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Baseline Survey of Impact of Vegetable Seed and Complementary Training Provided to Households Affected by Drought in Ethiopia

**Final Report**

**July 2023**

**Survey Implementation Report**

**May, 2023**

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# Abbreviations & Acronyms

CAPI Computer Assisted Personal Interview

CRS Catholic Relief Services

DAC Development Assistance Committee

GPS Global Positioning System

HFC High Frequency Checks

M&E Monitoring and Evaluation

OECD Organization for Economic Co-operation and Development

PLC Private Limited Company

SNNPR Southern Nations, Nationalities, and Peoples Region

# 1. INTRODUCTION

## 1.1 Background and Justification

The vegetable sub-sector is one of the most important sub-sectors of the Ethiopian economy. The high productivity and short growing period of vegetables, as compared with cereals and other annual crops, makes them the most preferred crops for irrigated agriculture[[1]](#footnote-1). The return from vegetables therefore is several fold higher than the return from major cereals. The sub-sector also plays a great role in reducing unemployment, as it is labor-intensive and needs special skills and knowledge.

It is also the major source of income for growers and for those who are involved in all aspects of the business, including propagation, production, harvesting, transporting, trading, and processing of vegetable products. Most of all, vegetables are included in emergency crop support programs to rebuild people’s livelihoods and diversify their diets and assets. However, there is no strong empirical evidence on the impact of vegetable seed and complementary training provided to households affected by drought in Ethiopia.

To strengthen this evidence, WorldVeg in partnership with Catholic Relief Services (CRS) Ethiopia planned to conduct an impact evaluation to test whether the provision of vegetable seed and technical support to households affected by an emergency program improves diet quality and income or not. CRS is implementing the intervention while WorldVeg conducts the impact evaluation of the project’s vegetable component. Accordingly, Frontieri Consult PLC took part in undertaking the baseline survey in treatment and control kebeles.

The intervention of providing vegetable seed and complementary training to households affected by drought aims to restore crop production/productivity, ensure seed security, increase capacity to mitigate shocks, and increase access to nutrient-rich foods to help mitigate the effects of poor diets, food insecurity, and the compound effects of future acute shocks. The intervention has three components: i) seed support through a one-time cash transfer, ii) training on good agronomic practices, and iii) technical follow-up.

The project targets to support 21,000 women found in eight zones of Oromia and Southern Nations, Nationalities, and Peoples (SNNP) Regions of Ethiopia. The zones covered in Oromia Region are East Hararghe, West Hararghe, Bale, and East Bale and that of SNNPR are Wolaita, Konso, Hadiya, and Kembata-Tembaro.

## 1.2. Objectives of the Assignment

The main objective of this assignment was to conduct a baseline survey among households targeted by an emergency crop support program and a comparison group of households outside the target areas. The specific objectives of the baseline survey were:

* To provide a detailed description of the demographic profile and productive asset holdings of study respondents in treatment and control kebeles;
* To describe the pattern of vegetable production during the last *Meher* and Dry seasons across treatment and control group households;
* To characterize the status of vegetable consumption and sales across treatment and control group households;
* To present the dominant forms of shocks experienced by households across treatment and control kebeles; and
* To assess the status of food security, knowledge of nutrition, and food insecurity coping strategies in both treatment and control kebeles.

## 1.3 Technical Approach

The results framework of a project serves as a valuable tool to map and analyze the causal link between the various aspects of an intervention (inputs, activities, outputs, outcomes, and impact). It explains the logic of intervention of a project, how the goals and objectives are intended to be achieved, and the basic assumptions underlying project design. Accordingly, the baseline survey for this assignment adopted the results chain of the project, which shows how a sequence of inputs, activities and outputs for which a project is directly responsible, and establishes pathways through which outcomes and impact are achieved. The results chain clearly outlines what activities should be done to convert the inputs into outputs and how the outputs contribute to the project outcomes and long-term impacts on the project beneficiaries and the target community towards its intended objectives. Accordingly, Frontieri’s research team adopted the results chain framework developed by DAC-OECD[[2]](#footnote-2) as a technical approach for this assignment.

**Inputs**:

Financial, human, material, and other resources to mobilize to support activities

**Activities**:

Actions taken or work performed to convert inputs into specific outputs

**Outputs:**

Direct products and results deriving from project activities

**Outcomes:**

Effects deriving from the utilization of outputs by target community

**Impact:**

Overall and long-term effect on the contribution entailed by the project

Figure 1: DAC-OECD Results chain

## 1.4 Organization of the Baseline Report

This baseline survey report is organized into four chapters, including this introductory section. Chapter 2 presents the technical approach and research methodology used to conduct the baseline survey, including data sources, sampling and methods of data collection and analysis. Chapter 3 discusses the survey results. The chapter portrays the issues related to the demographic profile of study respondents, land ownership, vegetable production, vegetable consumption and sales, shocks and resilience, nutrition and food security desegregated across study regions and between treatment and control households. Finally, chapter 4 presents the concluding remarks.

# 2. RESEARCH METHODOLOGY

This section presents a comprehensive methodology employed to carry out the baseline survey. It includes the study design, data type and collection methods, field procedures, and methods of data analysis. The baseline survey methodology is designed to enable the envisioned project to capture changes in the status of households and other survey units over time to compare the changes with similar households not targeted by the project (double-difference method). To generate a reliable data that will serve for this purpose, a quantitative research approach was employed. In the planned quantitative approach, the required primary data was collected through household survey technique. An appropriate data collection instrument was developed to ensure the objective of the baseline survey in close consultation with WorldVeg researchers.

## 2.1. Study Areas and Target Population of the Study

The study geographically covered a total of eight administrative zones, which include East & West Hararghe, Bale, and East Bale zones from the Oromia region; and Wolaita, Konso, Hadiya, and Kembata-Tembaro zones from the SNNPR. The target population units of the study were 21,000 women beneficiaries found in the eight target zones distributed across two study regions.

## 2.2. Study Design

In general, in a baseline survey the focus is given to the objective of the project and generating baseline values against which the project’s performance will be evaluated at the end of the project. Given these objectives, the baseline survey used a quasi-experimental design with baseline and end-line data for treatment (intervention) and control groups to evaluate the intended impact of the project against the outcome variables, including vegetable consumption, diet quality, income and food security. The study quantified the average treatment effect (intention to treat) using a Difference -in - Difference estimator. Thus, data were collected at the household level using a structured questionnaire and personal interviewing on tablet-based computers.

In this regard, Frontieri and WorldVeg professionals followed the most rigorous and feasible survey design that helped to identify the existing socio-economic characteristics of the households in the control and treatment (project intervention) areas. This included providing a detailed description of the social and economic infrastructures, livelihood, education, health, living conditions, as well as outcome variables, including vegetable consumption, diet quality, income, and food security that might be influenced by the project. The design provided a basis for determining progress or achievement as an integral part of impact assessment, and tracking changes in the areas of influence of the project through follow-up data collections and evaluating the progress and impacts of Vegetable Seed and Complementary Training provided to households affected by drought in the intervention areas at some point in the mid-term or at the end of the project period.

The baseline survey design identified a counterfactual scenario to compare the outcomes between those who receive the program benefits and other similar individuals or communities who do not receive the program benefits. In line with this, two conditions necessary for the baseline study were conducted: (1) a non-participant control group that is available so that a counterfactual can be identified; and (2) the problem of selection bias that should be addressed[[3]](#footnote-3). In other words, the unit of analysis in the study was a household, and households were stratified into two groups of “Affected” and “Non-affected”. The “Affected” households were those who received the project support and assistance and the “Non-affected groups were those households who did not get the project’s support and assistance. To put it differently, the “affected” stratum was meant for the treatment group and the “non-affected” stratum was considered as the control/ comparison group.

According to available literature, a systematic way to address the problem of selection bias is through random assignment, also called a Randomized Control Trial (RCT)[[4]](#footnote-4). Random assignment helps to ensure that treatment status is independent of the characteristics of the units being assigned. However, random assignment is not always feasible. For example, in the context of the envisioned project, the selection of areas to receive the project interventions was not random; rather, the selection of the zones and kebeles was based on several criteria used during the design stage. Thus, the problem arises because, in most cases, either purposeful targeting of project interventions to specific populations and/or self-selection of participants into interventions takes place[[5]](#footnote-5). This renders the control group and the participant group fundamentally different from each other prior to the commencement of project activities[[6]](#footnote-6). Thus, in the absence of random assignment, estimating the impact of a program becomes more complicated due to selection bias.

So, to avoid this problem, Frontieri team suggested a quasi-experimental evaluation that was designed at the inception stage. To enhance the accuracy of quasi-experimental evaluation results, the comparison group needs to be as similar as possible to the treatment group on all characteristics that might affect the outcomes4. The main challenge of quasi-experimental impact evaluations is identifying comparison groups that represent a reasonable counterfactual to the treatment group. In this regard, given that the selection process was non-random, Frontieri team identified and selected comparison areas that are as similar as possible to the treatment areas (i.e., to represent the counterfactual). This means, we used a quasi-experimental design that controls for several observable household-level characteristics and geographical attributes to account for potential placement and selection bias issues. The quasi-experimental design has both control and intervention groups as well as pre and post-intervention data collection points (double difference). As presented below in Figure 2, A1 and B1 represent pre-intervention or baseline and A2 and B2 represent post-intervention for future mid-term and/or end-line evaluation.

z

Figure 2: Classical Quasi-Experimental Design

## 2.3 Randomization and selection of respondents

The randomization process was applied at kebele level in which all households in treatment kebele were considered beneficiaries of the project regardless of whether the household actually benefits from the project or not whereas households from control kebele are considered as non-beneficiaries of the project regardless of their status in the project intervention. The random assignment of kebeles to either of the groups was done by the project in which Frontieri team received the beneficiary and control kebeles list from CRS.

There are five catholic secretariats (Robe, Harar, Hosana, Meki, and Soddo) set in place to launch the program in the study areas. Except for the Meki catholic secretariat, the other secretariats have started a cash transfer activity to beneficiaries selected for the intervention during the baseline study period.

During the baseline study period, the program started implementation in 155 kebeles distributed across eight zones found in Oromia and SNNP regions of Ethiopia. The randomization of kebeles was conducted using a one-stage complex sampling procedure considering region, zone and woredas as stratifying groups/variables. During this randomization exercise, we considered proportionality to the size of the population approach to determine the number of kebeles selected from the woredas. We randomly sampled 50 treatment kebeles from a pool of 155 kebeles in which the program is undergoing. Similarly, we sampled 50 control kebeles from a total of 248 control kebeles located in eight zones using a one-stage complex sampling approach. Accordingly, sample farm households were drawn from 100 kebeles randomized taking in to account one to one ratio between treatment and control kebeles (Figure 3).

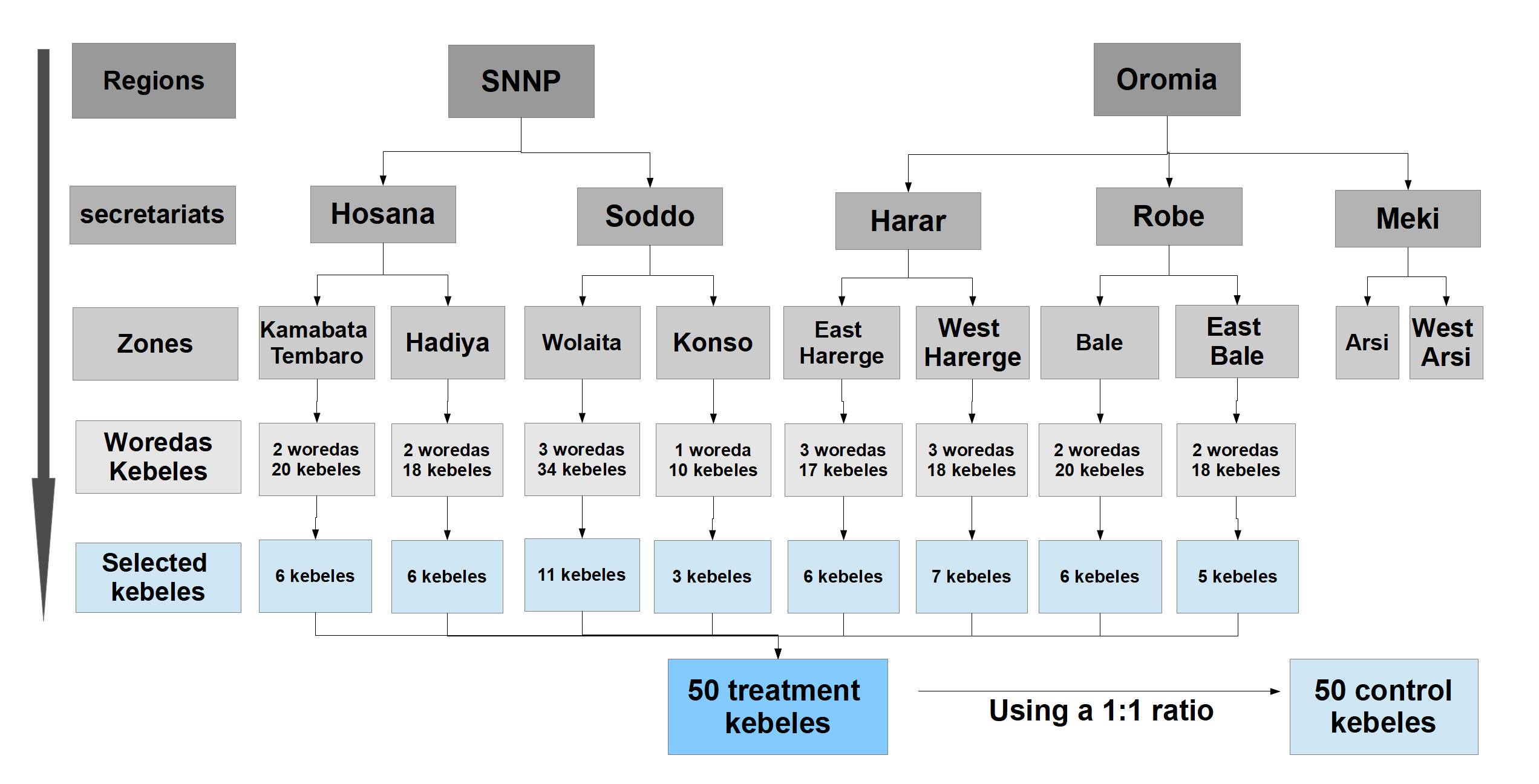


Figure : the Randomization of treatment and control kebeles

## 2.4. Sample size and Sampling Procedure

The study adopted stratified sampling procedure, particularly four-level mixed method of sampling technique to select the sample respondents. In the first stage, eight zones (4 from Oromia and the reaming 4 from SNNPR) were purposely selected in close consultation with WorldVeg scientists and CRS staff. In the second stage, one to three woredas were selected purposively from the selected zones. In the third stage, representative clusters/kebeles were randomly selected from the 18 target woredas from which target respondents were drawn. Finally, a total of 1190 respondents were randomly drawn from the list of the project beneficiaries in the treatment kebeles and control kebeles. Table 1 below shows distribution of sample households across the study areas.

