

Gender and Social Dimensions of Solar Development in the Upper West Region of Ghana



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Introduction

As a Freshman Fellow, I assisted on research with the Illume Lab uncovering the gender, political, and social dimensions of the Kaleo-Lawra Solar Plant in the Upper West region of Ghana. The proposal of the 35-megawatt solar park came as a part of the country's efforts to reduce "business of usual" greenhouse gas emissions by 15% by 2030 (Republic of Ghana). This research examines the relationship between gendered livelihoods, renewable development, and climate change vulnerability. Special attention is placed on specific gender impacts, like employment and compensation for lost land, as is the public perception of the plant, economic changes, fulfillment of promises by developers, and the impact on daily life. Solar energy and other renewable sources production are a great way to combat energy crises and climate change, but we must ensure it is conducted equitably. The goal of this research is to confirm that equality is at the forefront of the project.



Figure 1. One section of the Kaleo Solar Project.

Methods

A mixed-methods approach was used to collect data. Quantitative surveys were conducted using a systematic random sampling approach for 407 locals affected by the project in both Kaleo and Lawra. Additional data collection came from oral histories, interviews, and photovoice. Photovoice allows locals to take pictures of how the project impacts them. I then sorted, organized, summarized, and interpreted the data.



Figure 2. Research assistant in the field conducting interview.

Background

The Upper West region of Ghana is an arid region with little natural resources and low per capita income. Most citizens work in the agricultural sector, which is lucrative for the scant amount of rainfall. Many do not have basic needs fulfilled. Only 58% of people have a toilet, most cook with fire, and very few have generators for sporadic electricity (called "dumsor" by Ghanaians), if they have electricity access at all. Many people surveyed work multiple jobs or make money in more than one way. Energy distribution in both Kaleo and Lawra falls to the Volta River Authority (Volta River Authority). The Solar Power Project at Kaleo and Lawra was funded and overseen in its entirety by the German government, as they view Ghana as a model for other developing African countries (BMZ).



Figure 3. Sign at the Kaleo site.

Results

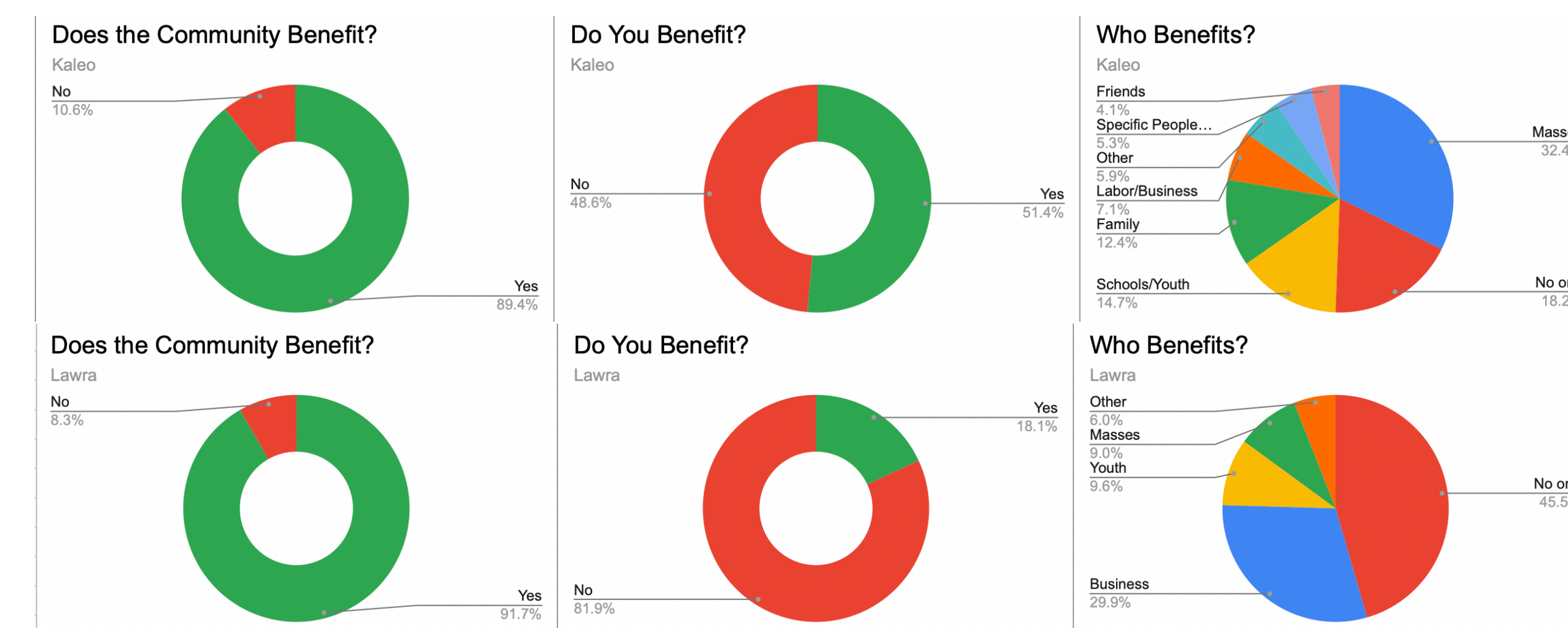


Figure 4. These charts show that while most respondents believe the community benefits from these projects, many do not believe that it benefits themselves.

