Food and Agriculture Organization of the United Nations

Transforming lives and Empowering Communities: Unveiling the most Efficient Stove for Vulnerable Households (FAO PDM)

22nd June 2023

Background/Problem Statement

- Over 2 million people across BAY states are still displaced (HRP 2023).
- 4.3 million people projected to be at risk of food insecurity including 522,000 in Emergency food insecurity (CH March, 2023).
- 50%-75% of BAY states is affected by desertification and Land degradation (Azare et al., 2020).
- Highly constrained SAFE (HRP 2023).
- Impact of resettling returnees (HRP, 2023)
- 2018-Date

Objectives of the Assessment:

- Assess the perception of beneficiaries on energy combustion efficiency of different designs (charcoal grate and wire mesh) of energy-efficient stoves.
- Assess the perception of beneficiaries on user-friendliness of and efficiency of different stove designs (heavy and lightweight).
- Assess the perception of beneficiaries on the use of briquette as alternative to firewood and charcoal.
- Generate data for quantifying emission reduction capacity of energy-efficient stoves.

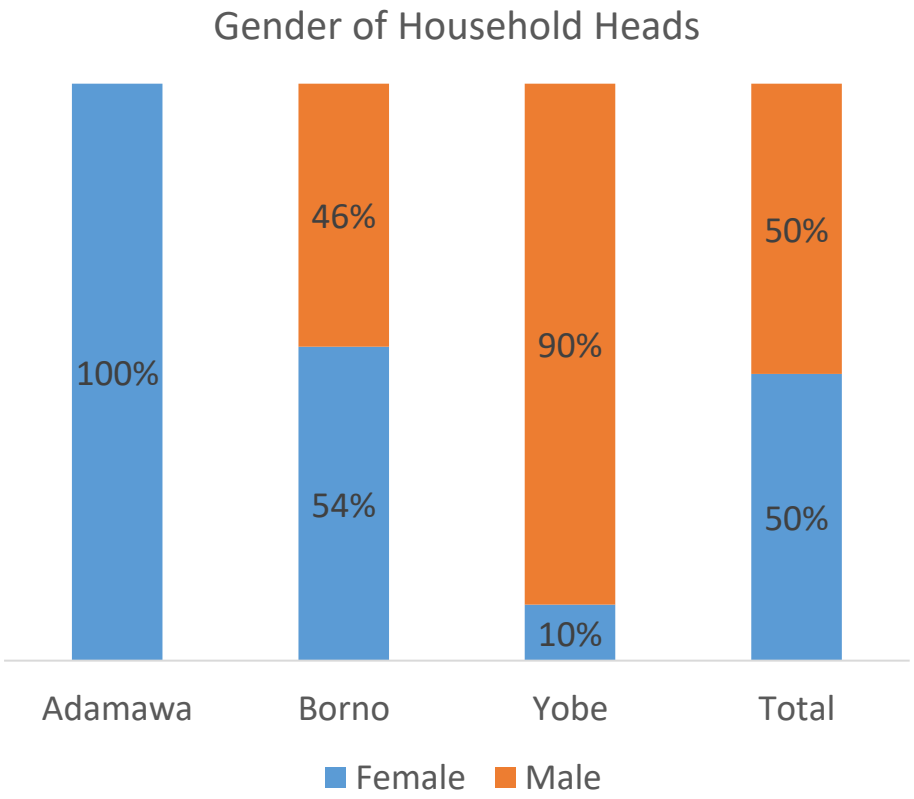
Methodology

A combination of quantitative and qualitative methods were employed. Quantitative data (household surveyed) was sourced from beneficiary households of FES and briquettes through random sampling while qualitative data was sourced from women briquette producers. Overall, 318 households were assessed and 3 briquette production centers across:

- Adamawa: Fufore, Yola south, Mubi south
- Borno: Bama, Banki, Pulka, Monguno, Damboa, Mobbar (Damasak)
- Yobe: Geidam, Potiskum, Damaturu (Kukareta)

Findings – Household Characteristics

- 50 percent each of the households surveyed were female-headed and male-headed household respectively.
- 67 percent of the surveyed Hh's were IDPs (100% in Adamawa, 73 percent in Borno and 29 percent in Yobe. Host community constituted 22 percent (48 percent in Yobe and 18% in Borno). 11 percent of the Hhs were returnees (23% in Yobe and 9% in Borno).
- The households comprised of both FAO FES and IOM stove users.