Table 1: Distribution of sample households across study areas

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Regions** | **Zones** | **Number of Woredas** | **Number of T and C *Kebele*s[[7]](#footnote-7)** | **Number of Households** | | | |
| **Treatment** | **Control** | **Total** | **Regional Total** |
| Oromia | East Harerge | 3 | 12 | 71 | 73 | 144 | 566 |
| West Harerge | 3 | 14 | 84 | 84 | 168 |
| Bale | 2 | 12 | 69 | 69 | 138 |
| East Bale | 2 | 10 | 57 | 59 | 116 |
| SNNPR | Wolaita | 3 | 22 | 132 | 168 | 300 | 624 |
| Konso | 1 | 6 | 36 | 36 | 72 |
| Hadiya | 2 | 12 | 72 | 36 | 108 |
| Kembata-Tembaro | 2 | 12 | 72 | 72 | 144 |
| **Total** | |  |  | **593** | **597** | **1,190** | **1,190** |

## 2.5. Methods of Data Collection

The required primary data was collected at the household level using a structured questionnaire and personal interviewing using CAPI based tablets. The data collection instrument (questionnaire) comprised several primary and secondary outcome variables as well as relevant socio-economic and demographic characteristics of the beneficiary and non-beneficiary households. Primary outcome variables included vegetable consumption, diet quality, income from vegetables, and food security. A range of secondary outcomes were also included in close consultation with researchers from WorldVeg team. The questionnaire was designed to undertake an interview that should take about 60 minutes, on average, and no longer than 90 minutes per household. The instrument was initially developed in English and was later translated into local languages (Amharic and Afan Oromo) for field operation. Hence, Frontieri team took the responsibility to recruit and train field staff, lead the data collection, and contributed to the study design and data analysis.

**Data Quality Assurance Measures**

To collect high quality data at the field level, we applied standard data quality assurance mechanism that was implemented in three different phases, namely preparation phase, data monitoring and processing phase, and the data cleaning and auditing phase.

The preparation phase included all activities from the standardization of tools until the piloting and debriefing session with the field staff, which helped to ensure data quality in all dimensions before the start of the main data collection. The major activities under this phase included:

1. **Tool Standardization and Translation**: After careful refining and standardization of a questionnaire and getting approval from WorldVeg team, the Frontier*i* team translated the tools from English into local languages (Amharic and Afan Oromo) and translated them back into English to ensure meaning similarity between the original and the back-translated English version. Any discrepancies identified in the back translated version was been amended to maintain data quality.
2. **Tool Programing:** After the standardization of data collection tool, digitizing and installing it on CAPI was the next step. Accordingly, the tool was programed into Survey Solutions. Once, the programed tool was finalized our data management team conducted a pre-test on the programed tool to ensure the critical data quality metrics (skip pattern rules, validation, and consistency) were successfully implemented in the programed tool before the data collection training was held.
3. **Recruitment of Field staffs:** As part of the preparation activities, field team recruitment was performed by Frontier*i* HR team, supported with qualification exam, field observation checklist, and supervisors’ comments. Accordingly, a total of 16 enumerators and four (4) supervisors who are experienced and excellently qualified with their language proficiencies in Afan-Oromo and Amharic languages were recruited. The recruitment also considered enumerators who participated in the previous survey and exhibited best performance.
4. **Field Staff Training:** Once preparation works and logistics arrangements have been completed, Frontier*i* conducted field staff training so as to prepare them for data collection and particularly to enhance their understanding and comprehension of the core and supplementary data collection tools, ethical field conduct, and the methodological approach involved. The training was given in Addis Ababa at Frontier*i* Consult PLC training hall for four consecutive days (from May 16-19, 2023) in keeping with COVID-19 protection protocols.

The medium of the training was mainly Amharic, Afan-Oromo, and English. It involved classroom sessions, mock interviews using hard copies of the English, Afan-Oromo, and Amharic languages version of the tools, and CAPI practice using tablets on the three language versions of the structured interview questionnaire of the household survey tool.

1. **Piloting and Debriefing:** Once the training was completed, the Frontier*i* research team has conducted field-level piloting with due emphasis on testing of the data collection tool in real situations. For the purpose of pilot testing 6 sub-city in Shegar City having Koye and Tulu Dimtu *woreda*s were purposively selected for the one-day pilot test. It was planned to conduct 40 household surveys from both target *woreda*s that are engaged in similar context of vegetable production. Following the pilot test, a debriefing session was organized for a half-day on May 19, 2023, in which the participants suggested a few points to be modified in the tool programming which were taken into account.

Data Monitoring and Processing was the second phase of data quality assurance mechanism which focused on activities that help to ensure data quality in all dimensions during the data collection period. This included: Spot-Checks, high frequency checks, call back checks, and real time access to data. For each data collection team (a group of five persons each) we allocated a field supervisor who performed direct supervision at woreda level accompanied by the representative of the CRS to ensure high-quality data. The supervisor reviewed all completed questionnaires and performed 5% of spot checks to ensure that the data recorded were accurately performed before the enumerators synchronized them to the server. Spot-check feedback was given to the interviewers for further improvement in the daily debriefing session once the daily data collection was completed.

In addition to spot-check, HFC was conducted every day. To facilitate the HFC check activities, major key variables were selected and STATA do-files were created that can accommodate the listed data quality metrics starting from the first day of data collection. By running HFC, the data management team regularly monitored enumerators’ performance, compliance with required ethics, response frequencies, outliers, duplicates, and other data quality issues. When the quality of the data collected was found to be below the expected standard, the data were rejected and returned to the supervisor/enumerators for correction.

Data cleaning and auditing was the last phase of our data quality assurance mechanism. The data cleaning process has enabled to determine inconsistent, inaccurate, incomplete, or unreasonable data by generating error-log sheets and to maintain the overall integrity of the data quality. Along with data cleaning, data auditing was performed to ensure that the required sample size from the respective farm households was met to achieve the completeness data quality dimension.

## 2.6 Data Analysis and Report Writing

The quantitative data obtained from the household sample survey was subjected to statistical analyses for the baseline report writing. The statistical analysis involved descriptive statistics such as percentages, frequencies and means and inferential statistics, such as dependent and independent sample t-tests to make a comparison between treatment and control groups for the baseline survey, and findings are presented in table forms. The following section presents study findings and discussion.

# 3. STUDY FINDINGS AND DISCUSSION

## 3.1. Demographic Profile of Study Participants

**Sex of the Household Heads**

About 40 percent of the households surveyed are female-headed; of which about 55 and 45 percent in the treatment and control kebeles are female-headed, respectively (Table 2). In addition, about nine percent of households are reported to have been led by elders (old age respondents).

Table 2: Sex composition of participant household heads

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Region** | **Type of Kebele** | **Statistics** | **Sex of the HH head** | | **Total** |
| **Female** | **Male** |
| Oromia | Treatment | Frequency | 95 | 186 | 281 |
| Percent | 33.8% | 66.2% | 100.0% |
| Control | Frequency | 91 | 194 | 285 |
| Percent | 31.9% | 68.1% | 100.0% |
| SNNPR | Treatment | Frequency | 161 | 151 | 312 |
| Percent | 51.6% | 48.4% | 100.0% |
| Control | Frequency | 122 | 190 | 312 |
| Percent | 39.1% | 60.9% | 100.0% |
| Total | Treatment | Frequency | 256 | 337 | 593 |
| Percent | 43.2% | 56.8% | 100.0% |
| Control | Frequency | 213 | 384 | 597 |
| Percent | 35.7% | 64.3% | 100.0% |

About 60 percent of households reported having more than one child. About 58 and 62 percent of households in the treatment and control kebeles, respectively, reported having one child in their family. However, among these households, 15.5 and 14.2 percent in the treatment and control kebeles, respectively, reported their child is malnourished.

Table 3 below shows the avenge age distribution of study respondents across regions and treatment and comparison group households. The statistical test result shows the presence of significance difference across regions but not among treatment and comparison groups in each region.

Table 3: Sample households’ average age distribution by treatment type and region

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Region** | **Treatment Type** | | **Total** | **Test Result** |
|  | **Treatment** | **Control** |  |  |
| Oromia | 42.1 | 42.4 | 42.2 | -0.3 |
| SNNPR | 44.4 | 45.0 | 44.7 | -0.8 |
| **Total** | **43.3** | **43.8** | **43.5** | **-0.7** |
| Test-result | -2.5\*\*\* | -2.7\*\*\* | -3.7\*\*\* |  |

\*\*\* indicates statistically significant at the 5% probability level.

About 53 percent (54 % in treatment and 51% in control kebeles) of respondents cannot read and write. About 26 and 27 percent of household members in treatment and comparison kebeles, respectively, indicated they attended primary school (Grades 1 to 8). The disaggregated results are presented in Table 4 below.

Table 4: Household educational level, by region and treatment type (%)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Oromia** | | | **SNNPR** | | | **Total** | | |
|  | **Treatment** | **Control** | **Total** | **Treatment** | **Control** | **Total** | **Treatment** | **Control** | **Total** |
| Cannot read and write | 56.8 | 60.7 | 58.7 | 54.8 | 47.1 | 50.8 | 54.1 | 51.2 | 52.7 |
| Can read and write | 8.7 | 9.2 | 9 | 4.8 | 5 | 4.9 | 6.4 | 7.9 | 7.1 |
| Primary (Grade 1 -8) | 21.0 | 17.6 | 19.3 | 29.6 | 32.4 | 31.0 | 25.8 | 26.5 | 26.2 |
| Secondary (Grade 9-12) | 4.0 | 4.7 | 4.4 | 7.8 | 11.0 | 9.5 | 7.1 | 8.0 | 7.6 |
| Certificate/Diploma | 0 | 0.2 | 0.1 | 2.1 | 2.9 | 2.5 | 1.2 | 1.7 | 1.4 |
| Degree or above | 0 | 0.2 | 0.1 | 0.9 | 1.6 | 1.3 | 0.7 | 1.3 | 1.0 |
| Do not know | 9.5 | 7.4 | 8.4 | 0 | 0 | 0 | 4.7 | 3.4 | 4.0 |

**Main Livelihood Activity**

About 49 percent of respondents in both intervention and control kebeles indicated that their main source of livelihood is crop production and sales. The other dominant forms of livelihood for household members in the intervention kebeles are casual labour/ temporary employment (73.7%), and commerce and other business (62.5%). The disaggregated baseline results on main livelihood activity reported are presented below in Table 5.

Table 5: Main Livelihood activities of household members, by region and treatment type (no. & %)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Main livelihood** | **Sample Intervention Households (n=1055)** | | | **Sample Control Households (n=1010)** | | |
| **Oromia** | **SNNPR** | **Total** | **Oromia** | **SNNPR** | **Total** |
| Crop Production and Sales | 349 (50.5%) | 492 (47.9%) | 841(49%) | 342 (49.5%) | 535 (52.1%) | 877 (49%) |
| Livestock Production and Sales | 7 (25.9%) | 2 (50%) | 9 (29%) | 20 (74.1%) | 2 (50 %) | 22 (71%) |
| Commerce or other business | 14 (73.7%) | 6 (46.2%) | 20 (62.5%) | 5 (26.3%) | 7 (53.8%) | 12 (37.5%) |
| Casual labour/temporary salary | 5 (50%) | 9 (100%) | 14 (73.7%) | 5 (50%) | 0 (0%) | 5 (26.3%) |
| Employee/ regular salary | 5 (62.5%) | 2 (13.3%) | 7 (30.4%) | 3 (37.5%) | 13 (86.7%) | 16 (69.6%) |
| Student | 0 (0%) | 1 (100%) | 1 (50%) | 1 (100%) | 0 (0%) | 1 (50%) |
| Unpaid housework | 102 (46.8%) | 24 (52.2%) | 126 (47.7%) | 116 (53.2%) | 22 (47.8%) | 138 (52.3%) |
| Retired | 2 (66.7%) | 0 (0%) | 2 (50%) | 1 (33.3%) | 1 (100%) | 2 (50%) |
| None | 34 (47.9%) | 1 (100%) | 35 (48.6%) | 37 (52.1%) | 0 (0%) | 37 (51.4%) |

***NB***: Percentages in brackets are computed from within valid livelihood activity reported, not from the total sample size.

## 3.2 Land and Livestock ownership

The baseline survey examined the size of households’ land using alternative measurement units. Among households who reported their land size in terms of hectares, the mean land size was found to be 1.86 hectare in treatment kebeles and 1.90 hectare in control kebeles, with the test result showing no significant difference between the two groups in landholding at any reasonable probability level. For those who reported using meter square, the mean land size was found to be 1.82 in targeted kebeles while it is 2.08 meter square in control kebeles. For those households who reported in terms of Kurt/timad/kada, the mean land size is 2.60 in targeted kebeles while it is 2.65 in control kebeles. The disaggregated result is presented below in Table 6.

