Linkage Between Drinking Water Supply and Irrigation under Multi-Use Water System in rural Ethiopia

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Introduction
In rural areas, irrigation has a complex interaction with domestic water supply and sanitation services.
Separate sources of domestic water supply and irrigation agriculture use do not exist in several areas.
As a result of limited availability of improved domestic supply, most rural households rely on unimproved water sources including unprotected wells or springs, rivers, irrigation water from canals, ponds and streams which are easily polluted by humans and animal excreta.

Objectives of the study
To examine the role of irrigation agriculture practices on quality and quantity of domestic water uses
To analyze the complex interaction between irrigation and domestic water supply and their impact on health outcome
To investigate the impact of irrigation on child nutritional outcomes

Conceptual Framework
The conceptual framework shows the link between irrigation agriculture–nutrition–health.

Data and Methods
- A household survey has been conducted from February to June 2014 for 454 households. In addition;
- Water samples from household drinking water storage has been collected and tested for the presence of Escherichia coli (E.coli) bacteria (colony forming units per 100 ml) water using membrane filtration method
- A self-reported morbidity status for all selected household member have been recorded (for instance: diarrhea, malaria and other types of illness)

Results and Discussions
- Based on the JMP definition, 50% of our sample households have access to improved drinking water source.
- 58% of the water samples from household’s drinking water storage is contaminated with E.coli (at least 1 E.coli counts of CFU per 100 ml).

Study Areas
- The study was conducted in Fogera and Mecha districts of Amhara Regional state,
- Water and sanitation coverage is very low and the prevalence of water-related diseases are higher
- Small scale irrigation farming practice is in place

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