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Situation Analysis of Energy and Gender Issues in ECOWAS Member States

2015

DEVELOPED FOR

The ECOWAS Policy for
Gender Mainstreaming in Energy Access

With the support of

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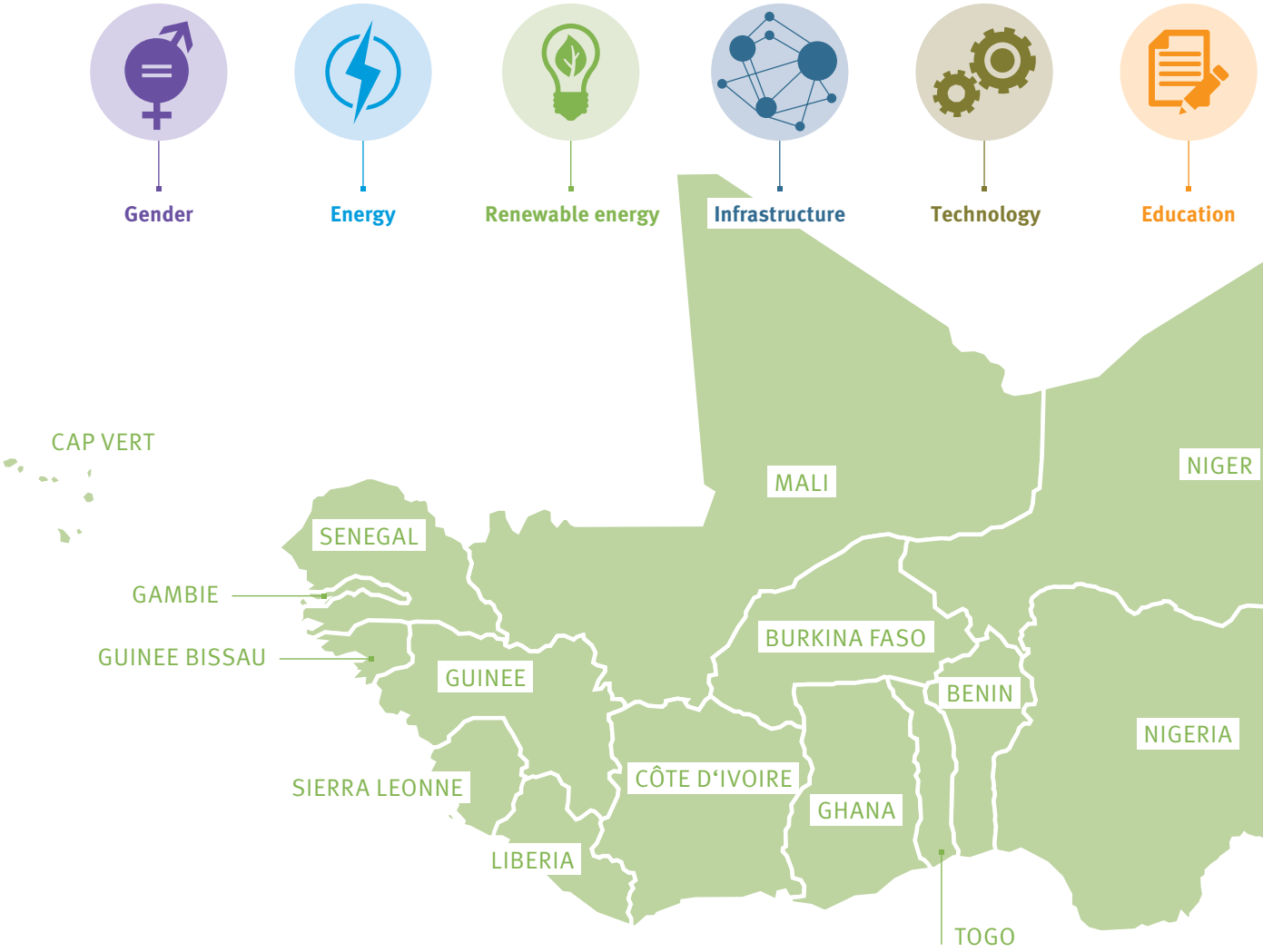

Situation Analysis of Energy and Gender Issues in ECOWAS Member States

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Foreword by the Executive Director of **ECREEE**

Energy and Gender issues remain as pressing as they were twenty years ago when world leaders met in Beijing to adopt actions to eliminate gender inequalities in all spheres of development. Even though over the years evidence continue to emerge to support the fact that gender blind energy interventions leads to unequal benefit-sharing amongst men and women, gender mainstreaming in energy projects, programmes, initiatives and investments, the 'why' and 'how', to a large extent, has not left the discussion tables.

A good explanation could be the fact that the discussion has barely shifted over the years. Energy and Gender issues continue to revolve around women and cooking fuels, which has given rise to the misconception and misunderstanding that energy and gender issues could be eliminated just by improving electrification rates, without much or any consideration for gender. The effect of this oversimplification is that gender is rarely taken seriously when energy interventions are planned and implemented and, thus, interventions which should promote inclusive and sustainable development falls short of the mark.

It is therefore necessary that planners of energy interventions recognize that energy is only relevant for the services it provides. And energy services (whether for lighting, motive power or recreation) has a gender dimension as the preferences for energy services differ depending on who is using it, what it is used for, when it is likely to be needed – in which, at the community or household level, gender roles, the differences and preferences feature significantly. Thus, aiming to improve energy access without a gender lens (that takes into consideration these gender roles, differences and preferences driven by the socio-cultural norms or characteristics in place) is missing an opportunity for maximizing the impact of interventions, especially in situations where accessibility, availability and affordability of energy services remain a critical challenge, and the gap between energy demand and supply is severe.

Furthermore, planners of energy interventions must recognize that the energy sector is a job provider and an income generating avenue for economic empowerment and poverty eradication. By eliminating existing barriers and establishing enabling frameworks that allow women, as well as men, to enter and succeed in this sector a community, country and region invests in a significant segment of its population and empowers them to move out of poverty. The effect of which benefits everyone.

Also, women and men, as beneficiaries of energy interventions, should be part of the dialogue. Meaning that they should be active participants in the design processes of energy programmes and projects that aim to "improve their lives"- either as participants in the consultation processes or part of those putting the project components together.

The push for women's participation goes beyond fairness, but it is rather to enhance the effectiveness of interventions as their participation ensures that the decision-making processes that influence energy access is based on a balanced and informed dialogue. Moreover, there is overwhelming evidence that at the community level women's participation in the supply chain increases the adoption rate of clean energy technologies by female users, thus a balanced work-force is 'smart economics'.

We cannot sugar-coat the fact that the inequality gap in the energy sector is set to widen if progress continues at this rate. In the last two decades, advancements in information and telecommunication led the technology revolution. The next technology revolution is set to happen in the clean energy sector. If the existing barriers are not addressed now, and women given the support to be engaged in the sector, it would be a missed opportunity not just for women but for the achievement of an inclusive and sustainable development. In every part of the supply chain, there are roles for women (whether as innovators or distributors). Women have shown themselves capable in fields that have been opened up to them (the medical sciences is one example). Thus, addressing barriers that hinder women from venturing into the energy sector or limiting their interest to a particular "mini" segment of the energy sector cannot be overemphasized if the goal of universal energy access is to be realized.

"The next technology revolution is set to happen in the clean energy sector. If the existing barriers are not addressed now, and women given the support to be engaged in the sector, it would be a missed opportunity not just for women but for the achievement of an inclusive and sustainable development."

I am pleased to say that through the 'Situation Analysis of Energy and Gender Issues in ECOWAS Member States' we are broadening the discourse, with a comprehensive report on how energy poverty affects men and women, boys and girls, the old and marginalized populations, the underlying drivers as well as the possible solutions. I strongly believe that it is time we put a human face on our efforts towards improving energy access, where beneficiaries are recognized as men and women, with different needs. I very much hope that this report will encourage planners and decision-makers in the energy sector to adopt gender-responsive approaches to improving energy access.

I would like to express my gratitude to the National Renewable Energy Laboratory (NREL), African Development Bank (AfDB), Austrian Development Cooperation (ADC), Spanish Agency for International Cooperation and Development (AECID), and United Nations Industrial Development Organization (UNIDO) for the support provided towards the development of this report.

Mahama Kappiah

Mahama Kappiah

Executive Director,
ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE)

Foreword by the Deputy Laboratory Director of **NREL**

As a woman who has been in the energy industry for 35 years, I've often acted as a mentor to help other woman achieve their career goals, often through work on projects that fulfil a passion. It is important that women throughout the world can realize their potential and have confidence in their abilities to eliminate energy poverty and drive sustainable development in their communities. The same economic opportunities afforded to men are available to women, including jobs in the clean energy sector. As stewards and leaders of communities, women have the capacity to find clean energy solutions that provide overall economic and social benefits for themselves and their families.

I have been fortunate and have had opportunities to succeed in my career. In my role as deputy laboratory director for Strategic Programs and Partnerships at the National Renewable Energy Laboratory (NREL), I see a broad set of career opportunities in the science, technology, engineering, and mathematics (STEM) fields and in the emerging, global clean energy sector. Women have traditionally been underrepresented in these careers, but we certainly have the capabilities, intelligence, and fortitude to pursue prominent pathways into energy careers. We need to ensure that all people have access to energy that is clean and, ultimately, end life-threatening conditions associated with energy poverty. Women have the ability to lead in this effort and make a compelling difference in their lives and in their communities. I encourage women in all countries and regions to explore opportunities in the emerging clean energy sector, which offers diverse roles to make a difference locally and in the world.

One of the most effective ways to gain support for a policy is to provide data and analysis that validate the need for forward-thinking regulations. The "Situation Analysis of Energy and Gender Issues in ECOWAS Member States" provides a comprehensive look into traits of the Economic Community of Western African States, such as energy poverty, development implications, and gender programs.

Based on this analysis, the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) – in partnership with the African Development Bank (AfDB) and the Clean Energy Solutions Center (CESC) – is developing the ECOWAS Policy for Gender Mainstreaming in Energy Access.

ECOWAS sought help for this work through the Clean Energy Solutions Center, which is operated by NREL. NREL staff and Solutions Center policy experts from Sustainable Energy Solutions provided expertise to help conduct the analysis to inform the development of the policy and design an implementation plan. This work will be followed by development of a regulation that will help enforce the policy in the long term.

During the inception workshop held to launch the policy development, Fatimata Sow, ECOWAS commissioner for Social Affairs and Gender, talked about how gender plays an important role in energy access. She emphasized the importance of incorporating gender considerations in the planning and execution of energy interventions to ensure socio-economic development.

This innovative policy will support women in energy and also help bring clean energy access to remote populations across West Africa. The policy aims to address existing barriers that hinder the equal participation of women and men in expanding energy access in the region. The intent is not to exclude men, but to provide opportunities for drawing women into the energy sector through jobs, and provide insights into innovative sustainable energy solutions.

I also serve as an ambassador to the Clean Energy Education and Empowerment (C3E) women's initiative, which was established by the Clean Energy Ministerial (CEM). The CEM, which also established the Clean Energy Solutions Center, is committed to achieving women's participation in the clean energy revolution. The C3E motivation "was a shared sense that the ideas and talents of all members of society are essential to accelerating progress toward a clean energy future."

In the United States, the C3E works to inspire mid-career women to sustain and grow through diverse careers in research, academia, industry, government, and the clean energy policy field. The principles of this initiative can be replicated in other countries by establishing a platform for peer learning and exchange of ideas, exposure to job opportunities in the field, mentorship programs, and recognition of key accomplishments of members. This often happens through meaningful activities that build opportunities for greater female influence and close the gender gap – and an emphasis on cross-linking efforts whenever possible.

"Women have traditionally been underrepresented in these careers, but we certainly have the capabilities, intelligence, and fortitude to pursue prominent pathways into energy careers."

The policy is also ground-breaking in that regard. According to ECOWAS, environment impact assessments (and social impact assessments) have become popular practices when authorizing energy infrastructure projects for implementation, but gender considerations are rarely incorporated.

Studies have shown that the energy sector continues to remain largely male dominated, especially at the technical and decision-making levels. Because energy poverty affects men and women differently, mainstreaming gender in energy access will help address those differences at the community and household level. The goal of ECREEE is to ensure that women – who play vital roles as energy producers and managers in their households – have the same access as men to energy services, including those that could enhance their entrepreneurial capacities.

On behalf of the National Renewable Energy Laboratory, I would like to thank everyone involved in conducting this analysis, which made the resulting policy a reality. It is truly amazing that the work on this policy began less than a year ago and it will be presented to all 15 state governments for adoption sometime this year. What I look forward to the most is the opportunity to replicate the policy and accompanying regulations from this analysis in other countries and expanding the reach and impact of this important work.

Bobi Garrett

Deputy Laboratory Director
National Renewable Energy Laboratory

Foreword by the Vice President for Infrastructure, Private Sector and Regional Integration, **AfDB**

The African Development Bank (AfDB) greatly prioritizes energy as a critical sector in advancing the development prospects of its Regional Member Countries (RMCs), including RMCs in the ECOWAS region. Since 1964, AfDB has devoted significant financial resources towards energy operations in the public and private sectors and spanning diverse energy sub-sectors. While most of its investments have consisted of energy infrastructure, AfDB has also supported capacity building, skills development, and research programs linked to the energy sector. AfDB understands the role of traditional sources of energy as well as renewable energy sources and has invested in both types of sources in recent years.

AfDB fervently believes that concrete results in the energy sector demand innovation and engagement at varied levels and with multiple stakeholders. AfDB hosts the Sustainable Energy for All Africa Hub and the African Energy Leaders Group secretariat. AfDB has channeled resources for the benefit of ECOWAS RMCs' energy sectors through the Climate Investment Funds and the Sustainable Energy Fund for Africa. Under the leadership of President Akinwumi Adesina, AfDB established a "New Deal for Energy in Africa" in September 2015, which entails a transformative partnership on energy focused on mobilizing support and funding to eradicate Africa's energy poverty by 2025.

Fueled by its Ten Year Strategy 2013 – 2022 and its Energy Sector Policy (2012), AfDB is continuing to further enhance its interventions in the energy sector in Africa and in the ECOWAS region. Increasing energy access for all is a top priority. Ensuring the sustainability of our energy investments remains paramount. Cultivating strategic partnerships with diverse stakeholders within our RMCs, across the borders of our RMCs, and outside of the African continent is of utmost importance. Engaging in relevant, constructive policy dialogue and sector dialogue on energy with governments and the private sector is critical. Addressing gender considerations and climate change aspects is fundamental in deepening the developmental impact of our energy operations at macro, meso, and micro levels.

In light of this context, AfDB wholeheartedly applauds ECREEE for its role in commissioning the Situation Analysis of Energy and Gender Issues in ECOWAS Member States Report. The publication of this landmark report has fundamental implications for all partners committed to the socio-economic development of the ECOWAS region, including AfDB. During the Inception Workshop for the ECOWAS Policy for Gender Mainstreaming in Energy Access in February 2015, I made a personal commitment that my complex would support ECREEE's efforts and further deepen the operationalization of gender mainstreaming efforts through our public and private sector energy investments and initiatives in the ECOWAS region. This report has comprehensively analyzed gender and energy issues while distinguishing nuances at regional and national levels. This report has carefully highlighted prevailing challenges and constraints as well as viable opportunities to transformative change. The insights emanating from this report will not only serve to meaningfully engender AfDB's policy dialogue and sector dialogue on the energy sectors in the ECOWAS region, it will also contribute to embedding more contextualized gender mainstreaming aspects into AfDB's national and multinational energy operations.

The dire energy poverty in the ECOWAS region remains a grave concern to AfDB. Equally disturbing are the gender dimensions characterizing this energy poverty in which inequalities and inequities with respect to access, affordability, and usage patterns persist and further marginalize myriad segments of women and girls in rural, urban, and peri-urban areas across the ECOWAS region. As a highly active development partner in the West African energy sectors, AfDB is cognizant of how the lack of and/or limited access to energy has undermined the productivity levels of female-owned micro, small, and medium enterprises; fostered higher rates

of gender-based violence and a diminished sense of security in public areas; forced women and girls to devote countless hours to searching for energy sources at the expense of engaging in educational, productive, and/or leisure activities; denied households members the opportunity to enhance their income generation potential by undertaking more economic and/or value addition activities; and constrained teenage girls and young women in cultivating their technological skills and contributing to innovative pursuits, for instance. The stark reality is that ECOWAS' energy crisis has reinforced gender stereotypes and discrimination and has erected additional barriers that are preventing women and girls from further progressing socially, economically, and politically. As a consequence, the design and implementation of energy investments, the formulation of energy policies and strategies, the establishment of linkages between the energy sector and other key sectors, such as health, education, transport, and telecommunications, and the functioning of local and national decision-making bodies have been compromised by a common failure to be gender informed.

The ECOWAS region urgently needs gender sensitive and gender responsive investments in its "hard" and "soft" energy infrastructure to achieve inclusive growth for all of its member states and their populations. In adhering to the spirit of its Gender Strategy 2014-2018, AfDB is focused on seriously operationalizing gender mainstreaming in its operational and policy work alongside key development partners, such as ECOWAS and ECREEE. We must all collectively assess gender constraints, leverage gender opportunities, and mobilize adequate technical and financial resources to design transformative energy interventions that evolve into gender sensitive and gender responsive partnerships, operations, and initiatives in the ECOWAS region. With AfDB's "New Deal for Energy in Africa" and the adoption of the Sustainable Development Goals, a new era has been created to closely intertwine energy and gender dimensions in reducing poverty and addressing socio-economic and socio-cultural vulnerabilities encountered by women and girls in the ECOWAS region. This report will be a vital tool for AfDB in understanding energy challenges and their gender implications and in devising appropriate mechanisms for empowering women and girls. AfDB firmly commits to supporting ECOWAS and ECREEE in implementing the report's recommendations, fostering synergies to strengthen the implementation of the ECOWAS Policy for Gender Mainstreaming in Energy Access, and determining sustainable and gender sensitive and responsive opportunities to elevate women and girls. AfDB also firmly commits to further ameliorating the development, implementation, monitoring, and evaluation of gender considerations in its public and private sector energy investments so that gender aspects contextualized to the realities and development priorities of ECOWAS countries and the distinct nature of their energy sectors emerge, translating into improved conditions for women and girls and their subsequent empowerment.

"AfDB firmly commits to supporting ECOWAS and ECREEE in implementing the report's recommendations, fostering synergies to strengthen the implementation of the ECOWAS Policy for Gender Mainstreaming in Energy Access, and determining sustainable and gender sensitive and responsive opportunities to elevate women and girls."

Solomon Asamoah

Solomon Asamoah
Vice President, Infrastructure, Private Sector and Regional Integration

African Development Bank Group

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Commissioned by the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), the report presents an overview of the current situation of gender mainstreaming in energy access in the ECOWAS Member States. This comprehensive situation analysis aims to inform the implementation of the ECOWAS Policy for Gender Mainstreaming in Energy Access by supporting Member States in addressing barriers that may hinder the equal participation of women and men in expanding energy access in West Africa. **Ellen Morris**, *Ph.D., (Sustainable Energy Solutions)* is the lead author of this report, with **Rose Mensah-Kutin**, *Ph.D., (ENERGIA)*, **Jennye Greene** *(Sustainable Energy Solutions)*, and **Catherine Diam-Valla** *(Sustainable Energy Solutions)* as co-authors. This work was implemented under the direction and guidance of **Monica Maduekwe** *(ECOWAS Centre for Renewable Energy and Energy Efficiency)* and **Victoria Healey** *(National Renewable Energy Laboratory)*. The report benefited from the review and insightful comments by **Bolanle Adetoun** *(ECOWAS Department of Social Affairs and Gender)*, **Alois Mhlanga and Katharina Proestler** *(UNIDO)*, **Rachel Aron** *(AfDB)*, **Inka Ivette Schomer** *(AFREA)*, **Richenda van Leeuwen, Aurelie Konin**, and **Yasemin Erboy** *(UN Foundation)*, **Erneus Kaijage** *(Tanzania Clinton Climate Initiative)*, and all of the **Members of the ECOWAS Programme for Gender Mainstreaming in Energy Access** *(ECOW-GEN)* **Technical Advisory Group** *(TAG)*. Heartfelt thanks are offered to Étienne Saint-Sernin for sharing previously unpublished research data, Vera Monteiro for conducting, transcribing and translating interviews, **Denise Mortimer** *(USAID)* and **Vanessa Lopes Janik** *(World Bank-ESMAP)* for sharing relevant project information, and **Shifali Gupta** for research and editing support.

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While the authors of this report made every effort to be inclusive and comprehensive in collecting and presenting information, there may be unintentional omissions. Kindly forward any additional material on policies, programmes, and initiatives for inclusion to: **Monica Maduekwe**, *Coordinator for the ECOWAS Programme on Gender Mainstreaming in Energy Access* (MMaduekwe@ecreee.org).

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Executive Summary

The ECOWAS region is dynamic and fast growing with many human and natural resources to its advantage, but it is also facing many challenges related to population, infrastructure, social services, security, migration, economy and environment. Gender norms in ECOWAS, along with gender neutral policy directives and regulatory environments, though evolving, still retain legacy elements limiting the potential of women and men to pursue lives that are free and fulfilling.

While rich in energy resources, the ECOWAS region lags in access to modern energy such as electricity, liquid and gaseous fuels, modern cooking options, and mechanical power. Around half the population is unelectrified and three quarters continue to cook with traditional biomass. While access to modern energy services is documented as being a necessary, if not sufficient, condition for economic growth and development, the region's energy sector struggles with low investment, inadequate infrastructure, and high costs, which are in turn met with low ability to pay on behalf of consumers.

Within the ECOWAS region, a large number of women and men – particularly those with low incomes or those living in rural areas – are more disadvantaged than most in terms of their ability to access modern energy. This not only depresses the overall economy but, more importantly, deprives them of their right to enjoy a better standard of living. These are the energy poor.

Energy poverty – defined as the lack of adequate modern energy for the most basic needs of cooking, heating, lighting, income generation, community schools and health centres – is limiting human development in many spheres, including but not limited to: education, nutrition and food security, water and sanitation, market-based work, health, and gender relations.

The inclusion of more women will open up new perspectives and avenues for problem solving.

The energy availability crisis forcing millions to keep relying on traditional biomass has resulted in a public health crisis of truly staggering proportions with unacceptable levels of death resulting from pneumonia, chronic obstructive pulmonary disorder and lung cancer. It is also an environmental crisis, with deforestation, habitat and biodiversity loss, desertification, and climate change all very real threats to the security and prosperity of the region. Women, as active agents in biomass management, as the primary household cooks, and as participants in many biomass-intensive processing sectors, will play an integral role in shifting the region onto a cleaner development pathway.

Energy poor individuals suffer in myriad ways, robbed of time, robbed of income, physically exhausted, struggling to access education and information. Women and men, despite many commonalities, also exhibit systematic differences in the ways they experience energy poverty, differences that if overlooked can end up propagating existing injustices. These differences are derived from socially determined gender roles and norms that in turn drive patterns of energy usage in the region. Women and men require modern energy as a means to accomplish distinct sets of tasks within their spheres of activity, whether domestic, agricultural, community-based, or commercial. Evidence shows that gender is one of many considerations (including geography, income, culture, etc.) influencing preferences for energy products, fuels, and services. Gender has also been shown to affect the ability of individuals to access energy because gender mediates other important predictors of fuel and technology switching like wealth, education, employment, and autonomy.

In a similar fashion, existing gender norms and constraints affect the probability that an individual will choose the energy sector as a vocation and succeed. This is because gender influences the availability of assets, credit, education, and networking opportunities. The male-dominated modern energy sector in ECOWAS is suffering from the absence many would-be participants, their efforts and their talents. There are relatively too few women working in the modern energy sector in the region, and when they do engage, it is too often in a smaller, more peripheral, and/or limited capacity.

What is true in this regard in the private sector also holds in the public sector. There is still a gender imbalance, though improving, in energy ministries and parastatals that is increasingly pronounced in more technical fields and among leadership positions. Experience shows that more gender balance than what currently exists is required to achieve truly representative decision-making. A survey of national policy instruments, human and financial resources, and current gender mainstreaming practices revealed some promising starts, but the region is far from fully integrating gender concerns into its energy policy making and planning. Fortunately, there are many pockets of excellence within Member States upon which to build and a number of international partners seemingly aligned with ECOWAS' goals for gender mainstreaming in energy access.

The policy, regulatory and institutional framework around gender mainstreaming in the energy sector is gaining momentum in the ECOWAS region. A growing number of Member States have incorporated references to gender equality in their energy policy documents; they have established gender focal units within public sector energy agencies; and they have conducted gender audits of energy agencies. Gender analysis of programmes and initiatives in the ECOWAS region, especially those with international funding, is now becoming the norm, and there are now numerous programmes focused on gender and energy. But even as consensus builds around the rationale for and execution of gender mainstreaming in the energy sector, practical progress at the national levels is too often constrained by the limited human and financial resources available for these undertakings.

Many compelling rationales are posited for pursing efforts to integrate gender issues into energy planning. Doing so should immediately enhance the democratic responsiveness of national machineries to their citizenry and should eventually enhance the welfare of both women and men as their distinct energy needs are taken into account. Encouraging women to participate more in all aspects of the energy sector value chain is expected to bring benefits as well. More hands, hearts and heads are desperately needed to address the energy access challenge and enhance sector performance. And the inclusion of more women will open up new perspectives and avenues for problem solving. Lastly, expanding energy access is shown to have mostly positive impacts on improving women's empowerment at the grassroots level.

This report, a fairly comprehensive analysis of the current situation of energy and gender issues in ECOWAS Member States, aims to inform the development of the ECOWAS Policy for Gender Mainstreaming in Energy, which will support national governments in focusing and harmonizing their current efforts at gender mainstreaming, learning from one another, and collectively mobilizing support.

1.

Introduction

Within the context of the ECOWAS region, issues of availability, accessibility and affordability of modern energy services is a major concern for citizens aspiring to higher standards of living and productivity. There is substantial regional potential to harness energy resources such as oil, gas, hydropower and coal as well as opportunities for modern biomass and other renewables such as wind and solar (Vilar, ed. 2012). Yet access to commercially sustainable energy services continue to elude women and men in the region as the energy infrastructure needed to meet demand is lacking. Moreover, the heavy dependence on traditional biomass, predominately wood fuel, and its unsustainable harvest, is threatening the ecology and development of Member States in the region. Deforestation and land degradation also further expose the societies of these already vulnerable countries to the harsh and gendered effects of climate variations.

The ECOWAS community is committed to ushering in a period of accelerated development that is socially just, equitable, economically rewarding, inclusive and environmentally sustainable. Achieving gender equality and transitioning to clean energy – efforts that are interconnected and mutually reinforcing in surprising and complex ways – will underpin substantial portions of this development. For this reason the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) launched the ECOWAS Programme on Gender Mainstreaming in Energy Access (ECOW-GEN). It is a stand-alone ECOWAS programme complementing the regional effort to achieve access to sustainable energy for all. It also seeks to ensure the success of the ECOWAS Renewable Energy and Energy Efficiency Policies (EREP and EEEP) by making women, as much as men, part of the solution to the region's energy crises.

ECOW-GEN promotes favourable policy environments and supports institutional frameworks and resource mobilization in order to more fully engage women in all areas of the energy access equation; including as energy suppliers, planners, financiers, educators and customers. In consultation with the ECOWAS Department of Social Affairs and Gender, ECOW-GEN is leading the development of the "ECOWAS Policy for Gender Mainstreaming in Energy Access," to be adopted by Heads of State. The Policy will support Member States as they address barriers hindering the equal participation of women and men in expanding energy access in West Africa, with the overall goal to ensure universal energy access in the ECOWAS Region by 2030.

ECOW-GEN promotes favourable policy environments and supports institutional frameworks and resource mobilization in order to more fully engage women in all areas of the energy access equation; including as energy suppliers, planners, financiers, educators and customers.

The rational for a gender mainstreaming policy lies in the fact that although women contribute to economic, social and political development as well as environmental management, they have not equally reaped the benefits of economic and social development. Much female labour continues to be unremunerated and overlooked in national accounts. Women continue to be outside the decision making sphere and their human rights are often comprised when addressing energy access issues. For example, much current thinking proposes that women will be disproportionately more affected by climate change, yet they possess relatively limited influence on key decisions related to climate change mitigation.

This situation analysis, therefore, laid the groundwork for the development of the ECOWAS Policy for Gender Mainstreaming in Energy Access; by providing as much as possible a holistic and objective evaluation of the current state of affairs with respect to gender and energy in the region.


2.

Context

2.1 Energy and gender

Compared to other infrastructure sector such as water, sanitation, transport and information and communication technology (ICT), there is less extensive literature on energy and gender within the social sciences or anthropology. Evaluation studies on energy such as stove programmes often do not adopt a gendered approach, often referring to stakeholders and target groups as 'people', 'consumers' or 'users' in addition to erroneously applying 'women' and 'gender' interchangeably (Clancy, 2012). In spite of this gap in the literature, it has been established that there is a clear linkage between energy and gender, namely the differential access, use and effects of energy sources and appliances in the home, community and wider society. Even when the same energy source or appliance is theoretically available to women and men, socio-economic and socio-cultural dynamics interact to create distinct patterns of use and benefits. If planning and project execution in the energy sector do not internalize certain unique gender concerns, projected benefits for different categories of women and men may not be realised.

ECOWAS Member States have experienced a healthy economic expansion since **2005**, with an average economic growth rate of more than **5%** per year, and the region is one of the fastest growing agricultural regions of the world (ECOWAS, 2012).

Access to modern energy services is a necessary component, among other factors, of economic growth. There are also clear and documented links between energy availability and industrial development, communication technology, agriculture, health, education, demographics, water services, transportation, and, importantly, gender equality. And while women and men can face vastly different energy realities, gender is a marginalized or even absent topic in the national energy policies of most Member States in the region.

In the West African region, everyday energy sector decisions have profound implications on access rates for the most marginalized populations, women and men in rural areas and poor urban communities. Each decision point presents an opportunity to move towards a more inclusive paradigm, but that can only happen once gender issues have been thoroughly mainstreamed. With women lagging behind men in access to clean and affordable energy, there is a need to address directly the issue of gender equality in energy access. Without it, progress towards sustainable development will remain incomplete.

2.1.1 Gender and regional socio-economic context

ECOWAS Member States have experienced a healthy economic expansion since 2005, with an average economic growth rate of more than 5% per year, and the region is one of the fastest growing agricultural regions of the world (ECOWAS, 2012). Nevertheless this progress conceals many pressing socio-economic challenges such as poverty, large structural unemployment, and rapid demographic growth.

Unfulfilled human potential remains pervasive in all 15 ECOWAS Member States. Member States like Niger, Sierra Leone, Mali, Burkina Faso and Guinea-Bissau, have some of the lowest Human Development Index (HDI) ratings at 0.3, while others such as Ghana, Nigeria and Cabo Verde score at 0.5 or higher (HDI, 2013). Income inequality is also a growing concern within Member States, with the poorest quintile possessing 6% of the wealth (ECOWAS, 2012), although this still pales in comparison to income inequality, say, in the US where the bottom two quintiles own just 0.2% of the wealth (Wolff, 2010). The urban/rural income differentials present another area of concern as does the population growth from 262 million people in 2005 to 335 million in 2015. The estimated 2014 GDP for 14 of the 15 ECOWAS Member States each falls below $50 billion. The exception is Nigeria with a GDP of $594 billion, representing more than half of the Economic Community's GDP. Eight ECOWAS Member States have GDPs below $10 billion with Togo, Cabo Verde, Liberia and the Gambia recording the lowest (ECREEE, 2014).

