Introduction

- In sub-Saharan Africa (SSA), the number of undernourished people is almost double the global number (Prevalence of undernourishment: World 10.8%, SSA 19.9%)
- In spite of the investments done in the agricultural sector (MDGs, CAADP etc), evidence shows a minimal impact on nutritional outcomes (FAO, 2019).
- Irrigated agriculture back in Africa’s policy agenda
- How should it be implemented to achieve food and nutrition security - a critical aspect of research and development arena (Lankford, 2009).

Methods and Materials

- Literature review - recently published literature on irrigation in Kenya
- 2015/16 Kenya Integrated Household Budget Survey (KIHBS) - look at the arrangement of irrigation and their linkage to nutritional outcomes.

Results and Discussion

- Arid and semi-arid lands (ASAL) covers about 89% of Kenya’s land area (Republic of Kenya, 2012; Njoka et al., 2016)
- But the data shows that only 5.35% of the respondents applied irrigation to their land
- Figure 1: Rivers act as the main source of water for irrigation followed by wells (deep and shallow), springs and ponds or water pans.
- Figure 2: The main method for water abstraction in Kenya is through gravity, followed by petroleum-powered fuel pumps, manual pumps, electric pumps and the least source of power for pumps is solar power.
- Figure 3: The respondents who irrigated their land had better nutritional outcomes in terms of worry about food, running out of food due to lack of money, eating few kinds of foods and in receiving relief food.
- However, when the results were subjected to a chi-square statistic, the none of the results were significant at 95% level of confidence while the Cramer’s V statistic showed a very small positive association (<0.05) for worry about food, eating few kinds of foods and in receiving relief food and a very small negative association (<0.05) for running out of food due to lack of money.

Conclusions and Way Forward

Weak link between nutritional outcomes and irrigation?

- Few studies linking agriculture and nutrition
  - Need for unpacking “agriculture” and “nutritional status” (Muthayya et al., 2013; Webb and Kennedy, 2014)
  - Paradigm shift in research - Understand the link between agriculture and nutrition (Ruel et al., 2018)
  - Irrigation impacts on nutritional outcomes are understudied (Domenech, 2015)

b) Research design and data limitation

- Data “not specified” to capture nutritional outcomes
- Known measures e.g. dietary diversity and food diary
- Dummy variables – trap?

- Literature – Lack of strong and robust study designs and survey methods
  - Weak results and limited generalizability with most of the nutritional effects remaining hidden (Jaenicke and Virchow, 2013; Webb and Kennedy, 2014)
  - Methodological flaws (Domenech, 2015)
  - Sampling - Bias on selecting the sample, Self-selection, Inadequate control sample for comparison

Part of a preliminary study

- Use of primary data – better research design and data collection

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References