

# Impact of Perma-garden Intervention on Household Vegetable Consumption and Income.



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# Introduction

- Home vegetable gardens have been documented as an important supplemental source contributing to food and nutritional security and livelihoods of vulnerable households.
- It enables poor households to produce fresh vegetables and fruits with limited resources and cost and introduce more dietary varieties for children.
- In two years implementation of Yekokeb Berhan Permagarden intervention with the targeted households, there are encouraging outcomes on both the nutritional status of the family(family vegetable consumption) as well as on the income generated by sales of excess produce to neighbors but there was limited evidence that show the impact of permagarden interventions in improving the nutrition and income of households of highly vulnerable children in YB program.



# Objectives

This study is planned to answer three main research questions.

- Has permagarden intervention resulted in the increased **vegetable consumption** among HVC households?
- Has permagarden intervention resulted in improved **household income** among HVC households?
- Has permagarden intervention has improved the **attitude beneficiaries** towards vegetable consumption?
- Has permagarden intervention increased the **skill and willingness to engage** in home vegetable gardening in the future among HVC households?
- Has permagarden intervention resulted in **better nutritional status** of under-five years old highly vulnerable children?



# Methodology

- The study was conducted in 7 woredas in Amhara and Tigray regions where YB program was implemented.
- The study was based on a quasi-experimental design that has intervention and control groups.
- Two-samples proportions comparison approach is used to calculate the required sample size.
- Used PSM analysis to minimize selection bias using the STATA module psmatch2 developed by Leuven and Sianesi (2003).
- Impacts measured by percentage point differences in positive in main outcome indicators between intervention and control groups.
- First, KII transcriptions were organized by major topics and specific questions.



# Methodology

Main outcome indicators include:

- i. Vegetable consumption habit in a HHD
- ii. Diversity of vegetable consumed
- iii. Frequency of vegetable consumption
- iv. Diarrhea incidence among under age 5 children
- v. Health condition of U5 children as subjectively rated by primary caregiver of children
- vi. Nutrition status of children



## Result and Discussion

- **Consumed vegetables in the past one week:** 95% of participants in the intervention group, compared 79% in the control group (mean difference 16.4%,  $P < 0.01$ ).
- **Frequency of vegetable consumption:** about 83 % of intervention groups reported consumed vegetable at least twice in a week, compared to 59% control groups (mean difference 27.2%,  $P < 0.01$ ).
- **Diversity of vegetables consumed:** 46.6% of intervention and 37.3% of control groups consumed more than one type of vegetable in the last 24 hours, (mean difference of 9.3%,  $P < 0.05$ )