Table 6: Summary statistics for owned total land area

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Unit of Measurement** | **Sample Type** | | | | | | **Total** | | | **Test-result** |
| **Treatment Households** | | | **Control Households** | | |
| **Frequency** | **Mean** | **SD** | **Frequency** | **Mean** | **SD** | **Frequency** | **Mean** | **SD** |  |
| Acres |  |  |  | 1 |  |  | 1 |  |  |  |
| Hectares | 171 | 1.86 | 1.41 | 173 | 1.93 | 1.31 | 344 | 1.90 | 1.36 | 0.8 |
| Meter square | 11 | 1.82 | 1.10 | 14 | 2.29 | 1.05 | 25 | 2.08 | 1.08 |  |
| *Kurt/timad/kada* | 410 | 2.60 | 1.64 | 405 | 2.70 | 1.77 | 815 | 2.65 | 1.71 |  |

Households in both intervention and control kebeles reported that, on average, about 80 percent of their land holdings are cultivated. There is no significant difference between the two groups with regard to the percentage of land cultivated for vegetables (Table 7).

Table 7: Distribution of land cultivation by region and treatment type (%)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Type of Group** | **Region** | **Frequency** | **Mean** | **Std. Deviation** | **Test result** | | Treatment | Oromia | 280 | 78.4000 | 21.17965 | -0.3 | | SNNPR | 312 | 81.9388 | 14.33116 |  | | **Total** | **592** | **80.2650** | **17.97136** |  | | Control | Oromia | 281 | 76.4413 | 23.08194 |  | | SNNPR | 312 | 84.5160 | 11.79077 |  | | **Total** | **593** | **80.6897** | **18.47446** |  | | **Total** | Oromia | 561 | 77.4189 | 22.15483 |  | | SNNPR | 624 | 83.2274 | 13.17532 |  | | Total | 1,185 | 80.4776 | 18.21840 |  |   Chicken is the dominant livestock type possessed across sturdy regions and for treatment and comparison groups. The average number of chickens held by study respondents was found as 1.23 and 1.82 across treatment and control groups, respectively. Similarly, the average number of goats held in both treatment and control groups was found as 1.20. The details and disaggregated results on the average number of livestock holding is presented below in Table 8. |

Table 8: Average livestock holding of study respondents

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Livestock Type** | **Sample Intervention Households (n=593)** | | | **Sample Control Households (n=597)** | | |
| **Oromia** | **SNNPR** | **Total** | **Oromia** | **SNNPR** | **Total** |
| Cow | .91 | .56 | .73 | 1.03 | .99 | 1.01 |
| Oxen | .44 | .37 | .40 | .56 | .77 | .67 |
| Calf | .53 | .38 | .45 | .60 | .64 | .62 |
| Heifer | .26 | .22 | .24 | .25 | .26 | .25 |
| Sheep | .20 | .26 | .23 | .16 | .47 | .33 |
| Goat | 1.89 | .57 | 1.20 | 1.85 | .62 | 1.20 |
| Chicken | 1.54 | .95 | 1.23 | 1.92 | 1.74 | 1.82 |
| Donkey | .47 | .15 | .30 | .48 | .26 | .36 |
| Horse | .00 | .02 | .01 | .01 | .01 | .01 |
| Mule | .00 | .00 | .00 | .00 | .00 | .00 |
| Bee hive | .20 | .05 | .12 | .32 | .35 | .34 |
| Camel | .09 | .00 | .04 | .05 | .01 | .03 |

## 3.3 Vegetable Production

## 3.3.1 Meher season production (June – September, 2022)

About 65 percent (67 % in treatment and 62 % in control kebeles) of study respondents indicated that they grew vegetables in their home garden during the last Meher season (Table 9). In addition, about 20 percent of households in both intervention and control kebeles reported that they produced vegetables in farm plots outside their home garden in the last Meher season (Table 10).

Table 9: Households who grow vegetables in home garden during the Meher season.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Region** | **Type of *Kebele*** | **Statistics** | **Response** | | **Total** |
| **Yes** | **No** |
| Oromia | Treatment | Frequency | 94 | 187 | 281 |
| Percentage | 33.5% | 66.5% | 100.0% |
| Control | Frequency | 67 | 218 | 285 |
| Percentage | 23.5% | 76.5% | 100.0% |
| SNNPR | Treatment | Frequency | 307 | 5 | 312 |
| Percentage | 98.4% | 1.6% | 100.0% |
| Control | Frequency | 306 | 6 | 312 |
| Percentage | 98.1% | 1.9% | 100.0% |
| Total | Treatment | Frequency | 401 | 192 | 593 |
| Percentage | 67.6% | 32.4% | 100.0% |
| Control | Frequency | 373 | 224 | 597 |
| Percentage | 62.5% | 37.5% | 100.0% |

Table 10: Households who grow vegetables in parcels other than home garden during the Meher season

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Region** | **Statistics** | **Type of *Kebele*** | | | **Total** |
| **Treatment** | **Control** | |
| Oromia | Frequency | 93 | | 91 | 184 |
| Percentage | 33.1% | | 31.9% | 32.5% |
| SNNPR | Frequency | 26 | | 28 | 54 |
| Percentage | 8.3% | | 9.0% | 8.7% |
| **Total** | **Frequency** | **119** | | **119** | **238** |
| **Percentage** | **20.1%** | | **19.9%** | **20.0%** |

## 3.3.2 Dry Season (Oct. 2022 – Jan. 2023) production

About 15 percent (15 % in treatment and 14.9 % in control kebeles) of study respondents indicated that they cultivated vegetables in their home garden during the last dry season (Table 11). Similarly, about four percent of households in both intervention and control kebeles reported that they produced vegetables in farm plots outside their home garden in the last dry season (Table 12).

Table 11: Households who grew vegetables in home garden during the dry season

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Statistics** | **Type of *Kebele* by treatment** | | | | **Total** |
| **Treatment** | | **Control** | |
| Oromia | Frequency | 24 | 23 | | 47 | |
| Percentage | 8.5% | 8.1% | | 8.3% | |
| SNNPR | Frequency | 65 | 66 | | 131 | |
| Percentage | 20.8% | 21.2% | | 21.0% | |
| Total | Frequency | 89 | 89 | | 178 | |
| Percentage | 15.0% | 14.9% | | 15.0% | |

Table 12: Households who grew vegetables in parcels other than home garden during the dry season

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Region** |  | **Type of *Kebele* by treatment** | | **Total** |
| **Treatment** | **Control** |
| Oromia | Frequency | 13 | 12 | 25 |
| Percentage | 4.6% | 4.2% | 4.4% |
| SNNPR | Frequency | 8 | 11 | 19 |
| Percentage | 2.6% | 3.5% | 3.0% |
| Total | Frequency | 21 | 23 | 44 |
| Percentage | 3.5% | 3.9% | 3.7% |

The average years of farming experience in vegetable production among study respondents was found to be 9.20 years (9.29 in treatment and 9.12 years in control kebeles). The farming experience among treatment and control households sampled within the same region is almost similar whereas the variation across study regions is found as significant. The mean farming experience in SNNPR is 13.71 years with standard deviation of 7.966 while it is 4.23 years with standard deviation of 3.103 in Oromia region. The test statistics between treatment and control groups is found to be insignificant at any reasonable probability level. The disaggregated results are presented below in Table 13.

Table 13: Households’ years of farming experience in vegetable production

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Region** | **Type of *Kebele*** | **N** | **Mean** | **Std. Deviation** | **Test-result** |
| Oromia | Treatment | 281 | 4.37 | 3.547 |  |
| Control | 285 | 4.10 | 2.592 |  |
| Total | 566 | 4.23 | 3.103 |  |
| SNNPR | Treatment | 312 | 13.72 | 7.868 |  |
| Control | 312 | 13.70 | 8.076 |  |
| Total | 624 | 13.71 | 7.966 |  |
| Total | Treatment | 593 | 9.29 | 7.765 | 0.3 |
| Control | 597 | 9.12 | 7.763 |  |
| Total | 1190 | 9.20 | 7.761 |  |

The aggregated results from both regions showed that about 17 percent of respondents (19.6 % in treatment and 15.9% in control kebeles) have received training for vegetable production in the past 12 months (Table 14). Negligible proportion of respondents (0.9%) indicated that they received voucher for seed or farm tools and equipment (Table 15). In contrast, about 12 percent of respondents in the treatment kebeles indicated that they leased out their land because of seed shortage (Table 16). The disaggregated results are presented in the following Tables (14 to 16).

Table 14: During the past 12 months have you received training for vegetable production?

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Type of *Kebele*** |  | **Response** | | | | **Total** | | |
| **Yes** | **No** | | |
| Oromia | Treatment | Frequency | 83 | 198 | 281 | | |
| Percentage | 29.5% | 70.5% | 100.0% | | |
| Control | Frequency | 60 | 225 | 285 | | |
| Percentage | 21.1% | 78.9% | 100.0% | | |
| SNNPR | Treatment | Frequency | 33 | 279 | 312 | | |
| Percentage | 10.6% | 89.4% | 100.0% | | |
| Control | Frequency | 35 | 277 | 312 | | |
| Percentage | 11.2% | 88.8% | 100.0% | | |
| Total | Treatment | Frequency | 116 | 477 | 593 | | |
| Percentage | 19.6% | 80.4% | 100.0% | | |
| Control | Frequency | 95 | 502 | 597 | | |
| Percentage | 15.9% | 84.1% | 100.0% | | |
| Total | Frequency | 211 | 979 | | 1190 | | |
| Percentage | 17.7% | 82.3% | | 100.0% | | |

Table 15: Did you receive voucher for seed or farm tools and equipment?

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Type of *Kebele*** | **Statistics** | **Response** | | | | **Total** | | |
| **Yes** | | | **No** |
| Oromia | Treatment | Frequency | 5 | 276 | | | 281 |
| Percentage | 1.8% | 98.2% | | | 100.0% |
| Control | Frequency | 3 | 282 | | | 285 |
| Percentage | 1.1% | 98.9% | | | 100.0% |
| SNNPR | Treatment | Frequency | 2 | 310 | | | 312 |
| Percentage | 0.6% | 99.4% | | | 100.0% |
| Control | Frequency | 1 | 311 | | | 312 |
| Percentage | 0.3% | 99.7% | | | 100.0% |
| Total | Treatment | Frequency | 7 | 586 | | | 593 |
| Percentage | 1.2% | 98.8% | | | 100.0% |
| Control | Frequency | 4 | 593 | | | 597 |
| Percentage | 0.7% | 99.3% | | | 100.0% |
| Total | Frequency | 11 | | 1179 | | 1190 | |
| Percentage | 0.9% | | 99.1% | | 100.0% | |

Table 16: Did the household lease out land because of seed shortage?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Type of *Kebele*** | **Statistics** | **Response** | | | **Total** | |
| **Yes** | **No** | |
| Oromia | Treatment | Frequency | 39 | 242 | 281 | | |
| Percentage | 13.9% | 86.1% | 100.0% | | |
| Control | Frequency | 43 | 242 | 285 | | |
| Percentage | 15.1% | 84.9% | 100.0% | | |
| SNNPR | Treatment | Frequency | 31 | 281 | 312 | | |
| Percentage | 9.9% | 90.1% | 100.0% | | |
| Control | Frequency | 21 | 291 | 312 | | |
| Percentage | 6.7% | 93.3% | 100.0% | | |
| Total | Treatment | Frequency | 70 | 523 | 593 | | |
| Percentage | 11.8% | 88.2% | 100.0% | | |
| Control | Frequency | 64 | 533 | 597 | | |
| Percentage | 10.7% | 89.3% | 100.0% | | |
| Total | Frequency | 134 | 1056 | | | 1190 |
| Percentage | 11.3% | 88.7% | | | 100.0% |

## 3.4 Vegetable Consumption and Sales

The results of the households surveyed in both regions revealed that about 14 percent of respondents (13.6% in treatment and 14.6% in control kebeles) indicated that they consume vegetables. Higher proportion of households in control kebeles used vegetables in their diets than households in treatment kebeles and the difference is statistically significant at the 5% probability level (Table 17). By the same token, the aggregated results from both surveyed regions showed that on average about 40 percent of their Meher vegetable product were sold in the market (Table 18). The average lower and higher price of selling the vegetables was found as 28.74 and 39.18 Birr per kilogram, respectively (Tables 19 & 20). There is no significant difference between the lowest and highest prices of vegetables between the two groups although treatment groups charged marginally higher prices than control groups (in both the lowest and highest prices). The mean net revenue obtained from selling vegetables produced in the Meher season reported by treatment group respondents was found as 2023.20 and 4651.58 Birr in Oromia and SNNPR, respectively. The average amount of revenue obtained from vegetable sales is higher for control households (3505 Birr) than that of treatment households (2591 Birr) and the difference is statistically significant at the 10% probability level (Table 21). The disaggregated results are presented in the following tables (17 to 21).

Table 17: Did you eat vegetables?