Findings – FES Usage

Findings – Emission Reduction of FAO's FES

- Households generally used a combination of small to medium sized fuelwoods to cook with the FES. On average, 11 sticks of fuelwood were used to cook major meals (usually 2 major meals) daily before the distribution of the FES. It dropped to 6.5 sticks of fuelwood used daily with the FES.

- On average a household that use non FAO cook stove use about 1.756 tonnes of wood per year as against 0.988 used by FAO FES user.

- The emission reduction by FAO distributed FES was estimated to be 0.1 ton equivalent to 33 percent reduction in CO2 emission per annum per stove.

Findings – Perception on FAO FES Stove Combustion efficiency cont.

- All sampled households in Adamawa and 58 percent of the households in Borno were involved in fuelwood collection for household use (as against none in Yobe who all bought fuelwood/charcoal).

- Beneficiary households of FES and briquettes generally reported some reduction in the number of trips/outings to collect firewood and reduction in exposure to protection risk. However, due to persistent deforestation and tree cutting, the distance covered has increased due to scarcity.

Findings –Perception of Beneficiaries on Briquette as an alternative to Firewood and Charcoal

- The briquette kits of 2kg distributed to households lasted or was only sufficient for an average of 2.7 days (when used alone).

- 94 percent of the beneficiaries of briquette reported that it emits the least smoke when successfully ignited when compared to charcoal and fuelwood.

- 6 – 8 pieces (which cost around NGN 100 - 150) was adequate to cook a major meal for a family of 6 or 7 persons. This may not be the case with fuelwood/charcoal.

- It was reported that briquettes doesn't stain pot

Findings – Perception on user-friendliness and efficiency of different stove designs (heavy and lightweight) cont.

- Beneficiaries generally used a combination of fuelwood, briquettes, and charcoal, and with the FES.
- 95 percent of the FES users reported that it is suitable to cook with the grate of the stove while 5 percent said it was not because ash from charcoal accumulates reducing energy efficiency, hence they substitute it with a wire mesh.
- FAO stove was reported to retain more energy/heat and cook slightly faster than the IOM design.
- About 40% of the FAO FES beneficiaries have been using the stove since 2018.

Findings – Perception on user-friendliness and efficiency of different stove designs (heavy and lightweight).

- Beneficiaries of the IOM designed stoves previously used the three stone or traditional sand mukubur for cooking.
- More than 71 percent of the beneficiaries reported that the IOM FES does not accommodate all their pot sizes although
- Beneficiaries reported relative reduction in the number of outings/trips for fuelwood (5 to 3 times weekly) and reduction in cooking energy (charcoal/firewood) expenditure (NGN 1200 down to NGN 580).
- About 93 percent of the beneficiaries reported that it was less smoky and cooks faster than their previous stove.
- About 81 percent described it as "heavy to carry" although slightly lighter than the FAO FES.

Recommendations

- There is the need for SAFE working group partners to promote the use of most efficient cook stove to enhance the protection of women and children as well as to conserve the environment.
- There is the need for SAFE partners to leverage on the established SAFE centres across the BAY states to enhance the market linkages for the vulnerable producers.

- There is currently little or no patronage for briquettes. There is urgent need for significant and aggressive community sensitization on the benefits of briquette so as to harness the potentials of the briquette production centers, provide economic empowerment, social cohesion and serve as a platform for women protection.

Thank you