This situation threatens efforts to extend access to basic social services and infrastructure. One particularly grim indicator is the maternal mortality rate, which stands at 1,100 per 100,000 live births in Sierra Leone (WHO, 2014). This is one of the highest in the world and translates to women facing a one in 23 lifetime risk of dying from childbirth. Seven other countries in ECOWAS have maternal mortality rates above 500 per 100,000 live births; 510 is the average for Sub-Saharan Africa. By contrast, Cabo Verde's rate is only 53 per 100,000. Additionally, the emergence of diseases such as Ebola in Guinée, Liberia and Sierra Leone adds to the many social and economic challenges.

Representation and policy-making

It has been agreed globally that women's participation in policy-making and in private sector leadership is a critical component of democratic dialogue and social cohesion. In the private sector, companies with greater gender balance on the board and in leadership positions are suggested to outperform the market. Women's increased participation in public discourse to shape policies and practices is vital to democratic governance, combating poverty, hunger, and violence, and bringing greater equality, peace and security.

However, the ECOWAS region has remained traditionally gender-stratified whereby males on average have greater access than females to the resources and opportunities in society (land ownership, inheritance system, etc.), creating imbalance in social relations and making it difficult for women to be equal competitors.

It is also a right that is enshrined in a number of national constitutions and laws as well as international human rights commitments, such as: the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW); the Beijing Platform for Action; the Millennium Development Goals (MDGs); the African Union's Supplementary Protocol; the African Charter on Human and Peoples Rights. In addition, several Articles of the ECOWAS Supplementary Protocol on Democracy and Good Governance are devoted to this issue.

However, the ECOWAS region has remained traditionally gender-stratified whereby males on average have greater access than females to the resources and opportunities in society (land ownership, inheritance system, etc.), creating imbalance in social relations and making it difficult for women to be equal competitors. For example, women continue to be under-represented at the political and economic leadership levels of the region. Women occupy only 14.5 percent of parliamentary seats in ECOWAS Member States (ranging from 7 percent in Nigeria's lower house to 42 percent in Sénégal's upper house) compared to a global average of 18.4 percent and 18.2 percent in sub-Saharan Africa (Intra-Parliamentary Union, 2015). Liberia is the only current Member Country out of 15 that has a female President, although women have served as the heads of the legislature and judiciary of some Member States (e.g., Ghana, The Gambia).

PARLIAMENTARY SEATS IN ECOWAS MEMBER STATES

Total

States (2011 – 2014)

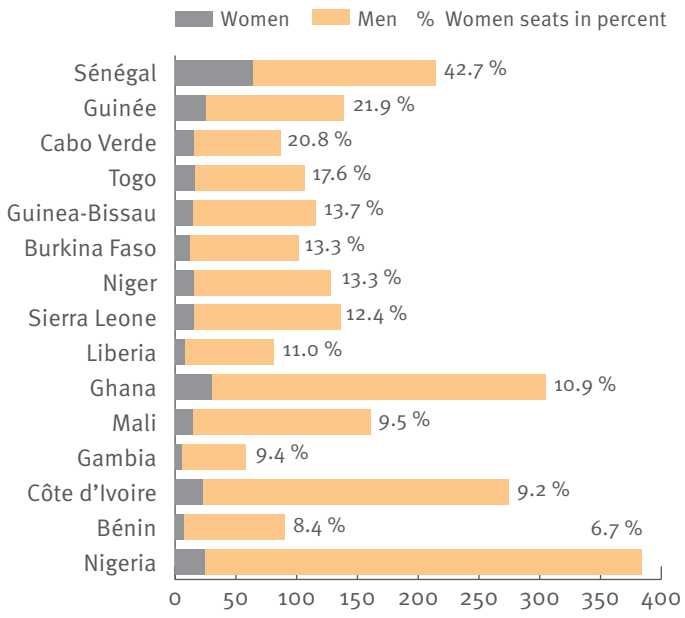


TABLE 1 | WOMEN IN ECOWAS NATIONAL PARLIAMENTS AND WORLD RANKINGS, 2015

Rank	Country	Elections	Seats	Women	%w
7	Sénégal	2012	150	64	42.7%
61	Guinée	2013	114	25	21.9%
63	Cabo Verde	2011	72	15	20.8%
78	Togo	2013	91	16	17.6%
95	Guinea-Bissau	2014	102	14	13.7%
97	Burkina Faso	2014	90	12	13.3%
97	Niger	2011	113	15	13.3%
104	Sierra Leone	2012	121	15	12.4%
110	Liberia	2011	73	8	11.0%
111	Ghana	2012	275	30	10.9%
115	Mali	2013	147	14	9.5%
116	Gambia	2012	53	5	9.4%
117	Côte d'Ivoire	2011	251	23	9.2%
122	Bénin	2011	83	7	8.4%
125	Nigeria	2011	360	24	6.7%

Source: Inter-Parliamentary Union, 2015

Women's inclusive political participation is about human rights, fairness and gender equality. Women represent a huge demographic force but are underrepresented in upper management and decision-making positions in both the public and private energy sectors despite official calls and commitments to more balanced participation and evidence that doing so would lead to better performance (ENERGIA, 2014b). They bring divergent perspectives in the process of tackling national issues and it makes economic sense to incorporate these perspectives.

Gender norms

Gender norms – expectations about who performs which tasks, how much status they are accorded for the completion of those tasks, and society's assumptions about an individual's abilities based on his or her gender – are shaped through an historical process, transmitted via culture and reinforced through social institutions and legal systems. It is problematic to generalize about gender norms across such a large and diverse region as ECOWAS, home to different nation states and ethnolinguistic groups. Even within one state or ethnic group, norms will be expressed differently in rural versus urban and poor versus wealthy settings, weighing most heavily among poorer women and men (WMC, 2004). However, there are some shared – though not universal – norms that bear mentioning.

West African women are certainly constrained and disadvantaged by many gender norms. For example, they are expected to perform certain caregiving and household duties almost exclusively, making it more difficult for them to pursue opportunities elsewhere; in some cases, work outside the home is discouraged altogether. There are weaker expectations that girls and women will study the so-called hard sciences at a high level. Professions typically thought of as "female" are generally not as lucrative, and women are often paid less for the same work performed by men. There are social expectations about the forms of transportation, times of travel, and destinations acceptable for women, all of which tend to be more restrictive than those for men. Finally, customary laws and traditions have in certain locales impinged on women's ability to control financial resources, enter into contracts, inherit property, even retain autonomy during widowhood. Marriage customs, including early or forced marriage and use of bride price to settle family debts, can disempower women, deprive them of opportunities to complete

There are weaker expectations that girls and women will study the so-called hard sciences at a high level. Professions typically thought of as "female" are generally not as lucrative, and women are 'often paid less for the same work performed by men.

education and endanger their health and wellbeing (for more on laws concerning marriage in ECOWAS countries, see section 4.2.4).

On the other hand, West Africa has deep, indigenous traditions of gender equality compared to many other regions of the world. Though partly disrupted through contact with Middle Eastern and European cultures and the experience of colonialism, some of these traditions persist today, also with important implications for the energy sector. The first point of note is women continue to be highly involved in farming and agro-processing (where many energy improvements must be directed in order to boost productivity and incomes). This is a product of geography, climate and soil conditions in much of the region which favoured shifting (long fallow) agriculture using hoe technology. As opposed to regions where ploughs (for which men had a biological advantage in their upper body strength) were used for continuous cultivation, women controlled much of farming production in West Africa, according them status, autonomy, and even profits from their ability to sell surplus crops at market (Boserup, 1970). The reason today so many petty traders in West Africa are women – providing a potential army of marketers for clean energy products and services – may have roots in this original structuring of agricultural production.

On the other hand, West Africa has deep, indigenous traditions of gender equality compared to many other regions of the world.

Other indicators of gender equality that are based in the history of the region include language (e.g., lack of gendered pronouns), comparable male/female governance and education systems, and the presence of female figures reported to wield considerable political, economic and cultural power (Assié-Lumumba, 1998). And, there is reason to believe that the region's legacy of female empowerment was not entirely erased by contact with outside cultures. Alesina et al., (2011), for example, finds empirical evidence around the world where societies' experience of shifting, hoe-based (in other words, female-dominated) agriculture possesses predictive power for contemporary measures of gender equality, such as work force and political participation.

Of the myriad changes wrought by colonialism in the ECOWAS region, one stands out as particularly relevant to the discussion of gender norms and energy. There was a reorientation of female education to focus on domestic competence to the exclusion of other pursuits that mirrored European attitudes at the time. This change put women, generally speaking, at a great disadvantage in terms of their ability to produce, accumulate assets, participate in public discourse, and enter the formal energy sector. Over time, norms regarding education were internalized and helped perpetuate these imbalances.

Gender norms can impact a women's ability to access clean energy, to work in the energy sector, or to have a voice in the public discourse, but they are neither inevitable nor immune from change. Global shifts in and the acceleration of the feminist movement are impacting norms through advocacy, awareness raising, and programmatic responses, particularly, within the ECOWAS region, in the areas of health, education, and inclusive finance. Gender norms are also influenced by the prevalence and type of conflicts, where they exist. Income measures (as discussed in section 4) influence female labour force participation rates, though not in a linear fashion, and the effect of media and television, in particular, is shown to have a transformative effect on gender relations, especially in rural areas (for more, see section 2.1.5).

Land and Property Rights

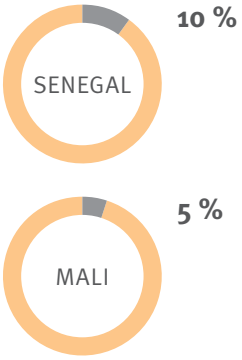
Land and property rights, particularly in the developing countries like those found in the ECOWAS region, are inextricably linked with the right to food, the right to work and a host of other human rights. In many instances, the right to land is bound up with self-determination, identity, livelihoods and thus survival.

Land is a crucial and critical asset with cultural, social and political functions that include agricultural production, housing, industry and the production of many services. Land is also key in fighting poverty, hunger and deprivation. Land provides families in rural communities the means to livelihoods through the production of farm produce for sale as well as providing space for shelter. Because of lands many uses and benefits, it is a contentious issue broadly impacting peoples' lives and livelihoods, especially women. Gender inequality in land acquisition has contributed significantly to the economic disempowerment of women. Women who have rights to secure access to, ownership and control over land are able to manage their lives better and are less vulnerable.

Gender disparities in land access remain significant in most Member States, regardless of their level of development, confining women especially in the rural areas to economic insecurity and dependency. The percentage of women landholders in Africa is very small.

Women's right to land is buried in a complex cultural web of norms that deny them outright ownership. Women's traditional rights to use tribal land and retain the agricultural production from that land were disrupted by the combined pressures of population growth making land scarce and private tenure patterns imposed during colonial times. Men began to predominantly purchase and hold title to land, meaning women were increasingly dependent on husbands, made to rent land, or made to work as casual labourers on others' plots. The legacy of women's dispossession is evident today; in Sénégal about 10% of land title is held by women and only 5% in Mali (FAO Gender and Land Rights database, 2015). This situation is further aggravated by women's growing concern of dislocation, loss of livelihoods, and prospects of food insecurity due to large-scale land deals for extractive, agricultural, and yes even energy sector-related investments in the region.

LEGACY OF WOMEN



Population

The West African sub-region is counted as the most densely populated on the African continent. The ECOWAS region had a population of around 190 million in 1990 expected to reach 358 million in 2015 (see below table):

TABLE 2 | HISTORICAL POPULATION OF ECOWAS MEMBER STATES (000'S)

Country	1990	1995	2000	2005	2010	2015
Bénin	4,795	5,723	6,679	7,868	9,212	10,647
Burkina Faso	8,814	10,127	11,676	13,747	16,287	19,013
Cabo Verde	354	398	439	477	,513	548
Côte d'Ivoire	12,610	14,981	17,281	19,245	21,571	24,210
Gambia (the)	896	1,085	1,302	1,526	1,751	1,986
Ghana	14,968	17,425	19,529	21,915	24,333	26,925
Guinée	6,147	7,478	8,384	9,221	10,324	11,844
Guinea-Bissau	1,022	1,166	1,304	1,473	1,647	1,848
Liberia	2,167	1,945	2,824	3,331	4,102	4,665
Mali	8,655	9,549	10,523	11,833	13,323	14,993
Niger	7,904	9,302	11,031	13,102	15,891	19,150
Nigeria	97,338	110,449	124,842	140,879	158,259	175,298
Sénégal	7,538	8,660	9,902	11,281	12,861	14,526
Sierra Leone	4,084	3,989	4,228	5,107	5,836	6,557
Togo	3,926	4,432	5,247	5,992	6,780	7,607
Total	**189,310**	**215,927**	**246,178**	**280,004**	**317,560**	**357,298**

Source: Population Development World Population Prospects, 2008

West Africa has a predominantly young population, one of the youngest in the world. A little over half of the region's inhabitants are less than 20 years old and 65 percent are under 25, with an annual population growth rate exceeding 3% (ECOWAS Commission, 2011). The West African demographic dynamic presents socio-economic challenges that constitute a major long-term development issue. Lackluster job creation, especially for the youth, together with rising inequalities and social exclusion affecting large sections of the population, pose a real challenge. This is partly attributable to the conflict situations in some ECOWAS countries.

The intra-regional mobility is high and around 8 million West African migrants reside in ECOWAS countries other than their own (ECOWAS Commission, 2011), bringing in diverse cultures and peoples, many of them seeking work. The major labour exporting Member States have been and still are Burkina Faso, Mali, Guinée, Cabo Verde and Togo. The situation in Cabo Verde is unique in that the diaspora outnumbers the resident population (Carling, 2002). Women make up over 50% of the population in ECOWAS and are increasingly migrating, drawn to the wage labour market (both formal and informal) as a survival strategy to augment family income. In addition, women constitute a potential asset in the promotion of deeper ECOWAS integration as many of them engage in cross-border trade and businesses.

Internally, ECOWAS members are experiencing significant population movement related to rural out migration and accelerating urbanisation. This process in itself is causing the depopulation of rural sectors and impacting agricultural production, as well as generating new uncontrolled and unplanned urban slums with their attendant social and cultural tensions and minimum access to resources.

2.1.2 Energy poverty

Around the world, sustainable energy has progressively been linked as an essential requirement in all productive, subsistence and leisure activities enabling the promotion of higher living standards and socio-economic development. What is meant by "energy" often means "energy services," or energy's ability to assist in the completion of a task or activity.[1] This section examines many of the critical services that energy can provide.

A country or area's overall level energy poverty carries consequences for household welfare by driving up costs of goods, disproportionately affecting the poorest segments.

Energy access also exerts pressure through more indirect channels. As demonstrated when food prices rise in response to oil shocks, energy is a major cost component of other household expenditure categories, the two most important of which are foodstuffs and transport. A country or area's overall level energy poverty carries consequences for household welfare by driving up costs of goods, disproportionately affecting the poorest segments.

While the energy poor share some common experiences, it cannot be assumed that any two instances of energy poverty are identical. Energy access projects, policies and companies do best to adapt themselves to the local demand and economic activities and to offer tailored solutions.

Health

Energy services are essential for providing safe, affordable and effective health services. The challenges in the ECOWAS region -- including how to improve maternal and children's health, address food security and nutrition, prevent disease, expand the number of doctors and health facilities -- can be better met if access to energy is considered as part of the solutions.

With improved nutrition, enhanced health care during pregnancy and delivery, and access to currently available technologies and medicines, 80% of maternal and new-born deaths would be preventable (Lassi, 2014). Energy's role in lighting, sterilization, powering equipment, and cooling is vital in this regard.

In addition, the devastation of childhood diseases can be reduced through interventions such as vaccinations, which require cold chain storage. Additionally, the prevention or prompt treatment of pneumonia and diarrheal diseases are vital to children's health. Changes in cooking and heating methods to eliminate indoor air pollution and improvements in basic infrastructure to pump clean water would eliminate many of the health threats that are common in developing countries. Modern medical facilities with access to electricity for lighting, mobile phone charging and refrigeration will be able to attract and retain doctors in rural areas.

1 *A kWH is a unit of energy. An hour of room lighting is an energy service.*

TABLE 3 | ENERGY AND HEALTH LINKAGES

Energy services and end uses	Health outcomes
Incubation facilities for infants cold chain for vaccine, medicine, and blood bank refrigeration laboratory and diagnostic equipment powering medical equipment lighting surgery and examination rooms household energy electricity for prevention and cure indoor lighting, for examination, surgery, reading, and ambient light and outdoor, including security lighting clean water supply pressurized water distribution water heating space cooling cooking sterilization transport waste management improved cook stoves water pumping/purification computers radios TV single side-band radios charging mobile phones rechargeable flashlights energy-efficient lighting heating and, energy services for health clinics and for housing for doctors, nurses, and clinic staff.	Reduced child and adult mortality and morbidity improved maternal health reliable access to clean/safe drinking water enhanced communications (especially for emergencies), technologies and education for health data and information combat HIV/AIDS, malaria and other diseases improved life expectancy improved health service delivery (staff retention, motivation and training, lab services and End Uses), evening health training for local communities, reduced fertility rates, reduced waste and environmental pollution, reduced indoor air pollution, improved nutrition night birthing and safety lower respiratory disease and macular degeneration cleaner living conditions at home.

Source: USAID (2005)

Because access to health services and improved health and well-being are directly tied to access to modern energy services, it is important that policies, programmes, and initiatives be examined in a holistic and integrated fashion.

Education

Education is a fundamental human right, and it is the most important pathway out of poverty and towards greater engagement with the community and wider world. Educational opportunities for men, women, and children will lead to improved literacy which is closely correlated with improved health, child survival, reduced fertility, gender empowerment, and better economic prospects.

Public investments in the education sector will be most effective if energy access is considered at the same time. Schools benefit from reliable electricity and basic heating/cooling, water and sanitation systems. In fact, schools often serve as general community centres and may supply drinking water, hot lunches, communications facilities and civic meeting spaces. Household electricity is important to education as well, expanding total hours available for work, chores and study (itself enabled by electric light compared to fuel-based lighting). Also, it is much easier to recruit and retain teachers in the rural areas if the schools are well-equipped and well-maintained and have access to electricity, clean water, and sanitation facilities.

There is a clear linkage between energy poverty and education. 90 percent of children in sub-Saharan Africa go to primary schools that lack electricity or any form of energy services, hampering their chances of receiving adequate and quality education; in Guinée and Burundi only 2% of schools are electrified, while in Democratic Republic of Congo there is only 8% school electrification for a population of 75.5 million (43% of whom are under 14 years) (UNESCO, 2012).

TABLE 4 | ENERGY AND EDUCATION LINKAGES

Energy services and end uses	Education outcomes
› Electricity (DC or AC) for lighting › computers › radio/TV › telecommunications › thermal energy for cooking (students and staff) › water pumping/purification › energy-efficient lighting and appliances › and electricity and modern fuel services both for schools and for teachers' housing.	Poverty reduction › income generation › improved quality of education › improved grades › enhanced school enrolment/ retention rates › improved ability to attract and retain teachers and staff › improved sanitation › gender balance/equity › facilities for evening classes and adult education.

Source: USAID (2005)

Education is fundamental to empowerment and advancement of people, and access to modern energy can make it possible to expand opportunities for men, women, and children.

Agriculture

In the ECOWAS region, farming is the predominant livelihood for people in the rural areas. Subsistence and small-scale farming is still the most common in the region, however there are also larger, more commercial agricultural operations. Energy is an important input into the agricultural value chain for production, processing, and distribution.

In rural areas, human labour and animal power are often the only sources of energy available, limiting people's ability to improve living conditions and economic opportunities. These farmers often operate on marginal or ecologically fragile lands where soil erosion and degradation have reduced productivity. Low productivity forces farmers to cultivate more land, overuse already fragile land, harvest lower yields, produce inferior products, and sell them without adding value through processing and packaging.

Modern energy services can transform the agriculture sector at multiple points including food production (e.g. ploughing, irrigation, cultivation); processing (e.g., grinding, milling and drying); and business (e.g., cold chain, access to market, pricing knowledge, and higher-value products). Alleviating the drudgery from farming while seeing increased production from access to mechanized power, are particularly relevant for the many small farmers in the ECOWAS region.

Energy and agriculture are also linked by the ability to use the waste and residues from agro-processing to produce biomass and biofuels for electricity, process heat or cooking fuel.

Water

Access to energy and water are inextricably linked, and the lack of access to clean water in the world is just as daunting as energy access. Access to clean, secure, and sufficient quantities of water is vital to achieving adequate standards of food and goods production, sanitation, and health, and these all have direct links to energy. As the population in the ECOWAS continues to rise and the development pressures increase, access to water will have to be handled in tandem with access to energy.

USAID, (2005) highlights that "Only half of the people living in the world's cities have connections to municipal water supplies, and in rural areas many people must collect water from polluted streams, rivers, or shallow wells. This can lead to a major health risk as bacteria and pollutants in drinking water directly cause illness. Moreover, without clean water for washing, people cannot practice effective hygiene to prevent the transmission of infectious diseases."

Pumped water and irrigation, as mentioned above, are important for improving agricultural production and food security. Energy for transport is essential for water distribution. Energy is also necessary to purify

water (boiling and disinfection), and this has dramatic impacts on health, sanitation, and food security. Just as energy is important for water production, water can be critical for energy production. Hydropower is an important component of many energy mixes and water is required for cooling energy plants, cleaning solar panels, etc.

Security

Access to energy can affect a community's and individual's security. This is posited through a variety of mechanisms. One example is street lighting, night markets, and other illuminated evening activities that have the potential to increase safety under the right circumstances. Powered communication devices can also be used to send and receive alerts and information during natural disasters and in conflict situations.

Migration

While not the sole, or even primary, driver of migration patterns, energy poverty is one important factor for consideration. Because of energy's link to economic productivity and quality of life issues, its absence contributes to urban migration, which if uncontrolled leads to the growth and intensification of slum areas, strains infrastructure and social services, and also tends to increase rural female-headed households. In a similar fashion, the lack of basic energy services may also be a contributing factor in poorly controlled international migrations. The availability of high quality energy forms, such as electricity and liquid fuels, could reduce part of the pressure felt by ECOWAS citizens to move in search of better opportunities and quality of life.

2.1.3 Regional energy access figures

Lack of access to clean and modern forms of energy is negatively weighing on the ECOWAS region's economic growth and development potential. The region is facing an energy crisis, characterized by a rapid increase in energy demand, production deficits, low energy efficiency, fuel import dependence and a heavy reliance on polluting fossil fuels. Within households, traditional biomass resources are major sources of energy used for cooking and water heating. At the larger scale of projects and utilities, there is insufficient orientation towards inclusive provision of modern renewables.

In the ECOWAS region, energy access, energy security, and climate change mitigation and adaptation are major challenges. Access to sustainable energy services, if well planned, can address all three challenges simultaneously, yet the ECOWAS region has access rates amongst the lowest in the world. Even in the most developed Member States, coverage rates for access to modern energy services (including electricity for cooking and mechanical power) remain very low while in other Member States, many communities lack modern energy altogether.

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The ECOWAS region, with a population of around 335 million people, has one of the lowest modern energy consumption rates in the world (ECREEE, 2012). For example, per capita electricity consumption in the ECOWAS region averaged 88 kWh in 2005 (ECREEE, 2012), as compared to 13,246 kWh in the U.S. (World Bank, 2011). Moreover, significant energy access and energy pricing inequalities exist between urban and rural areas. Whereas people in urban areas tend to use energy in the form of electricity, charcoal, kerosene and other fuels, people in rural areas continue to rely largely on traditional biomass for meeting their energy requirements for cooking, lighting and space heating.

PER CAPITA ELECTRICITY CONSUMPTION

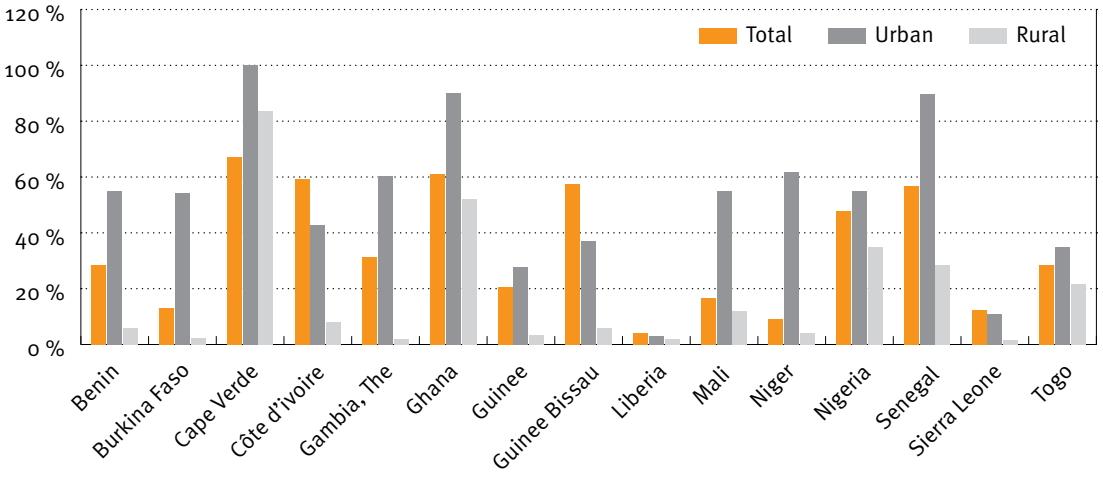
88 kWh | ECOWAS region

13,246 kWh | U. S.

Centralized grids mostly serve urban and peri-urban areas (with the exception of Cabo Verde and Ghana) and leave the rural electricity supply dependent on expensive diesel generators. The electricity consumer tariffs in the majority of ECOWAS Member States reach equal or higher levels than in industrialized countries with higher income (e.g., U.S. and Europe). For example, the low voltage tariff in Cabo Verde is CVE 23/kWh (~ USD 0.23) for amounts under 60 kWh, rising to CVE 30/kWh (~USD 0.30) at higher consumption levels (UNIDO, N.D.). Although island nations are notorious for their high electricity rates, Cabo Verde is roughly tied with the Gambia, with effective residential rates there of USD 0.28/kWh (assuming monthly consumption levels of 100 kWh), both followed by Sénégal at USD 0.24/kWh and Burkina Faso at USD 0.20/kWh (World Bank et al., in IRENA, 2013). Even in Cabo Verde, which exemplifies an electrification success story – connection rates are at 95% and endogenous consumption growth is a healthy 8% per annum – the power sector struggles with transmission/distribution losses, cost recovery and financial performance (Ajodhia, 2012).

Shown in Figure 1 are the electrification rates in the 15 Member States of ECOWAS. Overall access to electricity across the region is quite low, averaging about 50% (ECREEE, 2014), but wide gaps exist between the access rates in urban areas and rural ones, as well as between different countries. But even national electrification rates can obscure other realities, such as the availability of electricity in community institutions. For example, in a set of 11 countries in Sub-Saharan Africa, around a quarter of all health centres lacked any access to electricity, and only 28% had reliable electricity access, with great variation between countries (Adair-Rohani, 2013). The vast majority of deaths occur in resource-poor settings, and are preventable (WHO, 2011b).

FIGURE 1 | ELECTRIFICATION RATES IN ECOWAS MEMBER STATES



Source: IEA, in REN21, 2014

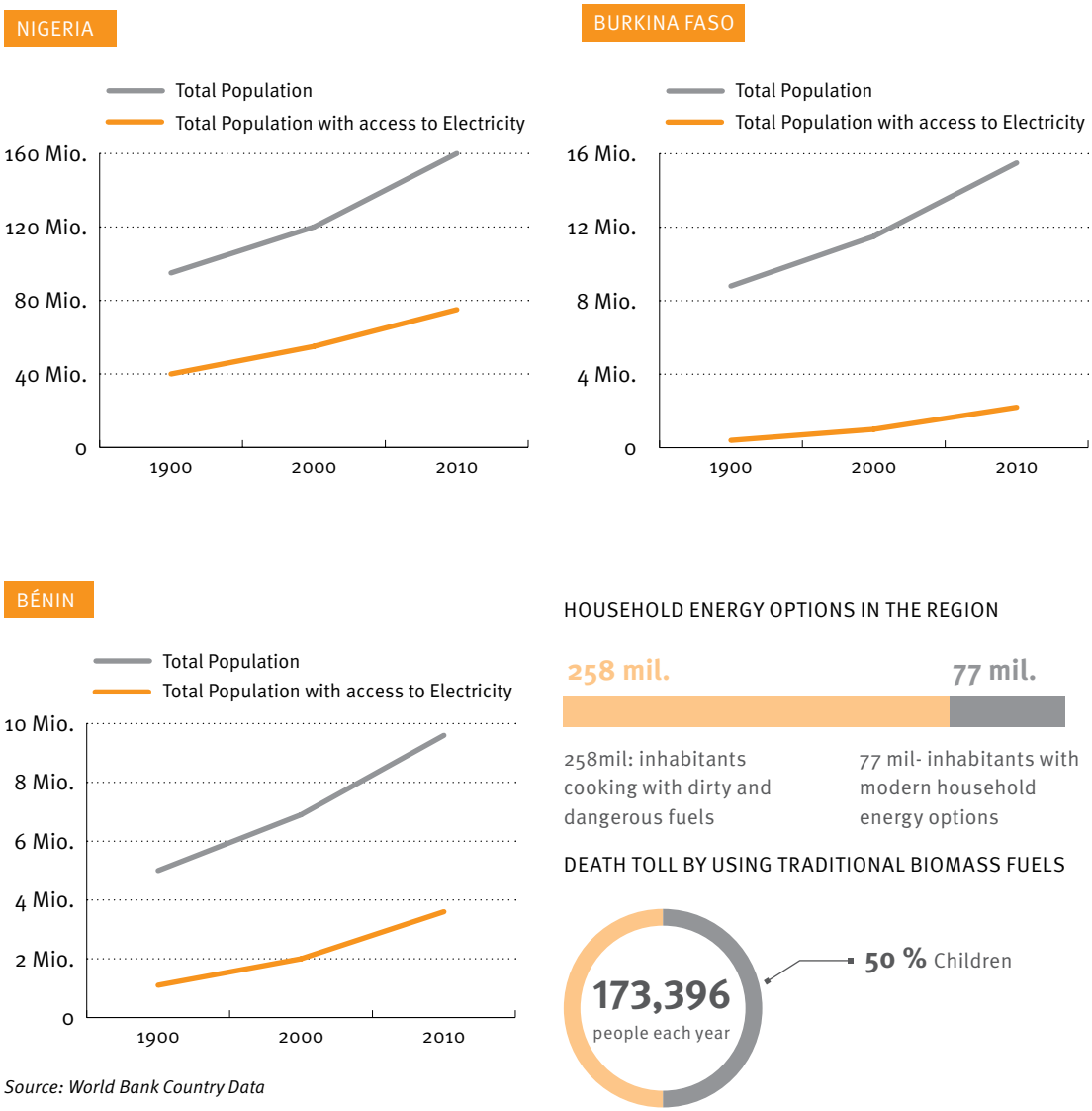
The challenge of electrification, and grid extension in particular, is catching up to and keeping up with population growth. There are far more individuals living in electrified homes in West Africa than at any time in the past, but the percentage of homes electrified is often the stubborn indicator that moves only with great effort. The table below shows some historic electrification rates for Burkina Faso and Sénégal, both of which had higher electrification rates than the US at the beginning of the 20th century.