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Type of *Kebele*** | **Statistics** | **Response** | |  | **Test result** |
| **Yes** | **No** |  |
| Oromia | Treatment | Frequency | 288 | 2144 | 2432 |  |
| Percentage | 11.8% | 88.2% | 100.0% |  |
| Control | Frequency | 203 | 1589 | 1792 |  |
| Percentage | 11.3% | 88.7% | 100.0% |  |
| SNNP | Treatment | Frequency | 1102 | 6674 | 7776 |  |
| Percentage | 14.2% | 85.8% | 100.0% |  |
| Control | Frequency | 1215 | 6689 | 7904 |  |
| Percentage | 15.4% | 84.6% | 100.0% |  |
| Total | Treatment | Frequency | 1390 | 8818 | 10208 | 2.04\*\* |
| Percentage | 13.6% | 86.4% | 100.0% |  |
| Control | Frequency | 1418 | 8278 | 9696 |  |
| Percentage | 14.6% | 85.4% | 100.0% |  |
| Total | Frequency | 2808 | 17096 | 19904 |  |
| Percentage | 14.1% | 85.9% | 100.0% |  |

\*\* indicates the test is statistically significant at the 5% probability level

Table 18: What percentage of harvest was sold from *Meher* production?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Type of *Kebele* by treatment** | **Region** | **N** | **Mean** | **Std. Deviation** |
| Treatment | Oromia | 134 | 37.22 | 38.537 |
| SNNP | 44 | 29.66 | 37.886 |
| Total | 178 | 35.35 | 38.410 |
| Control | Oromia | 141 | 44.17 | 37.795 |
| SNNP | 36 | 46.89 | 41.899 |
| Total | 177 | 44.72 | 38.556 |
| Total | Oromia | 275 | 40.78 | 38.247 |
| SNNP | 80 | 37.41 | 40.416 |
| Total | 355 | 40.02 | 38.714 |

|  |
| --- |
| Table 19: What was the lowest selling price per kg in Meher production of vegetables? (in Birr) |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Type of *Kebele* by treatment** | **Region** | **N** | **Mean** | **Std. Deviation** | **Test-result** |
| Treatment | Oromia | 69 | 30.01 | 17.791 | 0.8 |
| SNNP | 19 | 30.42 | 41.615 |  |
| Total | 88 | 30.10 | 24.611 |  |
| Control | Oromia | 87 | 26.46 | 14.483 |  |
| SNNP | 22 | 32.27 | 34.510 |  |
| Total | 109 | 27.63 | 20.102 |  |
| Total | Oromia | 156 | 28.03 | 16.074 |  |
| SNNP | 41 | 31.41 | 37.489 |  |
| Total | 197 | 28.74 | 22.205 |  |

Table 20: What was the highest selling price per kg of Meher vegetable production? (in Birr)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Type of *Kebele* by treatment** |  | **N** | **Mean** | **Std. Deviation** | **Test-result** |
| Treatment | Oromia | 69 | 41.19 | 28.308 | 0.7 |
| SNNP | 19 | 39.89 | 52.995 |  |
| Total | 88 | 40.91 | 34.752 |  |
| Control | Oromia | 87 | 35.53 | 18.233 |  |
| SNNP | 22 | 46.73 | 50.097 |  |
| Total | 109 | 37.79 | 27.805 |  |
| Total | Oromia | 156 | 38.03 | 23.323 |  |
| SNNP | 41 | 43.56 | 50.924 |  |
| Total | 197 | 39.18 | 31.056 |  |

Table 21: After accounting for all costs, on average how much did you earn from selling vegetables produced in the Meher season? (in Birr)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Type of *Kebele* by treatment** | **Region** | **N** | **Mean** | **Std. Deviation** | **Test-result** |
| Treatment | Oromia | 69 | 2023.20 | 2128.859 | -1.6\* |
| SNNP | 19 | 4651.58 | 6614.699 |  |
| Total | 88 | 2590.69 | 3711.855 |  |
| Control | Oromia | 87 | 2531.03 | 2566.588 |  |
| SNNP | 22 | 7356.36 | 6625.660 |  |
| Total | 109 | 3504.95 | 4191.322 |  |
| Total | Oromia | 156 | 2306.42 | 2388.976 |  |
| SNNP | 41 | 6102.93 | 6678.415 |  |
| Total | 197 | 3096.55 | 4000.401 |  |

\*Indicates the test is significant at the 10% probability level

About six percent of respondents indicated that they process vegetables to increase its shelf life. The disaggregated result is presented in Table 22 below.

Table 22: Processing vegetables to increase its shelf life?

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | | | **Response** | | | | **Total** |
| **Yes** | | | **No** |
| Oromia | Treatment | Frequency | 15 | | | 266 | | | 281 | |
| Percentage | 5.3% | | | 94.7% | | | 100.0% | |
| Control | Frequency | 4 | | | 281 | | | 285 | |
| Percentage | 1.4% | | | 98.6% | | | 100.0% | |
| SNNP | Treatment | Frequency | 23 | | | 289 | | | 312 | |
| Percentage | 7.4% | | | 92.6% | | | 100.0% | |
| Control | Frequency | 24 | | | 288 | | | 312 | |
| Percentage | 7.7% | | | 92.3% | | | 100.0% | |
| Total | Treatment | Frequency | 38 | | | 555 | | | 593 | |
| Percentage | 6.4% | | | 93.6% | | | 100.0% | |
| Control | Frequency | 28 | | | 569 | | | 597 | |
| Percentage | 4.7% | | | 95.3% | | | 100.0% | |
| Total | Frequency | | 66 | | | 1124 | | 1190 | | |
| Percentage | | 5.5% | | | 94.5% | | 100.0% | | |

## 3.5 Shocks and Resilience

Sample households both in the treatment and control group expressed their experience to various forms of shocks. Drought/irregular rain is reported as the dominant form of shock experienced in both groups and in both regions. In contrast, the aggregated results from both regions on major drop in prices of agricultural products showed that it is a less frequent case reported by about 26 percent of households in both treatment and comparison groups. Table 23 summarizes the aggregated and disaggregated baseline results for both groups and regions.

Table 23: Distribution of households who experienced various forms of shocks (%)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Type of shock** | **Sample Treatment Households** | | | **Sample Control Households** | | |
| **Oromia** | **SNNP** | **Total** | **Oromia** | **SNNP** | **Total** |
| Drought/irregular rain | 97.5 | 84.9 | 90.9 | 95.4 | 83.7 | 89.3 |
| Early or late onset of agricultural seasons | 81.9 | 69.9 | 75.5 | 82.2 | 69.9 | 75.9 |
| High rate of crop diseases | 73.3 | 51.6 | 61.9 | 77.2 | 52.6 | 64.3 |
| Major drop in prices of agricultural products | 44.1 | 14.1 | 26.3 | 44.2 | 8.3 | 25.5 |
| High prices of agricultural inputs | 74.4 | 76.6 | 75.5 | 82.5 | 78.5 | 80.4 |
| High prices of food | 77.2 | 68.6 | 72.7 | 80.7 | 66.0 | 73.0 |

The baseline survey used nine questions/statements to assess sample households’ attitude towards their resilience to withstand the shocks they experienced. The mean value of the attitude score lies under the categories of ‘disagreement’ and ‘neutral’ opinion. This shows that households have low level of efficacy to bounce back from the shocks they experienced[[8]](#footnote-8). Table 24 depicts to the descriptive statistics summary result of the statements considered to assess the attitude of study respondents, and Table 25 to 33 further show the desegregated result obtained from the baseline survey.

Table 24: Descriptive statistics result of attitude score on households’ current capability to withstand existing shocks

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statements used to assess households’ attitude** | **N** | **Minimum** | **Maximum** | **Mean** | **Std. Deviation** |
| Your household is fully prepared for any future climate shock that may occur in your area | 1190 | 1 | 5 | 2.57 | 1.034 |
| Your household is able to bounce back from any climatic shock affecting your livelihoods or incomes | 1190 | 1 | 5 | 2.55 | 1.005 |
| If affected by a climatic shock, your household can change or adapt its primary income or source of livelihood without major difficulties | 1190 | 1 | 5 | 2.59 | 1.071 |
| If threatening climatic variability shocks/stressors became more frequent and intense, your household would still find a way to get by. | 1190 | 1 | 5 | 2.57 | 1.040 |
| Your household has easy access to the financial support that would be required if climatic shocks caused hardship in your area. | 1190 | 1 | 5 | 2.56 | 1.083 |
| In case of unsatisfied essential needs because of climatic shocks your household can rely on the support of family and friends. | 1190 | 1 | 5 | 2.73 | 1.128 |
| In case of unsatisfied essential needs due to climatic shocks, your household can rely on support from public administration/government or other institutions. | 1190 | 1 | 5 | 2.93 | 1.111 |
| Your household has learned important lessons from past hardships caused by climatic shocks that help you better prepare for similar threats in the near future. | 1190 | 1 | 5 | 3.15 | 1.085 |
| Your household receives in advance information warning about future climate related variability and weather risks that help your household to prepare for and protect from future shocks/stressors. | 1190 | 1 | 5 | 3.25 | 1.061 |

The detail results of responses given to each statement are presented in the following tables (25 to 33) in a disaggregated manner.

Table 25: Your household is fully prepared for any future climate shock that may occur in your area

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** |  | **Response** | | | | | **Total** |
| **Strongly agree** | **Disagree** | **Neutral** | **Agree** | **Strongly disagree** |
| Oromia | Treatment | Frequency | 8 | 215 | 12 | 29 | 17 | 281 |
| Percentage | 2.8% | 76.5% | 4.3% | 10.3% | 6.0% | 100.0% |
| Control | Frequency | 7 | 210 | 12 | 40 | 16 | 285 |
| Percentage | 2.5% | 73.7% | 4.2% | 14.0% | 5.6% | 100.0% |
| SNNP | Treatment | Frequency | 0 | 219 | 6 | 61 | 26 | 312 |
| Percentage | 0.0% | 70.2% | 1.9% | 19.6% | 8.3% | 100.0% |
| Control | Frequency | 6 | 201 | 5 | 69 | 31 | 312 |
| Percentage | 1.9% | 64.4% | 1.6% | 22.1% | 9.9% | 100.0% |
| Total | Treatment | Frequency | 8 | 434 | 18 | 90 | 43 | 593 |
| Percentage | 1.3% | 73.2% | 3.0% | 15.2% | 7.3% | 100.0% |
| Control | Frequency | 13 | 411 | 17 | 109 | 47 | 597 |
| Percentage | 2.2% | 68.8% | 2.8% | 18.3% | 7.9% | 100.0% |
| Total | Frequency | 21 | 845 | 35 | 199 | 90 | 1190 |
| Percentage | 1.8% | 71.0% | 2.9% | 16.7% | 7.6% | 100.0% |

Table 26: Your household is able to bounce back from any climatic shock affecting your livelihoods

or income

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **. Region** | **Sample Type** | | **Statistics** | | | **Response** | | | | | | | **Total** |
| **Strongly agree** | **Disagree** | **Neutral** | | | **Agree** | **Strongly disagree** |
| Oromia | | Treatment | | | Frequency | 13 | 204 | 20 | | 29 | | 15 | 281 |
| Percentage | 4.6% | 72.6% | 7.1% | | 10.3% | | 5.3% | 100.0% |
| Control | | | Frequency | 6 | 203 | 23 | | 34 | | 19 | 285 |
| Percentage | 2.1% | 71.2% | 8.1% | | 11.9% | | 6.7% | 100.0% |
| SNNP | | Treatment | | | Frequency | 1 | 220 | 15 | | 51 | | 25 | 312 |
| Percentage | 0.3% | 70.5% | 4.8% | | 16.3% | | 8.0% | 100.0% |
| Control | | | Frequency | 1 | 215 | 5 | | 66 | | 25 | 312 |
| Percentage | 0.3% | 68.9% | 1.6% | | 21.2% | | 8.0% | 100.0% |
| Total | | Treatment | | | Frequency | 14 | 424 | 35 | | 80 | | 40 | 593 |
| Percentage | 2.4% | 71.5% | 5.9% | | 13.5% | | 6.7% | 100.0% |
| Control | | | Frequency | 7 | 418 | 28 | | 100 | | 44 | 597 |
| Percentage | 1.2% | 70.0% | 4.7% | | 16.8% | | 7.4% | 100.0% |
| Total | | Frequency | | 21 | 842 | 63 | 180 | | | 84 | 1190 |
| Percentage | | 1.8% | 70.8% | 5.3% | 15.1% | | | 7.1% | 100.0% |

Table 27: If affected by a climatic shock, your household can change or adapt its primary income or source of livelihood without major difficulties

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **. Region** | **Sample Type** | | **Statistics** | **Response** | | | | | **Total** |
| **Strongly agree** | **Disagree** | **Neutral** | **Agree** | **Strongly disagree** |
| Oromia | | Treatment | Frequency | 14 | 182 | 28 | 30 | 27 | 281 |
| Percentage | 5.0% | 64.8% | 10.0% | 10.7% | 9.6% | 100.0% |
| Control | Frequency | 7 | 212 | 18 | 28 | 20 | 285 |
| Percentage | 2.5% | 74.4% | 6.3% | 9.8% | 7.0% | 100.0% |
| SNNP | | Treatment | Frequency | 2 | 217 | 17 | 39 | 37 | 312 |
| Percentage | 0.6% | 69.6% | 5.4% | 12.5% | 11.9% | 100.0% |
| Control | Frequency | 1 | 215 | 10 | 46 | 40 | 312 |
| Percentage | 0.3% | 68.9% | 3.2% | 14.7% | 12.8% | 100.0% |
| Total | | Treatment | Frequency | 16 | 399 | 45 | 69 | 64 | 593 |
| Percentage | 2.7% | 67.3% | 7.6% | 11.6% | 10.8% | 100.0% |
| Control | Frequency | 8 | 427 | 28 | 74 | 60 | 597 |
| Percentage | 1.3% | 71.5% | 4.7% | 12.4% | 10.1% | 100.0% |
| Total | Frequency | 24 | 826 | 73 | 143 | 124 | 1190 |
| Percentage | 2.0% | 69.4% | 6.1% | 12.0% | 10.4% | 100.0% |

Table 28: If threatening climatic variability shocks/stressors became more frequent and intense, your household would still find a way to get by

