



POLICY BRIEF

Policy Implications for Gendered Differences in Household Cooking Coping Strategies for the Russia- Ukraine War in Kenya

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Summary Points

This policy brief uses evidence from Kenya on AERC collaborative research project on “Impacts of War in Ukraine on Food Security in Low Income Countries”. The study examines gendered differences in household cooking coping strategies for the Russia-Ukraine War in Kenya.

We present the following policy priorities for the government of Kenya:

1. Empower women to adopt clean energy by providing low-interest financing through social groups supported by key stakeholders.
2. Use the National Government Affirmative Action Fund to supply clean cooking technologies to underprivileged women through women representatives.
3. Encourage county governments to distribute clean cooking technologies as part of climate change initiatives.
4. Increase rural access to clean cooking technologies through result-based financing by the National Treasury and the Ministry of Energy.

1. Introduction

The Russia-Ukraine War (RUW) which started in early 2022 intensified global economic challenges, compounding the effects of the COVID-19 pandemic. Trade disruptions emanating from the RUW caused sharp increases in global food, fuel, and fertilizer prices, triggering inflationary pressures in the global south, including Kenya (Guenette et al., 2022). These price hikes disproportionately impacted poor households, which lacked resources to cope, deepening poverty and exacerbating economic inequalities (Schellekens and Sourrouille, 2020). Women, already marginalized by gender norms and disproportionately affected by the pandemic were faced with heightened vulnerability during this multi-crisis period (Papadavid, 2023).

In Kenya, kerosene is a critical cooking fuel for low-income urban households, with 7.8% of households relying on it as their primary cooking energy source (Republic of Kenya, 2010). The surge in kerosene prices due to the war necessitated the implementation of household coping strategies, including a shift to alternative fuels. Gender roles in Kenya place the burden of unpaid domestic work, such as cooking, fuel collection, and childcare, disproportionately on women (Republic of Kenya, 2023). As households adapted to rising fuel costs, these roles left women more exposed to economic and health risks, further straining their already significant contributions to unpaid labor (Dida et al., 2020; Njenga et al., 2021).

This paper explores how women coped with increased kerosene prices during the economic crisis. It examines gendered differences in household energy strategies, focusing on the implications for unpaid labor and well-being. Additionally, the paper evaluates the potential role of policy interventions, such as fuel subsidies, in addressing gendered inequalities during economic shocks. These insights aim to inform policies that promote gender equity and resilience in the face of future crises (Dartano, 2013; Breton and Mirzapour, 2016).

Using primary data collected from rural and urban Kenya and employing descriptive statistics and chi-square test statistics, we present empirical evidence and offer a range of policy implications.

2. Key Findings

Cooking Coping Strategies Following the Russia-Ukraine War

Kerosene Use and Gendered Trends: Before the Russia-Ukraine War (RUW), kerosene use for cooking was widespread, particularly in female-headed households (65.50%) compared to male-headed households (49.42%) (Table 1). Female respondents in male-headed households also reported higher kerosene use (60.40%) compared to their male counterparts (40.52%). Awareness of kerosene price increases due to the RUW was high across respondents (94.13%), but slightly lower among female-headed households (82.29%) compared to male-headed ones (95.55%). This highlights potential gender disparities in access to information, with women in male-headed households demonstrating better awareness than those in female-headed households.

Switching from Kerosene to Other Cooking Fuels: Nearly half (50.13%) of households ceased using kerosene due to RUW-induced price hikes, with more male-headed households (52.12%) stopping its use compared to female-headed households (43.33%). Among alternative fuel, the majority of

households (61.81%) adopted LPG, with male-headed households exhibiting a higher transition rate (63.13%) than female-headed households (56.41%). Adoption of firewood was minimal (8.54%) for the general population, with female-headed households (7.69%) less likely to switch to this highly polluting fuel compared to male-headed households (13.86%).