TABLE 5 | HISTORICAL ELECTRIFICATION RATES IN BURKINA FASO AND SÉNÉGAL

Share of households connected to the grid by year	Burkina Faso	Sénégal	United States *(for comparison)*
1900	6.2%	26%	2%
1907	6.9%	32.2%	8%
1942	11.4%	36.8%	50%
1960	n.a.	47.1%	95%

Source: Maddison, in Pelligrini, 2013

FIGURE 2 | HISTORICAL GROWTH POPULATION WITH ACCESS TO ELECTRICITY IN NIGERIA, BURKINA FASO AND BÉNIN



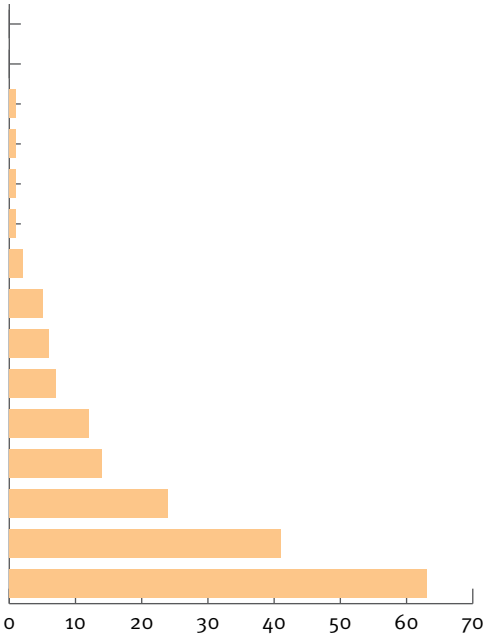
Source: World Bank Country Data

While electrification is a key enabler of economic and social development, bringing modern household energy options for three quarters (258 million) of the region's 335 million inhabitants cooking with dirty and dangerous fuels (ECREEE, 2014) is an equally important advance. Whether purchased or collected, using traditional biomass fuels entails significant household resources, in either cash or time, for an activity that too often contributes to the morbidity burden. The documented annual death toll is estimated to total 173,396 people each year; roughly half of them children with the largest numbers recorded in Nigeria, Côte d'Ivoire followed at a distance by Burkina Faso, Niger and Ghana (IEA, 2014). The other ECOWAS countries, namely, Bénin, Cabo Verde, Gambia, Guinée, Guinea-Bissau, Liberia, Mali, Sénégal, Sierra Leone and Togo account for much lower figures. Other health risks to women and children are also involved during collection and transportation of fuel wood and traditional biomass especially in rural communities.

West Africa has generally low penetration of modern fuels for cooking, defined as electricity and liquid and gaseous fuels such as LPG and kerosene. Rates range from less than 1% in some Member States to 63% in Cabo Verde.

TABLE 6 | SHARE OF POPULATION ACCESSING MODERN FUELS IN ECOWAS MEMBER STATES

Country	Share of population accessing modern fuels (electricity, liquid fuels, and gaseous fuels)
Liberia	0%
Mali	0%
Guinée	1%
Sierra Leone	1%
Niger	1%
Guinea-Bissau	1%
Togo	2%
Gambia	5%
Bénin	6%
Burkina Faso	7%
Ghana	12%
Côte d'Ivoire	14%
Nigeria	24%
Sénégal	41%
Cabo Verde	63%



*Source: IEA, 2014, data with * from UNDP/WHO in Legros, 2009 and includes electricity*

And even amongst traditional biomass users, the penetration of improved stove technology is quite low.

TABLE 7 | PERCENTAGE OF BIOMASS USERS IN SELECT ECOWAS MEMBER STATES USING IMPROVED STOVES

Country	National share of population cooking with solid fuels that uses improved stove	Rural	Urban
Burkina Faso (2003)	2.1%	1.1%	8.1%
Côte d'Ivoire (2005)	6.3%	5.7%	7.5%
Gambia (2005-6)	19.9%	16.9%	23.5%
Ghana (2009)	0.2%	.3%	0.1%
Guinea-Bissau (2006)	51.1%	53.8%	46.2%
Mali (2003)	6.0%	5.0%	8.3%
Niger (2007)	8.7%	–	–
Nigeria (2007)	6.2%	6.2%	6.3%
Sénégal (2003)	16.3%	15.7%	18.5%
Sierra Leone (2006)	9.6%	9.0%	11.1%
Togo (2006)	3.1%	1.4%	5.6%

Source: Legros, 2009

Comparatively little data is available on the availability of power for productive uses, but Bénin and Mali reported that 0% and 10% of their rural population, respectively, had access to mechanical power in 2004/5 (Government of Bénin and ECOWAS/UEMOA).

2.1.4 Gender dimensions of energy poverty

Energy poverty[2] can be defined as the lack of adequate modern energy for the basic needs of cooking, heating and lighting as well as the provision of basic energy services for schools, health centres and other community infrastructure and income generation (IEA, 2013). Under certain circumstances, energy can be the limiting factor impeding human development of many types. Across the globe, and in West Africa as well, energy consumption and development indicators correlate.

While there is agreement at the international level to address energy poverty as a means of promoting development and well-being, the dominant models used prioritise investments in large scale energy infrastructures and are premised primarily on promoting macro-economic growth. Until recently, only a small minority viewed small scale, decentralized energy solutions as viable options, or attempted the incorporation of pro-poor and gender concerns in their design.

In poor settings in particular, women often experience excess vulnerability to conditions of energy poverty above and beyond that experienced by men. Vulnerability tends to manifest itself as: "hands and feet" ferrying of goods, water, children, fuel, market goods, and household supplies; manual labor to do household tasks, farm work, and raw materials/agro-processing; exposure to physical hazards such as pollution, burns, assault, and poorly lit childbearing experiences. But the overall effects of energy poverty are largely consistent for both women and men and include: Low standards of living, suboptimal health, reduced productivity, and missed opportunities.

In poor settings in particular, women often experience excess vulnerability to conditions of energy poverty above and beyond that experienced by men.

As national incomes increase, as more political protections are offered, and as women's position in society is enhanced, the energy-gender gap will likely begin to close. But currently there are undeniable differences in the way women and men acquire and use energy and benefit from official energy policies and programmes, all with important development implications. The next section details these differences and, to the extent possible, seeks to understand the magnitude and importance of these differences, though this is not always possible due to gaps in the available data. Where there are gaps in the academic literature, small surveys and programme evaluations are relied on instead.

Gender dimensions of energy access – **Electrification**

Electrification has long been recognized as a vital policy goal, unlocking unparalleled advances in productivity, socio-economic development, enhanced livelihoods and social welfare. A survey of researchers rated electricity as the most significant technical advance of all time (37% of votes) trailed quite a bit by antibiotics (14%) and vaccines (11%) (National Academy of Engineering, in Pellegrini, 2013). In particular, electrification has profound effects on the manufacturing sector, over time leading to substantial increases in productivity, as was documented in the United States in the 1920s (Beaudreau, 2015). The full development payoff from electrification, however, is far from immediate. The fastest country to achieve universal electrification was the United States, where it took 80 years and was a highly uneven and political process that affected rich and poor, urban and rural, men and women unequally over time. There is no reason to think that current electrification progress in ECOWAS is any less political or any less uneven than has been the global norm.

This section investigates potential gender differences in electrification in three specific areas: 1) Do women and men have equal access to grid-supplied electricity? 2) Do women and men benefit differently from rural electrification projects? And 3) do women and men have differing preferences and decision-making influence when it comes to off-grid lighting products, small home appliances, and ICT?

The findings are that women may access grid electricity in lower numbers than men, but that this is likely because women are over represented in poor households and marginalized communities. Second, women and men do have different preferences and use patterns for electrical appliances. Lastly, the specific design of any one rural electrification project can greatly affect the degree to which women and men benefit.

2 *The UN SE4All Global Tracking Framework provides baseline information on energy access with bi-annual updates.*

Grid access at the national level: Due to cost and political considerations, wealthier areas are generally connected first and more intensely to grid networks. The reasons are multiple, sometimes communities must shoulder part of the infrastructure cost; utilities target high demand areas to aid in cost recovery; and wealthier communities have more political influence (IEG, 2008). When individuals must afford connection fees, female-headed households, which are disproportionately poor, may struggle more.

However, there is not a lot of gender disaggregated data regarding connections to the electrical grid. As a participant at the inception workshop noted, from a utility's perspective, "a customer is a customer." When the business strategy primarily focuses on increasing connections, reducing losses, and cost recovery and no gender disaggregated data is collected, gender can easily be overlooked.

One area where gender-disaggregated data was found on grid access was among the entrepreneurs surveyed by the World Bank/International Finance Corporation (IFC). This data is available in Appendix 1, but it does not show compelling gender differences. For example, there is a survey question about the number of days to obtain an electrical connection. In Nigeria, the only country with gender-disaggregated data for this indicator, it took 12.8 days for women versus 13.7 days for men. Nor were there easily discernible gender trends among all ECOWAS members in terms of the impacts of outages frequency, duration, and economic cost. Because of the World Bank's limited sample selection, it is difficult to say whether or not gender differentials exist. If they do, they might be as a function of income, education, geography, or other variables that are gender-linked.

This hypothesis is confirmed, tentatively, by a multi-criteria study of deprivation in Burkina Faso and Togo using nationally representative statistics by Ega (2013). The deprivation index for utilities is constructed using access to electricity, sanitation, water, and telephones. The reported indices have no tangible meaning and cannot be used to compare the two countries, but can be used to determine the relative importance of various types of gender difference between groups within a country, in this case men and women, and urban and rural dwellers. The table below allows for ranking the size of both the gender and location gaps.

TABLE 8 | DIMENSIONAL DEPRIVATION RATES BY GENDER AND PLACE OF RESIDENCE

Dimensions		By gender			By place of residence		
Burkina Faso	All	Male	Female	Diff.	Rural	Urban	Diff.
Access to credit	52.6	50.2	54.6	-4.4*	53.7	49.9	3.8
Employment	49.5	31.9	64.2	-32.3*	55.0	35.7	19.3*
Education	71.6	63.4	78.4	-15*	83.4	41.7	41.7*
Housing	53.8	53.1	54.3	-1.2*	69.3	14.5	54.8*
Assets	69.5	68.5	70.3	-1.8*	78.1	47.9	30.2*
Basic utilities	54.1	52.5	55.4	-2.9*	69.1	16.1	53*
Togo	All	Male	Female	Diff.	Rural	Urban	Diff.
Access to credit	56.5	49.9	61.7	-11.8*	62.5	48.1	14.4*
Employment	11.5	5.0	17.0	-12*	15.6	5.3	10.3*
Education	18.6	16.6	20.3	-3.7*	20.7	15.7	5.0*
Housing	41.3	38.6	43.4	-4.8*	65.0	8.2	56.8*
Assets	63.6	59.9	66.5	-6.6*	86.0	32.2	53.8*
Basic utilities	45.0	42.4	47.1	-4.7*	69.9	10.2	59.7*

Source: Ega, 2013. See original work for details about indices and selection of deprivation thresholds.
** Indicates difference significant at 5% level*

What Table 8 shows is that employment, followed by education are the main explanatory variables for gender inequality in Burkina Faso, while access to credit and employment are the most prominent variables in Togo. Deprivation in basic utilities didn't turn out to be a prominent factor in either country. However, basic utilities and housing are largely the two most important dimensions of deprivation for rural dwellers compared to their urban compatriots. There is little reason to believe the results for electricity alone would vary greatly from the composite index of all utilities.

In conclusion, without gender disaggregated national data on connection and service rates, it is difficult to know what gender differences exist with respect to grid access and service, and whether these discrepancies result from other gender-linked attributes such as wealth and geographic location, or yet other reasons, such as those outline in Box 1, that bear further investigation.

BOX 1 | DO ELECTRICITY TARIFFS FAVOUR ONE GENDER OVER ANOTHER?

Gender and electricity tariffs

One promising area for gender analysis in the electricity sector involves whether tariff schemes have the potential to inadvertently favour one gender over another. In Latin America, for instance, 14 out of 15 electric utilities were found to offer lower prices to commercial users (Komives, 2005), which could have inadvertently disadvantaged female-headed businesses operating disproportionately from home or informal premises (World Bank, 2011). The situation in ECOWAS is more mixed, with commercial and residential rates alternatively being higher or lower depending on the amount of electricity consumed (e.g., the Gambia). In Nigeria, commercial rates are lower; in Ghana, residential.

A number of Member States (Nigeria, Niger, Bénin, Ghana) also employ social tariffs that are variously targeted to low income members of society (Maduekwe, 2015), but in some circumstances female-headed households can't benefit because they lack legal recognition as households (Schomer, 2015). In some cases, like that of Cabo Verde, industrial users obtain lower electricity tariffs by virtue of being able to connect at higher voltages. These are all issues to be subjected to a gender analysis if a targeted approach to electricity provision is to be fostered (Ajodhia, 2012).

Rural electrification projects: For much of their history, rural electrification efforts focused only on outcomes like the number of connections, degree of coverage, load characteristics, cost, etc. Slowly, over time, projects have evolved to incorporate welfare and social justice concerns such the inclusion of participatory councils to determine which institutions get electrified; increasing use of "social allocation" analysis alongside cost-effectiveness analysis at the project level; technical assistance in helping groups link electrification efforts to productive activities; increased application of end-user financing efforts; etc. Compared to other development focal areas, though, progress has been slower in the electricity sector (IEG, 2008). Often, well-intentioned design considerations at a project's outset, or at a far removed level of involvement, fail to materialize during local implementation. The gender rhetoric used to propel rural electrification efforts forward is often just that. This section examines some of the complicating factors.

The fact that electricity is common to households (whereas, schooling accrues to individuals) partially lowers a veil over important gender dynamics. Whether electrification programmes succeed at incorporating the gender dimension depends partly on the extent to which they understand and account for different energy needs of women and men (See Boxes 2 and 3). This includes both the practical needs women have (i.e. accomplishing existing chores and work with less time, effort and hazard) but also expanding the realm of potential opportunities that perhaps weren't even considered yet, such as starting a home-based businesses based around selling ice pops or cold drinks or changing one's world view as a result of TV consumption.

In addition to accounting for differing needs, another critical design requirement is dissecting the entire complex decision-making process at a household and village level. This is equally true for "top-down" programmes, participatory community approaches, and market-led approaches since women and men are each included and excluded from various aspects of decision-making. For example, the IFC/Lighting Africa survey of 5,000+ households and 2,500 businesses uncovered differences in intra-household bargaining power, finding women were responsible on average around 40% of the time for deciding when and what kind of lighting services to buy, though in Ghana this dropped to 20%.

A study conducted in the wake of Ghana's rural electrification programme showed clear gender differentials in electricity access, participation in decision-making and utilization of electricity.

A study conducted in the wake of Ghana's rural electrification programme showed clear gender differentials in electricity access, participation in decision-making and utilization of electricity, see Box 2, below.

BOX 2 | GENDER DIFFERENCES DURING ELECTRIFICATION IN GHANA

The Ghana Electrification Programme

Participation and inclusiveness: Officials from the Energy Ministry as well as contractors had to work through local government structures which are male dominated. Since women are not significantly represented in those structures, it meant that critical decisions at the local level about the electrification programme could not adequately tap into women's knowledge, needs and interests.

Access and affordability: In terms of access, women especially those in female headed households, could not easily access electricity connections due to their lack of adequate cash incomes. Even though there was a government subsidy to facilitate the rate of connections by poorer communities and households, many such households could still not benefit from the available electricity resource.

Use patterns: With regard to electricity use, there was a clear gender pattern. While women tended to utilize electricity to power freezers for fish and ice used in selling cold water, men tended to use electricity for powering machines for welding and cement block-making. Similar gender differentials were noted within households with women using electricity for storage of food while men invested in the purchase of television sets for entertainment.

Source: Mensah-Kutin (2002)

Though not taken from the ECOWAS sub-region, another example of electrification in a village in Zanzibar, Tanzania is fascinating (see Box 3). It used detailed surveys and anthropological research to elucidate a highly gendered scenario with respect to the appliances bought and used after electrification (Winther, 2011). Because of the gendered roles that exist in the home, with men and women are often responsible for different tasks at different times of the day, it is reasonable to assume that they have varied preferences for types of electrical devices in use, their features, and also potentially, their placement within the house. Secondly, it is also assumed that household decision-making practices are not monolithic, but a reflection of combined individual preferences as well as the relative bargaining strength of each of those individuals. Evidence is found for both of these claims.

BOX 3 | ELECTRIFICATION IN UROA, ZANZIBAR, TANZANIA

Electrification example from East Africa

During a community-based electrification project in Zanzibar, many gender differences were discovered, ranging from where connections happened to what the electricity was ultimately used for.

First, women's participation (or lack thereof) greatly influenced connections. Though gender was mainstreamed at the project top-level, it wasn't well mainstreamed at the village level. Women couldn't attend planning meetings in the afternoon because of work obligations. Neither did they hold any official religious or planning posts giving them leadership roles at the meetings. As such, their influence was extremely limited. Perhaps not surprisingly mosques and the fish market where men gathered were connected, but the village mill where women ground their maize and grain was not, nor was the kindergarten where older women kept the children of young mothers.

Second, men and women ended up with very different appliances than the ones they initially expressed interest in. Men reported wanting to purchase freezers for fish, electric stoves for their wives, and televisions while women were divided on the issue of electric stoves. Years later, across 130 homes, there were virtually no electric stoves purchased, the freezers that were purchased were used for selling cold drinks and, a few radios aside, all the appliances were owned by men.

The investigator believes electricity became a male domain because houses were largely male property, electricity contracts were in their name, and men's social responsibilities evolved to include furnishing an electric connection and also paying the bills. Thus appliances that use electricity and cost men money are selected by them, even if women end up using them relatively more due to being present in the home more often.

Source: Winther (2011)

The IFC/Lighting Africa (2011) survey mentioned above found that women and men did exhibit differences in product preference, although regional differences were more pronounced than gender ones. For small business lighting, the study showed that it was mainly the type of business and not the gender of the manager that drove the preferences, though men and women tend to run different types of businesses.

In addition to determining who gets connected and how, one challenge of rural electrification projects involves the selection of appliances that are ultimately adopted. Both the examples taken from Ghana and Tanzania (Boxes 2 and 3) reveal disparities in appliance ownership and use. To compensate, some programmes, such as the the work of the Agence Sénégalaise d'Electrification Rurale (ASER) on solar mills, milk chilling, and cold storage projects, specifically support the energy needs of women's businesses.

In some cases, the ease of technology adoption must be considered at the same time as the energy intervention, whether this involves a new productive use technology or ICT. For certain forms of ICT, which is heavily depending on energy, it is known that women use them less frequently than men. In the Francophone ECOWAS states, for example, women's technology participation is 65% that of men (Vyas-Doorgapersad, 2014). Across Sub-Saharan Africa, women are 23% less likely to own a mobile phone (GSMA, in Practical Action, 2014). Agricultural extension services, health care information and remote diagnoses, market pricing information, delivered by mobile are all potentially transformative uses of ICT if targeted correctly to women and men.

BOX 4 | RURAL ELECTRIFICATION IN MALI WITH A GENDER FOCUS

AMADER incorporates gender concerns

The Malian Agency for the Development of Household Energy and Rural Electrification (AMADER) was set up in 2003 by the World Bank Household Energy and Universal Rural Access (HEURA) project to reduce poverty and promote economic development. In tandem, a rural electrification fund was set up to partially offset the cost for private developers to reach the remote unserved regions. The programme has provided 43,311 off-grid connections for households and public lighting as well as electricity for 803 public institutions, including 172 schools and 139 health centres.

The electrification programme in Mali has a particularly profound effect on women due to the proactive approach of AMADER in engaging with them. This began in 2011 when AMADER reviewed the results of a gender assessment that indicated that fewer women than men made use of electricity for enterprise development. At that point it was recommended that AMADER include more direct participation of women in the electrification programmes by ensuring both women and men are involved in the design and implementation of projects and that they have access to modern energy technologies and credit facilities. AMADER has formalized their approach in a gender and energy action plan to develop ways of promoting female enterprises and has appointed an official gender focal point responsible for ensuring that gender equality is integrated into its projects.

Source: Women's Environment and Development Organization (WEDO), et al., (2013)

Multi-sectorial programmes have a better track record of incorporating gender concerns than "pure" energy programmes (IEG, 2008). The gradual inclusion of gender in energy programmes has evolved through an historical process tied to the growth of the women's movement, its influence on global policy making and the concrete gender mainstreaming tools and methodologies developed for use by a range of parties, but progress is incomplete. In conclusion, for many rural electrification projects there is still room for ensuring women's concerns are fully realized.

Gender dimensions of energy access - **Cooking**

The major gender dimensions of cooking stem from who is doing it, how, and within what context. Along with childcare, food preparation in the home is largely women's work. And because women are mostly responsible for cooking, their specific kitchen practices and preferences for stove technology are important to understand and incorporate into clean cooking interventions.[3] Cooking, in the gender-energy discourse, is usually the most readily accepted of all the energy subsectors as being clearly gendered, and the literature and history of women-focused stove programmes extends back easily 40 years or more.

Data from nationally representative surveys in Bénin, Ghana and Guinée support that women do the majority of the non-remunerated cooking.

TABLE 9 | NATIONAL SURVEY DATA ON TIME USE PREPARING MEALS IN BÉNIN, GHANA AND GUINÉE

	Bénin (1998)		Ghana (1998-9)		Guinée (2002-3)	
Non-productive Activity	Daily Minutes Spent by Women	Daily Minutes Spent by Men	Daily Minutes Spent by Women	Daily Minutes Spent by Men	Daily Minutes Spent by Women	Daily Minutes Spent by Men
Preparing meals	75	6	117	55	73	2
Washing up	17	4	–	–	–	–

Source: Charmes, in Blackden 2006; Bardasi, in Blackden, 2006.

3 *The Global Alliance for Clean Cookstoves's (GACC) consumer research provides a deep look at potential consumers of cleaner stoves and fuels within a given country. These studies provide detailed information on consumer needs and preferences including cooking habits, purchasing trends, fuel costs, cultural barriers, and adoption practices*

Successful contemporary international designers and vendors of improved cooking technologies (e.g., Envirofit, Ecozoom) are very much aware of the necessity of incorporating women's concerns into their products and also that these concerns are highly variable across populations depending on the food staples, cooking methods, and cultural practices in that region. It is not uncommon for these stove producers to spend significant time and effort on testing prototypes in focus group settings. The sales departments of successful commercial stove companies also tend to invest heavily in tailoring their marketing messages to women and devising strategies to connect directly with their users. Unfortunately, many donor and government driven stove programmes lack the abilities needed to emulate current best practices.

TABLE 10 | CUSTOMER PREFERENCE FACTORS FOR COOK STOVES

Stove Attributes Found to be Important to Subsets of Female Users/Consumers	
Height of cooking surface	Portability
Length of cooking time	Resulting cleanliness of cookware and kitchen
Fire tending requirements	Smoke production
Overall ease of use	Heath implications
Stability of stove with vigorous stirring	Safety features, especially for children
Lighting time	Stove imparts traditional flavor to food
Shape, color and design sensibility	Cost of fuel supply
Ability to accommodate specific vessels	Convenience of fuel supply
Temperate control abilities	Cost of stove

By randomly varying the prices of stoves marketed to men and women in Bangladesh, Miller (2013) found that while women have stronger preferences for healthier stoves, they often lack the intra-household bargaining power to make the purchase decision. This suggests not only do companies/programmes need to market more effectively to women, they must also find ways to overcome the intra-household barriers that hinder women's decision making.

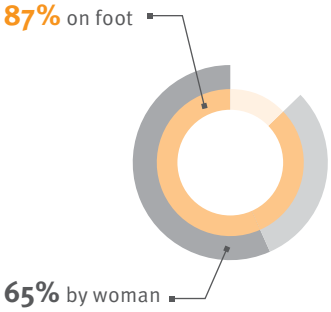
While women have stronger preferences for healthier stoves, they often lack the intra-household bargaining power to make the purchase decision.

Gender dimensions of energy access - **Transportation**

Social norms shape mobility patterns of men and women and vice versa. Transportation affects access to schools, banks, and markets, thus it is vital to make sure energy and transportation technology are equally available to all citizens. Women are more likely to select their employment based on distance and ease of travel, with the direst consequences for women in marginalized communities where opportunities are few (World Bank, 2011). Second, transportation can consume significant portions of time and energy budgets, especially of very poor households and individuals.

In rural areas, the majority of transportation involves walking and head loading, by both women and men, although in unequal amounts. Porter (2008), reporting on an older study by Howe and Barwell (1987), claims that in a Ghanaian survey women spent 286% of the time men did carrying loads and exerted 400% of the men's total effort in transporting loads, implying not only are women making more/longer trips but that their average load per trip is heavier. An African, multi country household survey that included Burkina Faso and Ghana found 87% of rural trips are on foot, with women completing 65% of the total (or 71-96% of all domestic-related trips) and carrying an average daily load equivalent to 20 kilograms over a distance ranging from 1.4 to 5.3 kilometres (Malmberg-Calvo, in ECOWAS, 2006).

RURAL TRIPS IN BURKINA FASO AND GHANA



As one interviewee, Dominique Lallement, former Director of the World Bank Energy Sector Management Assistance Program, put it, "Where there is no infrastructure, women become the infrastructure." The reasons for this are at least twofold, to some extent even interdependent, and include cultural factors and differing shadow wages between women and men (Kohlin, 2011).

It takes approx. **3½ hours** to reach the nearest **hospital by foot.**

BOX 5 | TRANSPORTATION TO HEALTH SERVICES IN BARGBLOR TOWN, LIBERIA

Where walking is the only option

"In Bargblor Town in Liberia, no one has access to electricity, piped water, public stand pipes, or a sewage system. There is no public transport, and the nearest hospital takes approximately 3½ hours to reach by foot. In an emergency, women report having to run or walk to the hospital. Children who die in the hospital are carried home to their village to be buried. In other countries, widespread civil conflict continues to extract a heavy toll among women."

Source: World Bank (2011)

And though not the only factor in mobility, access to energy and energy-transforming technology are important aspects for consideration. For example, a 68 kg human walking at 4 km/h would need food energy roughly equivalent to .65 L of petrol to traverse 100 km. But on a bicycle, and going four times as fast, that same person would need half the total food energy.[4] While bicycle access is hampered by high capital costs, a learning curve, and barriers related to social acceptance, these are substantially similar to the barriers faced by other more familiar types of energy-transformative technology, like PV systems and cook stoves. Thus, it is worthwhile to at least reexamine the evidence on bicycles and cart technology providing valuable energy services in the transportation sector.

Though female acceptance of bicycles and other intermediate transport technology appears limited, it is not immutable. Women in rural northern Ghana were found to use bicycles frequently, much more so than women in the south (Howe in Daneso-Wiredu, 2011). Francophone West Africa, and Burkina Faso in particular, lead their Anglophone and Lusophone neighbors in bicycle adoption by a long shot (IT Transport, 1996). And in Kampala, Uganda women are surprisingly more likely than men to use motorcycle taxis, probably as safer alternative to other forms of transportation(Kumar, 2011).

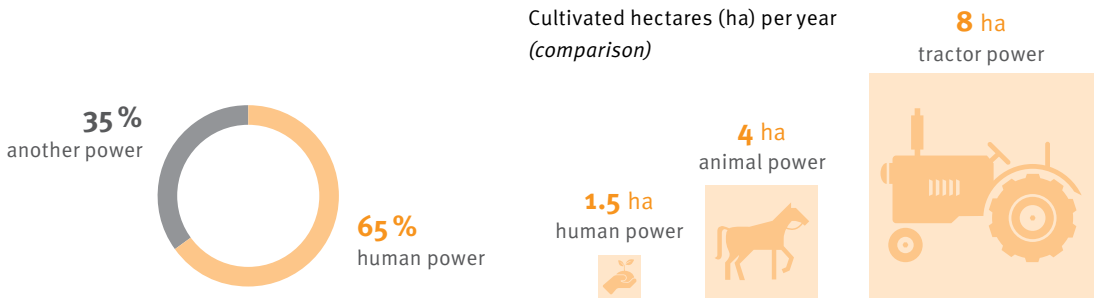
Gender dimensions of energy access - **Mechanical Power and Productive Uses**

Women's economic activities in developing countries, globally speaking, share a number of distinguishing traits. Due to women's frequent work in food processing and restaurants, the activities are often heat intensive. Women's work is also labor intensive when productive technology is to an extent monopolized or appropriated by men. Finally, the combination of longer work days and higher proportion of time spent indoors means women's economic activities are also light intensive (Dutta in Practical Action, 2014). Female citizens of ECOWAS, especially in poorer and rural settings, do tend to conform in broad strokes to these patterns but there is a widely diverse range of women's productive needs in the sub-region. In this section, the general categories of farming, agro-processing, food preparation, trading/services, and manufacturing will be covered with the conclusion that energy interventions designed for each must be responsive to gendered realities.

Farming: Women provide much of the agricultural labor, producing up to 80% of basic foodstuffs for home consumption and sale in Sub-Saharan Africa (FAO in World Bank, 2009). Moreover farm roles tend to be gendered with men performing much of the land clearing while women primarily process crops, transport them, hoe and weed (Kes, 2006). About 65 percent of the power for land preparation in Sub-Saharan Africa is provided by humans, with a typical family only using their own power only able to cultivate around 1.5 hectares per year. If draught animal power is used, the same family can cultivate four hectares, and with tractor power available, eight hectares (Sims, 2006). While it takes around 60 days to prepare a hectare for planting by hand, it takes about a half a day using a tractor (Bishop-Sambrook, 2003).

4 *From: http://en.wikipedia.org/wiki/Energy_efficiency_in_transportation, accessed April 1, 2015.*

POWER FOR LAND PREPARATION IN SUB-SAHARAN AFRICA



When men and women cultivate separate plots, their crop selection is often gendered as well. Some crops in West Africa are culturally determined to be "male" or "female," others are logistically difficult for women to grow because of the expensive inputs needed, particularly irrigation, seeds, and fertilizer; in Accra, for example, this results in three times as many male vegetable farmers as female (Drechsel, 2013). In other parts of Ghana, a small survey found women preferred growing cowpeas to pigeonpeas, likely because of their lower use of farming inputs, and exhibited a preference for cassava because of its flexible labor demands, even though other crops could be more profitable (Adjei-Nsiah, 2007). There is also voluminous literature examining the hypothesis that female-cultivated plots are less agriculturally productive than male-cultivated plots, due in part to the same reasons mentioned above as well as land tenure, labor shortages, intra-household bargaining, and land tenure regimes. A balanced review of all this literature coupled with a specific look at survey data in Nigeria, however, shows that gender productivity differences are vastly more nuanced and complex, conditioned on a range of different variables and in need of more research (Peterman, 2010).

Some crops in West Africa are culturally determined to be "male" or "female," others are logistically difficult for women to grow because of the expensive inputs needed, particularly irrigation, seeds, and fertilizer; in Accra, for example, this results in three times as many male vegetable farmers as female (Drechsel, 2013).

Agro-processing: Agro-processing work is without a doubt gendered. For example, all of the informal cowpea processors in Nigeria are reported to be women (World Bank, 2009). Box 6 gives some examples of the labor required to process common West African crops. There are large metabolic energy needs involved in this processing, and sometimes large process heat needs, often in the form of biomass energy.