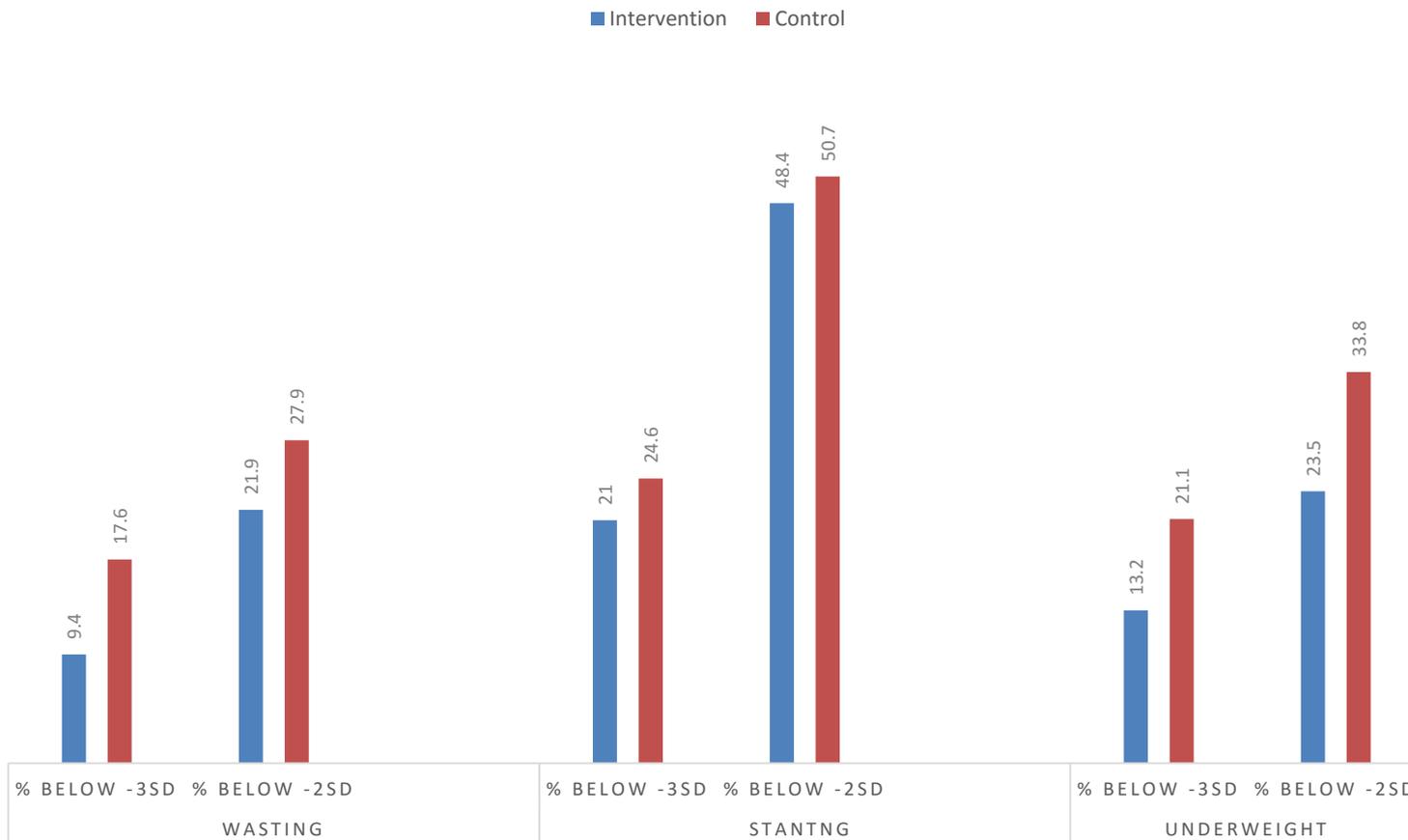


## Result and Discussion

- **Mean monthly reported household income:** intervention group (478 Birr) and control group (416 Birr), mean difference of 62 Birr, and  $P < 0.01$ .
- **Diarrhea incidence among under age 5 children:** was higher in the control (32.4%) than intervention groups (13.3%), with mean difference 19% ( $P < 0.01$ ).
- Malnutrition was lower in intervention groups than in the control.
- **Intention to grow vegetable:** about 86% of intervention and 48% of control group reported intend to grow vegetables in the future, mean difference of 38%, and  $P < 0.01$ .



# Percentage of children under five years classified as malnourished according to three anthropometric indices by intervention groups Amhara & Tigray September 2015



Nutritional status of the under five children Amhara & Tigray September 2015

# Conclusion and Recommendation

- In general, the results of this study confirmed that the PermaGardening intervention had positive and significant effects in terms of higher households' vegetable consumption, more diverse vegetables/fruits consumption, increased monthly household income and greater intention to grow vegetable in the future by the intervention group than the control group.
- In the long-term, vegetable gardening and consumption by households with HVC may help to increase micronutrient supply to poor households and reduced diarrhea incidence and malnutrition among children under age 5 years, and improve overall wellbeing of HVC.
- Future research should explore whether these observed positive effects will be sustainable over time and how the program affects the livelihood of households and children's health and nutrition status.



# Acknowledgement

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