Table 1: Descriptive Statistics on Kerosene Use

	Overall (N=944)	Female- headed Household (N=171)	Male-headed household (N=773)	Male-headed household & female respondent (N=346)	Male-headed household & male respondent (N=427)
Used kerosene before RUW (N (%))	494(52.33)	112(65.50)	382(49.42)	209(60.40)	173(40.52)
Used kerosene and aware that the RUW led to an increase in prices (N (%))	465(94.13)	100(89.29)	365(95.55)	198(94.74)	167(96.53)
Kerosene use by those aware that the RUW led to an increase in prices (N (%))					
Cooking	320(68.82)	72(72.00)	248(67.95)	140(70.71)	108(64.67)
lighting	68(14.62)	10(10.00)	58(15.89)	23(11.62)	35(20.96)
Both cooking and lighting	77(16.56)	18(18.00)	59(16.16)	35(17.68)	24(14.37)
Average weekly spending on kerosene before the RUW (Mean (SD))	279.01(187.22)	273.57(179.53)	280.54(189.53)	285.71(189.35)	275.22(190.12)
Min(max)	20(910)	30(700)	20(910)	20(700)	30(910)
Average weekly spending on kerosene after the RUW (Mean (SD))	464.47(260.06)	469.15(257.78)	463.22(261.13)	482.13(263.93)	438.97(256.58)
Min(max)	30(1000)	35(1000)	30(1000)	30(1000)	50(1000)
Average weekly spending on kerosene after the fuel subsidy (Mean (SD))	419.82(257.47)	429.52(270.15)	417.02(254.43)	415.56(256.96)	419.12(252.46)
Min(max)	20(1000)	35(1000)	20(1000)	20(1000)	50(1000)
Stopped using kerosene for cooking after the RUW	199(50.13)	39(43.33)	160(52.12)	84(48.00)	76(57.58)
Household cooking coping fuels					
LPG	123(61.81)	22(56.41)	101(63.13)	47(55.95)	54(71.05)
Firewood	17(8.543)	3(7.692)	14(13.86)	12(14.29)	2(2.632)
Other cooking fuels	59(29.65)	14(35.90)	45(28.13)	25(29.76)	20(26.32)

Gendered Differences in Households Cooking Coping Strategies

Gendered Shifts in Cooking Fuel Choices Following Kerosene Price Increases: The results in Table 2 indicate that in male-headed households, a significantly smaller proportion of female respondents, compared to male respondents, reported shifting to LPG use following the increase in kerosene prices due to the Russia-Ukraine War (RUW). Conversely, a significantly higher proportion of female respondents compared to male respondents reported switching to firewood as an alternative cooking fuel.

Table 2: Gendered Differences in Household Cooking Coping Strategies

Energy	Female-headed household (N=39)	Male-headed household (N=160)	P-value (χ^2)	Male-headed household & female respondent (N=84)	Male-headed household & male respondent (N=76)	P-value (χ^2)

LPG	22(56.41)	101(63.13)	0.439	47(55.95)	54(71.05)	0.048**
Firewood	3(7.692)	14(13.86)	0.832	12(14.29)	2(2.632)	0.009***
Other	14(35.90)	45(28.13)	0.341	25(29.76)	20(26.32)	0.628