BOX 6 | TIME AND LABOUR REQUIREMENTS FOR MANUAL AGRO-PROCESSING

Agro-processing: time and energy intensity

- In certain areas of central Africa, four times more work was needed to process tapioca and maize than it took to cultivate them (Rogers, in Blackden, 2006).
- Processing 30 kilograms of shea nuts can take up to 106 hours. Making kenkey, including the many various steps of soaking, milling, fermentation, dough making, cooking, ball making and boiling, can take up to 6 days. Likewise, making palm oil extremely heat and labor intensive (Khamati-Njenga, 2005).
- The following time-use estimates were obtained for Nigeria: 2-3 hours each day for just preparing grains for pounding (ie the threshing and milling); 82 women-hours for processing one drum of oil palm fruits; 2 hours to grate a basin of cassava (totalling 2 days a week) in the absence of a grating machine that can process a basin in one minute (Saito, in Kes, 2006)
- Studies from several African countries suggest it can take up to 13 hours to pound enough maize for a family to eat over 4-5 days

Source: Blackden and Kes (2006)

Food Preparation: Food preparation is an important sector in which women are over represented. It can require commercial, even industrial scale heating applications and cold chain management. Beer brewing is a typical business in West Africa that is being transformed with access to more efficient stoves (Box 7).

BOX 7 | EMPOWERING WOMEN BEER BREWERS IN BURKINA FASO

Improved stoves for dolo production

The local beer, called "dolo," has been produced primarily by women for many generations. The beer is brewed using inefficient cook stoves and women consequently suffer from serious health problems, such as burns, back problems and respiratory diseases. In addition, the inefficient stoves consume a lot of firewood, accounting for 50% of the total firewood consumption in the capital, Ouagadougou.

To improve this situation, the Ministry of Environment and Sustainable Development, in partnership with the UN Industrial Development Organization (UNIDO) and with funding from the Global Environment Facility (GEF), started promoting women's empowerment and clean technologies for the women beer brewers in June 2012. UNIDO is installing over 1,000 energy-efficient stoves in beer breweries in the Plateau-Central Region. With an improved stove, local brewers can reduce their firewood consumption by up to 60 per cent, thereby increasing their profits significantly. The programme will establish a credit line provided by a regional African Bank and implemented by a local financial institution. UNIDO also undertakes to develop clusters of beer brewers to generate collective gains and facilitate their integration into the local value chain.

Source: UNIDO (2013)

The introduction and use of the "Chorkor Smoker" in fishing communities has the potential to reduce costs, pollution and fuelwood consumption. This technology has been adopted by Ghana and others in the ECOWAS region (FAO, 1989). Men are largely responsible for catching the fish. They then sell it to women, primarily, onshore who preserve it by smoking. Some development projects have focused on providing solar lighting solutions for fishing boats and improved smokers, making sure to address the distinct needs of both the male and female workers and maintain a sense of fairness in the dynamic between the two economically dependent groups.

Trading/Services: The most pressing energy need for women in the broader trading and services sector is electricity, generally for lighting and appliances. Lighting can extend business hours (provided there is demand) for traders of textiles, clothing, beauty supply, vegetables, small homewares, and more, who disproportionately tend to be women. There is also the issue of women trading in energy products (stoves, solar kits, fuels, etc.) and services (phone charging, cold purified water, etc.).

Manufacturing: Manufacturing is a sector in which a significant portion is heavily dependent on electricity and where men are over-represented. Thus, black and brown outs will disproportionately affect men in energy-intensive subsectors of manufacturing.

Gender dimensions of energy access – **Resource Availability**

Much time and effort is expended by poor women and men in the ECOWAS region in collecting natural resources. Generally women take greater responsibility for natural resource collection given their traditional role as home makers and the few options available to them in terms of modern energy services. This could include fetching wood from forest stands, queuing for liquefied petroleum gas (LPG), or collecting water. Anecdotal information points to differentials in women and men's natural resource collection patterns. For example poorer women are more likely to collect firewood for household use while their male counterparts are more likely to collect for sale.

Poorer women are more likely to collect firewood for household use while their male counterparts are more likely to collect for sale.

Resource collection adds to concern over time poverty, which results when an individual lacks enough time to produce all the necessary goods and services for their livelihood and also lacks the financial resources to make market substitutes. A time-poor individual is forced to increase their work intensity, sometimes to the maximum physical level and at the exclusion of leisure activities, and/or choose between important, competing needs such as health, nutrition, education, income, etc.

These resource collection tasks are traditionally gendered in West Africa, but sometimes in surprising ways. Water collection is the most gendered task, with women, but also children, most involved in its collection. The picture on cooking fuels is more nuanced, with men participating more than for water collection, especially in some countries where refilling LPG cylinders is a predominantly male activity. Unsurprisingly, there is evidence of less collection burden, more gender parity, and decreased involvement of children in the urban, as opposed to rural, areas.

Water: As seen from the table below, both men and women are significantly involved in fetching water. However, in every case for which data could be found, women as a group spent more time on water collection. This ranges from a scant 6% more time in urban areas of Ghana to almost four times as much time in rural areas of Bénin. Water collection is an even more gendered activity than wood collection (see next section). The installation of wells, reservoirs, rain water harvesting systems, and pumps, including solar PV-driven ones, could all theoretically reduce the human energy and time spent on water collection/transport and build resilience into societies threatened by climate variability, climate change and the degradation of fresh water sources.

TABLE 11 | ESTIMATES OF DAILY MINUTES SPENT BY FEMALES AND MALES ON WATER COLLECTION IN GUINÉE, GHANA AND BÉNIN

WATER COLLECTION		Guinée (2002-2003)			Ghana (1998-1999)		Bénin (1998)	
		Female	Male	All	Female	Male	Female	Male
Daily minutes spent by adults age 15+								
	Urban	10	3	7	33	31	16	6
	Rural	28	6	19	44	34	62	16
	National	23	5	15	41	33	45	12
Daily minutes spent by children 6-14[5]								
	Urban	8	5	7	–	–	16	10
	Rural	22	13	17	–	–	63	24
	National	18	11	15	41	38	46	19

Sources: Barasi 2006, estimation using EIBEP 2002–2003; Charmes, 2005, estimation using 2000 Ghana Living Standards Survey, 4th Round, Ghana Statistical Service; Charmes, 2005, estimation using INSAE/PNUD (1998), Enquête emploi du temps au Bénin, Méthodologie et résultats.

Wood and other cooking fuels: The availability of cooking fuels is a component of household energy systems with possible implications for personal security, household expenditures and time poverty. Time poverty, specifically that of women, along with deforestation have traditionally been the impetus for supporting woodlot cultivation and community forestry projects. Wood fuel/forest management projects have been common in the ECOWAS sub-region. For example, 10 of 19 of the World Bank's projects with wood fuel components from 1990-2010 were in ECOWAS Member States. The promotion of woodlots along with LPG and associated technology, and even efficient biomass stoves all theoretically have an effect on the amount of time spent collecting wood.

Similar to the situation for water collection, both women and men are involved in wood collection for cooking fuel, though the gender division is somewhat less clear. As seen in the table below, in four of the 11 cases for which there is data, males actually collectively spent the same or more "non-productive" time gathering wood than women. These cases are: urban adults in Guinée, urban adults in Ghana, urban children in Guinée, and rural children in Guinée.

5 *The Ghana survey included children ages six to 15.*

TABLE 12 | ESTIMATES OF DAILY MINUTES SPENT BY FEMALES AND MALES ON WOOD COLLECTION IN GUINÉE, GHANA AND BÉNIN

WOOD COLLECTION	Guinée (2002-2003)			Ghana (1998-1999)		Bénin (1998)	
	Female	Male	All	Female	Male	Female	Male
Daily minutes spent by adults age 15+							
Urban	2	2	2	44	51	3	1
Rural	21	14	18	37	28	23	5
National	15	9	13	37	30	16	4
Daily minutes spent by children age 6-14[6]							
Urban	1	3	2	--	--	2	2
Rural	13	21	17	--	--	17	7
National	9	16	13	30	29	12	5

Sources: Bardasi 2006, estimation using EIBEP 2002–2003; Charmes, 2005, estimation using 2000 Ghana Living Standards Survey, 4th Round, Ghana Statistical Service; Charmes, 2005, estimation using INSAE/PNUD (1998), Enquête emploi du temps au Bénin, Méthodologie et résultats.

2.1.5 Energy and development: Implications for men and women

It is widely held that there are different development implications for women and men as it relates to energy access. However, many gender and energy assumptions are not well supported with rigorous empirical, gender-differentiated data (e.g., measuring gender outcomes pre- and post- intervention), making it difficult for energy planners to internalize and integrate gender considerations into energy projects and policies. Furthermore, when improvements occur within homes and are not shown to directly influence national income or production accounts, national planners have further difficulty accounting for the benefits. There is a paucity of data – and resulting analyses – involving large sample sizes and control groups that would allow policy makers to comfortably make causal inferences under varying conditions.

Energy and development: implications for men and women – **Electrification**

Household electrification is sometimes considered by planners to disproportionately benefit women since they spend relatively more time at home, but this view needs examination. Directly, it is believed to extend women's work day, provide access to information, including market information, and reduce hazards associated with fuel-based lighting. Indirectly, electrification is believed to be linked to increases in income-generating activities, decreases in fertility, increases in amount and quality of schooling, and women's empowerment. Two other potentially gender-important community-level impacts of electrification to consider are: 1) increases in women's public safety due to street lighting, and 2) maternal/child health outcomes in clinics with light and refrigeration.

These claims will be examined in light of the available evidence. Given the importance placed on household electrification programmes, it is surprising that only one scientific, gender-differentiated impact study exploring causality could be located from within the ECOWAS region (Côte d'Ivoire) and it is gender-specific only because its subject matter, fertility rates, is inherently so. Thus, insights about the development impact of electrification will be drawn from other parts of the world as necessary and mostly anecdotal claims will be presented for the ECOWAS sub-region in particular.

The conclusion of the following section is that compelling scientific studies exist on the gender impacts of electrification only with regards to: 1) women's market work and/or leisure time, 2) decreased time spent preparing meals, and 3) lowered fertility. There is a smaller body of research that supports some effect of electrification on school enrollment. This is no way indicates that the many other posited positive impacts don't exist, only that more research is needed to credibly establish their causal chains.

6 *The Ghana data surveys children ages six to 15.*

Employment and wage labor: There is some limited evidence that electrification can have a positive impact on female employment and/or an increase in leisure time, possibly by decreasing the time required for domestic work, allowing that work to be done at night, and/or even creating new opportunities for market work. Three recent studies used massive government electrification roll-outs "at random" as a natural experiment setting to study its effects. Large detailed household survey data was used to control for range of other variables. The first study, in South Africa, found a nine percentage point increase in female employment (or 30% above baseline), but no statistically significant increase in male employment, in communities that were electrified but was unable to rule out that electricity altered the types of feasible market activities for all adults (Dinkelman, 2010). A second study in Guatemala found women in electrified households, ceteris paribus, were nine percentage points more likely to be employed outside the household, likely because they spent less time cooking (34% less time, even though electricity was generally not used as a cooking fuel) (Grogan, 2009). A third study conducted in Nicaragua, similar in design to the previous one, found women 23 percentage points more likely to work outside the home when it is electrified. The proposed reason was that domestic activities were no longer constrained to daylight hours, then households were pushed to become monetized, having two income earners and then buying rather than gathering cooking fuels, though this was not empirically verified (Grogan, 2013). Interestingly, none of these three studies showed any correlation, positive or negative with male labor force participation rates.

Other important gender-differentiated results from electrification studies have cautionary aspects. A study on Bangladeshi infrastructure (Chowdhury, 2010) found the presence of electricity, and especially water wells, did seem to cause a decrease in women's unpaid work. This decrease in unpaid work, in addition to infrastructure's (particularly the telephone's) complementarity with other productive inputs seems to have led to increase in women paid work, albeit in low-paying, unskilled fields. Of potential concern is the fact that the increase in paid labor was not fully compensated for by the decrease in unpaid labor, that is, women's total time burden increased. Also, the three studies mentioned in the previous paragraph point out changes in wage levels that are disadvantageous to women. Dinkelman (2010) finds evidence that South Africa's electricity roll-outs had no correlation with men's wages (though their earnings increased because total work hours increased) but it was linked to depressed wages for women. Grogan (2009) similarly finds that female wages in Guatemala do not vary with community electrification, but that male wages do increase. Taken together, these studies suggest that wage benefits of electrification projects cannot be assumed to be uniformly distributed between men and women.

Fertility: In many Member States, the discussion on decreasing fertility rates has centered on the "demographic transition" and decreases in fertility being linked to economic growth. Peters (2011), using data from household surveys associated with an Ivoirian electrification project in the 1970s, finds a positive correlation with electrification and fertility in urban areas, possibly as a result of electricity decreasing the costs associated with childcare, but a negative correlation in rural areas, possibly as a result of information provision and "modernizing" attitudes. In Latin America, the Guatemalan study by Grogan (2009), found evidence of decreased fertility among women in electrified households, controlling for other variables. Women in households electrified before they turned 30 had on average 28% fewer children than women in households electrified after they turned 30, and the amount of time spent living in an electrified household negatively correlated with fertility at every age group.

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Some investigators link not just electricity access, but television and particular types of programming specifically, to the changing of prevailing attitudes (e.g., acceptance of domestic abuse, preference for male children) and fertility outcomes (La Ferrara, 2008; Jensen, 2009). This points to the complementarity of certain interventions: electrification, television purchases (or increased viewing due to cheaper energy), and gender-enlightened programming. Some in the development community are understandably hesitant to promote television purchases and viewing because they believe it could detract from education or productive activities, or divert household expenditure that could be spent on other investments, but the evidence and strength of television's effect on fertility is compelling and bears further examination.

Education: There are several plausible channels through with access to electricity could positively impact children's schooling. Children may have new opportunities to study at night. Electricity may also free up parents and children's time in other ways indirectly leading to more school attendance. The available quantitative evidence for electrification increasing schooling rates is established in studies from Asia, with effects increasing over many years after electrification happens, though other household attributes such as wealth have interaction effects (see Khandker, 2009a, 2009b, and 2012). However, the collection of available studies presents mixed evidence regarding whether the effect is stronger for girls or boys (Kohlin, 2011). It would appear that results are highly sensitive to contextual factors and experiment design. But since children are a vulnerable group, and one that is targeted for inclusion in most contemporary gender programmes and policies, it hardly matters whether girls or boys benefit relatively more.

Electrification projects have been reported to have unplanned consequences on women's ability to access land. Imminent domain and land sales to utilities can bypass women who don't own or have titles to their land, leaving them deprived of both land to cultivate and financial compensation for their loss.

Other implications: Anecdotally, electrification projects have been reported to have unplanned consequences on women's ability to access land. Imminent domain and land sales to utilities can bypass women who don't own or have titles to their land, leaving them deprived of both land to cultivate and financial compensation for their loss.

Energy and development: implications for men and women – **Cooking**

Some difficulty arises from the broad definition employed of "clean cook stove," which can encompass everything from a very rudimentary device costing only a few dollars to an LPG stove or electric one costing a hundred or more. Regardless, the two most discussed benefits of cleaner cooking are: 1) reduction of health hazards, and 2) freed-up time. And because women are primarily responsible for domestic cooking, it is often assumed that these benefits accrue almost entirely to them. While the time reductions from improved cooking are documented, currently there is little definitive and statistically robust research linking that saved time to income-generating activities, increased farm production, schooling, etc. Hence, this section will only examine the gendered health implications of cooking.

Disappointingly, there are less gender disaggregated data and empirical analyses about the positive impacts of clean cook stoves than might be expected. The health benefits, in terms of reduced incidence of pneumonia and lung disease – most prevalent at the cleanest end of the cook stove spectrum – are now exceedingly well documented by the public health community, but often not in a gender disaggregated fashion. A notable and early exception is Ezzati (2002) who found in a sample of 55 Kenyan households, air pollution exposures did decrease both relatively and absolutely more for women adopting a clean stove. However, Kohlin (2011), in years since, found conflicting reports of men benefiting relatively more, women benefitting relatively more, and both sexes benefitting equally, and so it seems the question is not yet settled. Given that biomass users often tend to have small houses, it isn't obvious that men automatically escape the harms associated with indoor air pollution.

Looking at the WHO/UNDP (in Legros, 2009) data on deaths from solid fuel use, Sub-Saharan Africa has the greatest disease burden of any region in terms of disability-adjusted life years (DALYs) per share of the population. Contrary to conventional wisdom perhaps, men are relatively more at-risk than women. The table below shows deaths attributable to solid fuel use with men showing higher mortality from lung cancer and chronic obstructive pulmonary disease (COPD).

TABLE 13 | MALE AND FEMALE DEATHS ATTRIBUTABLE TO SOLID FUEL USE IN ADULTS ›30 IN SUB-SAHARAN AFRICA

	Women	Men
Share of COPD and Lung Cancer Deaths in SSA	44%	56%
Number of COPD Deaths per 1 Million Population in SSA	219	296
Number Lung Cancer Deaths per 1 Million Population in SSA	0.7	1.4

Source: UNDP/WHO in Legros, 2009

This gender gap, though, pales in comparison to the child-adult gap in terms of harm suffered from solid fuel use. The next table shows that in some cases child pneumonia deaths attributable to solid fuel use are an order of magnitude higher than adult death from COPD and lung cancer combined.[7] It's well understood that children's bodies respond differently and are more vulnerable to pollution.

TABLE 14 | CHILD AND ADULT DEATHS ATTRIBUTABLE TO SOLID FUEL USE IN ECOWAS MEMBER STATES

Country	Child Deaths from Pneumonia (age <5)	Adult Deaths from Chronic Obstructive Pulmonary Disease (age >30)	Adult Deaths from Lung Cancer (age >30)
Bénin	5,100	600	–
Burkina Faso	15,300	1,200	–
Cabo Verde	–	–	<100
Côte d'Ivoire	10,900	1,500	<100
The Gambia	500	100	–
Ghana	7,800	1,800	–
Guinée	4,900	700	–
Guinea-Bissau	1,600	100	–
Liberia	3,700	200	–
Mali	14,000	1,200	–
Niger	26,100	1,400	–
Nigeria	85,600	9,600	–
Sénégal	5,400	900	–
Sierra Leone	10,200	600	–
Togo	2,700	400	–

Source: UNDP/WHO in Legros, 2009

The WHO, in evaluating negative effects of cooking with solid fuels, has relatively more information and confidence about those impacts on women and children than men. It considers that the evidence is strong[8] for solid fuel use causing: **1)** pneumonia in children under five, and **2)** chronic obstructive respiratory disease (COPD) in adult women. There is "moderate[9]" evidence for linking solid fuel use to: **1)** adverse pregnancy outcomes, **2)** lung cancer in adult women, **3)** tuberculosis, and **4)** cataracts. (Legros, 2009) Thus, there is another research gap, this time regarding the effects on traditional cooking on men.

In conclusion, access to improved cooking has strong health implications for everyone – women, men, children, as shown above – and likely elderly populations, people living with HIV/AIDS, and other vulnerable groups as well. Even with data gaps in specific gender-differentiated outcomes persisting, the overwhelming magnitude of the public health crisis demands immediate and serious attention, attention that outstrips many times over the present budget allocations for household energy programmes.

7 *This table does show adult estimates from stroke and heart disease, also caused partly by solid fuel use, because the causal evidence is weaker.*

8 *Based on 15-20 observational studies and a randomized controlled trial showing consistent and significant evidence of sizable effects.*

9 *Based on a small number of studies, not all of which are consistent, and supporting studies of outdoor pollution, smoking and laboratory animals.*

Energy and development: implications for men and women – **Mechanical power and productive uses**

There are numerous case studies documenting examples of interventions enabling women to access mechanical power or productive use technology and the specific benefits realized in each case. But cases are often diverse, difficult to directly compare, and balanced by an equal number of lessons learned and context-specific caveats that make it difficult to generalize about the gender-differentiated impacts of providing mechanical power to individuals and communities. According to Practical Action (2014), energy for productive uses is one of the least documented areas of the energy access debate to date.

As far as case studies go in the ECOWAS sub-region, there is nothing quite so large scale and high profile as that of the Multi-Function Platform (MFP) programme. Even though none of the available evaluations were statistically rigorous, some insights are included here for consideration. Among the most oft-toted benefits of the MFP programme, a combined technical-institutional intervention that provides mechanical processing capabilities to women's groups, is the time-saving aspects and reduction in drudgery. In Mali, some female project participants reported saving between two and six hours of work per day, and that extra time was shifted to income generation (USD 0.47 extra per day for some participants (Modi, 2004). However, the MFP project is not without its problems. Nygaard (2009) reported that some of the very project design considerations crucial for building high level donor support – poverty alleviation, gender equity, and environmental sustainability – had limited or even adverse effects in a sample of cases. In particular, the inclusion of multiple technical productive use capabilities, insistence on female ownership and control, and experiments with local biofuel production were often problematic.

In contrast to the expensive, institutionally and technically sophisticated MFP project, even some relatively simple, low cost changes to prevailing practice can result in substantial energy and time savings. One example is conservation agriculture. The following field level data (Table 15) were taken from a project in Tanzania and serve as an illustration.

TABLE 15 | EXAMPLES OF LABOUR REQUIREMENTS OF DIFFERENT FARM ACTIVITIES USING CONVENTIONAL AND CONSERVATION AGRICULTURE

	Conservation Agriculture			Conventional Agriculture		
Farm activity	Labor/acre (# people)	Implement	Time/acre (days)	Labor/acre (# people)	Implement	Time/acre (days)
Land Prep	2-3	Ripper and slashers	3	2-4	Plow	3-4
Planting	2	Jab planter	2	3	Draft animals	3-4
Weeding	8-10, performed once	Hand hoe	1	8-10, performed twice	Hand hoe	1

Source: Maguzu in World Bank 2009, based on Tanzania survey data

Two excellent examples in Africa of productive uses that have a direct impact on the role of women are highlighted below (Boxes 8 and 9), both dealing with food preservation. One is the previously mentioned improved fish smokers and the other is solar dryers.

BOX 8 | TRANSFORMING THE SMOKED FISH INDUSTRY IN WEST AFRICA

Impacts of improved smoker technology

Smoked fish is an important part of the diet for people living in West Africa, but traditional ovens to smoke the fish are inefficient and also produce harmful emissions as well as tar residues that contaminate the fish.

The new technology has an oven and mechanical drier that is well suited for small-scale fish processors. It is a simple technology that can be used to upgrade traditional ovens and leads to significant reductions in carcinogenic emissions and uses much less wood fuel. It also helps to reduce post-harvest losses, while reducing the drudgery of fish processors who are now less exposed to the heat and smoke.

Many women are fish processors, so the new fish smoking technology will have immediate impacts on their health and incomes. The working environment is much cleaner and there is less exposure to the fumes. The shorter processing times with the systems reduces the fuel usage, directly contributing to their profits, as well as frees up time for their families and household work.

Source: Food and Agriculture Organization of the United Nation (2015)

BOX 9 | WOMEN'S ADOPTION OF SOLAR DRYERS IN TANZANIA

Impacts of solar dryers on production

"Over the course of the study, ...adopters produced on average 55 litres after one year as compared to only 33 litres for non-adopters in the intervention communities... dried significantly larger quantities of a variety of vegetables that were cultivated in home gardens than did non-adopters. Moreover, the project had the effect of increasing the consumption of vitamin A and pro-vitamin A rich foods among children whose mothers' adopted the improved solar as opposed to children whose mothers were non-adopters."

Source: Mulokozi in Kes (2006)

Before investing in production-expanding energy technology, women and men both, need to be assured of additional market opportunities for their increased production. A firm-level study in northern Bénin found many businesses, especially manufacturing business, not connecting to the grid once it arrived, or connecting and then regretting it, because of limited market opportunities in the rural area to sell additional output (Peters, in Mayer-Tasch, 2013a). Clear and holistic planning needs to happen in order to integrate the following: 1) energy supply, cost, and technical parameters; 2) the women, their businesses, and potential expanded lines of business; and 3) those businesses' final customer bases.

Before investing in production-expanding energy technology, women and men both, need to be assured of additional market opportunities for their increased production.

Energy and development: implications for men and women – **Resource availability and collection**

This section details whether there are gender-specific effects from changing the time, or distance traveled by household members, for collecting necessary resources such as water and fuel. Of great interest is knowing what other types of activities and investments might result from time saved on resource collection.

The cases of water and fuel collection are not identical. It's important to note that water, as compared to energy, has no substitutes and is the more gendered of the two collection activities while many households "stack" multiple cooking fuels and male family members participate more extensively in this type of collection. This might suggest finding statistical evidence of gender-specific benefits for water collection is more likely than for fuel. Though a moderately stronger data case can be made for gender impacts of water, unfortunately evidence on both fronts still exhibits some data gaps.

As to the effects of reducing the time and energy spent on collecting water, Koolwal (2010) finds weak and mixed empirical evidence. Across tens of thousands of households in nine countries in Sub-Saharan Africa (unfortunately none in the ECOWAS sub-region), the Middle East and South Asia, time spent collecting water was never significantly correlated to women's engaging in more market work in the ways the authors would have expected. There was some evidence for water availability increasing the likelihood that both boys and girls attend school, but this relationship didn't exist in any of the African countries sampled, perhaps because school attendance rates are the product of many complex forces. Data from a government household survey in Malawi, though, did show that school age girls are more burdened by resource collection tasks than boys, and that water and wood scarcity did lower school achievement. However, the presence of additional women in the household did appear to relax some of the labor demands on children, meaning that increased men's participation in collection, whether globally pareto optimal or not, could also positively influence child schooling (Nankhuni, 2003).

BOX 10 | WATER AVAILABILITY AND CONFLICT

Solar water pumping may ease tensions

Water availability, and solar pumping in particular, continue to be high policy priorities for many reasons – Yacouba Doumbia from the Ivoirian Ministry of Gender noted that annual water scarcity in the northern regions and Burkina Faso was already a source of tension – but more quality studies are needed to understand the constraints, opportunities and development impacts.

Source: Personal communication (2015)

For wood fuel, the literature review done by Kohlin (2011) found high quality evidence only from South Asia that supported welfare gains (reductions in collection time) for women stemming from the presence of tree plantations, but even there only in some conditions. Much depended on the availability of other fuel substitutes (e.g., agricultural residues or dung), additional male or child labor that could be re-tasked to fuel collection in the agricultural off-season, and the magnitude of the difference in the male and female opportunity costs. Thus woodlot cultivation can be a high value intervention, but must be carefully targeted to communities and households where fuel is scarce and where members are highly labor constrained.

Another potentially important variable to consider is the degree of management control exercised by women and poor individuals in community forestry arrangements since trees can provide multiple benefits (e.g., firewood, fodder, timber, non-timber forest products, ecosystem services). In some community programmes, the benefits are largely captured by wealthier households and men (for example, see the case of a Nepali community forest programme in Adhikari, 2005). A study of forest management groups in East Africa and Latin America showed that the gender composition mattered greatly. Unsurprisingly, male dominated groups harvested more timber while all-female groups harvested more fuel. However, all-female groups participated less than gender-balanced groups in forestry decision-making and governance and they were less likely to make and enforce rules, exclude other groups from harvesting, and invest in forest improvements (Sun, 2011). It appears as if women and men should both comprise between one and two thirds of user groups to achieve optimal outcomes.

BOX 11 | SUSTAINABLE PARTICIPATORY ENERGY MANAGEMENT PROJECT (PROGEDE)

Incorporation of gender concerns in PROGEDE

PROGEDE is a World Bank project that operated in two phases to address natural resources management and gender. PROGEDE I focused on the regulation of wood-based energy supplies and on streamlining the demand for cooking fuels, in particular through the promotion of improved stoves. Noting that the forest ecosystems provided significant economic resources to women, PROGEDE I introduced a gender element in programme design: technical support to increase the productivity of forest-related activities such as beekeeping and collection of medicinal plants, introduction of new or improved economic activities (poultry farming, animal husbandry), and some representation of women on village land-use committees. Following a gender audit of the programme, PROGEDE II (ongoing) recognizes that women derive significant economic roles from the agricultural land and forest resources, that they have strong marketing and technical skills in some areas (ceramic pottery), and that they can contribute to the development of a sustainable forestry and charcoal value chain. The project design also recognizes that women must benefit from training opportunities on equal footing with men in order to have more effective representation. PROGEDE II includes forest management activities, improved community decision making in charcoal production, improved household cooking fuels and technologies, and improved beekeeping practices that reduce brush fires.

Source: Africa Renewable Energy Access Programme (2015)

The conclusion is that while household welfare and efficiency impacts result from improving access to key domestic natural resources, blanket assumptions about the gender effects should probably be avoided in favor of carefully investigating local circumstances and patterns of activity.

2.2 Rationale for gender mainstreaming policy

Although women contribute to economic, social and political development as well as environmental management, they have not equally reaped the benefits of economic and social development. Much female labour continues to be unremunerated and overlooked in national accounts. Women continue to be outside the decision making sphere and their human rights are often comprised when addressing energy access issues. For example, much current thinking proposes that women will be disproportionately more affected by climate change, yet they possess relatively limited influence on key decisions related to climate change mitigation.

There are a range of barriers that hinder the equal participation of women and men in expanding energy access in West Africa and, by the extension, the success of the SE4ALL initiative and the ECOWAS Regional Policies on Renewable Energy and Energy Efficiency. For energy interventions and policies to be effective they must be tailored to the needs of the beneficiaries. Thus, when women are not actively engaged throughout the process the interventions can rarely produce sustainable and effective results.

Women continue to be outside the decision making sphere and their human rights are often comprised when addressing energy access issues. Women will be disproportionately more affected by climate change, yet they possess relatively limited influence on key decisions related to climate change mitigation.

The rationale for the ECOWAS Regional Policy on Gender Mainstreaming for Energy Access is three-fold:

1. Energy access is a basic human right that should be available equally to men and women. Currently women are bearing an undue burden related to the production and use of low quality energy products and fuels;
2. Gender mainstreaming is necessary for the success of the range of energy policies, programmes, and initiatives in the ECOWAS region. Both women and men need to be involved in designing and executing solutions in order to enable creative approaches and maximize the benefits; and
3. Markets – local, national, regional – can operate more effectively only if women's contributions in all spheres are actively solicited and accurately valued. This includes active support and a guarantee of equal rewards for women participating at all levels in the energy sector. It also entails finding better ways to quantify the non-market activities performed by women and men.

Progress must result from fruitful dialogue between civil society and governments, be backed by political will, and be reflected in changes to constitutional, legal and social platforms.

2.2.1 Opportunities

The ECOWAS region finds itself now at an inflection point. The need for energy and the need for a more inclusive energy paradigm loom great, yet there is a considerable foundation of knowledge and existing programmes on which to build and a mounting political will to address gender and energy access directly.

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The lack of access to clean and modern forms of energy is limiting the region's potential for economic growth and development. The ECOWAS region overall has an electricity access rate of 42% and access to modern fuels is even lower.10 Generally, more than 90% of the people in rural areas lack electricity, and the grid is unlikely to reach them in the next 10-15 years. There is room to catalyse much more private sector investment, enterprise development and local solutions for increasing access to energy. The low access rates combined with energy insecurity and the threat of climate change create a timely opportunity for policymakers from the Member States to deliver on a forward-looking policy that prioritizes gender in all facets of the energy access challenge.

Although women are crucial actors in managing households, in bearing and raising children, in food production, and in managing land, forest, and water resources, their roles and responsibilities are often taken for granted. Moreover, women's contributions are disproportionately in the informal sector. As a result, women's voices lack an equal measure of influence in the democratic, economic and social processes that will shape the transition to cleaner energy.