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | | **Statistics** | | | **Response** | | | | | **Total** |
| **Strongly agree** | **Disagree** | **Neutral** | **Agree** | **Strongly disagree** |
| Oromia | | Treatment | | | Frequency | 15 | 183 | 26 | 36 | 21 | 281 |
| Percentage | 5.3% | 65.1% | 9.3% | 12.8% | 7.5% | 100.0% |
| Control | | | Frequency | 9 | 185 | 34 | 38 | 19 | 285 |
| Percentage | 3.2% | 64.9% | 11.9% | 13.3% | 6.7% | 100.0% |
| SNNP | | Treatment | | | Frequency | 1 | 231 | 16 | 34 | 30 | 312 |
| Percentage | 0.3% | 74.0% | 5.1% | 10.9% | 9.6% | 100.0% |
| Control | | | Frequency | 1 | 226 | 10 | 36 | 39 | 312 |
| Percentage | 0.3% | 72.4% | 3.2% | 11.5% | 12.5% | 100.0% |
| Total | | Treatment | | | Frequency | 16 | 414 | 42 | 70 | 51 | 593 |
| Percentage | 2.7% | 69.8% | 7.1% | 11.8% | 8.6% | 100.0% |
| Control | | | Frequency | 10 | 411 | 44 | 74 | 58 | 597 |
| Percentage | 1.7% | 68.8% | 7.4% | 12.4% | 9.7% | 100.0% |
| Total | | Frequency | | 26 | 825 | 86 | 144 | 109 | 1190 |
| Percentage | | 2.2% | 69.3% | 7.2% | 12.1% | 9.2% | 100.0% |

Table 29: Your household has easy access to the financial support that would be required if climatic shocks caused hardship in your area

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **. Region** | **Sample Type** | | **Statistics** | | | **Response** | | | | | **Total** |
| **Strongly agree** | **Disagree** | **Neutral** | **Agree** | **Strongly disagree** |
| Oromia | | Treatment | | | Frequency | 19 | 179 | 32 | 25 | 26 | 281 |
| Percentage | 6.8% | 63.7% | 11.4% | 8.9% | 9.3% | 100.0% |
| Control | | | Frequency | 8 | 198 | 33 | 22 | 24 | 285 |
| Percentage | 2.8% | 69.5% | 11.6% | 7.7% | 8.4% | 100.0% |
| SNNP | | Treatment | | | Frequency | 2 | 231 | 12 | 17 | 50 | 312 |
| Percentage | 0.6% | 74.0% | 3.8% | 5.4% | 16.0% | 100.0% |
| Control | | | Frequency | 1 | 231 | 18 | 15 | 47 | 312 |
| Percentage | 0.3% | 74.0% | 5.8% | 4.8% | 15.1% | 100.0% |
| Total | | Treatment | | | Frequency | 21 | 410 | 44 | 42 | 76 | 593 |
| Percentage | 3.5% | 69.1% | 7.4% | 7.1% | 12.8% | 100.0% |
| Control | | | Frequency | 9 | 429 | 51 | 37 | 71 | 597 |
| Percentage | 1.5% | 71.9% | 8.5% | 6.2% | 11.9% | 100.0% |
| Total | | Frequency | | 30 | 839 | 95 | 79 | 147 | 1190 |
| Percentage | | 2.5% | 70.5% | 8.0% | 6.6% | 12.4% | 100.0% |

Table 30: In case of unsatisfied essential needs because of climatic shocks your household can rely on the support of family and friends

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **. Region** | **Sample Type** | **Statistics** | **Response** | | | | | **Total** |
| **Strongly agree** | **Disagree** | **Neutral** | **Agree** | **Strongly disagree** |
| Oromia | Treatment | Frequency | 23 | 163 | 34 | 35 | 26 | 281 |
| Percentage | 8.2% | 58.0% | 12.1% | 12.5% | 9.3% | 100.0% |
| Control | Frequency | 9 | 161 | 42 | 51 | 22 | 285 |
| Percentage | 3.2% | 56.5% | 14.7% | 17.9% | 7.7% | 100.0% |
| SNNP | Treatment | Frequency | 1 | 210 | 15 | 40 | 46 | 312 |
| Percentage | 0.3% | 67.3% | 4.8% | 12.8% | 14.7% | 100.0% |
| Control | Frequency | 0 | 187 | 18 | 61 | 46 | 312 |
| Percentage | 0.0% | 59.9% | 5.8% | 19.6% | 14.7% | 100.0% |
| Total | Treatment | Frequency | 24 | 373 | 49 | 75 | 72 | 593 |
| Percentage | 4.0% | 62.9% | 8.3% | 12.6% | 12.1% | 100.0% |
| Control | Frequency | 9 | 348 | 60 | 112 | 68 | 597 |
| Percentage | 1.5% | 58.3% | 10.1% | 18.8% | 11.4% | 100.0% |
| Total | Frequency | 33 | 721 | 109 | 187 | 140 | 1190 |
| Percentage | 2.8% | 60.6% | 9.2% | 15.7% | 11.8% | 100.0% |

Table 31:In case of unsatisfied essential needs due to climatic shocks, your household can rely on support from public administration/government or other institutions

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **Response** | | | | | **Total** |
| **Strongly agree** | **Disagree** | **Neutral** | **Agree** | **Strongly disagree** |
| Oromia | Treatment | Frequency | 13 | 150 | 37 | 62 | 19 | 281 |
| Percentage | 4.6% | 53.4% | 13.2% | 22.1% | 6.8% | 100.0% |
| Control | Frequency | 4 | 147 | 38 | 81 | 15 | 285 |
| Percentage | 1.4% | 51.6% | 13.3% | 28.4% | 5.3% | 100.0% |
| SNNP | Treatment | Frequency | 4 | 154 | 21 | 94 | 39 | 312 |
| Percentage | 1.3% | 49.4% | 6.7% | 30.1% | 12.5% | 100.0% |
| Control | Frequency | 4 | 142 | 25 | 104 | 37 | 312 |
| Percentage | 1.3% | 45.5% | 8.0% | 33.3% | 11.9% | 100.0% |
| Total | Treatment | Frequency | 17 | 304 | 58 | 156 | 58 | 593 |
| Percentage | 2.9% | 51.3% | 9.8% | 26.3% | 9.8% | 100.0% |
| Control | Frequency | 8 | 289 | 63 | 185 | 52 | 597 |
| Percentage | 1.3% | 48.4% | 10.6% | 31.0% | 8.7% | 100.0% |
| Total | Frequency | 25 | 593 | 121 | 341 | 110 | 1190 |
| Percentage | 2.1% | 49.8% | 10.2% | 28.7% | 9.2% | 100.0% |

Table 32: Your household has learned important lessons from past hardships caused by climatic shocks that help you better prepare for similar threats in the near future

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **Response** | | | | | **Total** |
| **Strongly agree** | **Disagree** | **Neutral** | **Agree** | **Strongly disagree** |
| Oromia | Treatment | Frequency | 6 | 119 | 33 | 100 | 23 | 281 |
| Percentage | 2.1% | 42.3% | 11.7% | 35.6% | 8.2% | 100.0% |
| Control | Frequency | 2 | 133 | 38 | 95 | 17 | 285 |
| Percentage | 0.7% | 46.7% | 13.3% | 33.3% | 6.0% | 100.0% |
| SNNP | Treatment | Frequency | 11 | 100 | 27 | 153 | 21 | 312 |
| Percentage | 3.5% | 32.1% | 8.7% | 49.0% | 6.7% | 100.0% |
| Control | Frequency | 14 | 84 | 30 | 156 | 28 | 312 |
| Percentage | 4.5% | 26.9% | 9.6% | 50.0% | 9.0% | 100.0% |
| Total | Treatment | Frequency | 17 | 219 | 60 | 253 | 44 | 593 |
| Percentage | 2.9% | 36.9% | 10.1% | 42.7% | 7.4% | 100.0% |
| Control | Frequency | 16 | 217 | 68 | 251 | 45 | 597 |
| Percentage | 2.7% | 36.3% | 11.4% | 42.0% | 7.5% | 100.0% |
| Total | Frequency | 33 | 436 | 128 | 504 | 89 | 1190 |
| Percentage | 2.8% | 36.6% | 10.8% | 42.4% | 7.5% | 100.0% |

Table 33: Your household receives in advance information warning about future climate related variability and weather risks that help your household to prepare for and protect from future shocks/stressors

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **. Region** | **Sample Type** | | **Statistics** | **Response** | | | | | **Total** |
| **Strongly agree** | **Disagree** | **Neutral** | **Agree** | **Strongly disagree** |
| Oromia | | Treatment | Frequency | 4 | 101 | 26 | 130 | 20 | 281 |
| Percentage | 1.4% | 35.9% | 9.3% | 46.3% | 7.1% | 100.0% |
| Control | Frequency | 3 | 107 | 26 | 132 | 17 | 285 |
| Percentage | 1.1% | 37.5% | 9.1% | 46.3% | 6.0% | 100.0% |
| SNNP | | Treatment | Frequency | 20 | 78 | 28 | 168 | 18 | 312 |
| Percentage | 6.4% | 25.0% | 9.0% | 53.8% | 5.8% | 100.0% |
| Control | Frequency | 20 | 66 | 38 | 177 | 11 | 312 |
| Percentage | 6.4% | 21.2% | 12.2% | 56.7% | 3.5% | 100.0% |
| Total | | Treatment | Frequency | 24 | 179 | 54 | 298 | 38 | 593 |
| Percentage | 4.0% | 30.2% | 9.1% | 50.3% | 6.4% | 100.0% |
| Control | Frequency | 23 | 173 | 64 | 309 | 28 | 597 |
| Percentage | 3.9% | 29.0% | 10.7% | 51.8% | 4.7% | 100.0% |
| Total | Frequency | 47 | 352 | 118 | 607 | 66 | 1190 |
| Percentage | 3.9% | 29.6% | 9.9% | 51.0% | 5.5% | 100.0% |

## 3.6 Nutrition and Food Security

The baseline survey conducted in both regions found that over the past four weeks preceding this survey, about 90 percent of the study respondents reported that they get worried about access to enough food due to lack of resources (Table 34). The frequency of this insecurity ranges from three to ten times in the past four weeks for about 42 percent of households in the treatment kebeles (Table 35). The disaggregated results between the studied regions are presented in the following tables.

Table 34: In the past four weeks, did you worry that your household would not have enough food because of lack of resources?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **Response** | | | **Total** | |
| **Yes** | | **No** |
| Oromia | Treatment | Frequency | | 242 | 39 | | 281 |
| Percentage | | 86.1% | 13.9% | | 100.0% |
| Control | Frequency | | 251 | 34 | | 285 |
| Percentage | | 88.1% | 11.9% | | 100.0% |
| SNNP | Treatment | Frequency | | 294 | 18 | | 312 |
| Percentage | | 94.2% | 5.8% | | 100.0% |
| Control | Frequency | | 285 | 27 | | 312 |
| Percentage | | 91.3% | 8.7% | | 100.0% |
| Total | Treatment | Frequency | | 536 | 57 | | 593 |
| Percentage | | 90.4% | 9.6% | | 100.0% |
| Control | Frequency | | 536 | 61 | | 597 |
| Percentage | | 89.8% | 10.2% | | 100.0% |
|  | Frequency | | 1072 | 118 | | 1190 |
| Percentage | | 90.1% | 9.9% | | 100.0% |

Table 35: Frequency of not to have enough food because of lack of resources in the past four weeks

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **How often did this happen?** | | | **Total** |
| **Rarely (once or twice in the past four weeks)** | **Sometimes (****three to ten times in the past four weeks)** | **Often (more than ten times in the past four weeks)** |
| Oromia | Treatment | Frequency | 69 | 109 | 64 | 242 |
| Percentage | 28.5% | 45.0% | 26.4% | 100.0% |
| Control | Frequency | 71 | 128 | 52 | 251 |
| Percentage | 28.3% | 51.0% | 20.7% | 100.0% |
| SNNP | Treatment | Frequency | 91 | 116 | 87 | 294 |
| Percentage | 31.0% | 39.5% | 29.6% | 100.0% |
| Control | Frequency | 106 | 114 | 65 | 285 |
| Percentage | 37.2% | 40.0% | 22.8% | 100.0% |
| Total | Treatment | Frequency | 160 | 225 | 151 | 536 |
| Percentage | 29.9% | 42.0% | 28.2% | 100.0% |
| Control | Frequency | 177 | 242 | 117 | 536 |
| Percentage | 33.0% | 45.1% | 21.8% | 100.0% |
| Total | Frequency | 337 | 467 | 268 | 1072 |
| Percentage | 31.4% | 43.6% | 25.0% | 100.0% |

Furthermore, the aggregated survey result from both studied regions showed that over the period of four weeks prior to this survey, about 86 percent of the study respondents were not able to eat the kinds of food they preferred because of lack of resources, while the remaining 14% of surveyed respondents were able to eat the kinds of food they preferred (see Table 36).

Table 36: In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **. Region** | **Sample Type** | **Statistics** | **Response** | | **Total** |
| **Yes** | **No** |
| Oromia | Treatment | Frequency | 245 | 36 | 281 |
| Percentage | 87.2% | 12.8% | 100.0% |
| Control | Frequency | 251 | 34 | 285 |
| Percentage | 88.1% | 11.9% | 100.0% |
| SNNP | Treatment | Frequency | 270 | 42 | 312 |
| Percentage | 86.5% | 13.5% | 100.0% |
| Control | Frequency | 259 | 53 | 312 |
| Percentage | 83.0% | 17.0% | 100.0% |
| Total | Treatment | Frequency | 515 | 78 | 593 |
| Percentage | 86.8% | 13.2% | 100.0% |
| Control | Frequency | 510 | 87 | 597 |
| Percentage | 85.4% | 14.6% | 100.0% |
| Total | Frequency | 1025 | 165 | 1190 |
| Percentage | 86.1% | 13.9% | 100.0% |

A closer look at the frequency of inability to eat the food they preferred showed that 50.7% of the respondents were not able to eat three to ten times over the past four weeks. By the same token, 18.6% of the respondents were also not able to eat the food they preferred more than ten times in the past four weeks. The frequency of this insecurity ranges three to ten times in the past four weeks for about 47 percent of households in the treatment kebeles vis-à-vis 54 percent of control groups. The disaggregated results are presented in Table 37 below.