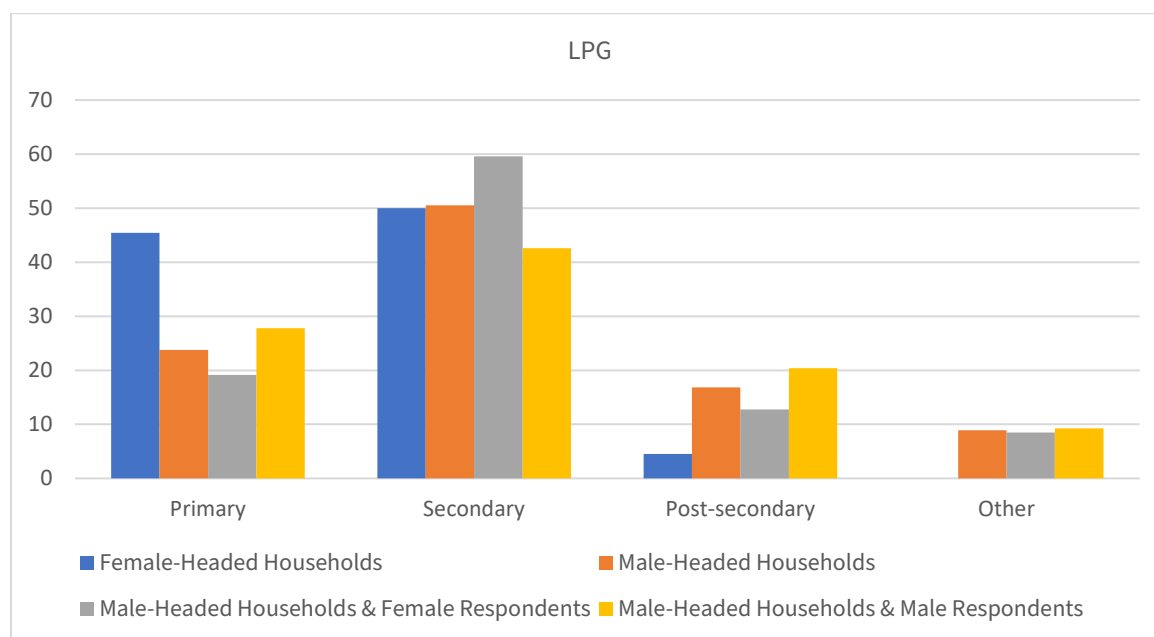
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Choice of Cleaner Versus Dirty Fuels: The adoption of cleaner cooking fuels, such as LPG and other energy forms, was more common in urban areas, with female-headed households fully adopting LPG and other forms in urban regions. Male-headed households showed a higher proportion of LPG adopters in urban areas, though female respondents in male-headed households were more likely to adopt firewood than their male counterparts. This highlights a gendered difference in coping strategies, where women, particularly in male-headed households, were more inclined to rely on firewood compared to men.

Living Conditions and Clean Fuel Adoption: There was a noticeable link between cleaner energy adoption and better living conditions. Households adopting LPG and other clean energy sources were more likely to live in homes with concrete or ceramic-tiled floors, suggesting a correlation with higher income. Conversely, firewood adopters often lived in houses with earth floors, indicating a lower socio-economic status. Female-headed households showed a lower proportion of concrete-floor homes among LPG adopters compared to male-headed households, indicating potential income disparities.

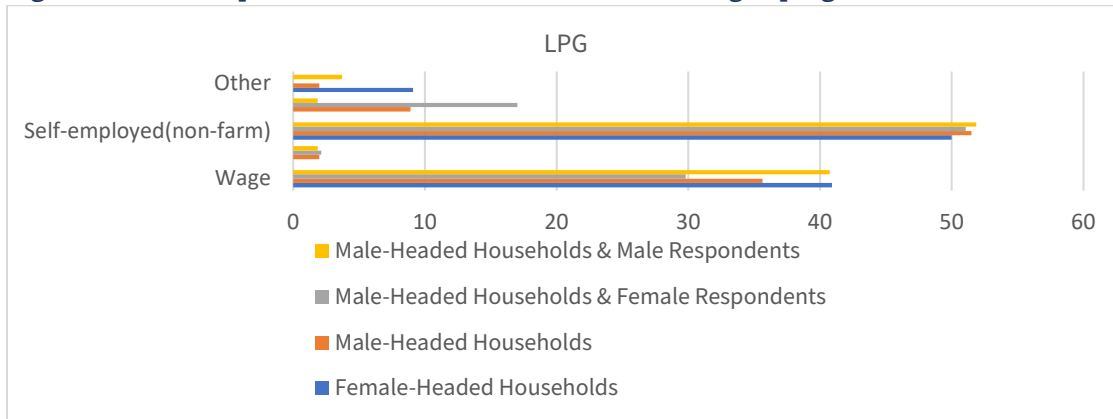
Educational Attainment: Most respondents adopting cooking coping strategies had attained primary or secondary level education. In LPG-adopting households, a higher proportion of female respondents in male-headed households had a secondary education compared to those in female-headed households. However, the proportion of female respondents with primary education was higher in female-headed households, highlighting some gendered differences in educational attainment and its potential role in influencing fuel adoption choices.