Furthermore, women represent enormous potential if fully engaged as producers, suppliers, and decision makers in the energy sector, but their capabilities are currently under-utilized. Empowering women and men on an equal basis to make significant contributions is necessary to solve the energy poverty crisis in the region.

Progress is well underway, however, in various ECOWAS policies and programmes seeking to create a new path for energy and development that has gender equality at its core. ECOW-GEN, which is based on

10 *Technical Discussion Paper on General Energy Access in the ECOWAS region http://www.uncsd2012.org/content/documents/164Consolidated_Document_General__Energy_Access_Final%20(2).pdf*

the principles laid out in the ECOWAS Gender Policy and is contributing towards the SE4All goals in West Africa and the ECOWAS Regional Policies on Renewable Energy and Energy Efficiency, is now seizing the opportunity to take the lead in the development of a Regional Policy for Gender Mainstreaming in Energy Access. This new policy will be building off existing strong commitments and experiences detailed in Chapter 3 of this report.

2.2.2 Vision

Central to ECOW-GEN's activities is the aim to develop a Regional Policy for Gender Mainstreaming in Energy Access and an implementation strategy that spurs the development of gender responsive national energy policies and strategies with concrete targets and timelines for implementation. With the adoption of the Regional Policy for Gender Mainstreaming in Energy Access, Member States will be committed to concrete actions for addressing gender inequalities in the region as they concern energy development, with collateral impacts on environmental sustainability, social inclusivity, and economic growth. The equal participation of women and men is imperative for improving energy access in West Africa and, by extension, the success of the SE4ALL initiative, the Sustainable Development Goals (SDGs), the ECOWAS Regional Policies on Renewable Energy and Energy Efficiency, and the ECOWAS Gender Policy.

With the adoption of the Regional Policy for Gender Mainstreaming in Energy Access, Member States will be committed to concrete actions for addressing gender inequalities in the region as they concern energy development, with collateral impacts on environmental sustainability, social inclusivity, and economic growth.

ECOW-GEN will work in close partnership with the ECOWAS Department of Social Affairs and Gender to advocate for the adoption of the Regional Policy for Gender Mainstreaming in Energy Access. The aim is to have the Regional Policy endorsed by heads of state to facilitate the operationalization of strategic actions contained therein. The Regional Policy for Gender Mainstreaming in Energy Access aims to be an innovative policy instrument to close gender gaps in the energy sector; to create awareness and understanding amongst policymakers about gender-sensitive policies; to expand business opportunities; and to encourage information, education and communication between Member States about gender and energy.

2.2.3 Methodology

This situation analysis report was created using a combination of in-depth research, data analysis, and interviews with policymakers, entrepreneurs, and development practitioners. The identification and assessment of issues on gender mainstreaming in the ECOWAS region was driven primarily by desk research and in depth phone interviews with key personnel that supported final conclusions and recommendations. Early drafts were widely shared in the energy and gender practitioner community and feedback was incorporated.

This situation analysis represents the groundwork for developing the Regional Policy for Gender Mainstreaming in Energy Access. It provides a rich set of data and findings on the region and around the world from which to develop a set of provisions for addressing gender inequalities on energy access and development. The draft policy will be revised based on input from ongoing communication and consultation with a wider group of ECOWAS experts until there is general consensus, and subsequent endorsement by ECOWAS heads of state.

3.

3. Policy Landscape

The present policy landscape must be understood within the historical evolution of gender and energy paradigms, intertwined closely with the global feminist and environmental movements. The Beijing Platform for Action developed twenty years ago during the 1995 UN Conference on Women has established clear links between "development, peace and equality." This position has been affirmed during the celebration of Beijing +20 this year in New York. Similarly, the 1992 UN Conference on Environment and Development (a.k.a. Earth Summit) in Rio de Janeiro, among many other things, declared vital the role of women in environmental management. This theme was taken up again at the Rio +20 Conference in 2012. Two decades on, the process of engendering energy development initiatives continues to be a long and slow work in progress.

Two decades on, the process of engendering energy development initiatives continues to be a long and slow work in progress.

3.1 Regional policies, programmes, and initiatives

The ECOWAS sub-region has a number of commitments to energy access, sustainable energy, and gender equality within which the proposed Regional Policy on Gender Mainstreaming for Energy Access will be situated. A snapshot of the key energy policies and gender policies are presented below, with particular emphasis on the links between gender and energy.

3.1.1 Energy policies, programmes and initiatives

Energy Policies

The ECOWAS Renewable Energy Policy (EREP), the ECOWAS Energy Efficiency Policy (EEEP), and the ECOWAS/ West African Economic and Monetary Union (UEMOA) White Paper For Increasing Access to Energy Services For Rural and Peri-Urban Areas

ECOWAS, with the support of the Austrian and Spanish governments, as well as technical assistance from UNIDO, created ECREEE in 2010. As part of its mandate, the Centre led the process of developing and implementing the ECOWAS Renewable Energy Policy (EREP) and the ECOWAS Energy Efficiency Policy (EEEP) both adopted in 2012. The two policies are linked together to ensure alignment and complementarity. National energy ministers committed to meeting a set of ambitious energy and development goals in their respective countries. These two policies are an organic outgrowth of the strategy developed in the 2006 White Paper that examined energy access in the context of achieving the Millennium Development Goals.

ECOWAS Renewable Energy Policy (EREP) aims to ensure universal energy access in rural areas and sets targets for increasing the overall share of renewable energy, achieving rural electrification, adopting cleaner cooking options, improving transportation, and utilizing solar thermal for hot water.[11]

EREP specifically mentions the importance of gender mainstreaming as it relates to energy security, sustainability, and access. The policy aims at mainstreaming gender in renewable energy-related issues, particularly those associated with women's productive roles. The policy states that:

> *"EREP's renewable energy options will offer abundant job opportunities for both men and women, in the industry and trade sectors, but also in the management and maintenance of decentralized and individual energy systems. EREP will secure equal opportunities for men and women in accessing training, credit, and forums for local decision-making on renewable energy."*

11 *The full text of the policies and supporting documents can be found at: http://www.ecreee.org/page/policy-development*

A second objective addresses household energy uses, and aims to "provide solutions for domestic cooking energy," through the use of improved cook stoves and the promotion of sustainable forest management practices.

ECOWAS Energy Efficiency Policy (EEEP) aims to improve efficiency in the cooking, lighting, buildings, and electricity distribution market segments and outlines ambitious targets to reduce energy use and increase productivity to help ECOWAS achieve its goals for energy security and access.7 National Energy Efficiency Action Plans (NEEAP) are being developed by each of the national governments to outline how the EEEP goals will be met by 2020.

In terms of gender, the EEEP notes that energy efficiency can contribute to improving gender equality, and it aims to support national policies and programmes that are gender responsive. The policy calls out the need for support in planning and implementation of gender equality policies as well as workforce expansion, capacity building, and conducting impact studies on the energy efficiency sector.

The ECOWAS White Paper was an important step in bringing to light the importance of access to energy services, notably to meet the energy needs of the poor, of rural and peri-urban areas. Endorsed in 2006, The White Paper (ECOWAS and UEOMA, 2006) contained ambitious numerical targets for increasing access to improved cooking fuels and stoves, electricity access, mechanical power, and improvements in public services such as education, health and telecom.

On gender, a guiding principle to support gender equality was put forth in the White Paper that highlighted alleviating women's workload, creating income-generating activities for women, their households and their communities, and providing access to quality social services, including healthcare and literacy training. A clear objective was outlined "to improve the situation of women, who are disproportionately, affected by all aspects of poverty, most particularly health problems (arising from the difficulty of chores such as wood-gathering and water-drawing, etc.)".

The ECOWAS Bioenergy Policy

Work continues in order to finalize and validate the Bioenergy Policy and Implementation Plan. This policy will provide guidance to ECOWAS Member States on promoting a modern, sustainable and vibrant bioenergy sector through enhancing the enabling environment and addressing institutional, legal, financial, social, environmental and capacity gaps. The needs and constraints of governments, the private sector and the local communities in using existing resources such as household and agro-processing wastes and residues are examined. Gender equality is identified as one of the important considerations in implementing the policy. The Bioenergy Policy states that it will aim to "Ensure women play an important role in the bioenergy value chain therefore particular attention should be given to gender issues especially women's participation in the decision making process."

Sustainable Energy for All

Sustainable Energy for All (SE4ALL) is a global initiative led by the United Nations that aims to ensure universal access to modern energy services, double the share of renewable energy in the global energy mix and double the rate of improvement in energy efficiency by 2030 as a means to reduce poverty, improve education and human health, and power economic growth. SE4ALL has created a global tracking framework to measure high level progress on each of its three objectives and will be further refining measurement and collection techniques at the national and subnational level over the coming years. This revision process represents an important opportunity to bring systematic gender disaggregated data collection practices to the international forefront if SE4ALL chooses to do so.

ECREEE is the SE4ALL Focal Point in the West Africa region. A key piece of SE4ALL is the national level action plans, representing a consolidation of the National Energy Efficiency Action Plans (NEEAP) and the National Renewable Energy Action Plans (NREAP). These action agendas will define and articulate countries' visions and targets to 2030, priority action areas, and follow-up mechanisms. They will serve as a framework for donor coordination, assistance, and participation by the private and civil society sectors.

ECOWAS Member States are in the process of developing national level SE4ALL action plans, which will incorporate gender considerations. In an associated guidance note prepared by UNIDO and UN Women, SE4ALL had a number of clear recommendations on ensuring that gender issues are mainstreamed into policies, consultations, programmes, and projects. Perhaps most important is the recognition of budgeting for this purpose, to…

> *"…support gender-responsive budgeting (GRB) in government planning and programming. GRB ensures that general budgets are planned, approved, executed, monitored, and audited in a gender-sensitive manner. Mainstreaming gender into national budgeting processes is a long-term process that requires a committed effort from the government and senior managers."*

The West African Power Pool (WAPP) Revised Master Plan

The WAPP Revised Master Plan is a framework for an integrated regional power market with the aim to facilitate development of large scale power projects and regional interconnections between ECOWAS countries. Its potential impact, however, has been blunted by delays in project construction. A WAPP gender policy is under development that would help integrate gender into large scale infrastructure projects. Specifically, it has been noted that:

> *"Gender disparities are still prevalent in West African countries especially in the energy sector. Closing the gender gap and enhancing women's participation in development is essential not only for building a just society, but is also a pre- requisite for achieving political, social, economic, cultural and environmental security among people on a sustainable basis."*

The ECOWAS Regional Electricity Regulatory Authority12 (ERERA) has been established (a/SA.2/1/08, 2008) within the context of the ECOWAS Energy Protocol and WAPP as the regional regulator for cross-border interconnections in West Africa, reflecting Member States' desire to jointly implement power and interconnection projects and efficiently distribute the energy resources of the region. The Energy Protocol is in place to facilitate the design of a relevant legal and institutional environment for the development of the electricity sector in the region.

The UEMOA Initiative Regionale pour l'Energie Durable (IRED)

This is a regional initiative for sustainable energy for the UEMOA region launched in 2008 with the following main objectives:

- Universal electricity access by 2030
- Reductions in electricity prices to 30 CFA/kWh by 2020 to increase economic competitiveness
- Development of the union's clean energy potential and utilization of carbon markets

It has been found that there are no clear gender linkages in this initiative, making the presence of the new Regional Policy on Gender Mainstreaming for Energy Access vital.

12 For more information see: (http://www.erera.arrec.org/About-us.aspx)

Energy Programmes

There have been numerous energy programmes implemented within ECOWAS' borders. Below, several programmes with gender linkages are highlighted.

ECOWAS Rural Electrification Programme (ERuReP) 2015-2020 is a programme under development by ECREEE to achieve the ambitious goals set forth in the EREP and adopted by the Heads of State in July 2013. The ERuReP 2015-2020, a component of the ECREEE Access to Improved Energy Services (EAIES) initiative, aims to supply 25% of the rural population with minigrid and stand-alone systems (ECOWAS, 2015b). This will be done with ~60,000 minigrids installed between 2014 and 2020 for a total capacity of 3,600 MW, serving 71.4 million people. ECREEE has the opportunity to ensure that gender equality is considered in the roll-out of the programme by adhering to the provisions outlined in the Regional Policy for Gender Mainstreaming in Energy Access.

Supporting Energy Efficiency for Access in West Africa (SEEA-WA) is a regional project recently completed that supported the implementation of energy efficiency measures within ECOWAS. It aimed to overcome the technical, financial, legal, institutional, social, and related capacity building challenges that hinder the penetration of energy efficiency measures. It was housed within ECREEE to promote energy efficiency alongside the ongoing work on renewable energy and expanding energy access.

Promoting a Sustainable Market for Solar Photovoltaic (PV) Systems in the ECOWAS Region (ProSPER) Initiative was launched by ECREEE and the International Renewable Energy Agency (IRENA) in 2011, to promote the development, adoption and implementation of national renewable energy policies, and to accelerate private-sector engagement in financing and SME creation. Under ProSPER, the programme called "Promotion of Renewable Energy Entrepreneurship in Photovoltaics Technology and its Financing" was created to support local entrepreneurs develop businesses and to expand access to finance through local financial institutions. There was no specific gender equality targets outlined in the programme, but women were encouraged to participate.

The Comité Permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel (CILSS) Programme Regionale de Promotion des Energie Domestiques et Alternatives au Sahel (PREDAS)[13] is a programme focusing on woody biomass, sustainable management of forest and wooded lands and sustainable use of wood- fuel, including substitution strategies (LPG and kerosene). Efforts are being made in the CILSS countries to build commitment around a national domestic fuel policy having sustainable forest management, efficient uses of the resources (cook stoves and charcoal production) and fuel substitution as its main pillars.

Institutional Capacity Building and Strengthening of Energy and Water Resource Sectors programme implemented by NVE and the Liberia Ministry of Land, Mines and Energy included a sub activity for capacity building and training on the productive uses of electricity. The productive use training conducted by ENERGIA with support from NORAD (2011-2013) had female attendance rates of 70%.

The Health Clinic Electrification Initiative, part of the Energy for Women and Children's Health High Impact Opportunity Area, co-led by the United Nations Foundation, the World Health Organization, and UN Women under the auspices of the UN Sustainable Energy for All initiative, has conducted needs assessments and is moving towards pilot implementation in three countries in sub-Saharan Africa: Ghana, Malawi and Uganda, with more potentially to be added in the future

Domestic energy strategies were developed for Cabo Verde, the Gambia, Guinee-Bissau, and Sénégal that incorporate concerns of both women and men. They are particularly relevant in the gender and energy debate by virtue of the fact that they target sectors such as cooking fuels and technologies, and forest and land management, all of which have been traditionally neglected yet have an outsized importance for women.

13 *Covering: Niger, Burkina Faso, Mali, Sénégal, Cabo Verde, Guinea-Bissau and The Gambia*

Energy financing vehicles

A number of dedicated energy financing windows have direct and indirect gender equality mandates. A few of the more prominent ones include:

- **The ECOWAS Renewable Energy Facility (EREF)** is a grant-making facility, managed by ECREEE, for small to medium sized renewable energy and energy efficiency projects and businesses in rural and peri-urban areas. In 2011 the EREF provided grants for 41 projects totaling EUR one million (average grant size of EUR 25,000) during the first call for proposals. During its first phase of operation (2011 to 2016), the EREF will test and sharpen its funding policy and find its comparative advantage in the West African market. In the second phase (2016 to 2020) the EREF will broaden its portfolio of financial instruments and support schemes. Gender equality is not strongly identified in the programme documents or in the grants awarded, but this type of facility could be a likely target for the proposed Regional Policy for Gender Mainstreaming in Energy Access.

- **The ECOWAS Women's Business Fund** was established to stimulate the development of women-led business initiatives in the energy sector. ECREEE is working with national governments to identify and support, through the fund, innovative energy projects implemented by women groups and associations such as an LPG project in Ghana and a fish drying project in Sénégal, both of which have already been awarded grants. The business fund project is also supposed to build capacity, raise awareness, engage in advocacy, and mainstream gender into large scale energy projects. In addition to this, ECREEE will assist is establishing similar funds at the national level throughout the Community.

- **The Sustainable Energy Fund for Africa (SEFA)** is a multi-donor facility hosted by the African Development Bank, with a technical assistance window, a public sector enabling environment window, and private equity window called the African Renewable Energy Fund (AREF). This is a USD 100 million private equity fund managed by Berkeley Energy LLC. SEFA must adhere to the AfDB's gender action plan, though it is not clear whether SEFA's private equity window's investment into AREF is governed by similar principles or even whether Berkeley Energy LLC maintains any sort of gender policy.

- **The Global Environment Facility (GEF) Strategic Programme for West Africa** is allocating USD 100 million in funding to projects across 12 countries. The GEF adopted a policy on gender mainstreaming in 2011 to guide it and its partner organizations in project selection and management, though historically it has always had a good reputation for being pro-poor and gender inclusive.

- **The Green Climate Fund (GCF)** – A UNFCCC fund to assist developing countries in adaptation and mitigation projects has a dedicated gender policy that embraces the principles of equality, inclusiveness, accountability, country ownership, competency, and equitable resource allocation (GCF, 2014).

3.1.2 Gender policies, programmes and initiatives

Gender policies

The ECOWAS Gender Policy, adopted in 2004, seeks to address the strategic needs of men and women, accelerate the achievement of equality and equity and reaffirms Member States' commitments to gender under the New Economic Partnership for African Development (NEPAD) and the Millennium Development Goals (MDG).

The Supplementary Act Relating to Equality of Rights Between Men and Women for Sustainable Development in the ECOWAS Region, passed in 2015 by ECOWAS Ministers in charge of Gender issues, aims to harmonize and strengthen legislation and policies on gender equality; increase women's participation in decision-making; and expand the economic opportunities for women[14].

14 *Currently in draft form. The ECOWAS Ministers in charge of Women and Gender have ratified the policy, and the policy still needs to be endorsed by ECOWAS Council of Ministers, and the Heads of States.*

There are a number of specific provisions relevant to energy that will be considered in the development of the Regional Gender Mainstreaming Policy on Energy Access:

- *Article 36:* Access to Water and Sanitation -- Member States shall take the necessary measures for the improvement of sanitation and access of people to safe drinking water through: (b) the improvement of renewable energy (use of solar) and rural electrification in a bid to reduce the burden of work on women and improve the competitiveness of businesses managed by women

- *Article 37:* Environmental Management, Article 2, Protection -- Member States shall take measures to promote the use of alternative energy for domestic purposes in order to mitigate the negative impact of firewood use, such as the disappearance of certain plant and animal species, the degradation of forest resources, soil impoverishment, and the occurrence of bush fires

- *Article 45:* Access to Energy Services -- Member States shall undertake to promote access to energy services for all, and particularly to increase access to energy services for rural and peri-urban populations in an equitable manner and without gender related discriminations ainable Development Goals, Climate Policies, ECOWAS RE and EE policy, etc.

The Comité Permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel (CILSS) drafted a gender policy in 2008 that has four high level objectives to:

- Promote equal rights and opportunities for men and women in controlling resources

- Create favorable conditions for equal participation of men and women in development

- Institutionalize gender considerations within CILSS

- Incorporate gender considerations in the conceptualization, planning, execution, and monitoring and evaluations of programmes.

African Union Gender Policy is a broad reaching policy adopted in 2009 that aims to create lasting solutions with a view to achieving gender equality and women's empowerment. It proposes to implement a multi-sector approach for gender mainstreaming touching on all key development sectors. Energy and Infrastructure are identified as one of the priority sectors in Commitment 7 to "Implement gender mainstreaming in all sectors" across all African Union divisions, Regional Economic Communities (like ECOWAS), and African Union Members States15. It is not clear what concrete actions, if any, have resulted from this policy regarding energy, but it does provide general support for the objectives of the Regional Gender Mainstreaming Energy Policy for Energy Access.

African Development Bank Gender Policy (2001) was created to mainstream gender in order promote poverty alleviation, economic development and gender equality. It provides a framework for action, ensuring men and women equally benefit and profit from the bank's resources.

African Development Bank Gender Strategy (2014-2018) aims to strengthen gender mainstreaming in all of the Bank's country and regional operations and strategies, including a focus on: Women's legal status and property rights; Women's economic empowerment; and Knowledge management and capacity building. Secondly, it addresses the Bank's own internal transformation with a focus on staffing and work environment. There is an explicit link to energy in Pillar 2 of the strategy on Economic Empowerment, with an outcome focused on "gender equality benefitting from infrastructure development, including access to employment, markets and energy". One area mentioned in the strategy is the focus on green growth whereby women farmers will be provided training and provision of clean energy technologies such as solar energy and digital connection to appropriate information such as mobile phones. African Development Bank is an ally of ECOW-GEN in the consultation process regarding the proposed Regional Policy on Gender Mainstreaming for Energy Access, and it is expected that the AfDB Strategy will help to improve the uptake of the policy from the banking and financial sector.

15 The full text of the policy is available at http://wgd.au.int/en/content/african-union-gender-policy

Gender and Energy Programmes

The ECOWAS Programme on Gender Mainstreaming in Energy Access (ECOW-GEN) is the key programme in ECOWAS working at the intersection of gender and energy (ECOWAS, 2015a). ECOW-GEN was established in 2013 to aid stakeholders in the energy sector to integrate gender into their policy and programme work. This initiative works along four main axes:

- Capacity development
- Support for gender-sensitive policy development
- Knowledge management and awareness creation
- Investment promotion and advocacy

ECOW-GEN contains five programme areas

1. **ECOWAS Women's Business Fund:** to support the establishment and expansion of women-led energy businesses.
2. **Women's Technical Exchange Programme:** to facilitate knowledge and technology transfer among women groups
3. **Women's Economic Empowerment through Energy for Productive Uses:** to provide business development and capacity building for rural women
4. **Mainstreaming Gender in Energy Programs and Projects:** to promote a regional gender and energy policy and national strategies for gender equality
5. **Youth Leadership Development in Energy:** to empower the West African youth to shape and influence energy developments in the region through research grants that support the development of high-quality, relevant studies that propose solutions to topical issues.

The development of the Regional Policy for Gender Mainstreaming in Energy Access led by ECOW-GEN is being pursued in a highly collaborative manner with gender and energy policymakers, practitioners, and entrepreneurs.

The Mano River Union Framework Action Plan on Women's Economic Empowerment through Energy for Productive Uses was adopted at the ministerial level from countries of the Mano River Union (MRU) in May 2013. This framework highlights that gender equality and women's empowerment is a priority for the Manu River Union. Moreover, it moves beyond household energy issues by recognizing women as key economic actors and it promotes women's economic empowerment through energy for productive uses so that women become active participants and leaders in the energy sector.

The West African Clean Cooking Alliance (WACCA), launched in 2012, is led by ECREEE to ensure that by 2030, the entire ECOWAS population has access to efficient, sustainable, and modern cooking fuels and devices. This is a programme that embodies many of the objectives of the ECOW-GEN Programme. WACCA aims to:

- Promote the implementation of policies and regulatory frameworks on clean cooking initiatives in the ECOWAS region
- Enhance capacity building in clean cooking initiatives
- Support and harmonize standards and labelling practices
- Promote networking and knowledge sharing in terms of technologies and innovations

The WACCA Action Plan has included specific gender actions and recognizes gender integration in the planning and implementation of activities as important to achieving its objectives. Women are not only seen as important end-users of cooking fuels and technologies, but also seen as key agents of change.

The Gender and Energy Program of the Africa Renewable Energy Access Program (AFREA), part of the World Bank's Energy and Extractives Global Practice, was piloted in 2009 and has helped integrate gender considerations into a number of initiatives, developing approaches and know-how and working with energy teams and government clients. Within the ECOWAS region, the AFREA Gender and Energy Program is active in projects in Bénin, Mali and Sénégal, with preparatory work conducted in Liberia. The Gender and Energy Program continues under AFREA 2 and will expand its scope of activities beyond energy access.

The UNDP Multifunctional Platform Programme centers on an agro-processing machine that was piloted in 1998 in Mali. The MFP programme has three objectives: to enable smallholder women farmers to increase and diversify their income; to strengthen human and institutional capacities to expand services in rural communities; and to enable governments to scale up their MFP programmes across West Africa and other Sub Saharan countries. As of 2012, 2.831 platforms were installed in rural communities benefitting over 3.5 million people in eleven sub-Saharan countries; the lead countries for implementation of the MFP are Mali, Sénégal and Burkina Faso.

Women in rural communities, with no access to electricity, are both the primary customers for the energy services, purchasing grinding and milling services, and also the entrepreneurs who own and operate the MFP businesses, which in addition to processing local crops can light households and public places (health center/school), pump drinking water and provide energy for handicraft and local private entities.

The African Women's Entrepreneurship Programme (AWEP) is an initiative launched by the U.S. Department of State in 2010 that identifies and builds networks of women entrepreneurs across Sub-Saharan Africa, including West Africa, focusing on outreach, education, and engagement. It targets African women entrepreneurs to promote business growth and increase trade, create better business environments, and empower African women entrepreneurs to become voices of change in their communities. There are members of FEBWE working in the energy sector, specifically in the distribution of petroleum products.

Power Africa, a U.S. presidential initiative launched in 2013, seeks to support projects, programmes and policies that intentionally strive to reduce gender inequalities and promote effective engagement of both men and women in Sub-Saharan Africa. It takes a sector-wide approach to gender integration and works directly with private sector actors engaged in the power sector as well as provides support directly to governments. Partners include 12 U.S. government agencies, the World Bank Group, the African Development Bank, the Government of Sweden, host governments and 100 private sector partners. Focus countries include Ghana, Nigeria, and Liberia.

Gender Initiatives

The ECOWAS Federation on Business Women and Entrepreneurs (ECOWAS/FEBWE) is open to national federations/associations of business women and entrepreneurs from within the Community and has two main objectives:

- create a platform for dialogue and action with a view to promoting entrepreneurship among women in West Africa, thus making it possible for them to contribute to the achievement of the MDGs and the goals of NEPAD, particularly regional integration of West Africa

- formulate a support and advocacy policy for:

  - skills and capacity building of business women and entrepreneurs; and

  - promotion of a favorable business environment for business women within ECOWAS.

To reach these objectives, FEBWE is undertaking a number of activities, including to:

- facilitate capacity building, trade, and other demand-driven basic services for greater competitiveness of women in the business world, and to improve the visibility of their participation in the economy
- facilitate greater accessibility of women to regional and international markets through participation in e-commerce, fairs, and exhibitions
- establish a guarantee fund for women's initiative to facilitate their access to formal long-term loans, in collaboration with ECOWAS
- create a database on the activities of FEBWE women for sharing experiences and developing trade in the region and with partners
- connect with similar organizations regionally and internationally for exchange; organize exchange visits to other parts of the world such as Europe, North America, Asia and other regions of Africa in search of joint ventures and partnerships for members
- carry out research to identify informal businesses owned by women with a view to gradually bringing them into the formal mainstream

The Sustainable Development Goals (SDG)

The world community has once again come to the realization that there is an urgent need to focus attention on an overarching comprehensive global framework for a development agenda. While the UN anti-poverty targets established through the MDGs in 2000 have contributed to the empowerment of rural women by calling for improved access to education, work, and greater participation in decision-making, the MDGs overlooked the plight of millions of women in accessing energy. This is an area that has now received consensus, before and after Rio+20, as an important issue to be addressed by the SDGs as the new comprehensive global framework replacing the MDGs.

There is a strong emphasis among the proposed SDGs of emerging issues such as climate change and the removal of inequalities in public service delivery of which energy provision is a component. They will form a new, universal set of goals, targets and indicators that UN Member States will be expected to use to frame their agendas and political policies over the next 15 years. The SDGs take over where the MDGs left off, except now there will be a goal focused on energy. Moreover, many of the proposed SDGs put a strong focus on gender and women's issues, often with a direct or indirect link back to energy service provision. For example:

SDG 4: Achieve gender equality, social inclusion and human rights, with target 4a to "end discrimination and inequalities in public service delivery" of which energy provision is a component.

SDG 6: Improve agricultural systems and raise rural prosperity, with target 6c to "ensure universal access in rural areas to basic resources and infrastructure services (land, water, sanitation, modern energy, transport, mobile and broadband communication, agricultural inputs, and advisory services;" noting that energy is mentioned explicitly and it also implicitly undergirds many of the other services.

SDG 7: Empower inclusive, productive and resilient cities, with target 7b to "ensure universal access to a secure and affordable built environment and basic urban services including housing; water, sanitation and waste management; low-carbon energy and transport; and mobile and broadband communication."

SDG 8: Curb human induced climate change and ensure sustainable energy, with target 8a to "decarbonize the energy system, ensure clean energy for all, and improve energy efficiency, with targets for 2020, 2030 and 2050."

3.2 National policies, programmes, and initiatives

3.2.1 Energy

Almost every member country has an energy policy in place either in form of a broad national policy, a sectorial policy, a strategy or a policy declaration. Only Cabo Verde, Gambia, Ghana, Liberia, Nigeria and Sénégal have a stand-alone renewable energy policy and only Liberia and Nigeria have an energy efficiency policy. For countries such as Bénin, Côte d'Ivoire, Guinée, and Mali, renewable energy and energy efficiency represent a subset of the general energy policy. A review of Member States' renewable energy and energy efficiency (RE/EE) policy language has revealed very little connection to gender equality.

Only a handful of countries (Burkina Faso, Gambia, Liberia and Sierra Leone, and Nigeria[16] address gender equality in their energy policies.

Only a handful of countries (Burkina Faso, Gambia, Liberia and Sierra Leone, and Nigeria[16]) address gender equality in their energy policies. Sierra Leone's energy policy is notable. It recognizes gender-differentiated **1)** energy needs and use (including agriculture and agro-processing), **2)** impacts of energy use, **3)** resource ownership, and **4)** participation in the energy sector. The policy calls for the government to promote firewood and charcoal alternatives to ameliorate the position of rural women, raise awareness of gender issues in energy and mainstream them broadly, further gender-balanced development, and educate and train women in energy sector matters. The Gambia's new energy policy highlights gender equality as one of its goals; Liberia's policy recognizes gender issues but states,

> *"Although the Government of Liberia (GoL) has a ministry dedicated to gender affairs, it has no programme or capacity to address energy-related gender issues. The Ministry of Land, Mines, and Energy (MLME), which should take a lead role in developing and implementing appropriate policies to address these important considerations, does not currently have the necessary resources to do so."*

Nonetheless, the policy directs the Rural and Renewable Energy Agency (RREA) to take into account gender considerations in its planning process. In Burkina Faso, the multi-sectorial policy on energy specifically states that the Ministry of Women's Affairs should be involved to ensure that gender equity and equality are taken into account. It further states in its guidelines that the specific needs of men and women will be considered in the formulation, implementation and monitoring-evaluation of the policy.

In Bénin, Sénégal and Guinée interviewees reported that gender is sometimes integrated at the project level. In general, it seems that the policies have not yet caught up with reality. While policies are often drafted to guide implementation, in the case of the gender mainstreaming, policies are taking cues from efforts that have already been implemented. Several interviewees stated that gender would certainly be included when the policies are revised. The political will is seen in the gender audits that many energy ministries have undertaken in Ghana, Sénégal, Liberia and Bénin.

