

## PRCI Research Proposal Summary

<b>ACTIVITY TITLE:</b>	Energy access, food security and diet-related health outcome nexus
<b>PRINCIPAL CENTER:</b>	CPEEL-DAERD
<b>PRINCIPAL INVESTIGATOR(S):</b>	Dr. Olufunke Alaba
<b>GEOGRAPHIC FOCUS:</b>	Nigeria

**Activity Description:** In Nigeria, solid fuels are still widely used, and energy poverty (in terms of the high cost of and limited access to fuel sources) is one of the major problems facing both rural and urban households. Lack of access to modern energy sources for cooking and limited availability of electricity also have economic, health and nutritional implications, particularly in countries like Nigeria where 33 percent of the population is undernourished. This study proposes to investigate the dynamic link between energy poverty, as measured by cooking fuel expenditure by energy source, on nutrition, diet and diet-related health outcomes in Nigeria. This research explores the often-ignored cross-sector linkages between energy access, health, and nutrition in order to inform policies aimed at reducing food and nutrition insecurity and promoting healthy diets.

**Research Questions:** Specific objectives and associated research questions are to:

1. Investigate trends in calorie intake, food security and household dietary intake pattern by energy poverty level of households
  - a. What is the food security and dietary profile of energy poor households in Nigeria?
  - b. Is there a relationship between cooking fuel expenditure by energy source and calorie intake?
2. Analyze the dynamic link between energy poverty as measured by fuel expenditure by energy source of cooking and food (in)security outcomes
  - a. Are there changes overtime in calorie intake, food security and household dietary intake outcomes?
  - b. What are the characteristics that contribute to the changes, such as income loss, household size?
  - c. Are there changes overtime in household fuel expenditure by energy source of cooking?
  - d. Is the transition matrix of food (in)security indicators between years related to the fuel expenditure by energy source of cooking and energy access?

**Methods:** The study will utilize three waves of the Nigeria Living Standards Measurement Survey – Integrated Survey on Agriculture (LSMS-ISA) panel collected by the National Bureau of Statistics (NBS) of Nigeria to investigate patterns and distributions of measures of energy poverty (cooking fuel expenditure by energy source and access to clean fuel), calorie intake dietary diversity, and subjective measures of food insecurity. Data will also be used to examine the effect of measures of energy poverty on food security indicators using a fixed and random effect model.

**Gender Integration:** Women and children are disproportionately affected by the lack of clean energy. Gender will be integrated in all proposed analyses by disaggregating, to the extent possible, the input



data and resulting analysis by gender, paying specific attention to the implications of local energy regimes for the diets of female-headed farms and households. Furthermore, this research is expected to improve the agency of women by supporting their inclusion through citizen science workshops.