Table 37: Frequency of inability to eat the foods they preferred due to lack of resources

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **. Region** |  |  | **How often did this happen?** | | | **Total** |
| **Rarely (once or twice in the past four weeks)** | **Sometimes (three to ten times in the past four weeks)** | **Often (more than ten times in the past four weeks)** |
| Oromia | Treatment | Frequency | 64 | 128 | 53 | 245 |
| Percentage | 26.1% | 52.2% | 21.6% | 100.0% |
| Control | Frequency | 58 | 140 | 53 | 251 |
| Percentage | 23.1% | 55.8% | 21.1% | 100.0% |
| SNNP | Treatment | Frequency | 96 | 115 | 59 | 270 |
| Percentage | 35.6% | 42.6% | 21.9% | 100.0% |
| Control | Frequency | 80 | 137 | 42 | 259 |
| Percentage | 30.9% | 52.9% | 16.2% | 100.0% |
| Total | Treatment | Frequency | 160 | 243 | 112 | 515 |
| Percentage | 31.1% | 47.2% | 21.7% | 100.0% |
| Control | Frequency | 138 | 277 | 95 | 510 |
| Percentage | 27.1% | 54.3% | 18.6% | 100.0% |
| Total | Frequency | 298 | 520 | 207 | 1025 |
| Percentage | 29.1% | 50.7% | 20.2% | 100.0% |

Four weeks prior to the survey, about 89 percent of the study respondents indicated that they had limited variety of foods due to lack of resources (Table 38). The frequency of this insecurity ranges three to ten times in the same period for about 41 percent of households in the treatment kebeles (Table 39). The disaggregated results are presented in the following tables (Tables 38 and 39).

Table 38: In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **Response** | | **Total** |
| **Yes** | **No** |
| Oromia | Treatment | Frequency | 254 | 27 | 281 |
| Percentage | 90.4% | 9.6% | 100.0% |
| Control | Frequency | 256 | 29 | 285 |
| Percentage | 89.8% | 10.2% | 100.0% |
| SNNP | Treatment | Frequency | 279 | 33 | 312 |
| Percentage | 89.4% | 10.6% | 100.0% |
| Control | Frequency | 264 | 48 | 312 |
| Percentage | 84.6% | 15.4% | 100.0% |
| Total | Treatment | Frequency | 533 | 60 | 593 |
| Percentage | 89.9% | 10.1% | 100.0% |
| Control | Frequency | 520 | 77 | 597 |
| Percentage | 87.1% | 12.9% | 100.0% |
| Total | Frequency | 1053 | 137 | 1190 |
| Percentage | 88.5% | 11.5% | 100.0% |

Table 39: Frequency of household members that have to eat a limited variety of foods due to a lack of resources

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **How often did this happen?** | | | **Total** |
| **Rarely (once or twice in the past four weeks)** | **Sometimes (three to ten times in the past four weeks)** | **Often (more than ten times in the past four weeks)** |
| Oromia | Treatment | Frequency | 73 | 113 | 68 | 254 |
| Percentage | 28.7% | 44.5% | 26.8% | 100.0% |
| Control | Frequency | 81 | 118 | 57 | 256 |
| Percentage | 31.6% | 46.1% | 22.3% | 100.0% |
| SNNP | Treatment | Frequency | 86 | 107 | 86 | 279 |
| Percentage | 30.8% | 38.4% | 30.8% | 100.0% |
| Control | Frequency | 88 | 126 | 50 | 264 |
| Percentage | 33.3% | 47.7% | 18.9% | 100.0% |
| Total | Treatment | Frequency | 159 | 220 | 154 | 533 |
| Percentage | 29.8% | 41.3% | 28.9% | 100.0% |
| Control | Frequency | 169 | 244 | 107 | 520 |
| Percentage | 32.5% | 46.9% | 20.6% | 100.0% |
| Total | Frequency | 328 | 464 | 261 | 1053 |
| Percentage | 31.1% | 44.1% | 24.8% | 100.0% |

Moreover, about 80 percent of the study respondents indicated that, four weeks prior to the survey they ate some foods they dislike due to lack of resources Table 40). The frequency of this phenomena ranges three to ten times for the same period for about 50 percent of households in the treatment kebeles (Table 41). The disaggregated results between two groups along the studied regions are presented in the following tables (40 and 41).

Table 40: In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **. Region** | **Sample Type** | **Statistics** | **Response** | | **Total** |
| **Yes** | **No** |
| Oromia | Treatment | Frequency | 222 | 59 | 281 |
| Percentage | 79.0% | 21.0% | 100.0% |
| Control | Frequency | 225 | 60 | 285 |
| Percentage | 78.9% | 21.1% | 100.0% |
| SNNP | Treatment | Frequency | 260 | 52 | 312 |
| Percentage | 83.3% | 16.7% | 100.0% |
| Control | Frequency | 243 | 69 | 312 |
| Percentage | 77.9% | 22.1% | 100.0% |
| Total | Treatment | Frequency | 482 | 111 | 593 |
| Percentage | 81.3% | 18.7% | 100.0% |
| Control | Frequency | 468 | 129 | 597 |
| Percentage | 78.4% | 21.6% | 100.0% |
| Total | Frequency | 950 | 240 | 1190 |
| Percentage | 79.8% | 20.2% | 100.0% |

Table 41:Frequency of household members forced to eat the foods they dislike due to lack of resources

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **How often did this happen?** | | | **Total** |
| **Rarely (once or twice in the past four weeks)** | **Sometimes (three to ten times in the past four weeks)** | **Often (more than ten times in the past four weeks)** |
| Oromia | Treatment | Frequency | 69 | 116 | 37 | 222 |
| Percentage | 31.1% | 52.3% | 16.7% | 100.0% |
| Control | Frequency | 71 | 118 | 36 | 225 |
| Percentage | 31.6% | 52.4% | 16.0% | 100.0% |
| SNNP | Treatment | Frequency | 89 | 123 | 48 | 260 |
| Percentage | 34.2% | 47.3% | 18.5% | 100.0% |
| Control | Frequency | 90 | 120 | 33 | 243 |
| Percentage | 37.0% | 49.4% | 13.6% | 100.0% |
| Total | Treatment | Frequency | 158 | 239 | 85 | 482 |
| Percentage | 32.8% | 49.6% | 17.6% | 100.0% |
| Control | Frequency | 161 | 238 | 69 | 468 |
| Percentage | 34.4% | 50.9% | 14.7% | 100.0% |
| Total | Frequency | 319 | 477 | 154 | 950 |
| Percentage | 33.6% | 50.2% | 16.2% | 100.0% |

About 76 percent of the study respondents indicated eating smaller meal than they need due to lack of enough food in the household in the four weeks prior to the survey (Table 42). The frequency of this phenomenon ranges three to ten times for about 48 percent of households in the treatment kebeles (Table 43). The disaggregated results between two groups along the studied regions are presented in the following tables (42 and 43).

Table 42: In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **Response** | | | **Total** | |
| **Yes** | **No** | |
| Oromia | Treatment | Frequency | 209 | | 72 | | 281 | |
| Percentage | 74.4% | | 25.6% | | 100.0% | |
| Control | Frequency | 208 | | 77 | | 285 | |
| Percentage | 73.0% | | 27.0% | | 100.0% | |
| SNNP | Treatment | Frequency | 251 | | 61 | | 312 | |
| Percentage | 80.4% | | 19.6% | | 100.0% | |
| Control | Frequency | 237 | | 75 | | 312 | |
| Percentage | 76.0% | | 24.0% | | 100.0% | |
| Total | Treatment | Frequency | 460 | | 133 | | 593 | |
| Percentage | 77.6% | | 22.4% | | 100.0% | |
| Control | Frequency | 445 | | 152 | | 597 | |
| Percentage | 74.5% | | 25.5% | | 100.0% | |
| Total | Frequency | 905 | | 285 | | 1190 | |
| Percentage | 76.1% | | 23.9% | | 100.0% | |

Table 43: Frequency of eating smaller meal than needed due to lack of enough food in the household

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **. Region** | **Sample Type** | **Statistics** | **How often did this happen?** | | | **Total** |
| **Rarely (once or twice in the past four weeks)** | **Sometimes (three to ten times in the past four weeks)** | **Often (more than ten times in the past four weeks)** |
| Oromia | Treatment | Frequency | 52 | 95 | 62 | 209 |
| Percentage | 24.9% | 45.5% | 29.7% | 100.0% |
| Control | Frequency | 63 | 99 | 46 | 208 |
| Percentage | 30.3% | 47.6% | 22.1% | 100.0% |
| SNNP | Treatment | Frequency | 76 | 127 | 48 | 251 |
| Percentage | 30.3% | 50.6% | 19.1% | 100.0% |
| Control | Frequency | 77 | 125 | 35 | 237 |
| Percentage | 32.5% | 52.7% | 14.8% | 100.0% |
| Total | Treatment | Frequency | 128 | 222 | 110 | 460 |
| Percentage | 27.8% | 48.3% | 23.9% | 100.0% |
| Control | Frequency | 140 | 224 | 81 | 445 |
| Percentage | 31.5% | 50.3% | 18.2% | 100.0% |
| Total | Frequency | 268 | 446 | 191 | 905 |
| Percentage | 29.6% | 49.3% | 21.1% | 100.0% |

Four weeks prior to the survey about 46 percent of the study respondents indicated that they ate fewer meals in a day due to lack of enough food in the household (Table 44). The frequency of this experience ranges from three to ten times in the same period for about 47 percent of households in the treatment kebeles (Table 45). The disaggregated results between two groups along the studied regions are presented in the following tables (44 and 45).

Table 44: In the past four weeks, did you or any household member have to eat fewer meals in a day because there was not enough food?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **Response** | | | | | **Total** |
| **Yes** | | | **No** | |
| Oromia | Treatment | Frequency | | 171 | 110 | | 281 | | |
| Percentage | | 60.9% | 39.1% | | 100.0% | | |
| Control | Frequency | | 174 | 111 | | 285 | | |
| Percentage | | 61.1% | 38.9% | | 100.0% | | |
| SNNP | Treatment | Frequency | | 121 | 191 | | 312 | | |
| Percentage | | 38.8% | 61.2% | | 100.0% | | |
| Control | Frequency | | 89 | 223 | | 312 | | |
| Percentage | | 28.5% | 71.5% | | 100.0% | | |
| Total | Treatment | Frequency | | 292 | 301 | | 593 | | |
| Percentage | | 49.2% | 50.8% | | 100.0% | | |
| Control | Frequency | | 263 | 334 | | 597 | | |
| Percentage | | 44.1% | 55.9% | | 100.0% | | |
| Total | Frequency | | 555 | 635 | | 1190 | | |
| Percentage | | 46.6% | 53.4% | | 100.0% | | |

Table 45: Frequency of eating fewer meals in a day due to lack of enough food in the household

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **How often did this happen?** | | | **Total** |
| **Rarely (once or twice in the past four weeks)** | **Sometimes (three to ten times in the past four weeks)** | **Often (more than ten times in the past four weeks)** |
| Oromia | Treatment | Frequency | 68 | 84 | 19 | 171 |
| Percentage | 39.8% | 49.1% | 11.1% | 100.0% |
| Control | Frequency | 80 | 74 | 20 | 174 |
| Percentage | 46.0% | 42.5% | 11.5% | 100.0% |
| SNNP | Treatment | Frequency | 56 | 53 | 12 | 121 |
| Percentage | 46.3% | 43.8% | 9.9% | 100.0% |
| Control | Frequency | 49 | 34 | 6 | 89 |
| Percentage | 55.1% | 38.2% | 6.7% | 100.0% |
| Total | Treatment | Frequency | 124 | 137 | 31 | 292 |
| Percentage | 42.5% | 46.9% | 10.6% | 100.0% |
| Control | Frequency | 129 | 108 | 26 | 263 |
| Percentage | 49.0% | 41.1% | 9.9% | 100.0% |
| Total | Frequency | 253 | 245 | 57 | 555 |
| Percentage | 45.6% | 44.1% | 10.3% | 100.0% |

Four weeks prior to the survey about 39 percent of the study respondents indicated that they were not able to eat any kind of food because of lack of resources to get food (Table 46). The frequency of this phenomena ranges three to ten times in the past four weeks for about 47 percent of households in the treatment kebeles (Table 47). The disaggregated results between two groups along the studied regions are presented in the following tables (46 and 47).

Table 46: In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **Response** | | **Total** |
| **Yes** | **No** |
| Oromia | Treatment | Frequency | 147 | 134 | 281 |
| Percentage | 52.3% | 47.7% | 100.0% |
| Control | Frequency | 138 | 147 | 285 |
| Percentage | 48.4% | 51.6% | 100.0% |
| SNNP | Treatment | Frequency | 104 | 208 | 312 |
| Percentage | 33.3% | 66.7% | 100.0% |
| Control | Frequency | 78 | 234 | 312 |
| Percentage | 25.0% | 75.0% | 100.0% |
| Total | Treatment | Frequency | 251 | 342 | 593 |
| Percentage | 42.3% | 57.7% | 100.0% |
| Control | Frequency | 216 | 381 | 597 |
| Percentage | 36.2% | 63.8% | 100.0% |
|  | Frequency | 467 | 723 | 1190 |
| Percentage | 39.2% | 60.8% | 100.0% |

Table 47: Frequency of not eating any kind of food due to lack of resources to get food

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **How often did this happen?** | | | **Total** |
| **Rarely (once or twice in the past four weeks)** | **Sometimes (three to ten times in the past four weeks)** | **Often (more than ten times in the past four weeks)** |
| Oromia | Treatment | Frequency | 56 | 74 | 17 | 147 |
| Percentage | 38.1% | 50.3% | 11.6% | 100.0% |
| Control | Frequency | 46 | 65 | 27 | 138 |
| Percentage | 33.3% | 47.1% | 19.6% | 100.0% |
| SNNP | Treatment | Frequency | 50 | 45 | 9 | 104 |
| Percentage | 48.1% | 43.3% | 8.7% | 100.0% |
| Control | Frequency | 42 | 28 | 8 | 78 |
| Percentage | 53.8% | 35.9% | 10.3% | 100.0% |
| Total | Treatment | Frequency | 106 | 119 | 26 | 251 |
| Percentage | 42.2% | 47.4% | 10.4% | 100.0% |
| Control | Frequency | 88 | 93 | 35 | 216 |
| Percentage | 40.7% | 43.1% | 16.2% | 100.0% |
| Total | Frequency | 194 | 212 | 61 | 467 |
| Percentage | 41.5% | 45.4% | 13.1% | 100.0% |

Four weeks prior to the survey about 21 percent of the study respondents indicated that they went to sleep at night hungry because there was not enough food (Table 48). The frequency of this phenomena ranges three to ten times in the past four weeks for about 50 percent of households in the treatment kebeles (table 49). The disaggregated results for the two groups along the two regions are presented in the following tables (48 and 49).