Similarly, a few gender policies make the link between gender equality and energy poverty: Burkina Faso, Nigeria and Togo. This does not mean however that the policy provides specific solutions. Burkina Faso for instance mentions energy poverty in the situation analysis of the policy but stops short of addressing the problem in the policy goals. In contrast Nigeria's policy states in its objectives, "Relevant agencies shall ensure that women are adequately represented in all activities designed to improve the environment, particularly in the reforestation programmes, and to ensure alternative sources of fuel energy to replace the use of firewood so as to check deforestation." It is important to point out, however, that in both policies, energy is limited to cooking energy.

One of the best designed gender policies is perhaps that of Mali, which embraces the true cross-cutting nature of gender. The policy calls for the creation of a high council for gender, regional councils, a permanent secretary and committees within 10 ministries whose principal roles are to institutionalize gender within the ministries. The implementation structure gives primary responsibility of the policy to

16 Nigeria address gender equality in its draft revised national energy policy.

the Ministry of Women's Affairs while assigning specific roles to 10 other ministries (finance, education, health, labour, etc.), which are believed to be essential to the success of the policy. However, even in this well designed policy, the connection between gender and energy is absent. The Ministry of Energy is not included in the aforementioned 10 ministries. Sénégal's National Strategy for Gender Equality and Equity has the same shortcomings. The gender policy of Burkina Faso mentions that low access to energy affects women more than men but the axes of intervention in the policy do not include energy. All the policies point to the need of gender equality in education, employment and health but access to energy in generally absent. In Ghana, the health ministry has a gender policy, the Ministry of Agriculture has a programme for women agricultural development and has also integrated gender. In Sénégal, the Ministry of Education has an active gender programme that provides scholarship to girls for technical and scientific studies.

TABLE 16 | ENERGY AND GENDER LINKAGES IN ECOWAS COUNTRY POLICIES

	National Energy Policy	Renewable Energy Policy	Energy Efficiency Policy	Gender Dimension in Energy Policies	National Gender Policy	Energy Linkage in Gender Policy
Benin	✓	×	×	×	✓	×
Burkina Faso	✓	×	×	✓	✓	✓
Cabo Verde	✓	✓	✓	×	✓	×
Cote d'Ivoire	✓	×	×	n.a	✓	×
Gambia	✓	✓	×	✓	✓	×
Ghana	✓	✓	×	×	✓	n.a
Guinée	✓	×	×	×	✓	×
Guinée Bissau	n.a	×	×	n.a	✓	n.a
Liberia	✓	✓	✓	✓	✓	×
Mali	✓	×	×	×	✓	×
Niger	✓	×	×	×	✓	×
Nigeria	✓	✓	✓	×	✓	✓
Senegal	✓	✓	×	×	✓	×
Sierra Leone	✓	×	×	✓	✓	n.a
Togo	×	×	×	×	✓	✓

✓=yes; ×=no; n.a.=information not available

3.2.2 Institutional framework for mainstreaming gender and energy

The institutional framework involved mainstreaming gender in energy is far reaching. At the regional level, ECREEE and the ECOWAS Department of Social Affairs have the most direct responsibility. But the ECOWAS Department for Energy and Mines as well as other energy-related agencies may also be involved. The institutional landscape encompasses the national ministries in charge of gender and of energy, obviously, but also those in charge of finance and planning along with census bureaus and statistical services. Other national level ministries such as labor, education, environment, etc. may equally be involved. Outside government, there are numerous civil society organizations and associations active in the space and the gender and energy nexus is a high priority for many international development agencies.

There is consensus that gender issues have been put at the forefront of political discussions over the past five years. Although women's rights have been enshrined in country policies since the 1995 Beijing Declaration or, in some cases since the International Year of Women (1975), developing a gender equality strategy is a recent phenomenon in ECOWAS countries. "Gender equality" is often equated with "women empowerment" which is arguably the reason why gender issues are considered the exclusive domain of

women affairs, family affairs and social affairs ministries. More structurally, policy makers, the majority of whom are men, do not easily see themselves as having to share power with women and have therefore tended to institutionalise gender work as a lower priority item.

Some Member States have succeeded in partially dissociating gender from social affairs by creating a gender department within these ministries. It is the case of Burkina Faso, which in 2008 added, "gender" to the Ministry of Women Affairs (Ministere de la Promotion de la Femme et du Genre) and created the Permanent Secretary for the National Council on Gender (Sécrétariat Permanent du Conseil National pour la Promotion du Genre), and Sénégal which has the Directorate for Gender Equity and Equality within the Ministry of Women's Affairs, Families and Children. Before Sénégal created a gender directorate, an evaluation of the ministry organizational chart showed that "gender" had no visibility and no leadership and therefore little ability to influence policies and programmes. The lack of visibility also hinders a proper allocation of resources. In some cases, the ministries of women's affairs have such large portfolio that is it difficult to see where gender fits within them. In Bénin for instance, the Ministry in charge of women's affairs is also in charge of national solidarity, people with disabilities and the elderly. In Ghana as well, the national machinery set up in 1975 transitioned the National Council on Women and Development (NCWD) to the Ministry of Women and Children's Affairs (MOWAC) in the year 2000. Since 2012, it has been re-designated the Ministry of Gender, Children and Social Protection (MOGCSP). Regardless of the exact institutional arrangements, every member country does have a gender policy in place.

Member States with gender focal points/units

Member States with a Gender Focal Point (GFP) or a Gender Focal Unit (GFU) at the ministerial level are: Burkina Faso, Gambia, Niger, Côte d'Ivoire, Liberia and Ghana. Guinée has a position for GFP in its organizational chart but the position has not been filled yet while Bénin has developed a terms of reference. Liberia has a GFP both at the ministerial level and at RREA (part of the ministry of energy). Sénégal has recently nominated a GFP in the rural electrification agency (ASER) and Mali a GFU in the agency for household energy and rural electrification (AMADER) comprised of a staff member from each department who support the focal point. The structure adopted in Mali seems to be a good model in the sense that gender is integrated in the activities of each department (statistics department; planning department; administrative department, etc.) and staff members are more sensitized on gender issues.

TABLE 17 | MEMBER STATES WITH GENDER UNITS AND GENDER AUDITS IN THE ENERGY SECTOR

	Gender Focal Point or Unit in Ministry of Energy	Gender Focal Point or Unit at Agency Level	Gender audit of Energy Sector
Benin	✓	×	✓
Burkina Faso	✓	×	×
Cabo Verde	n.a	n.a	×
Cote d'Ivoire	✓	×	×
Gambia	✓	×	×
Ghana	✓	×	✓
Guinée	✓	✓	×
Guinée Bissau	n.a	n.a	n.a
Liberia	✓	✓	×
Mali	×	✓	×
Niger	✓	×	×
Nigeria	×	×	✓
Senegal	×	✓	✓
Sierra Leone	✓	✓	n.a
Togo	×	×	✓

✓=yes; ×=no; n.a*=information not available*

Role of gender units and their influence on policies

The roles of the GFP and GFU as stated by the interview participants include:

1. ensure that gender is taken into account in energy projects, policies and programmes;
2. coordinate the implementation of action plans related to gender;
3. integrate gender and energy in existing monitoring and evaluation systems;
4. facilitate access to information on the ministry's gender-related activities; and
5. coordinate with the gender ministry. It is important to note however that some GFP have very limited roles. In Niger, for instance, the GFP only attends meeting and reports on them.

Competence and capacity of gender units

On qualification and training, it could not be confirmed that any of GFP or members of the GFU had a background on gender or social sciences. Most of them are energy experts or statisticians. Some of them have attended training workshops on gender and have gained hands-on experience. There was a unanimous agreement among the interviewees that additional training is necessary.

The ministries of women's affairs are considered the experts on gender issues in national governments. However, it could not be confirmed through interviews with the ECOW-GEN TAG members that their staff has formal training on gender. Except for Burkina Faso, where staff from the gender ministry provided training to gender focal unit in the energy ministry, there was no other instance where the gender ministry offered subject matter expertise. In Mali, there was a round of "train the trainer" sessions right after the national gender policy was adopted, but the trainers did not train other people. If the expertise exists, there is no evidence that it is being spread outside the gender ministries. Moreover, it is recognized that gender ministries lack influence over other ministries and are often frustrated in their attempts to direct government interventions toward gender equality.

There are a few exceptions, however. In the Gambia, the Ministry of Women Affairs and the Women Bureau are part of the steering committee of the Ministry of Energy; in Burkina Faso the Ministry of Gender is consulted during the elaboration of programmes and policies; in Niger a staff member from the gender ministry attends all the relevant energy ministry meetings but cannot influence any decision.

In general, there is very little collaboration between gender ministries and energy ministries on programme design and implementation except for projects financed by development partners (World Bank, UNDP, etc.) when the partner specifically requires that gender be considered in the project. There are gender experts in the country offices of the development partners, in non-governmental organizations (NGOs), consulting firms and universities although energy ministries rarely consult them. It is therefore not surprising that gender expertise is lacking within the energy ministries. Liberia seems to be the exception where the cooperation agreement with the Norwegian government with technical support from ENERGIA facilitated a process of regular engagement on policies and programmes between the ministry in charge of gender and that of energy.

In general, there is very little collaboration between gender ministries and energy ministries on programme design and implementation except for projects financed by development partners (World Bank, UNDP, etc.) when the partner specifically requires that gender be considered in the project.

The competencies needed for implementing a gender and energy policy include the following: training energy ministry staff on gender mainstreaming; sensitizing gender ministry staff on the role energy in gender equality; training statisticians in the collection and analysis of gender disaggregated data. As for capacity, resources are needed personnel, an office, vehicles, processes, and projects in addition to a strong commitment from the top of the organization. Roles, accountability and a phased roll-out strategy will be developed in the implementation plan accompanying the Regional Policy for Gender Mainstreaming in Energy Access.

Civil society

Throughout the region, there are vibrant civil society organizations and associations engaging in gender and energy issues. They are valuable implementing partners for governments and also play a role in elevating the concerns of groups of citizenry to the level of policy dialogue.

Gender-balanced public sector recruiting, hiring and promotion

Men far outnumber women in the energy sector. In energy ministries there is large presence of women in secretarial, accounting, human resources and other administrative positions but men hold most of the technical and managerial positions. Two countries stand out as exceptions. In Nigeria, there are almost as many women in the ministry as there are men (47% and 53% respectively) and in Sénégal, the energy minister is a woman and women head three of the five directorates within the ministry.

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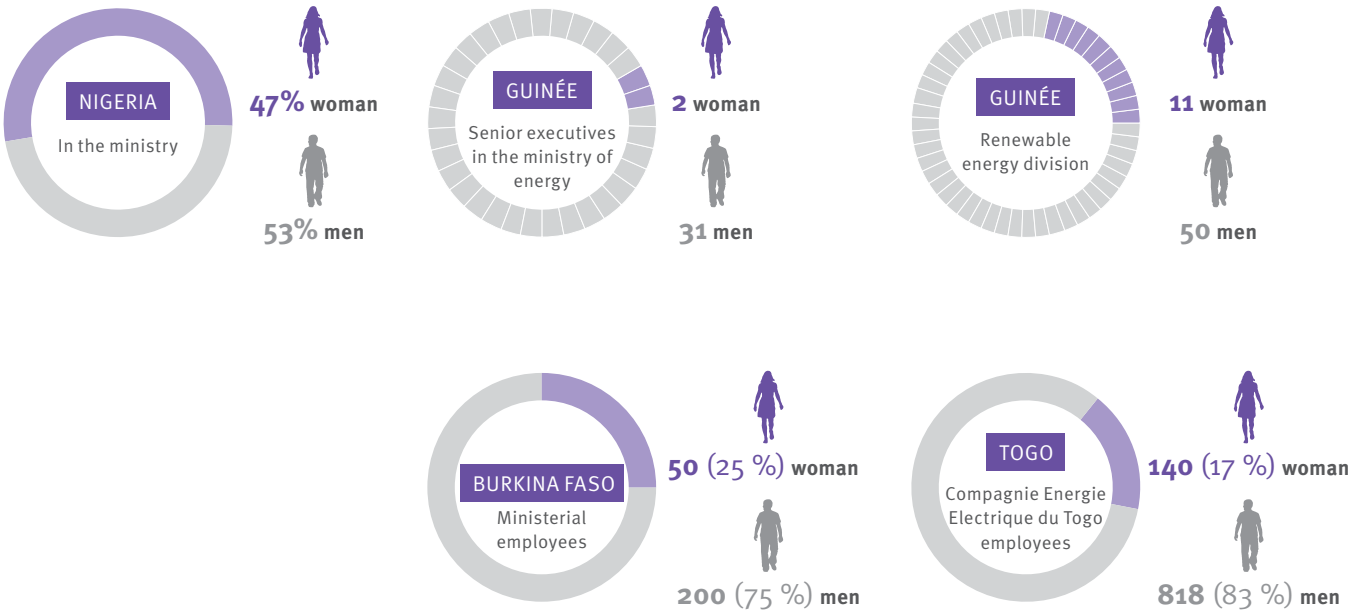
In the energy directorate of Bénin, there are three women heads of department. In Guinée, among the 33 senior executives in the ministry of energy, only 2 are women. Within Guinée's renewable energy division, there are 11 women and 50 men. In Burkina Faso only 50 of the 200 ministerial employees are women. In the Compagnie Energie Electrique du Togo (CEET), 140 of 818 (17%) employees are women.

Although most interview participants were not able to give exact staffing numbers, everyone agreed that there is a large gender imbalance in the energy ministries. Most senior positions in the energy sector require an engineering or technical background, a field of study in which women are underrepresented for a number of reasons.

The lack of equal numbers of women and men in the energy ministries and parastatals appears to be the primary barrier to equal participation. When women hold high positions that include them in decision-making processes, they are given equal rights and their opinion is as valued as those of men. There is no indication of any internal practices that deter them from participating in the decision making processes.

Some interviewees indicated, however, that some positions are implicitly inaccessible to women, even when they have the necessary qualifications, because it is believed that their role as spouses and mothers may interfere with their ability to perform the job. Some examples are positions that require long working hours or extensive travel in the field.



Budget allocation for gender mainstreaming

Where GFP and GFU exist, they are usually understaffed, underfunded and sometimes unmotivated. In Burkina Faso, the GFU was allocated 5 million CFA (about $10,000) in its first year of operation, which was only able to cover training for members of the unit. In Niger, the unit has no budget. In some cases, The GFP or GFU is created to meet the requirements of a specific project. Therefore, at the end of the project, the unit is left unfunded and even worse there is no handoff mechanism to ensure continuation of learning and build off the successes of the project. There is general consensus that more financial and human resources are needed for the GFP or the GFU to intervene at every step of the programme cycle from inception to monitoring, evaluation and reporting.

With energy policies being devoid of gender consideration, it is understandable that the majority of the Member States do not have a budget specifically dedicated to addressing gender gaps in the energy sector. The Bénin Ministry of Energy has a line item for gender in its 2015 budget (although the amount couldn't be confirmed), but in general there are no line item for gender mainstreaming in the ministry of energy budgets unless it is specifically tied to a project.

Perhaps the biggest gap in achieving equal access to energy for men and women is the lack gender-disaggregated statistical data without which the extent of unequal access cannot be grasped. These data do not exist at the national level.

3.2.3 Gender and energy flagship programmes and initiatives

There is a host of energy-related programmes in the Member States that target women specifically, but not all of them can be qualified as gender mainstreaming programmes. According to Ms. Joy Clancy, a gender and energy expert and co-founder of ENERGIA, a gender project can focus on women but it has to take into account the relationship with men. Some of the gender mainstreaming efforts mentioned by interviewees for this report include: the UNDP Multi-functional Platform in Burkina Faso, Mali, and Sénégal; the World Bank AFREA/ESMAP programme in Sénégal, Bénin and Mali; The Mano River Strategy; the "Projet d'appui au secteur de l'électricité" (Burkina faso) which has a component targeting women; the "Projet d'accès aux services énergétiques" (Burkina Faso) which has a component targeting women; Carbone Guinée; Programme Butane (Guinée); Guinée 44; Light up a Village Initiative in The Gambia.

There is a host of energy-related programmes in the Member States that target women specifically, but not all of them can be qualified as gender mainstreaming programmes.

However, it was only possible to verify the gender dimension in the MFP programme and the AFREA Gender and Energy Program. Interviewees were not able to discuss how gender mainstreaming was done in the other projects nor was it possible to find additional information online.

The UNDP MFP programme installs diesel generators in a village to power grinding mills, huskers, alternators, battery chargers, pumps, welding stations, and carpentry equipment. Its main focus is to alleviate the drudgery of women's chores but it also creates jobs for men (carpentry, welding, machine maintenance and repairs), increases agriculture production for the entire village, and, most importantly, involves both men and women in decision making processes. More detail on the programme can be found in section 3.1.1.

The World Bank's Africa Renewable Energy and Access (AFREA) Gender and Energy programme was implemented in Mali, Sénégal and Bénin. In Sénégal, the programme promoted the sustainable supply of wood fuel, sustainable management of forests as well as dissemination of improved cook stoves and installation of bio-digesters for cooking. More details on the programme can be found in section 3.1.1.

AFREA's activities to integrate gender included a gender-sensitive rural appraisal to establish the baseline for the forest resource management; evaluation of the capacity of female and male charcoal producers to access urban markets; small business management training for men and women charcoal traders; training of local government, women and youth to participate in local government bureaus and forestry management committees and participation of women potters to manufacture improved cook stoves. The programme

resulted in an increased participation of women in the charcoal sector as entrepreneurs and decision makers; and an increase in the share of income at the community level going to women (from 3% to 12%).

In Mali, the AFREA Gender and Energy programme supported the assessment of gender-specific energy needs in the areas electrified by AMADER followed by an action plan for integrating gender in the agency's projects.

In Mali, the AFREA Gender and Energy programme supported the assessment of gender-specific energy needs in the areas electrified by AMADER followed by an action plan for integrating gender in the agency's projects. The action plan enabled the creation of a gender focal unit within AMADER and the implementation of a gender-energy pilot project to reduce inequalities in energy access between men and women in two villages. The pilot project was later extended to 13 villages. In Bénin, the programme supported the Energy Services Delivery Project and the Increased Access to Modern Energy Project, which focused on improving women's participation in honey production and forest management. Gender was assessed in both projects followed by an action plan, which led to the revision of the National Energy Policy (still in progress).

Another example is the programme for the promotion of renewable energy, rural electrification and sustainable supply of domestic fuels (PERACOD) in Sénégal funded by the German Ministry for Economic Cooperation and Development, which has been in existence since 2006 but went through the process of integrating a gender approach in its activities in 2009. The process, facilitated by ENDA and ENERGIA, consisted of assessing the gender situation within the project area, analysing project documents and assessing the capacity of staff vis-à-vis gender. It culminated with a gender action plan for PERACOD.

Other gender mainstreaming efforts include gender audits of the energy sector, development of gender mainstreaming methodologies, and training. Member States with gender audits include Ghana, Sénégal, Liberia, Bénin and Nigeria. Gender audits ideally lead to a gender action plan, a higher awareness by the energy staff of gender issues, and ultimately to the systematization of gender consideration in policies and programmes. In Ghana for instance, the Ghanaian Ministry of Women and Children's affairs now request all ministries to include gender budgeting in their Expenditure Proposals (per ENERGIA gender audit).

ENERGIA, UNDP, ENDA and the World Bank have developed gender-mainstreaming tools and have held training workshops on the subject. An example of the tools are UNDP's "Gender Mainstreaming Training Manual", ENERGIA "Mainstreaming Gender in Energy Projects: A Practical Handbook." For more tools, see Appendix 2.

3.2.4 Gap identification

The interviews and research reveal numerous gaps on the policy front, but not all are equally critical. Recruiting, training, financial resources and active involvement of women in all energy decision-making processes are the greatest gaps needing immediate attention. Policy language and institutional frameworks, while not perfect, are less urgent matters to address. The most effective strategy may, in fact, be to concentrate on building from the ground up rather than the top down.

The lack of explicit gender references in energy policies, and energy references in gender policies, is undoubtedly a gap, but one that is expected to close as public policy discourse becomes increasingly attuned to gender issues. Over time, as policy documents come up for revision, there will likely be mounting pressure for the inclusion of appropriate language linking gender and energy..

The institutional framework supporting gender and energy affairs in the region is perhaps not ideal, but at least it is minimally functional and shows great potential. Indeed the West African countries seem ahead of other countries in promoting gender considerations in the energy sector. There are many gender focal units, even if they lack teams. Some of the institutions such as the Ministry of Energy in Ghana, have also undertaken gender audits and developed Gender Action Plans (GAPs) even though implementation has been slow. Energy ministries also have gender counterparts, even if the communication and coordination could be enhanced. And with ECREEE's work through the ECOW-GEN programme and the close involvement of ENERGIA, there are the beginnings of a vibrant transnational support network for gender and energy

champions to draw on. In short, there are promising beginnings in place with regards to the institutional framework.

Of critical urgency is that the gender focal persons must become gender focal units with representation at the highest decision-making levels. They also need expertise and financial resources to increase their clout and visibility within their agencies and effectively impart their gender sensitive methods of problem solving to their many colleagues. Well-written policies and well-designed institutional frameworks count for very little without the operational muscle to put ideas into practice. This muscle boils down to technical training, intrapreneurial[17] savoir-faire, and money. Sufficiently empowered, gender focal units can be real forces for change.

Lastly, female participation in energy ministries is a very important deficit. Studies show that just by including women, regardless of their qualifications, in decision-making bodies that agenda-setting and project selection will change to more accurately reflect the whole population. Many are worried (justifiably or not) about potential backlash over quota systems and insist that energy technical positions require qualifications that enough women simply don't have. The priority that needs addressing, then, is in the educational feeder system that leads to ministerial employment. The urgency is immediate because it will take years of promoting internships, mentee programmes, and female secondary and tertiary education to begin filling out the staff rolls at the ministries. The launch of ECREEE's #Standtall campaign seeks to bring women and men together to raise awareness on gender and energy issues and advocate for young women to pursue energy careers, but much more is needed.[18]

17 *An **intrapreneur** is someone working within an organization that applies the principles of entrepreneurship – accomplishing more than would be imaginable given the resources currently controlled – to innovate, advance, and grow.*

18 *http://ecowgen.ecreee.org/index.php/campaigns/*


4.

4. Workforce Participation and Entrepreneurship

Female labour force participation and entrepreneurship rates in the ECOWAS region are relatively high, but vary across the region. Similar to many countries across the world, women seem to be held back in terms of having equal opportunity and equal wages. This becomes obvious with women's generally low participation in the formal as opposed their high participation rates in the large informal sector in the West Africa region. For ECOWAS, it is instructive to examine the roles of women in business and as business owners, and the implications of the barriers to workforce participation. The contributions of women to scaling up the supply of clean energy has been recognized as vital at many points in the value chain (see Hart, 2013).

Similar to many countries across the world, women seem to be held back in terms of having equal opportunity and equal wages.

Entrepreneurship: In the longitudinal study of the Global Entrepreneurship Monitor (GEM), Sub-Saharan Africa had the highest levels of female entrepreneurial activity of any region, with 27% of women engaged in entrepreneurial activities. Two ECOWAS countries profiled in the study, Ghana and Nigeria, exhibited higher levels of female than male entrepreneurship, which is unusual (Kelley, 2012).

The following are stylized facts taken from the Global Entrepreneurship Monitor report:

TABLE 18 | SUMMARY OF KEY POINTS FROM THE GLOBAL ENTREPRENEURSHIP MONITOR19

Good News	Bad News
Compared with other regions, African female entrepreneurs perceive the highest level of market opportunities. In every region, women's self-assessment of their capabilities scored lower than men's, but the region with the highest self-reported level of female capabilities was SSA (76%). Women are universally less likely to personally know an entrepreneur than men are, but 59% do in SSA, which is relatively higher than any other region.	Female-run businesses in SSA are more likely to be discontinued than those run by men. The average "life-expectancy" of a female-managed business in is shorter; fewer reach maturity. Globally, half of female businesses operate in the consumer sector, rising to 80% in SSA, while men's businesses are more diversified. More women in SSA than any other region (37%) reported starting their business out of necessity (as opposed to opportunity).[19]

For policy-makers who want to foster female-led energy businesses, the major strengths of female entrepreneurship in Sub-Saharan Africa, and presumably the ECOWAS sub-region, are overall it is widespread, vibrant, and optimistic. The challenges are mainly due to the unfavourable policy environment with embedded discriminatory and gender biases.

The areas representing significant opportunities for future action include:

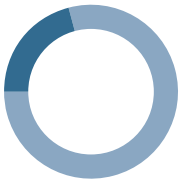
1. expanding the number of sectors women operate in;
2. better supporting businesses as they orient themselves towards a long term, sustainable growth path, and
3. addressing gender specific bottlenecks in entrepreneurial activities, especially in the energy sector.

19 There is evidence of a "U-shaped" curve for country-level income and female entrepreneurship (Verheul, 2004), just as it is for overall entrepreneurship. This relationship appears borne out across countries and within a single country over time.

Many stereotypes exist about female entrepreneurship in the ECOWAS region. One predominantly negative stereotype depicts women as poor in assets, poor in education, working informally on the margins, with businesses that have low productivity and remain small for lack of growth opportunities. Other stereotypes are positive, of the empowered woman capable of conquering every challenge and improving the welfare and progress of her family and community. However, the assumptions are problematic and do not accurately capture the diversity of backgrounds and experiences of female entrepreneurs that were examined as part of the Situation Analysis. It is necessary to be cautious not to make assumptions about the prevalence of each profile (or others) without solid data to back it up.

FULL-TIME WORKERS

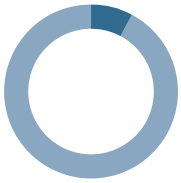
21 % women



79 % men

SENIOR MANAGEMENT POSITIONS

8 % occupied by women



92 % occupied by men

Workforce: Sub-Saharan Africa, in addition to having the highest levels of female entrepreneurial activity, also has the highest rates of female labour force participation (FLFP), hovering around 63% (ILO/WB indicators, 2013). The data for individual ECOWAS Member States are in the table below. While women make up 21% of full-time workers, only 8% of senior management positions are occupied by women, well short of the 30% generally considered necessary for effective gender balance. In the clean energy sector, five of 77 surveyed small and medium companies in Sub-Saharan Africa had a combined total of six women in the top management tier, but all of the women were either French or American immigrants (Saint-Sernin, 2015).

TABLE 19 | LABOUR FORCE PARTICIPATION FOR INDIVIDUALS 15 AND OVER, MODELLED ESTIMATE

Country	Female Labour Force Participation	Male Labour Force Participation
Bénin	68%	78%
Burkina Faso	77%	90%
Cabo Verde	52%	84%
Côte d'Ivoire	52%	81%
The Gambia	72%	83%
Ghana	67%	71%
Guinee	66%	78%
Guinea-Bissau	68%	79%
Liberia	58%	65%
Mali	51%	81%
Niger	40%	90%
Nigeria	48%	64%
Sénégal	66%	88%
Sierra Leone	66%	69%
Togo	81%	81%

Source: International Labour Organization, 2013 data

4.1 Businesses owned and operated by women

The responses from interviewees for this project mentioned farming, restaurant operation, agro-processing, petty trading, craft production, and services as businesses typically entered by women. This is broadly consistent with existing literature, for example, surveys of several hundred female entrepreneurs from Ethiopia, Tanzania and Zambia show women primarily in activities such as trading and retailing, particularly in the agro, clothing and hairdressing sectors (Richardson, 2004). Every area has its own, partly unique sectors that women tend to gravitate to; earlier in this report, the occupations of beer making, fish smoking and pigeon pea processing were mentioned as other highly gendered jobs within the ECOWAS sub-region.

Women also appear to enjoy fewer options when choosing their occupations and are concentrated in relatively fewer subsectors.

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Women also appear to enjoy fewer options when choosing their occupations and are concentrated in relatively fewer subsectors. Bardasi (2008), reporting on the World Bank's Nigeria Enterprise Surveys, found over 85% of women entrepreneurs, versus 54.7% of men entrepreneurs, who were operating in just the following four

sectors: food manufacturing, garment manufacturing, retail, and hotels/restaurants, which are all low value-added sectors. At the same time however, these sectors and the activities women are engaged in could benefit substantially from energy services which in turn could create space for value-additions.

There are indications that women-owned businesses are, on average, smaller and formalized at lower rates. Others point to possible productivity gaps between male- and female-headed businesses, but this claim has received additional scrutiny. For example, a cross sectional study of 37 countries in Sub-Saharan Africa found that the labour productivity gap between male and female enterprises was 6% but entirely attributable to the entrepreneur's level of education, the sector, and the degree of formality of the business, not the entrepreneur's gender (Hallward-Driemeier, 2013). It would seem however that gender is at play here given socio-cultural and economic variables that determine/affect women's levels of education and push them into particular sectors, especially within the informal economy.

4.1.1 Technologies

Consistent with the global literature on female entrepreneurship, it does appear that women are predominantly found working in certain energy subsectors, particularly those that are less capital intensive at start-up, less profitable, utilize less advanced technology, and employ business models that are "closer" to the final customer. This is mainly due to the fact that their needs, concerns and contributions are not usually considered in energy accounting systems (Clancy, 2010; ENERGIA, 2012)).

Consistent with the global literature on female entrepreneurship, it does appear that women are predominantly found working in certain energy subsectors, particularly those that are less capital intensive at start-up, less profitable, utilize less advanced technology, and employ business models that are "closer" to the final customer.

The Global Village Energy Partnership's (GVEP) Developing Energy Enterprise Project (DEEP) seems to confirm this bias. Started in 2008 in East Africa, DEEP worked with over 800 micro enterprises, mostly informal, 42% of which were headed by a female (the project design called for gender parity). In this project, female entrepreneurs showed a strong preference for the cook stove and briquette sectors while men disproportionately favoured solar PV, battery charging and biogas.

TABLE 20 | DEEP MALE AND FEMALE ENTREPRENEURS BY SECTOR

Technology	Female	Male	Mixed Groups
Cook stoves	196 (53%)	181 (36%)	10 (50%)
Solar	47 (13%)	183 (37%)	4 (20%)
Battery charging	3 (1%)	27 (5%)	0
Briquettes	104 (28%)	59 (12%)	6 (30%)
Biogas	1 (<1%)	28 (6%)	0
Others	18 (5%)	18 (4%)	0
Total	**369 (100%)**	**496 (100%)**	**20 (100%)**

Source: Kariuki, 2011

This may be attributable, according to GVEP, to women's restricted mobility preventing them from sourcing information and products and also selling in distant markets, and also their relatively poorer access to capital causing them to prefer labour-intensive businesses (Kariuki, 2011). Even within single sub sectors, there are gender discrepancies. Anecdotally, women are more likely to be engaged in making the ceramic inserts for stoves, consistent with pottery being an acceptable "female vocation," instead of manufacturing the metal cladding; they are more likely than their male counterparts to manually fabricate briquettes instead of using more automated equipment; they are more likely to be involved in the distribution and retail sales of liquid petroleum fuels as opposed to exploration, production and wholesaling.

When women's energy sector activities cluster at the lower end of the value chain in spaces where substantial and core financial investments are not required, it might have two consequences. It could overly focus donor resources on where women are (in small, capital non-intensive ventures) as opposed

where they should be. It may also obscure women with great potential from the view of many SME and commercial lenders and private equity investors.