Figure 1: Level of education of adopters of cooking coping mechanisms



Differences in Occupation Patterns Between Clean and Dirty Cooking Fuel Adopters: Households that adopted clean cooking fuels (LPG and other energy sources) were mostly engaged in self-employment in non-farm activities and wage employment. Among LPG adopters, slightly more respondents in male-headed households (51.49%) were self-employed in non-farm activities compared to female-headed households (50%). For wage employment, a higher proportion of female-headed households (40.91%) adopted LPG compared to male-headed households (35.64%). However, within male-headed households, a higher proportion of male respondents (40.74%) reported wage employment than female respondents (29.79%). Conversely, firewood adopters were primarily self-employed in farm activities.

Figure 2: The occupation of household heads with cooking coping mechanisms



Gendered Differences in Fuel Collection and Cooking Time

The paper reveals significant gendered differences in fuel collection and cooking times across various energy forms (Table 3).

Fuel Collection Time: A discernible disparity exists in the time spent by women and men collecting fuel, particularly firewood. On average, women devoted significantly more time to collecting firewood, taking approximately 37.86 minutes, compared to 22.23 minutes for kerosene, a difference of 15 minutes. In contrast, men spent around 23.33 minutes collecting firewood, just 5 minutes more than the 18.84 minutes spent collecting kerosene. The paper highlighted that women spent seven times more time than men in firewood collection (530.04 minutes vs. 70 minutes), which could negatively affect household productivity, particularly in rural areas where most firewood adopters reside. For cleaner fuels like LPG and other energy forms, both men and women spent less time collecting fuel compared to kerosene, with a smaller gender gap. Women spent 10 minutes less collecting LPG than kerosene and 12 minutes less collecting other energy forms. This suggests that adopting these fuels provided more time for productive activities and reduced gendered inequalities in fuel collection time.

Cooking Time: Women spent more time cooking than men. On average, women took 30.60 minutes to cook using kerosene, compared to 25.06 minutes for men. When using firewood, women took 45 minutes, while men took 38 minutes to cook a typical meal. The adoption of firewood as a coping fuel increased gendered inequalities, with women spending eight times more time cooking than men (630 minutes vs. 76 minutes). In contrast, adopting LPG and other energy forms reduced cooking time compared to kerosene. Women spent 4 minutes less cooking with LPG (26.75 minutes) and 2 minutes less cooking with other energy forms (28.22 minutes), though still taking longer than men for both fuels.

These findings indicate that while adopting cleaner cooking fuels reduced time spent on unpaid cooking tasks, gendered inequalities in fuel collection and cooking time persisted, albeit to a lesser extent with cleaner energy sources.

Table 3: Average Fuel Collecting and Cooking Time

	Kerosene		LPG		Firewood		Other fuel	
	Female	Male	Female	Male	Female	Male	Female	Male
Collecting (N)	135	98	74	49	14	3	41	18
Mean (SD)	22.23(18.16)	18.84(17.51)	12.03 (10.71)	11.53(8.163)	37.86(44.06)	23.33(11.55)	10(11.45)	7.889(6.790)
Minimum	5	5	5	5	15	10	5	5
Maximum	90	60	50	30	180	30	60	20
Cooking (N)	182	51	91	32	15	2	46	13
Mean (SD)	30.60(17.98)	25.66(17.38)	26.75(13.73)	22.09(11.04)	45(21.21)	38(21.71)	28.22(14.22)	24.37(12.58)
Minimum	5	5	5	5	10	10	10	5
Maximum	90	60	90	60	90	60	90	90