Table 48: In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **Response** | | | | **Total** |
| **Yes** | | **No** | |
| Oromia | Treatment | Frequency | | 101 | | 180 | 281 |
| Percentage | | 35.9% | | 64.1% | 100.0% |
| Control | Frequency | | 98 | | 187 | 285 |
| Percentage | | 34.4% | | 65.6% | 100.0% |
| SNNP | Treatment | Frequency | | 31 | | 281 | 312 |
| Percentage | | 9.9% | | 90.1% | 100.0% |
| Control | Frequency | | 18 | | 294 | 312 |
| Percentage | | 5.8% | | 94.2% | 100.0% |
| Total | Treatment | Frequency | | 132 | | 461 | 593 |
| Percentage | | 22.3% | | 77.7% | 100.0% |
| Control | Frequency | | 116 | | 481 | 597 |
| Percentage | | 19.4% | | 80.6% | 100.0% |
| Total | Frequency | | 248 | | 942 | 1190 |
| Percentage | | 20.8% | | 79.2% | 100.0% |

Table 49: Frequency of any household member going to sleep at night hungry because there was not enough food

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **. Region** | **Sample Type** | | **Statistics** | **How often did this happen?** | | | **Total** |
| **Rarely (once or twice in the past four weeks)** | **Sometimes (three to ten times in the past four weeks)** | **Often (more than ten times in the past four weeks)** |
| Oromia | Treatment | Frequency | | 50 | 46 | 5 | 101 |
| Percentage | | 49.5% | 45.5% | 5.0% | 100.0% |
| Control | Frequency | | 50 | 40 | 8 | 98 |
| Percentage | | 51.0% | 40.8% | 8.2% | 100.0% |
| SNNP | Treatment | Frequency | | 17 | 12 | 2 | 31 |
| Percentage | | 54.8% | 38.7% | 6.5% | 100.0% |
| Control | Frequency | | 5 | 8 | 5 | 18 |
| Percentage | | 27.8% | 44.4% | 27.8% | 100.0% |
| Total | Treatment | Frequency | | 67 | 58 | 7 | 132 |
| Percentage | | 50.8% | 43.9% | 5.3% | 100.0% |
| Control | Frequency | | 55 | 48 | 13 | 116 |
| Percentage | | 47.4% | 41.4% | 11.2% | 100.0% |
| Total | Frequency | | 122 | 106 | 20 | 248 |
| Percentage | | 49.2% | 42.7% | 8.1% | 100.0% |

Four weeks prior to the survey about 15 percent of the study respondents indicated that they or any household member went a whole day and night without eating anything because there was not enough food (Table 50). The frequency of this occurrence ranges from three to ten times in the same period for about 41 percent of households in the treatment kebeles (Table 51). The disaggregated results for the two groups along with their respective regions are presented in the following tables (50 and 51).

Table 50: In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **Response** | | | **Total** |
| **Yes** | **No** | |
| Oromia | Treatment | Frequency | 79 | | 202 | 281 | |
| Percentage | 28.1% | | 71.9% | 100.0% | |
| Control | Frequency | 72 | | 213 | 285 | |
| Percentage | 25.3% | | 74.7% | 100.0% | |
| SNNP | Treatment | Frequency | 13 | | 299 | 312 | |
| Percentage | 4.2% | | 95.8% | 100.0% | |
| Control | Frequency | 12 | | 300 | 312 | |
| Percentage | 3.8% | | 96.2% | 100.0% | |
| Total | Treatment | Frequency | 92 | | 501 | 593 | |
| Percentage | 15.5% | | 84.5% | 100.0% | |
| Control | Frequency | 84 | | 513 | 597 | |
| Percentage | 14.1% | | 85.9% | 100.0% | |
| Total | Frequency | 176 | | 1014 | 1190 | |
| Percentage | 14.8% | | 85.2% | 100.0% | |

Table 51: Frequency of a household member going without eating the whole day and night because there was not enough food

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **How often did this happen?** | | | **Total** |
| **Rarely (once or twice in the past four weeks)** | **Sometimes (three to ten times in the past four weeks)** | **Often (more than ten times in the past four weeks)** |
| Oromia | Treatment | Frequency | 42 | 33 | 4 | 79 |
| Percentage | 53.2% | 41.8% | 5.1% | 100.0% |
| Control | Frequency | 37 | 29 | 6 | 72 |
| Percentage | 51.4% | 40.3% | 8.3% | 100.0% |
| SNNP | Treatment | Frequency | 8 | 5 |  | 13 |
| Percentage | 61.5% | 38.5% |  | 100.0% |
| Control | Frequency | 7 | 5 |  | 12 |
| Percentage | 58.3% | 41.7% |  | 100.0% |
| Total | Treatment | Frequency | 50 | 38 | 4 | 92 |
| Percentage | 54.3% | 41.3% | 4.3% | 100.0% |
| Control | Frequency | 44 | 34 | 6 | 84 |
| Percentage | 52.4% | 40.5% | 7.1% | 100.0% |
| Total | Percentage | 94 | 72 | 10 | 176 |
| Frequency | 53.4% | 40.9% | 5.7% | 100.0% |

**Knowledge of Nutrition**

The baseline survey further assessed the study participants’ knowledge about nutrition by asking a number of standardized questions. The average quantity of fruits and vegetables to be taken per day was suggested to be 174 grams by participants of the study. The mean value in the treatment group is found to be 156.44gram, while in the control group it is 191.2 grams. There is a variation in the mean value suggested by treatment and control groups, as well as among study regions, as presented in Table 52 below.

Table 52: Amount of fruit and vegetables households were advised to eat every day (in grams)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Type of *Kebele* by treatment** | **Region** | **N** | **Mean** | **Std. Deviation** |
| Treatment | Oromia | 281 | 66.20 | 104.879 |
| SNNP | 312 | 241.51 | 325.712 |
| Total | 593 | 158.44 | 261.936 |
| Control | Oromia | 285 | 69.64 | 103.673 |
| SNNP | 312 | 302.24 | 375.801 |
| Total | 597 | 191.20 | 303.869 |
| Total | Oromia | 566 | 67.93 | 104.195 |
| SNNP | 624 | 271.88 | 352.679 |
| Total | 1190 | 174.87 | 284.102 |

About 13 and 15 percent of households in treatment and control kebeles, respectively, reported that they put one serving spoon of vegetables in a plate per meal. About 40 percent of households in both kebeles indicated that they usually put two spoons of vegetables in a plate. Furthermore, about 30 and 32 percent of the households in treatment and control kebeles, respectively, mentioned that they often put three serving spoons of vegetable in any meal. Yet, about 6 percent of households from both groups mentioned that they usually put four spoons of vegetables in any meal while about 10 and 8 percent of respondents from treatment and control kebeles, respectively, said they did not know the quantity of vegetable they put in a plate at any meal. The disaggregated results are presented in Table 53 hereunder.

Table 53: Number of serving spoons of vegetables households should put in a plate

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | | | | **Statistics** | **Number of serving spoons of vegetables that**  **should be put in a plate** | | | | | **Total** |
| **One** | **Two** | **Three** | **Four** | **Don’t know** |
| Oromia | | Treatment | | Frequency | | 76 | 81 | 88 | 3 | 33 | 281 |
| Percentage | | 27.0% | 28.8% | 31.3% | 1.1% | 11.7% | 100.0% |
| Control | | Frequency | | 90 | 73 | 93 | 2 | 27 | 285 |
| Percentage | | 31.6% | 25.6% | 32.6% | 0.7% | 9.5% | 100.0% |
| SNNP | | Treatment | | Frequency | | 2 | 158 | 94 | 32 | 26 | 312 |
| Percentage | | 0.6% | 50.6% | 30.1% | 10.3% | 8.3% | 100.0% |
| Control | | Frequency | | 1 | 161 | 95 | 34 | 21 | 312 |
| Percentage | | 0.3% | 51.6% | 30.4% | 10.9% | 6.7% | 100.0% |
| Total | | Treatment | | Frequency | | 78 | 239 | 182 | 35 | 59 | 593 |
| Percentage | | 13.2% | 40.3% | 30.7% | 5.9% | 9.9% | 100.0% |
| Control | | Frequency | | 91 | 234 | 188 | 36 | 48 | 597 |
| Percentage | | 15.2% | 39.2% | 31.5% | 6.0% | 8.0% | 100.0% |
| Total | Frequency | | | 169 | 473 | 370 | 71 | 107 | 1190 |
| Percentage | | | 14.2% | 39.7% | 31.1% | 6.0% | 9.0% | 100.0% |

We have also attempted to understand the recommended amount of water to be drunk per day. About 5 and 3 percent of households in treatment and control kebeles, respectively, mentioned that the amount of water a person should drink each day was one to two glasses. About 43 and 41 percent of households in the treatment and control kebeles, respectively, mentioned that the amount should be three to four glasses while about 40 and 44 percent of households from the same respective groups said that one should take five to six glasses per day. About 10 percent of households in both groups believed the amount should be seven to eight glasses per day. Only about 2 percent of households from each of the two groups indicated that the amount should be nine to ten glasses. The disaggregated results are presented in Table 54.

Table 54: Number of glasses of water recommended for drink each day

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **Number of glasses recommended** | | | | | **Total** |
| **One to two** | **Three to four** | **Five to six** | **Seven to eight** | **Nine to ten** |
| Oromia | Treatment | Frequency | 11 | 114 | 129 | 26 | 1 | 281 |
| Percentage | 3.9% | 40.6% | 45.9% | 9.3% | 0.4% | 100.0% |
| Control | Frequency | 7 | 101 | 153 | 23 | 1 | 285 |
| Percentage | 2.5% | 35.4% | 53.7% | 8.1% | 0.4% | 100.0% |
| SNNP | Treatment | Frequency | 17 | 143 | 110 | 32 | 10 | 312 |
| Percentage | 5.4% | 45.8% | 35.3% | 10.3% | 3.2% | 100.0% |
| Control | Frequency | 11 | 144 | 112 | 34 | 11 | 312 |
| Percentage | 3.5% | 46.2% | 35.9% | 10.9% | 3.5% | 100.0% |
| Total | Treatment | Frequency | 28 | 257 | 239 | 58 | 11 | 593 |
| Percentage | 4.7% | 43.3% | 40.3% | 9.8% | 1.9% | 100.0% |
| Control | Frequency | 18 | 245 | 265 | 57 | 12 | 597 |
| Percentage | 3.0% | 41.0% | 44.4% | 9.5% | 2.0% | 100.0% |
| Total | Frequency | 46 | 502 | 504 | 115 | 23 | 1190 |
| Percentage | 3.9% | 42.2% | 42.4% | 9.7% | 1.9% | 100.0% |

About 63 and 59 percent of respondents from treatment and control kebeles, respectively, mentioned that cooking vegetables for a long time makes them more nutritious. The variation in cooking time of vegetables between the treatment and control groups in Oromia and SNNPR follows the same pattern. Disaggregated results across both groups in the study regions are presented in Table 55 below.

Table 55: Household members who believe cooking vegetables for a long time makes them more nutritious

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **Response** | | | **Total** |
| **True** | **False** | **Don't know** |
| Oromia | Treatment | Frequency | 184 | 36 | 61 | 281 |
| Percentage | 65.5% | 12.8% | 21.7% | 100.0% |
| Control | Frequency | 178 | 42 | 65 | 285 |
| Percentage | 62.5% | 14.7% | 22.8% | 100.0% |
| SNNP | Treatment | Frequency | 188 | 113 | 11 | 312 |
| Percentage | 60.3% | 36.2% | 3.5% | 100.0% |
| Control | Frequency | 176 | 132 | 4 | 312 |
| Percentage | 56.4% | 42.3% | 1.3% | 100.0% |
| Total | Treatment | Frequency | 372 | 149 | 72 | 593 |
| Percentage | 62.7% | 25.1% | 12.1% | 100.0% |
| Control | Frequency | 354 | 174 | 69 | 597 |
| Percentage | 59.3% | 29.1% | 11.6% | 100.0% |
| Total | Frequency | 726 | 323 | 141 | 1190 |
| Percentage | 61.0% | 27.1% | 11.8% | 100.0% |

About 61 and 63 percent of respondents from treatment and control kebeles, respectively, thought that carrots, pumpkins and sweet potatoes like orange inside are all sources of vitamin A. The disaggregated result across study regions and sample type are presented in Table 56.

Table 56: Household members who think carrots, pumpkins and orange sweet potatoes are all sources of vitamin A

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Sample Type** | **Statistics** | **Response** | | | **Total** |
| **True** | **False** | **Don't know** |
| Oromia | Treatment | Frequency | 171 | 6 | 104 | 281 |
| Percentage | 60.9% | 2.1% | 37.0% | 100.0% |
| Control | Frequency | 173 | 6 | 106 | 285 |
| Percentage | 60.7% | 2.1% | 37.2% | 100.0% |
| SNNP | Treatment | Frequency | 189 | 66 | 57 | 312 |
| Percentage | 60.6% | 21.2% | 18.3% | 100.0% |
| Control | Frequency | 202 | 65 | 45 | 312 |
| Percentage | 64.7% | 20.8% | 14.4% | 100.0% |
| Total | Treatment | Frequency | 360 | 72 | 161 | 593 |
| Percentage | 60.7% | 12.1% | 27.2% | 100.0% |
| Control | Frequency | 375 | 71 | 151 | 597 |
| Percentage | 62.8% | 11.9% | 25.3% | 100.0% |
| Total | Frequency | 735 | 143 | 312 | 1190 |
| Percentage | 61.8% | 12.0% | 26.2% | 100.0% |

About 82 percent of respondents from both Treatment and Control groups contend that it is important to eat diverse range of fruits to stay healthy. The disaggregated result across study regions and sample type are presented in Table 57 below.