4.1.2 Business models

Evidence of female energy businesses is unfortunately often anecdotal, but exists at all scales of operation, from the ranks of the doorstep micro consigners of Solar Sister to Jassandra Nyker, the female CEO of BioTherm Energy, a leading South African developer of large scale clean energy projects. It must be said that women are largely underrepresented in the energy sector, despite recent press lauding their entry into the Nigerian oil and gas sector.[20]

Of the 1,441 applications received from five countries submitted to the African Rural/Renewable Energy Enterprise Development (AREED) programme only one was from a woman (Haselip, 2013).

Of a sample of 77 African small and medium clean energy enterprises (SMEs) in five countries profiled recently at the behest of an investor, only six had female CEOs. Four of those six were immigrants from outside the continent and one other was the director of a microfinance institution involved in energy lending (Saint-Sernin, 2015). The remaining female CEO, Yvonne Faye of EnergieR, was interviewed for this project (see box 12). Even more sobering was the report that of the 1,441 applications received from five countries submitted to the African Rural/Renewable Energy Enterprise Development (AREED) programme, a multi country programme with operations in Ghana, Mali and Sénégal that provided business development assistance and concessional financing from 2000-2007, only one was from a woman (Haselip, 2013), Clara Koranteng who founded M38 Ventures (see box 13) and could not be reached for comment.

BOX 12 | YVONNE FAYE OF ENERGIER

Story of a woman solar entrepreneur in Sénégal

Yvonne Faye, with an educational background in electrical engineering, electronics and computer science, is the owner and manager of EnergieR, a PV system supplier and service provider in Sénégal. From working as an IT manager at an NGO, she was introduced to PV when her employer was selected to install a rural system for a development agency. Her reputation as a PV expert she eventually parlayed into a successful business, at first buying systems on demand and then eventually financing an inventory with help from bank loans. The first two times she claimed the loans were for other purposes knowing the bank had no experience with PV businesses and would likely deny her requests. Using her car as collateral, she could access small amounts of working capital. It took five years of working on her own before Ms. Faye formalized her business with money from friends and family investors. After drafting a business plan, she received a $41,000 loan from E+Co in 2005, and another $45,000 in 2007 after being awarded a contract from a mobile network provider to power base stations with PV.

As of 2015, her business is still operating. Though, on the whole, she doesn't feel disadvantaged because of her gender, the following illustrative points were also made during a recent interview about her experience:

- As a woman leading a modestly sized business, she had to work up until the birth of her child and then take the very young infant into the field while performing installations in rural areas; there was no maternity leave and no one there to run the business while she was away.
- After initially proposing a clean energy switching project to a telecom and subsequently submitting arguably the better technical and cost bid, she was told – off the record – the company solicited another contractor because it harboured doubts about her capacity as a woman.
- She had difficulties installing a system at a mosque because the dress code the mosque leaders demanded she wear was incompatible with the physicality of the job.

She knows several other women who were ultimately discouraged from pursuing careers in PV because their spouses had difficulty accepting that they worked constantly with other men, worked long hours, and travelled extensively, sometimes even spending the night on the road sleeping under the stars.

Source: Diam-Valla (2010) and Diam-Valla (personal communication, 2015)

20 See profiles of "Nigeria's Rising Female Oil Tycoons," http://leadership.ng/news/388734/nigerias-rising-female-oil-tycoons - accessed March 27, 2015

BOX 13 | M38 VENTURES AND CLARA KORANTENG

Story of a women owned LPG business in Ghana

Clara Koranteng noticed an opportunity to retail liquefied petroleum (LP) cooking gas to households in an upscale Accra neighbourhood because supply problems at Ghana's Tema Oil Refinery were causing long lines and frequent shortages. M38 Ventures was incorporated in 2001 when she decided to open an LP distribution station close to this neighbourhood and also offer tank delivery services. She obtained all the necessary permits and with a $59,000 loan in 2004 purchased the necessary equipment. An expansion loan of $50,000 was made in 2007. As of 2012, M38 ventures was selling .45 million kg of LP gas a year, employed four people, and had plans to open another filling station (Haselip, 2013). Some interesting, possibly gender-related points to note about Ms. Koranteng's story include:

- She was initially helped to run the business by her stepson who was very materially involved, that is, she benefitted from at least one supportive family member (E+Co Investment Recommendation, 2003)
- She continued to work at her salaried job at the Agriculture Development Bank, where she was the most senior secretary, while running M38 in her spare time (Haselip, 2013)
- She showed comparatively little appetite for aggressive expansion of her business when approached by E+Co for serial financing opportunities (Nketsia-Tabiri, 2009)

There are dual problems, potentially, in surveying female energy entrepreneurs. One is prevalence and the other is visibility. Soliciting a large enough representative sample of female energy entrepreneurs is difficult because of their scarcity at the medium- and large- scale enterprise levels. Identifying and contacting entrepreneurs at the micro and small scale is challenging because of the detailed, census-type survey required to capture activity at this level.

Thousands of micro and small scale female entrepreneurs have been launched via donor supported programmes and NGOs. The following is just a partial list with relevance to the ECOWAS sub-region:

- Solar Sister, for example, currently works with 1,200 women micro consigners retailing products such as solar lamps and stoves, and is just starting operations in Nigeria.[21]
- GVEP with ENERGIA and the SEM Fund are planning to train and finance 250 female micro energy entrepreneurs in Sénégal over three years.[22]
- The wPower initiative, launched in 2013 aimed to empower 8,000 female energy entrepreneurs in East Africa, India and Nigeria over three years[23]
- The Gyapa Stove is a project that introduces the Gyapa as an insulated and efficient cookstove to families in Ghana. The stove cooks food more quickly, requires 50-60% less fuel and is less smoky. Many of the stove retailers are women.
- Women's groups own and operate hundreds of Multifunction Platforms (MFPs) across five West African countries (Mali, Burkina Faso, Ghana, Guinée, Sénégal) with assistance from the UNDP

21 From: http://www.solarsister.org/ - accessed March 27, 2015

22 From: http://sem-fund.org/les-femmes-du-senegal-beneficieront-bientot-de-nouvelles-opportunites-dans-le-secteur-energetique/ - accessed March 27, 2015

23 From" http://www.state.gov/r/pa/prs/ps/2013/11/217737.htm - accessed March 27, 2015.

4.2 Barriers for men and women as employees and as business owners

4.2.1 Awareness, education, and technical capacity

There are social and historic reasons for the gender disparity in the energy sector workforce. Many interviewees for this project noted that lagging female technical education was a primary cause. School enrolment gap has been closing over time but still persists, though the gap is driven much more by wealth and geographic location than it is by gender. In Nigeria, 2008 primary school attendance rates are 31% in the poorest quintile and 89% in the richest quintile, a sobering difference of 58 percentage points, while Bénin, Burkina Faso, Guinée, Liberia, Mali, and Niger all have gaps of more than 40 percentage points in primary school attendance between the poorest and richest quintiles. However, the country with the greatest overall mean male-female enrolment gap is Niger, but this is only a 13 percentage point difference (UNESCO, 2010). In general, the greatest gender education gaps within a country do occur within the poor and the rural sub-groups. This is consistent with the hypothesis that females possess a degree of excess vulnerability when part of already disadvantaged households or communities.

Gender education gap is exacerbated in science, engineering, technology and mathematics (STEM) fields. Even in countries with very advanced gender equality, women still encounter resistance to studying STEM fields in technical and vocational education and training (TVET) programmes.

But the gender education gap is exacerbated in science, engineering, technology and mathematics (STEM) fields. Even in countries with very advanced gender equality, women still encounter resistance to studying STEM fields in technical and vocational education and training (TVET) programmes where many are corralled into traditional female disciplines such as food, garment, and other sectors (UNESCO-UNEVOC, 2011). Barefoot College, having trained more than 140 women from 21 African countries, many of them older and lacking formal education (Roy, 2011), for engineering vocations in solar PV is a powerful example of what a pro-woman programme could look like.

BOX 14 | BAREFOOT COLLEGE

Women Solar Engineers

Through south-south cooperation, involving the Barefoot College in India and the Government of Sierra Leone, twelve women, mostly illiterate and semi-illiterate, received training to become solar engineers.

These women attended the training and then returned to villages in Sierra Leone to assemble 1,500 household solar units at a new branch of Barefoot College in Konta Line, where the training will continue.

The Government of Sierra Leone invested $820,000 in the project, and India provided equipment.

Source: Excerpts from The Guardian: "The women bringing solar power to Sierra Leone".

BOX 15 | SOLAR PV VOCATIONAL TRAINING PROGRAMME IN LIBERIA

Liberian educator struggles to enrol and retain women

There were no women visible in the PV vocational training workshop visited and none reported in any of the other workshops throughout the country. The trainer said he worked for weeks trying to convince women to attend in order to align the enrolment numbers with the objectives of the programme sponsors. Before completing the programme, the one woman he convinced to attend became pregnant and left. He said he had since given up recruiting women.

Source: Personal communication with a solar trainer in Liberia, 2008

Education is a key determinant, along with previous entrepreneurial experience, in influencing the kind of business women elect to enter, what sector, how formal, and at what scale. In fact, there are large differences in schooling completed between entrepreneurs in the formal and informal sectors but few gender differences within the formal sector and within the informal sector (Hallward-Driemeier, 2013). Extrapolating to the energy domain, one would expect that male and female entrepreneurs in comparable businesses have more similarities in their education backgrounds than differences. The real disadvantage is that fewer women overall have the necessary educational and work experience to be able to enter the energy sector at the same rates as men. The same finding was reported for female technical staff at the agencies represented by the ECOW-GEN Technical Advisory Group (TAG): that the female candidate selection pool was simply too small.

Sub-Saharan Africa also has the lowest percentage of female teachers at the secondary level (29%) of any region, and this number is decreasing. Having female teachers known to correlate with increasing female enrolment and completion rates, perhaps due to the influence of teacher expectations and role modelling. In Bénin and Liberia, 19% and 12% respectively of primary school teachers are female, possibly because teaching positions carry more status in West Africa and therefore male-dominated (UNESCO, 2010).

4.2.2 Financial

Conventional wisdom holds that women are excluded from formal banking services and are also more risk adverse than men, two facts that would stymie business growth. The literature surveyed for this report finds neither one of these observations to be unambiguously true. It is found that women do access finance less frequently, much less frequently, than men, but that this is explained by their lower wealth, income, and schooling at the outset.

It is found that women do access finance less frequently, much less frequently, than men, but that this is explained by their lower wealth, income, and schooling at the outset.

In GVEP's Developing Energy Enterprise Programme (DEEP) men and women borrowed at the same frequency but men borrowed on average larger amounts (USD 755 versus USD 630) in the briquette sector and larger amounts (USD 649 versus USD 534) in the cook stove sector. However, in the male dominated solar sector, women were more likely to take loans and they borrowed larger amounts (USD 800 versus USD 496) (Kairuki, 2011). The authors explained these numbers by women's briquette and cook stove businesses being less capital intensive, those women being more risk adverse, and one particularly motivated group of female solar entrepreneurs in Uganda. The number of DEEP entrepreneurs taking loans, however, is too small to draw general conclusions about behaviour and does not support women being inherently more risk averse than men.

The literature claiming women are more risk averse is widespread, even to the point of becoming common knowledge, but Nelson (2012) points out that the absolute differences in behaviour are small across studies, with men and women being more similar in their decision-making than different. She also calls attention to several other studies (for example, Booth and Nolen, 2012) showing that gender differences in risk perception/risk taking appear susceptible to manipulation by the norms and expectations of the experiment settings. This makes a biological basis for risk appetite seem implausible. Gneezy (2009) performed a lottery experiment with members of a Masai group in Kenya, which is extremely patriarchal, and found no gender differences in risk-taking attitudes.

In fact, using the World Bank's Enterprise Surveys, Aterido (2011) showed that the much documented gender gap in women's access to formal banking services in Sub-Saharan Africa disappeared once firm characteristics such as size, sector, formality and endowments at start-up (factors which are themselves gender-influenced) were controlled for. Hence we should look to these other factors and not the financial service sector, per se, to understand the disproportional use of banking services by men and women entrepreneurs.

As seen in the table below, African businesses are 40% more likely to report access to finance as the biggest obstacle compared to the global average, and it can be seen that it is constraining for both men and women alike. In fact, women are not even universally reporting being more constrained by access to

finance within the ECOWAS sample, perhaps because of business entry decision selection bias. Project interviewees also noted that finance was a barrier for female entrepreneurs, though they were not asked about the relative importance of finance for women compared to men.

TABLE 21 | PERCENTAGE OF ENTREPRENEURS REPORTING ACCESS TO FINANCE AS BIGGEST OBSTACLE

Economy	% of Entrepreneurs reporting access to finance is biggest business obstacle		
	All	**Female**	**Male**
All Countries	16.9%		
Sub-Saharan Africa	23.9%		
Bénin	25.1%	33.5%	19.6%
Burkina Faso	35.5%	37.1%	36.1%
Côte d'Ivoire	45.2%		
Cabo Verde	13.1%	20.2%	11.5%
Ghana	49.5%	46.9%	49.8%
Guinée	8.3%		
Gambia, The	11.7%		
Guinea-Bissau	20.1%		
Liberia	39.8%	n.a.	41.9%
Mali	43.9%	32.3%	45.0%
Niger	20.4%	42.5%	18.4%
Nigeria	35.2%	32.6%	37.7%
Sénégal	38.6%	47.8%	37.9%
Sierra Leone	14.8%	0.0%	8.5%
Togo	23.7%	30.2%	22.6%

Source: World Bank Enterprise Surveys

Additionally, if women's businesses were undercapitalized due to primarily to the direct effect of their gender (and not indirect, gender-influenced factors as posited), higher marginal returns would be expected on any capital inflow to these businesses. One such experiment by Fafchamps et al., (2013) was conducted in Ghana where micro scale male and female business owners were given either cash grants or in-kind grants. Neither kind of grant produced sizeable returns in the bottom half of female enterprises, but the in-kind grants did improve returns over months, and even years, to the larger, more profitable female businesses whose owners tended to have higher education and wealthier families. This in a way also supports the idea that being a woman in business is not by itself disadvantaging compared with the initial and more gender-indirect obstacles of low human capital and scant initial resources for start-up.

The available research related to women and finance suggest women's lack of access to finance is a symptom more than an root cause of gender discrimination. Increasing women's access to finance must acknowledge the underlying causes as well as offer complementary interventions to compensate for women's disadvantage starting point and help ensure the efficient use of capital.

4.2.3 Technological

Some suggest that female entrepreneurs in Africa don't make use of new technology at the same rates as their male counterparts, possibly because of their limited exposure/know-how and limited financial means of accessing it (Richardson, 2004). This is believed to be equally valid for ICT as well as production technology. ICT could theoretically play an important role in sourcing products, expanding to new markets,

networking, tapping into formal channels of finance, and raising the visibility of women in the energy sector. Production technology is self-evidently important, whether it requires a personal knowledge of electrical or mechanical engineering or just a managerial comfort and willingness to invest in new methods.

Barefoot College, based in Tilonia, India, has demonstrated, though, that technology need not be a barrier. Using methods that don't even depend on possessing a common language, it has succeeded in instructing women in eight ECOWAS countries, many of them illiterate, how to assemble, install, repair and maintain solar PV technology (Roy, 2011). So technology itself, a priori, is not a gender-relevant barrier – obviously women and men are equally capable of understanding and employing technology – though there are still other factors that differentially shape men and women's relationship to technology, notably social norms, schooling, and wealth.

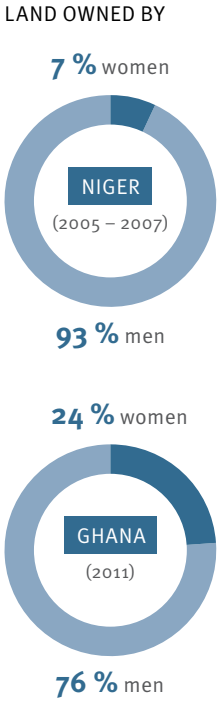
4.2.4 Policy and regulations

The constitution of every member state recognizes the principle of non-discrimination based on gender, and 12 of the 15 specifically include a provision about gender equality (see appendix 3). While conducting interviews for this project, the majority of respondents agreed that codified, legally based discrimination was becoming increasingly rare over time. However, important oversights still exist, namely in the areas of marriage and of customary law, which some states recognize and even exempt from non-discrimination statutes. And greater legal protections, which only come about through deliberate policy action (not economic growth alone), are generally associated with greater opportunities for women to become employers as opposed to self-employed (Source: Hallward-Driemeier, 2013).

There are still significant discrepancies in land ownership, which is an immensely important problem that needs solving for many reasons.

Land: There are still significant discrepancies in land ownership, which is an immensely important problem that needs solving for many reasons. However, it is inconclusive the extent to which lesser overall female ownership of land may or may not negatively impact energy business growth and how important this barrier is compared to others. At least one interviewee mentioned discriminatory land rights and ownership practices as being the definitive barrier to women's advancement (for example, only five Member States grant legal protection to women's land rights, see appendix 3), but more research is needed to connect the many dots from land rights, to ownership, to business creation, financing, and growth in the case of clean energy entrepreneurship.

Women are decidedly disadvantaged when it comes to land ownership, which could theoretically impact business success in two ways: **1)** by providing appropriate premises from which to operate and **2)** by functioning as collateral for loans. For example, in the Republic of Niger's General Census of Agriculture and Livestock over the period 2005 to 2007, it was found that women owned 7% of land versus 93% for men while in a 2011 study in Ghana found women owned 24% of land versus 76% for men and that women's plots were generally smaller/less valuable (Doss, 2013). Information about landholding, which is not the same as legal ownership but implies the ability to make decisions with regard to use, shows a similar pattern. The percentage of landholders who were female in the Gambia (2001-2002) was 8.3% while in Mali (2004-2005) it was only 3.1%; the primary outlier in this case is Cabo Verde with over 50% of landholders being women.



However, in spite of these differentials in ownership, there's not an unambiguous link between land ownership and business creation, financing and growth. In the World Bank Enterprise Surveys, only in four of the ten Member States for which we have gender-disaggregated data did women entrepreneurs rank access to land as the biggest obstacle more frequently than men did. Furthermore, compared with other barriers such as "access to finance," "corruption," and "electricity access," the overall importance of access to land is relatively minor. The notable exception to this is for women living in Mali as seen below.

TABLE 22 | PERCENTAGE OF ENTREPRENEURS REPORTING ACCESS TO LAND AS THE BIGGEST BUSINESS OBSTACLE

Economy	Percentage of entrepreneurs reporting access to land as biggest business obstacle		
	All	**Female**	**Male**
All Countries	3.6%		
Sub-Saharan Africa	5.6%		
Bénin	2.5%	0.0%	3.5%
Burkina Faso	2.7%	5.1%	2.2%
Côte d'Ivoire	3.9%		
Cabo Verde	7.2%	1.2%	8.5%
Ghana	6.2%	4.2%	6.6%
Guinée	1.9%		
Gambia, The	6.5%		
Guinea-Bissau	0.0%		
Liberia	2.5%	n.a.	0.0%
Mali	6.1%	12.0%	4.9%
Niger	2.1%	2.9%	2.0%
Nigeria	1.8%	0.2%	2.0%
Sénégal	4.9%	8.0%	4.5%
Sierra Leone	7.6%	0.0%	9.0%
Togo	1.4%	0.0%	1.6%

Source: World Bank Enterprise Surveys[24]

Legal capacity, contracts and property rights: The rights of women to acquire, keep, invest, contract and profit from various types of property strengthens their ability and incentives to go into business. The following section examines marital law and its extensions with the surprising result that women sometimes lose protections, rights and opportunities once they become married.

In four ECOWAS countries, a wife can legally be compelled to seek her husband's permission to open a bank account and in six Member States, a husband could, with legal standing, prevent his wife from working outside the home.

In four ECOWAS countries, a wife can legally be compelled to seek her husband's permission to open a bank account and in six Member States, a husband could, with legal standing, prevent his wife from working outside the home (see appendix 3). These types of statutes could theoretically in some cases have a chilling effect on a woman's decision to enter business, or could influence her choice of sector and scale if she is unable to autonomously enter into contracts or fears that earnings could be appropriated.

Property rights that create or protect assets are vital, particularly inasmuch as they influence the start-up capital available to women to open new businesses, which can have lingering effects on productivity, returns and growth prospects. In two states, husbands are legally permitted to pay debts using their wife's property and in two other states, husbands can manage community property alone (see appendix 3). Married women are usually entitled to some property in cases of divorce, but only in five states is that property divided equally. These rights imbalances can influence affect each marriage partner's leverage and negotiating power during decision-making.

Some limited evidence suggests that changing these types of statutes can have real world consequences. In Ethiopia, for instance, when certain localities reformed marriage laws, raising the legal marriage age for women, requiring joint administration of marital property, and allowing women to work outside the home without their husbands' permission, women joined the workforce in greater numbers, for more hours, and adopted higher skilled employment (Hallward-Driemeier, 2011).

24 *From: www.enterprisesurveys.org*

Business regulatory environment: Some argue that the business regulatory environment can differentially impact women and men in subtle ways. While on the surface, business registration and licensing procedures appear gender neutral and are a hassle for everyone, extra steps in multiple offices, long lines, fees etc. can be disproportionately more burdensome for women who on average have fewer financial resources, less education and more constraints on their time and mobility. Looked at another way, women's businesses are on average smaller and regulatory systems tend to disfavour small businesses compared to their larger counterparts.

Beyond the gender-neutral regulatory environment that nonetheless results in gendered impacts, women can also face blatant discrimination while trying to formalize their ventures and ensure regulatory compliance. While no comparable study was found for West Africa, women surveyed in South Asia, for example, waited on average longer than men (37% more, because of line-cutting), were more frequently targets of extortion and even faced sexual harassment by government officials; pregnant and ill women appeared to be even more vulnerable (Simavi, 2010).

Lastly, there are female-specific workplace protections, such as equal pay measures and parental leave policies that must be addressed (see appendix 3). Only the Gambia and Liberia lack explicit statute barring discrimination in the workplace and guaranteeing equal pay for equal work. Most ECOWAS countries offer around 14 weeks of paid maternity leave, the notable exception being Cabo Verde with just 45 days.

Representation and policy making: Women's underrepresentation in public office as well as in private sector leadership positions results in a noticeable absence of women's concerns from the main discourse and agenda for change (Simavi, 2010). The Beijing Platform for Action calls for a threshold of at least 30% of decision-making positions held by women, arguing that only at this level will female concerns be voiced, confident, and able to effect change. In the interviews with representatives from government ministries and energy agencies conducted for this project, senior decision makers at energy agencies by and large fell short of this threshold.

4.2.5 Social norms

There are some barriers women face that are physical in nature, notably physical limitations associated with reproduction. However, it can be argued that these limitations have an outsize impact on women's careers, specifically because of social norms and institutional practices surrounding the accommodations that will and won't be made for them. Examples of such accommodations include parental leave for fathers and mothers, childcare arrangements or allowances, and the guarantee to re-enter the workforce at the same position after periods of absence. Outside of the workplace, other social norms related to childcare, care for the elderly, and domestic work impinge disproportionately on women's time management, flexibility, and mobility, capabilities arguably needed in certain clean energy subsectors.

Finally, the reasons for the gender differential within the energy sector have been explained a number of different ways even though no scientifically rigorous study exists to our knowledge. A number of interviewees (e.g., Adiho, Agyarko) for this project mentioned certain social norms that discouraged women from performing work involving climbing. In Yvonne Faye's case, at EnergieR in Sénégal, the overalls she wore permitting her to climb on the roof to install a solar system without being "dangerous and indecent" itself caused a customer to refuse her entry to his house until she covered her pants with a cloth wrap (Diam-Valla, 2010). While she mentions plenty of other gender-based inconveniences and discrimination (see box 12), she says on balance that the major entrepreneurial barriers are the same for women and men alike: access to finance. And that most of the time, she's greeted with a sort of "joyous curiosity" on the part of her customers and she cautions that there is an internal, mental barrier present in some women – worried that the road ahead is too difficult or that society will regard them poorly – which deters them from exploring careers in solar energy.

In Yvonne Faye's case, at EnergieR in Sénégal, the overalls she wore permitting her to climb on the roof to install a solar system without being "dangerous and indecent" itself caused a customer to refuse her entry to his house until she covered her pants with a cloth wrap (Diam-Valla, 2010).

5.

5. Strategy for Next Steps

5.1 Gender mainstreaming policy drafting

Building on the vision and objectives for a Regional Policy for Gender Mainstreaming in Energy Access outlined in the terms of reference and affirmed and enriched at the inception workshop, the insights from this situation analysis report was used to inform and guide the development of the policy. Despite notable gaps in the literature (see section 5.3), there is still much data, research findings, and primary information from numerous in depth interviews upon which to build.

The policy drafting process involved linking to and incorporating previous policy work in the sub-region that are referenced in Section 3 of this report, as well as capturing best practices in national policy and legislation identified in the Member States, with the goal to craft a harmonized policy. The Policy on Gender Mainstreaming in Energy Access includes regional and national level energy needs and concerns that are both urgent and feasible to address. It also leverages existing national commitments to gender. The proposed axes of action was drawn from time-tested interventions, complementary to one another, in order to address the needs of different energy users, communities, suppliers, policy-makers, national governments and the ECOWAS region as a whole. It includes target setting and reporting mandates. The first draft of the policy was shared among a range of stakeholders as well as energy and gender experts for additional input. The validation workshop also provided another forum for additional inputs from a wider group of stakeholders from across the sub-region before the final document is prepared for endorsement by West African heads of state.

5.2 Communication modalities

The role of civil society is extremely critical in terms of information dissemination. Within the West Africa region, a lot of effort has been made with regard to information dissemination and sharing of critical policy issues. The Media Foundation for West Africa (MFWA) based in Accra, Ghana, with its focal points in the various countries in the sub-region, has an effective network and mechanisms for reaching out to different stakeholders on critical issues. It has recently been promoting a gender perspective and this could provide a solid entry point for communicating this initiative. The work could further be developed into relevant curricula for rolling out via communication institutions across the region such as the Ghana Institute of Journalism (GIJ). Even as much of the information presented in this situation analysis is nuanced and technical, a gender responsive communication strategy could be developed and implemented to build political support for the project. Such a strategy must involve clear, simple and compelling messaging. On the other hand, this messaging cannot be overly reductive or exaggerated in a way that diminishes the merits of the project and risks its credibility. There is a fine line that ECREEE must walk in being able to substantiate the concepts and assumptions, while leaving room for forward looking and experimental approaches.

Even as much of the information presented in this situation analysis is nuanced and technical, a gender responsive communication strategy could be developed and implemented to build political support for the project.

The primary target audience with which acceptance and support must be built includes the national energy ministries. It will be important to align the discourse at energy ministries with their expectation for more quantifiable and rigorous arguments rather than more anecdotal information that tends to be found in the gender and energy grey literature. The unique language and technical approach of the gender community will need to be adapted in light of the expectations and knowledge of the energy community. When communicating about this project with energy ministries, every effort should be made to translate into “their” language to help ensure uptake and buy-in. Even better is to figure out how gender mainstreaming could help energy ministries, internally, achieve some of their own goals.

5.3 Data gaps

- Collect gender-disaggregated data in all energy spheres in West Africa, especially by making current data collection by government agencies gender sensitive.
- Undertake ECOWAS specific, scientific, gender-disaggregated impact studies for grid and off-grid electrification and clean cooking adoption.
- Expand the nascent scientific understanding of energy for productive uses, including any differences by gender.
- Study more deeply the schooling and workforce entry decisions, why women choose one sector over another; many of these factors are "invisible" when undertaking surveys of energy workers or entrepreneurs because the women who didn't join aren't represented.
- Understand the systematic effectiveness of different measures designed to correct gender imbalances in schools, government, workforce, and business leadership, particularly in the ECOWAS context.

Abbreviations

AfDB	African Development Bank
AFREA	Africa Renewable Energy Access Programme
AMADER	Agence Malienne pour le Développement de l'Energie Domestique et de l'Electrification Rurale
AREF	African Renewable Energy Fund
ASER	Agence Sénégalaise d'Electrification Rurale
AWEP	African Women's Entrepreneurship Programme
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CEET	Compagnie Energie Electrique du Togo
CILSS	Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel
CSO	Civil Society Organisation
CVE	Cape Verdean Escudo
DEEP	Developing Energy Enterprises Programme
ECOWAS	Economic Community of West African States
ECOW-GEN	ECOWAS Programme on Gender Mainstreaming in Energy Access
ECREEE	ECOWAS Centre for Renewable Energy and Energy Efficiency
EE	Energy Efficiency
EEEP	ECOWAS Energy Efficiency Policy
EREP	ECOWAS Renewable Energy Policy
ERERA	ECOWAS Regional Electricity Regulatory Authority
EUR	Euro
FAO	Food and Agriculture Organization
FEBWE	Federation of Business Women and Enterpreneurs
FLFP	Female Labour Force Participation
GAP	Gender Action Plan
GCF	Green Climate Fund
GEF	Global Environment Facility
GFP	Gender Focal Point
GFU	Gender Focal Unit
GIJ	Ghana Institute of Journalism
GoL	Government of Liberia
GRB	Gender Responsive Budgeting
GSMA	Groupe Speciale Mobile Association
GVEP	Global Village Energy Partnership
HEURA	Household Energy and Universal Rural Access
HDI	Human Development Index
ICT	Information and Communication Technology
IFC	International Finance Corporation
LGP	Liquefied Petroleum Gas
MDGs	Millennium Development Goals
MFP	Multifunctional Platform
MFWA	Media Foundation for West Africa
MLME	Ministry of Land, Mines and Energy (Liberia)
MOGCSP	Ministry of Gender, Children and Social Protection (Ghana)
MOWAC	Ministry of Women's and Children's Affairs (Ghana)
MRU	Mano River Union
NCWD	National Council on Women and Development (Ghana)
NEEAP	National Energy Efficiency Action Plan
NEPAD	New Partnership for Africa's Development
NGOs	Non- governmental Organizations
NREAP	National Renewable Energy Action Plan
PREDAS	Programme Régional de Promotion des Energies Domestiques et Alternatives au Sahel
PROGEDE	Projet de Gestion Durable et Participative de l'Energie
ProSPER	Promoting a Sustainable Market for Solar PV Systems in the ECOWAS Region
PV	Photovoltaic
RE	Renewable Energy
RREA	Rural Renewable Energy Agency (Liberia)
SE4ALL	Sustainable Energy for All
SEEA-WA	Support for Energy Efficiency for Access in West Africa
SEFA	Sustainable Energy Fund for Africa
SDG	Sustainable Development Goal
STEM	Science, Technology, Engineering, and Mathematics
TAG	Technical Advisory Group (ECOW-GEN)
UEMOA	Union économique et monétaire ouest-africaine
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
USD	United States Dollar
WAGPA	West African Gas Pipeline Authority
WAPP	West African Power Pool
WB	World Bank
WEDO	Women's Environment and Development Organization

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Appendix 1
Questionnaire used for interviews

Assessment of existing gender expertise, competence and identify required capacity building/development with the implementing institutions and national ministries

I. On a scale of 1 to 5 (1 being poor, 5 being very good) how would you rate gender equity and equality in the countries where you operate:

- With regards to decision-making at the government level
  - With regards to employment
  - With regards to education
  - What institutions/ministries are responsible for implementing gender policies?
- What are the notable measures (programmes and projects) they have implemented? Have these been successful? What have been the success or failure factors?
- Who are the gender experts in the governments that you work with?
- Do they have formal training in gender?
- How regularly are trainings organized for them?
- Do they provide training to other people within their institutions or in other institutions?
- Is there a gender focal point in the ministry of energy or in one of its agencies (for instance in the rural electrification agency, the household energy agency, the energy directorate, etc.)? if so, please describe his/her role.
- Is there an energy focal point in the ministry in charge of gender? If so, please describe his/her role
- Is the focal point provided with a team (gender focal unit)? If so what is the professional background of the staff in the unit? What is the professional background of the focal point?
- What resources are made available to the unit and/or the focal point (financial resources, human resources, work tools, etc.)
- Are these resources sufficient? If not, what additional resources are needed?
- Who does the focal point report to?
- What is focal point's (or unit's) involvement in policy drafting and programme/project implementation?
- If there is no gender focal point in the ministry of energy, does the ministry of energy consult with the ministry in charge of gender (or other gender institutions and experts) during policy drafting and project/programme implementation?
- Are gender considerations included in energy programmes and projects during elaboration and during implementation? If so, how?
- Please describe the internal implementation process of these programme and projects within the energy ministries. Do you have women and men in your planning committee (designing the project, etc.)?
- On a scale of 1 to 5 (1 being poor, 5 being very good) how would you rate the competence for implementing gender and energy policies/strategies/programmes and projects in the countries where you operate? Please explain your choice.
- In your opinion, what competence is lacking for implementing this gender and energy policy in the country where you operate?