Types of Noted Corporate Social Responsibility Schemes

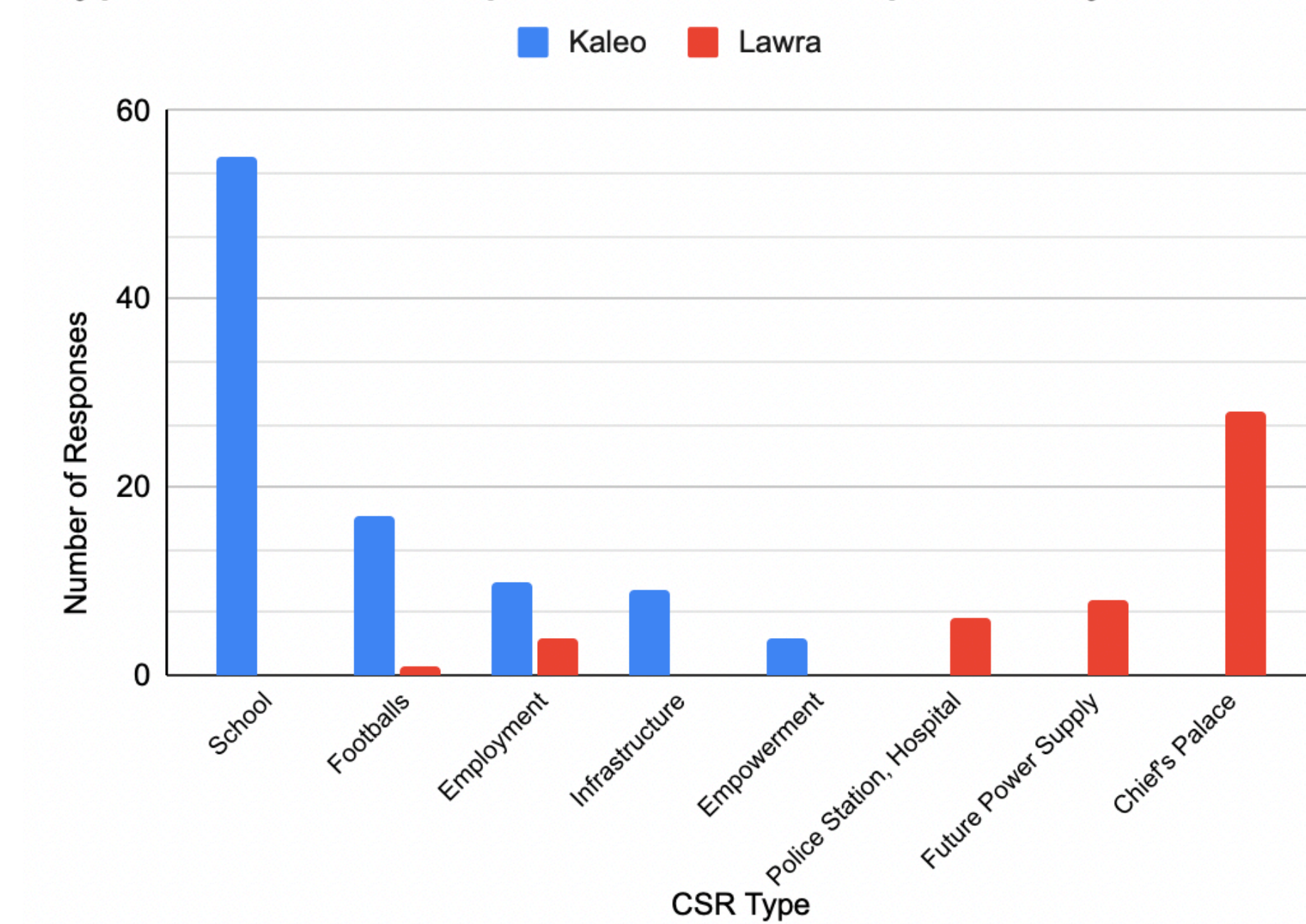


Figure 5. In Kaleo, most of the CSRs benefitted the public, while in Lawra, there were private beneficiaries.

Has the solar plant project improved the reliability of electricity for your household?

	Yes	No
Kaleo	78.3%	21.7%
Lawra	29.4%	70.6%

Conclusions

Geographic research of this caliber is crucial to creating a sustainable world in a socially conscious, responsible, and equitable way. Solar energy is the future of energy production; we must assess all possible impacts.

The following are negative impacts of the Kaleo-Lawra Solar Project:

- In general, the citizens of Lawra were not as positively impacted by the project as the people of Kaleo.
- There are ongoing land settlement issues in Lawra.
- Some reported the price of electricity is still too high to afford.
- CSRs in Kaleo included school improvements, while in Lawra, the chief received panels for his home.
- Job opportunities were disproportionate by gender. Only one woman is still employed in Lawra.
- Women cannot own or inherit any land. They cannot receive compensation for land taken for solar.



Figure 6. Photograph taken by local of the site.

Positives impacts include:

- Locals were employed as laborers for installation.
- Increased electricity reliability in Kaleo corresponds with an increase in small business, trade, local profit generation, etc.
- Several believe that solar projects should be implemented in other communities in northern Ghana.
- On a 5 point scale, the Solar Park received a 3.91 approval rating.



Figure 7. Installation of solar panels on the hospital in Lawra.

Quotes

"... land is becoming a scarce natural resource. This is because of the proximity to the regional capital where people now buy land to build their houses for settlement. This activity has led to the **encroachment of agricultural lands**. These and other factors contribute significantly to limiting the accessibility of land for crop production."

-Kaleo respondent

"VRA should come back to the negotiating table to iron out concerns about portions of land which initially was not enclosed but have now been captured. Also, **VRA promised to pay stipends every year as a form of compensation** to landowners who have lost their source of livelihoods but **[that] has not been fulfilled.**"

-Lawra respondent

"As [a] young woman working in this project, I will like to say that more **women should be given the opportunity to clean the surfaces of the panels**. I think that empowering women will make the place a better place to live"

-Kaleo respondent

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