Kerosene Use after the Fuel Subsidy

Table 4 shows that only 8.04% of households that had stopped using kerosene resumed its use after the fuel subsidy, suggesting that the subsidy may not have been large enough to incentivize a return to kerosene or that households had adapted to cleaner cooking methods. A slightly higher proportion of male-headed households resumed kerosene use compared to female-headed households. Most resuming households (93.75%) were in urban areas, reflecting the higher concentration of kerosene users in urban settings. The findings imply that households may have recognized the benefits of cleaner energy sources, reducing their reliance on kerosene.

Table 4: Kerosene use after the fuel subsidy

	Overall (N=199)	Female-headed (N=39)	Male-headed (N=160)	Male-headed and female respondent (N=84)	Male-headed and male respondent (N=76)
N (%)	16(8.040)	3(7.692)	13(8.125)	7(8.333)	6(7.895)
Region Rural	1(6.250)	-	1(7.692)	1(14.29)	
Urban	15(93.75)	3(100)	12(92.31)	6(85.71)	6(100)

3. Policy implications

The underlying research has identified a range of policy suggestions that deserve policy attention for governments of Kenya.

1. **Empowerment of Women for Increased Clean Energy Adoption.** The research revealed that women were less likely than men to adopt clean cooking energy solutions, which can lead to a deeper gender disparity in access to modern and efficient energy sources. To address this, it is critical to empower women, particularly those from low-income backgrounds, to access clean cooking technologies. One way to do this is by providing low-interest financing for the purchase of these technologies. This can be facilitated through collaboration between government bodies, such as the Ministry of Labour and Social Protection, and development partners. Private financial institutions can also play a role by offering targeted loans or financial products that make clean technologies more affordable. Furthermore, existing women's social groups can be leveraged to create community-based lending systems, further promoting access to these energy solutions.
2. **Use of Affirmative Action Platforms to Promote Clean Energy Uptake.** Women's representatives in the legislature, such as those elected under the National Government Affirmative Action Fund (NGAF), should actively use existing affirmative action platforms to promote the uptake of clean energy technologies among women, especially those in disadvantaged areas. This can involve using the NGAF to fund clean cooking technologies for women in rural and peri-urban areas, ensuring that they have access to affordable and sustainable alternatives to traditional fuels like firewood and kerosene. This targeted support will not only benefit women but also help in reducing gender inequalities in energy access, enabling them to benefit from improved health, time savings, and increased productivity.
3. **County Governments' Role in Distributing Clean Cooking Technologies.** County governments should integrate the distribution of clean cooking technologies into their local climate change mitigation strategies. This could include programs where counties procure and distribute clean cookstoves, LPG (liquefied petroleum gas), or other alternative energy sources to households, particularly in rural and underserved areas. These initiatives could be carried out in partnership with NGOs, international organizations, and private sector actors who are focused on promoting clean cooking technologies. This approach ensures that local governments are taking an active role in mitigating climate change, improving public health, and reducing energy poverty by providing affordable and sustainable energy options for cooking.
4. **Increase the Availability of Clean Cooking Technologies in Rural Areas.** One of the key findings from the study was that firewood adoption remained higher in rural areas, potentially due to the lack of clean energy alternatives in these regions. To address this gap, it is important for the National Treasury and the Ministry of Energy and Petroleum Development to collaborate in implementing a result-based financing model. This model would incentivize the private sector and local distributors to increase the availability and affordability of clean cooking technologies in rural areas. By targeting these regions, where firewood remains a primary cooking fuel, the government can help reduce reliance on traditional biomass fuels, which contribute to deforestation, air pollution, and health risks. This could also be combined with training programs to raise awareness about the benefits of clean cooking technologies, which can lead to improved health, environmental sustainability, and women's empowerment.

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