II. Assessment of ongoing gender mainstreaming efforts and their results within ECOWAS and its Member States, as well as key lessons learnt from past efforts

- Do you know of other gender mainstreaming efforts (energy related or not) in the countries where you operate?
- Who is initiating and implementing these efforts?
- Have they been successful? If so, in what way? If not why?
- If the efforts have not been successful, what do you think should have been done differently?

III. Identify barriers that female energy entrepreneurs face and needs that they have to become fully competitive in their work

- In your opinion, what are the main sectors (at least 3) women entrepreneurs are involved in? What are the reasons for that?
- Do you know any women entrepreneur involved in energy businesses?
- Do they face any particular barriers in the energy sector as opposed to other sectors?
- What are those barriers?
- What can be done to alleviate these barriers?

IV. Identify barriers for equal participation of men and women in the energy sector as employees

- How significant is the difference between the number of male employees and the number of female employees in your organization?
- What is the percentage of women and men in technical positions and administrative positions?
- What do you think could be the reasons for this – i.e. more or less female staff in admin or technical roles?
- For technical employees, are there targeted efforts to increase the number of female employees? Do you think this is necessary, and why?
- If you think targeted measures are necessary, what could be done to increase the number of female employed as technical staff?
- If targeted measures are being implemented, is this sufficient enough and what additional measures should be put in place?
- Are women in your organization (or other energy-related organizations) given equal opportunity to participate in decision-making processes? If so, how?
- Do you feel that women take advantage of these opportunities? Explain.
- Are there any internal practices that deter women from participating openly to decision-making processes?
- Are there roles/positions that are not accessible to women in your organization (or other energy-related organizations)? If so, what are the main reasons this?
- If so, what are the factors that could make the roles /positions accessible to women?

V. Identify gaps in national policies, budgets, and practice in achieving equal access to modern energy services and technologies by men and women

- Is there certain legislation or practices that encourage (directly or indirectly) unequal access to resources (e.g. land, access to finance and technology etc.) for men and women, explain?
- Is gender equality considered in the national energy policies of the countries where you operate, what are they and how are they implemented?
- In budgeting, are there funds dedicated to identifying and addressing gender gaps in the energy sectors – e.g. capacity building, awareness raising, developing gender-responsive policies (or policy reform for gender equality) or gender-responsive investment promotion and business development?
- If yes, do you think the funds allocated are sufficient to achieve gender equality?
- Is there a team (or expert) overseeing (evaluating and reporting on) the mainstreaming of gender perspectives in energy programmes and projects? If yes, is this coordinated with the Ministries of Gender?

VI. Identify existing gaps within countries in the region of equal access by men and women to key resources, including finances, land, and technology

- In your opinion, are there other resources (in addition to land, finance, technology) that if women had access to, would increase their access to energy?
- Are there practices (driven by social norms, perceptions, cultures or traditions) within the countries where you operate that prevent women from having access to these resources?
- Do you believe that these practices can be changed? If so, how?

VII. General questions

- In your opinion, what are the main barriers to gender equality in the energy sector?
- What are 3 most important interventions that will allow equal participation of men and women in the energy sector?
- Do you have other recommendations (people to contact, publications to read, etc.)?

Appendix 2:
Resources for gender mainstreaming in energy programmes and projects

The following compilation of key resources for mainstreaming gender in energy access can provide energy decision makers and managers, particularly at the national ministerial level, with a foundational set of knowledge resources in order to understand the issues revolving around the nexus of gender and energy and the accepted modalities for mainstreaming gender concerns into energy policy making, planning, programmes and evaluations. This set of resources is not exhaustive by design, but rather intended as a starting point for individuals and departments seeking to operationalize the ECOWAS Policy for Gender Mainstreaming in Energy Access. These documents offer different approaches that may not be applicable in every setting. Some tools are not specific to the energy sector yet nevertheless present important concepts and guides for practice that are readily transferable.

There are four sections based on specific needs:

Background

Selections include pieces providing a review of the development of a the gender and energy discourse, gender mainstreaming more generally, scientific evidence supporting linkages between gender and energy, and documentation of the participation of women in the cooking subsector.

Practical Methodologies

Selections include several how-to guides on gender mainstreaming for programmes in the energy sector, each with a slightly different approach and focus.

Training Packages

Selections include a collection of modules on gender mainstreaming in general and another set of modules on gender responsive budgeting. Neither training package is energy specific but each could readily be adapted for use in the energy sector.

Single Use Tools

A compilation of templates and fit-for-purpose forms useful in conducting gender assessments in the energy sector, evaluations, and hiring.

Background

TITLE DOES ENERGY ACCESS HELP WOMEN? BEYOND ANECDOTES: A REVIEW OF THE EVIDENCE

Authors: Haves | **Published:** Ashden | **Date:** 2012

Overview: A short, easily digestible overview of the state of the current scientific evidence concerning gender and energy, including where major data gaps lie; well researched and referenced with footnotes

Purpose: To quickly summarize which claims in the gender and energy space are scientifically supported with rigorous evaluations and experiments and which are not

Audience: Policy makers, practitioners in related fields

Interesting Features: For a more in-depth, technical review, explanation and comparison of scientific articles, see the excellent Kohlin et al, "Energy, Gender and Development: What are the Linkages? Where is the Evidence?" World Bank Social Development Working Paper No. 125, 2011.

TITLE GUIDANCE NOTE: GENDER MAINSTREAMING IN DEVELOPMENT PROGRAMMING

Authors: Cohen, Moser, Taylor & Cortes | **Published:** UN Women | **Date:** 2014

Overview: A conceptually clear document to: detail changes in global norms and aid modalities from a legal and historical perspective; offer general principles relevant at the national level; describe appropriate technical programming aspects; examine systemic changes required to support gender mainstreaming

Purpose: To technically illustrate the types and sequences of decision-making in national programmes, across sectors, according to contemporary global best practice

Audience: The UN and its Member States, their policy makers, senior managers, programme staff, technical specialists and gender focal points; also relevant for civil society and development agencies

Interesting Features:

- Concise overview of intergovernmental decisions and current consensus
- National level perspective (ie beyond just the energy ministries and agencies), including making statistics bureaus gender sensitive
- Helpful list of "entry points" for policy dialogue
- Impressive list of gender mainstreaming tools (Annex 2)

TITLE SUSTAINABLE ENERGY FOR ALL: THE GENDER DIMENSIONS

Authors: UNIDO & UN Women | **Published:** SE4ALL | **Date:** 2013

Overview: A high level presentation of the international energy situation, linkages between energy, economic development, female empowerment and sustainable practices

Purpose: To assist UN agency staff in developing policies and programmes with their national partners

Audience: Regional and country offices of UNIDO and UN Women

Interesting Features: Provides a strong set of talking points useful in orienting policy dialogues

TITLE SCALING ADOPTION OF CLEAN COOKING SOLUTIONS THROUGH WOMEN'S EMPOWERMENT: A RESOURCE GUIDE

Authors: Hart & Smith | **Published:** GACC | **Date:** 2013

Overview: A value chain approach to examining the role and potential of women in the production and sale of cook stoves, replete with detailed and varied examples

Purpose: To showcase the role of women in cooking solutions around the world, elucidate why women are important, and provide guidance on how to include more women in every segment of the value chain

Audience: Practitioners, donors, policy makers and academics

Interesting Features: Extremely rich case studies with above average quantitative metrics and impact indicators reported

TITLE A GUIDE TO GENDER ANALYSIS FRAMEWORKS

Authors: March, Smyth, Mukhopadhyay | **Published:** Oxfam | **Date:** 1999

Overview: An introduction to the various theoretical frameworks for analysing gender (mostly within projects) presented with a number of examples and commentaries

Purpose: To share, in a way accessible to generalists, the theoretical underpinnings of the most common gender frameworks, demonstrate how they've been applied, and discuss their limitations

Audience: Development practitioners, trainers, researchers and students

Interesting Features: Relevant guidance on criteria for selecting one framework over another depending on context

Practical Methodologies

TITLE MAINSTREAMING GENDER IN ENERGY PROJECTS: A PRACTICAL HANDBOOK

Authors: Cecelski & Dutta | **Published:** ENERGIA/ Practical Action | **Date:** 2011

Overview: A foolproof and straightforward (if somewhat long) methodology for making any energy project gender sensitive, drawn from deep and practical experience around the globe.

Purpose: Provide practical guidance on incorporating gender into all project aspects from origination to final evaluation; the concrete goal is the development of a project gender action plan

Audience: Energy project managers, staff, and gender experts

Interesting Features: Includes useful literature and case study references, tools, questionnaires, checklists, guidelines and examples for each of the nine clearly defined stages of mainstreaming in the "building block" approach

TITLE GENDER TOOL KIT: ENERGY, GOING BEYOND THE METER

Authors: Mohideen & Tanaka | **Published:** ADB | **Date:** 2012

Overview: Though specific to the ADB project cycle, a well-written guide treating issues around gender analysis and mainstreaming, including in many instances from a utility's perspective

Purpose: To provide a roadmap for conceptualising and designing gender responsive programmes

Audience: Staff and consultants of the ADB, also relevant for many other programme designers

Interesting Features: Broken out by subsectors, transmission and distribution, rural electrification, energy efficiency, and renewable energy; includes a discussion of performing gender risk analysis; includes terms of reference for gender analysts and project tasks

TITLE GUIDE ON MAINSTREAMING ENERGY AND CLIMATE CHANGE PROJECTS

Authors: Cadondon, Gutierrez-Amo & Steensig | **Published:** UNIDO | **Date:** 2014

Overview: Much of this guide can be applicable to projects outside the UNIDO context and its use of lists of questions is helpful

Purpose: To educate and demystify gender mainstreaming and offer practical guidance on addressing inequalities specific to energy and climate change interventions

Audience: Primarily UNIDO Energy and Climate Change Branch (ECC) staff, also national counterparts and the private sector

Interesting Features: Helpful annexes include the following:

- TOR for gender expert for project design
- TOR for gender expert for project implementation
- Gender analysis at the country/regional/sectoral level
- Guide for integrating gender into evaluations of UNIDO projects and programmes

TITLE INTEGRATING GENDER CONSIDERATIONS INTO ENERGY OPERATIONS

Authors: Hughes, Janik, & Bossman | **Published:** ESMAP | **Date:** 2013

Overview: A very short guide to including gender in energy project design, action planning, implementation and monitoring, and evaluation

Purpose: To provide support to staff integrating gender into the standard World Bank project cycle

Audience: Primarily implementers of WB financed projects, also relevant to other energy project managers

Interesting Features: Annex 1 provides a concise and highly relevant list of issues related to assessment, implementation and monitoring, broken out by energy sector

TITLE GENDER AND ENERGY FOR SUSTAINABLE DEVELOPMENT: A TOOLKIT AND RESOURCE GUIDE

Authors: Karlsson & Clancy | **Published:** UNDP/ENERGIA | **Date:** 2004

Overview: An oldie but a goodie; while mostly subsumed by more recent publications there is a trove of older, sometimes overlooked examples and case studies which remain informative today

Purpose: Establish the linkages between gender and energy and help planners integrate them in development programmes

Audience: Bi-/Multilaterals, UNDP staff and partners, civil society, development specialists

Interesting Features: Case studies from the 1990s and early 2000s.

Training Packages

TITLE GENDER MAINSTREAMING: A KEY DRIVER OF DEVELOPMENT IN ENVIRONMENT AND ENERGY – TRAINING MANUAL

Authors: Havet, Braun & Goght | **Published:** UNDP | **Date:** 2007

Overview: A comprehensive and interactive training programme useful for awareness raising and capacity building of staff either within or across organizations; rich case studies and careful analysis with many open-ended questions make this a thought-provoking read.

Purpose: Build understanding of the gender dimensions in ensuring environmental and energy sustainability, with near equal weighting given to why and how

Audience: Primarily UNDP staff and partners, but also relevant for other development practitioners

Interesting Features: Accompanied by interactive training aids and materials (available on CD and online) such as facilitator instructions, handouts, and detailed descriptions of assignments

TITLE MANUAL FOR TRAINING ON GENDER RESPONSIVE BUDGETING

Authors: Schneider | **Published:** GTZ (now GIZ) | **Date:** 2006

Overview: A detailed training programme with facilitator notes and handouts for gender budgeting; modules offer flexibility to customize to different length training sessions and different audiences

Purpose: To increase the pool of trainers and practitioners familiar with the tools of gender responsive budgeting

Audience: For use by professional gender trainers with staff from Ministry of Finance, line ministries, parliamentarians, statisticians, civil society organizations

Interesting Features: Highly interactive training activities

TITLE EMPOWERED ENTREPRENEUR TRAINING HANDBOOK

Authors: Smith & Shankar | **Published:** GACC | **Date:** 2015

Overview: A six-day training programme to impart business skills, leadership training

Purpose: To assist intermediary organizations to empower local women entrepreneurs and speed the uptake of clean stoves and fuels

Audience: Organizations working with women entrepreneurs in the improved cooking value chain, also applicable to other household energy subsectors

Interesting Features: Train-the-trainer section encourages the trainer to customize their training using human-centered design

Single Use Tools

TITLE ONLINE RESOURCES FOR INTEGRATING GENDER INTO ENERGY OPERATIONS

Authors: Adapted from Skutsch, Clancy & Hanke; ESMAP/AFREA | **Published:** ESMAP, available at https://www.esmap.org/node/2758 | **Date:** N.D.

Overview: A series of short (1-10 page) tools, handy and unbundled for specific applications; useful (if high level) reference for quickly designing assessments, creating report outlines, developing TORs, etc.

Purpose: Gender assessment functions

Audience: Energy project managers and staff, researchers

Interesting Features: Includes the following specific tools –

- Assessing access and control over resources
- Energy policy analysis – quick scan
- Focus groups and other participatory tools
- Gender mainstreaming organizations
- Organizational analysis
- Gender responsive rapid social assessment
- Identifying potential impact of intervention by gender
- Module for disaggregated energy base line survey[25]
- Sample questionnaire for survey for an organizational gender assessment
- Semi-structured interview guide for organizational assessment
- Terms of reference templates for:
  - gender focal point
  - national gender expert and research assistant for energy projects
  - gender analysis of household energy data
  - gender survey and analysis of rural electrification
  - gender needs assessment for energy agency/ministry
  - gender action plan development for energy agency/ministry
  - gender awareness and capacity building for energy projects/agency

TITLE GENDER RATING OF OPERATIONS: METHODOLOGY AND CHECKLIST

Authors: PRMGE/Gender and Development Board | **Published:** World Bank | **Date:** 2012

Overview: A one-page, extremely simple checklist to rate a project's gender inclusivity on a scale of 1-3

Purpose: Provide a quick rating system for project evaluations

Audience: World Bank staff and evaluators

Interesting Features: Brevity allows for easy rating of large numbers of projects

25 This module has been put into practice in the case of MLME/LISGIS in Liberia (Clancy, 2012), which provides an exellent example of its applicability in, and adaptability to, the West African setting.

Appendix 3: **Data tables**

TABLE 1 | INFRASTRUCTURE EFFECTS ON FIRMS BY GENDER OF MANAGER

Economy	Subgroup Level	Number of electrical outages in a typical month	If there were outages, average duration of a typical electrical outage (hours)
All Countries		6.3	4.6
Sub-Saharan Africa		8.2	6.2
Bénin	All firms	4.9	3.0
Bénin	Top manager is female	n.a.	4.5
Bénin	Top manager is male	3.8	2.8
Burkina Faso	All firms	9.8	3.3
Burkina Faso	Top manager is female	10.7	2.9
Burkina Faso	Top manager is male	9.6	3.4
Côte d'Ivoire	All firms	2.0	4.5
Cabo Verde	All firms	3.3	9.2
Cabo Verde	Top manager is female	5.1	6.5
Cabo Verde	Top manager is male	3.0	9.5
Ghana	All firms	8.4	7.8
Ghana	Top manager is female	7.1	8.6
Ghana	Top manager is male	8.6	7.6
Guinée	All firms	31.5	6.8
Gambia, The	All firms	21.0	6.9
Guinea-Bissau	All firms	5.2	17.9
Liberia	All firms	1.7	4.7
Liberia	Top manager is female	2.2	n.a.
Liberia	Top manager is male	0.9	2.3
Mali	All firms	2.7	5.8
Mali	Top manager is female	2.5	1.9
Mali	Top manager is male	3.0	7.3
Niger	All firms	18.5	1.6
Niger	Top manager is female	15.8	1.3
Niger	Top manager is male	18.9	1.6
Nigeria	All firms	36.4	9.8
Nigeria	Top manager is female	54.6	12.0
Nigeria	Top manager is male	35.7	9.2
Sénégal	All firms	6.0	1.7
Sénégal	Top manager is female	3.5	1.3
Sénégal	Top manager is male	6.5	1.7
Sierra Leone	All firms	13.7	10.2
Sierra Leone	Top manager is female	n.a.	n.a.
Sierra Leone	Top manager is male	14.1	9.2
Togo	All firms	7.3	5.7
Togo	Top manager is female	3.7	4.6
Togo	Top manager is male	7.7	5.9

Source: World Bank Enterprise Surveys, Various dates

If there were outages, average losses due to electrical outages (% of annual sales)	Percent of firms owning or sharing a generator	If a generator is used, average proportion of electricity from a generator (%)	Days to obtain an electrical connection (upon application)	Percent of firms identifying electricity as a major constraint
4.8	34.4	20.1	30.7	34.1
7.5	47.6	26.3	29.3	44.0
6.2	42.3	26.1	86.6	56.4
13.7	66.7	n.a.	n.a.	58.0
3.3	40.2	25.6	95.3	54.4
5.8	28.3	10.4	23.1	53.9
4.5	38.4	n.a.	...	49.0
5.9	24.7	10.2	23.2	54.4
5.0	6.5	17.0	20.9	39.8
5.5	48.8	24.4	30.5	53.1
2.9	41.1	n.a.	n.a.	51.2
6.0	50.0	22.8	48.2	53.3
15.8	52.1	21.5	44.7	61.2
15.1	49.2	21.7	n.a.	63.6
15.9	52.6	21.5	43.4	60.8
13.9	59.9	59.2	16.1	83.6
11.8	63.9	32.3	63.9	78.1
5.3	68.4	78.3	20.5	74.1
2.9	66.5	91.1	–	59.1
n.a.	73.7	100.0	–	68.5
3.3	63.5	99.6	n.a.	48.4
4.1	20.1	22.3	32.9	33.5
2.7	12.9	10.6	n.a.	19.1
4.5	23.3	24.2	30.7	36.5
1.9	34.5	20.1	37.1	63.2
1.5	28.3	n.a.	n.a.	100.0
1.9	36.2	20.7	29.7	58.4
16.0	71.7	61.8	12.6	52.9
14.5	72.9	59.6	12.8	68.6
16.6	73.5	62.2	13.7	51.3
2.8	64.2	9.0	24.8	48.2
2.0	46.2	10.6	n.a.	55.1
2.9	66.5	8.8	25.5	47.0
6.6	81.8	44.8	14.8	53.4
n.a.	75.3	n.a.	n.a.	42.8
5.7	83.5	57.4	n.a.	66.5
10.5	63.6	17.3	53.9	50.9
10.5	n.a.	n.a.	n.a.	47.8
10.4	62.7	16.0	46.6	51.4

TABLE 2 | CONSTITUTIONAL RIGHTS

Country	Recognizes non-discrimination based on gender as a guiding principle	Includes specific provision for gender equality	Guarantees private property ownership	Explicitly provides for gender equality in property ownership	Constitution recognizes customary law and prohibits discrimination with a clear test (such as a bill of rights)	Constitution recognizes customary law and explicitly exempts it from nondiscrimination provisions
Bénin	Yes	Yes	Yes	No	No	No
Burkina Faso	Yes	Yes	Yes	No	No	No
Cabo Verde	Yes	No	Yes	No	No	No
Côte d'Ivoire	Yes	Yes	Yes	No	No	No
Gambia, The	Yes	Yes	No	No	No	Yes
Ghana	Yes	No	Yes	No	No	Yes
Guinée	Yes	Yes	Yes	No	No	No
Guinea-Bissau	Yes	Yes	No	Yes	No	No
Liberia	Yes	No	Yes	Yes	Yes	No
Mali	Yes	Yes	Yes	No	No	No
Niger	Yes	Yes	No	No	Yes	No
Nigeria	Yes	Yes	Yes	No	Yes	No
Sénégal	Yes	Yes	Yes	Yes	No	No
Sierra Leone	Yes	Yes	Yes	No	No	Yes
Togo	Yes	Yes	Yes	No	Yes	No

Source: Hallward-Driemeier[b], 2013

TABLE 3 | LAND RIGHTS

Country	Women's land rights are granted statutory protection under land laws	Statutory recognition is granted to customary law governing ownership or distribution of land	Customary land is exempt from succession	Women are entitled to co-ownership through marriage
Bénin	Yes	Yes	No	No
Burkina Faso	Yes	No	No	No
Cabo Verde	—	No	No	No
Côte d'Ivoire	Yes	Yes	No	No
Gambia, The	No	Yes	No	No
Ghana	Yes	Yes	Yes	No
Guinée	No	No	No	No
Guinea-Bissau	No	Yes	—	No
Liberia	No	Yes	No	No
Mali	No	Yes	No	No
Niger	Yes	Yes	No	No
Nigeria	No	Yes	Yes	No
Sénégal	No	No	No	No
Sierra Leone	No	Yes	Yes	No
Togo	No	No	Yes	No

Source: Hallward-Driemeier[b], 2013

TABLE 4 | LEGAL CAPACITY

Country	Husband is formally recognized as head of household	Husband is given right to choose location of marital domicile	Wife requires husband's permission to open bank account	Husband can deny wife permission to pursue trade or profession or to work outside the home
Bénin	No	Yes	No	No
Burkina Faso	No	Yes	No	No
Cabo Verde	No	No	Yes	No
Côte d'Ivoire	Yes	Yes	No	Yes
Gambia, The	No	No	No	No
Ghana	No	No	No	No
Guinée	Yes	Yes	No	Yes
Guinea-Bissau	Yes	Yes	Yes	Yes
Liberia	No	No	No	No
Mali	Yes	Yes	Yes	Yes
Niger	Yes	Yes	No	Yes
Nigeria	No	No	No	No
Sénégal	Yes	Yes	No	No
Sierra Leone	No	No	No	No
Togo	Yes	Yes	Yes	Yes

Source: Hallward-Driemeier[b], 2013

TABLE 5 | MARITAL PROPERTY REGIMES

Country	Default marital property regime	"Community of property" is allowed	Polygamy is formally allowed	Husband is recognized as head of household and allowed to administer or manage community of property alone	Husband must gain wife's consent in managing marital property	Husband can pay community debts from personal property of wife	Husband can use community property to pay own personal debts
Bénin	Separate	Yes	No	No	No	No	No
Burkina Faso	Community	Yes	Yes	No	Yes	No	No
Cabo Verde	Community	Yes	No	No	No	No	No
Côte d'Ivoire	Community	Yes	No	No	Yes	No	No
Gambia, The	Separate	No	Yes	No	No	No	No
Ghana	Separate	No	Yes	No	No	No	No
Guinée	N.S.	Yes	No	No	No	No	No
Guinea-Bissau	Community	Yes	No	Yes	No	No	No
Liberia	Separate	Yes	Yes	No	No	No	No
Mali	Separate	Yes	Yes	No	Yes	Yes	Yes
Niger	Separate	Yes	Yes	Yes	No	No	No
Nigeria	Separate	No	Yes	No	No	No	–
Sénégal	Separate	Yes	Yes	No	No	No	No
Sierra Leone	Separate	Yes	Yes	No	No	No	No
Togo	Separate	Yes	Yes	No	Yes	Yes	Yes

Source: Hallward-Driemeier[b], 2013

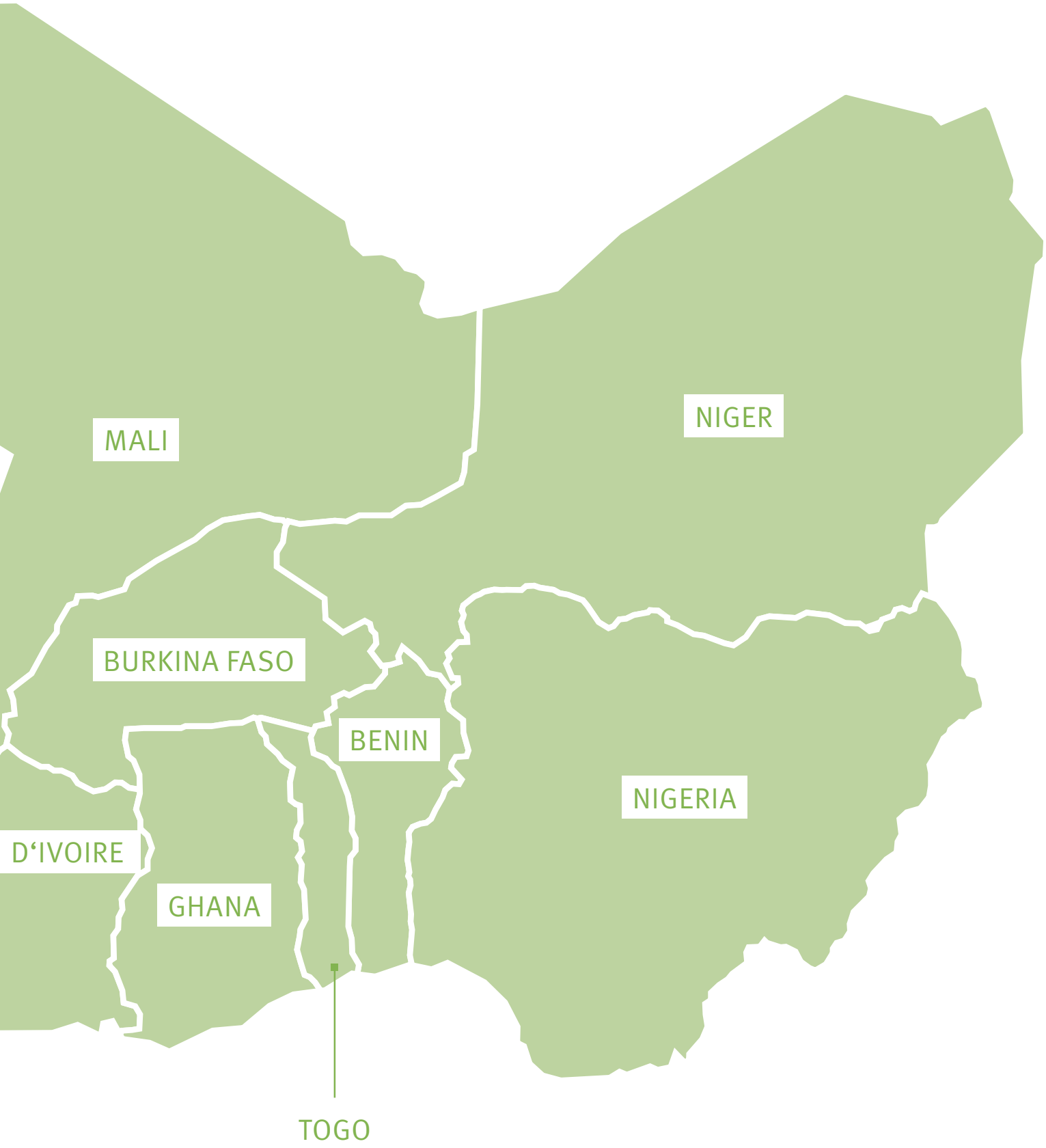
	Women in statutory marriages are entitled to some of the marital property upon divorce	Marital property is divided equally upon divorce	Wife's nonmonetary contribution is recognized in determining share of property she receives in countries with separate property regimes	Right of women married under statutory law to inherit is recognized	Wife's portion of joint property is recognized in cases of intestate inheritance	Widow has right to remain in and use house and land of husband upon his death, at least until she remarries	Right of maintenance from deceased's estate
	Yes	No	No	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	Yes	Yes	No
	Yes	Yes	Yes	Yes	Yes	No	No
	No	No	No	Yes	No	Yes	No
	Yes	No	No	Yes	Yes	Yes	Yes
	Yes	Yes	No	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	–	–	–
	Yes	No	–	Yes	Yes	Yes	–
	Yes	No	No	Yes	Yes	Yes	Yes
	Yes	No	No	Yes	Yes	Yes	Yes
	No	No	No	Yes	Yes	Yes	Yes
	Yes	No	No	Yes	Yes	Yes	No
	Yes	No	No	Yes	Yes	Yes	Yes
	Yes	No	No	No	No	No	No

TABLE 6 | WORKPLACE PROTECTIONS

Country	Statutory protection for non-discrimination in the workplace	Statutory protection is granted to equal pay for work of equal value	Women face statutory restrictions on industries in which they may work	Women face statutory restrictions on hours they may work	Statutory requirements exist providing maternity leave, mandating duration of maternity leave, and way in which it is funded	Mandated minimum duration of paid maternity leave	Mandated percentage of salary to be paid by employer during maternity leave
Bénin	Yes	Yes	Yes	No	Yes	14 weeks	100
Burkina Faso	Yes	Yes	Yes	Yes	Yes	14 weeks	100
Cabo Verde	Yes	Yes	No	No	Yes	45 days	Variable
Côte d'Ivoire	Yes	Yes	Yes	Yes	Yes	14 weeks	100
Gambia, The	No	No	No	No	Yes	12 weeks	100
Ghana	Yes	Yes	No	No	Yes	12 weeks	100
Guinée	Yes	Yes	Yes	No	Yes	14 weeks	100
Guinea-Bissau	Yes	Yes	Yes	No	Yes	60 days	100
Liberia	No	No	No	No	No	n.a.	n.a.
Mali	Yes	Yes	Yes	Yes	Yes	14 weeks	100
Niger	Yes	Yes	Yes	No	Yes	14 weeks	50
Nigeria	Yes	Yes	Yes	Yes	Yes	12 weeks	50
Sénégal	Yes	Yes	Yes	Yes	Yes	14 weeks	100
Sierra Leone	–	–	Yes	–	–	–	–
Togo	Yes	Yes	No	No	Yes	14 weeks	100

Source: Hallward-Driemeier[b], 2013


Vestas


MALI
NIGER
BURKINA FASO
BENIN
NIGERIA
D‘IVOIRE
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