Table 57: Participants who think it is important to eat diverse range of fruits to stay healthy

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Response** | **Statistics** | | **Type of *kebele* by treatment** | | | | **Total** | |
| **Treatment** | | **Control** | |
| Oromia | True | Frequency | 226 | | 231 | | 457 | |
| Percentage | 80.4% | | 81.1% | | 80.7% | |
| False | Frequency | 9 | | 6 | | 15 | |
| Percentage | 3.2% | | 2.1% | | 2.7% | |
| Don't know | Frequency | 46 | | 48 | | 94 | |
| Percentage | 16.4% | | 16.8% | | 16.6% | |
| SNNP | True | Frequency | 258 | | 257 | | 515 | |
| Percentage | 82.7% | | 82.4% | | 82.5% | |
| False | Frequency | 38 | | 39 | | 77 | |
| Percentage | 12.2% | | 12.5% | | 12.3% | |
| Don't know | Frequency | 16 | | 16 | | 32 | |
| Percentage | 5.1% | | 5.1% | | 5.1% | |
| Total | True | Frequency | 484 | | 488 | | 972 | |
| Percentage | 81.6% | | 81.7% | | 81.7% | |
| False | Frequency | 47 | | 45 | | 92 | |
| Percentage | 7.9% | | 7.5% | | 7.7% | |
| Don't know | Frequency | 62 | | 64 | | 126 | |
| Percentage | 10.5% | | 10.7% | | 10.6% | |
| Total | Frequency | 593 | | 597 | | 1190 | |
| Percentage | 100.0% | | 100.0% | | 100.0% | |

**Food security coping strategies**

The baseline survey examined coping mechanisms of respondents to food insecurity by asking them about their vegetable consumption during the previous seven days. About 72 and 75 percent of respondents from treatment and control kebeles, respectively, indicated that reducing the quantity of vegetables they ate was used as a coping strategy (see Table 58). About 63 and 59 percent of respondents from both kebeles, in the same order as above, indicated that eating less preferred vegetables was used as a coping strategy (Table 59). Further, about 67 percent of respondents from both kebeles indicated that eating vegetables less often (e.g. not at every meal) was considered as a coping strategy (Table 60). In addition, about 26 and 23 percent of respondents from treatment and control kebeles, respectively, indicated that producing less vegetable crops for selling was used as a coping strategy (Table 61). For about 34 percent of the treatment and 32 percent of the control kebeles, producing more vegetables for home consumption was the coping strategy (Table 62). About 15 and 16 percent of respondents from treatment and control kebeles, respectively, indicated that processing vegetables more commonly (e.g. drying, fermentation) used as a coping strategy (Table 63). About 19 and 18 percent of respondents from treatment and control kebeles, respectively, indicated that finding new markets to sell vegetables was considered as a coping strategy (Table 64). About 13 percent from treatment and 12 percent from the control kebeles said reducing the selling price of vegetables was considered as a coping strategy (Table 65). The disaggregated findings for the two groups across the study regions are shown in the following tables (Tables 58 to 65).

Table 58: Percentage of respondents who used reducing the quantity of vegetables eaten as a coping strategy

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Region** | **Response** | **Statistics** | **Type of *kebele* by treatment** | | **Total** |
| **Treatment** | **Control** |
| Oromia | No | Frequency | 69 | 77 | 146 | | |
| Percentage | 24.6% | 27.0% | 25.8% | | |
| Yes | Frequency | 212 | 208 | 420 | | |
| Percentage | 75.4% | 73.0% | 74.2% | | |
| SNNP | No | Frequency | 98 | 73 | 171 | | |
| Percentage | 31.4% | 23.4% | 27.4% | | |
| Yes | Frequency | 214 | 239 | 453 | | |
| Percentage | 68.6% | 76.6% | 72.6% | | |
| Total | No | Frequency | 167 | 150 | 317 | | |
| Percentage | 28.2% | 25.1% | 26.6% | | |
| Yes | Frequency | 426 | 447 | 873 | | |
| Percentage | 71.8% | 74.9% | 73.4% | | |
| Total | Frequency | 593 | 597 | 1190 | |
| Percentage | 100.0% | 100.0% | 100.0% | |

Table 59: Percentage of respondents who used eating less preferred vegetables as a coping strategy

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Region** | **Response** | **Statistics** | **Type of *kebele* by treatment** | | **Total** |
| **Treatment** | **Control** |
| Oromia | No | Frequency | 88 | 97 | 185 | |
| Percentage | 31.3% | 34.0% | 32.7% | |
| Yes | Frequency | 193 | 188 | 381 | |
| Percentage | 68.7% | 66.0% | 67.3% | |
| SNNP | No | Frequency | 131 | 146 | 277 | |
| Percentage | 42.0% | 46.8% | 44.4% | |
| Yes | Frequency | 181 | 166 | 347 | |
| Percentage | 58.0% | 53.2% | 55.6% | |
| Total | No | Frequency | 219 | 243 | 462 | |
| Percentage | 36.9% | 40.7% | 38.8% | |
| Yes | Frequency | 374 | 354 | 728 | |
| Percentage | 63.1% | 59.3% | 61.2% | |
| Total | Frequency | 593 | 597 | 1190 | |
| Percentage | 100.0% | 100.0% | 100.0% | |

Table 60: Percentage of respondents who used eating vegetables less often as a coping strategy

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Response** | **Statistics** | **Type of *kebele* by treatment** | | | **Total** |
| **Treatment** | | **Control** |
| Oromia | No | Frequency | 104 | 121 | | 225 |
| Percentage | 37.0% | 42.5% | | 39.8% |
| Yes | Frequency | 177 | 164 | | 341 |
| Percentage | 63.0% | 57.5% | | 60.2% |
| SNNP | No | Frequency | 92 | 77 | | 169 |
| Percentage | 29.5% | 24.7% | | 27.1% |
| Yes | Frequency | 220 | 235 | | 455 |
| Percentage | 70.5% | 75.3% | | 72.9% |
| Total | No | Frequency | 196 | 198 | | 394 |
| Percentage | 33.1% | 33.2% | | 33.1% |
| Yes | Frequency | 397 | 399 | | 796 |
| Percentage | 66.9% | 66.8% | | 66.9% |
| Total | Frequency | 593 | 597 | | 1190 |
| Percentage | 100.0% | 100.0% | | 100.0% |

Table 61: Percentage of respondents who used producing less vegetables for sale as a coping strategy

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Response** | **Statistics** | **Type of *kebele* by treatment** | | | | **Total** |
| **Treatment** | | **Control** | |
| Oromia | No | Frequency | 197 | 206 | | 403 | | |
| Percentage | 70.1% | 72.3% | | 71.2% | | |
| Yes | Frequency | 84 | 79 | | 163 | | |
| Percentage | 29.9% | 27.7% | | 28.8% | | |
| SNNP | No | Frequency | 240 | 256 | | 496 | | |
| Percentage | 76.9% | 82.1% | | 79.5% | | |
| Yes | Frequency | 72 | 56 | | 128 | | |
| Percentage | 23.1% | 17.9% | | 20.5% | | |
| Total | No | Frequency | 437 | 462 | | 899 | | |
| Percentage | 73.7% | 77.4% | | 75.5% | | |
| Yes | Frequency | 156 | 135 | | 291 | | |
| Percentage | 26.3% | 22.6% | | 24.5% | | |
| Total | Frequency | 593 | 597 | | 1190 | | |
| Percentage | 100.0% | 100.0% | | 100.0% | | |

Table 62: Proportion of respondents who used producing more vegetables for home

consumption as a coping strategy

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Response** | **Statistics** | **Type of *kebele* by treatment** | | | **Total** | |
| **Treatment** | **Control** | |
| Oromia | No | Frequency | 217 | | 230 | | 447 | |
| Percentage | 77.2% | | 80.7% | | 79.0% | |
| Yes | Frequency | 64 | | 55 | | 119 | |
| Percentage | 22.8% | | 19.3% | | 21.0% | |
| SNNP | No | Frequency | 174 | | 175 | | 349 | |
| Percentage | 55.8% | | 56.1% | | 55.9% | |
| Yes | Frequency | 138 | | 137 | | 275 | |
| Percentage | 44.2% | | 43.9% | | 44.1% | |
| Total | No | Frequency | 391 | | 405 | | 796 | |
| Percentage | 65.9% | | 67.8% | | 66.9% | |
| Yes | Frequency | 202 | | 192 | | 394 | |
| Percentage | 34.1% | | 32.2% | | 33.1% | |
| Total | Frequency | 593 | | 597 | | 1190 | |
| Percentage | 100.0% | | 100.0% | | 100.0% | |

Table 63: Percentage of respondents who used processing vegetables more commonly as a coping strategy

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Response** | **Statistics** | **Type of *kebele* by treatment** | | | | **Total** |
| **Treatment** | | **Control** | |
| Oromia | No | Frequency | 247 | 257 | | 504 | |
| Percentage | 87.9% | 90.2% | | 89.0% | |
| Yes | Frequency | 34 | 28 | | 62 | |
| Percentage | 12.1% | 9.8% | | 11.0% | |
| SNNP | No | Frequency | 256 | 247 | | 503 | |
| Percentage | 82.1% | 79.2% | | 80.6% | |
| Yes | Frequency | 56 | 65 | | 121 | |
| Percentage | 17.9% | 20.8% | | 19.4% | |
| Total | No | Frequency | 503 | 504 | | 1007 | |
| Percentage | 84.8% | 84.4% | | 84.6% | |
| Yes | Frequency | 90 | 93 | | 183 | |
| Percentage | 15.2% | 15.6% | | 15.4% | |
| Total | Frequency | 593 | 597 | | 1190 | |
| Percentage | 100.0% | 100.0% | | 100.0% | |

Table 64: Proportion of respondents who used finding new markets for vegetables as a coping strategy

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Response** | **Statistics** | **Type of *kebele* by treatment** | | | **Total** |
| **Treatment** | | **Control** |
| Oromia | No | Frequency | 254 | 259 | | 513 | |
| Percentage | 90.4% | 90.9% | | 90.6% | |
| Yes | Frequency | 27 | 26 | | 53 | |
| Percentage | 9.6% | 9.1% | | 9.4% | |
| SNNPR | No | Frequency | 228 | 230 | | 458 | |
| Percentage | 73.1% | 73.7% | | 73.4% | |
| Yes | Frequency | 84 | 82 | | 166 | |
| Percentage | 26.9% | 26.3% | | 26.6% | |
| Total | No | Frequency | 482 | 489 | | 971 | |
| Percentage | 81.3% | 81.9% | | 81.6% | |
| Yes | Frequency | 111 | 108 | | 219 | |
| Percentage | 18.7% | 18.1% | | 18.4% | |
| Total | Frequency | 593 | 597 | | 1190 | |
| Percentage | 100.0% | 100.0% | | 100.0% | |

Table 65: Percentage of respondents who used reducing the price of vegetables as a coping strategy

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Region** | **Response** | **Statistics** | **Type of *Kebele* by treatment** | | **Total** |
| **Treatment** | **Control** |
| Oromia | No | Frequency | 256 | 258 | 514 |
| Percentage | 91.1% | 90.5% | 90.8% |
| Yes | Frequency | 25 | 27 | 52 |
| Percentage | 8.9% | 9.5% | 9.2% |
| SNNPR | No | Frequency | 261 | 270 | 531 |
| Percentage | 83.7% | 86.5% | 85.1% |
| Yes | Frequency | 51 | 42 | 93 |
| Percentage | 16.3% | 13.5% | 14.9% |
| Total | No | Frequency | 517 | 528 | 1045 |
| Percentage | 87.2% | 88.4% | 87.8% |
| Yes | Frequency | 76 | 69 | 145 |
| Percentage | 12.8% | 11.6% | 12.2% |
| Total | Frequency | 593 | 597 | 1190 |
| Percentage | 100.0% | 100.0% | 100.0% |

**Diet Diversity of Women of Reproductive Age during the Previous 24 hours**

About 83 percent (82% in treatment and 83% in control kebeles) of respondents indicated that they have women of reproductive age (15 to 49 years) in their households. When seen by region, this was true for 84 percent of households in Oromia and 80 percent of households in the SNNPR.

These women of reproductive age were asked about the foods and drinks they consumed during the previous 24 hours, whether at home or elsewhere. The tables below (Table 66 to 69) show the proportion of such women along with the food items they consumed during the 24 hours before the interview. The dominant foodstuff consumed by about 92 percent of respondents from both kebeles was injera (pancake-like bread), homemade bread, qita, chechebsa, nifro, qinche, porridge, or food made of maize or barley (see Table 66). Less consumed vegetable groups consisted of guava, dates, prickly pear, strawberries, prim, or peaches consumed only by 0.8% of women in the treatment kebeles and 1.4% of women in the control kebeles (see Table 66). Yoghurt was the dominant dairy product consumed by 2.7% and 4% of women in the treatment and control kebeles, respectively (Table 67). Tea with sugar, coffee with sugar, a mix of coffee and tea with sugar, macchiato or milk with sugar were the dominant drinks consumed by 40% and 44% of women in the treatment and control kebeles, respectively (Table 69).

Table 66: Percentage of women of reproductive age by foods/drinks they consumed 24 hours before the interview

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **Item description** | **Sample Treatment *Kebele*s** | | | **Sample Control *Kebele*s** | | |
| **Oromia** | **SNNPR** | **Total** | **Oromia** | **SNNPR** | **Total** |
| 1 | Rice, pasta, macaroni, or commercial white bread | 21.9 | 2.4 | 12 | 24.6 | 3.2 | 13.7 |
| 2 | *Injera*, homemade bread, *qita, chechebsa, nifro, qinche*, porridge, or food made of maize or barley | 96.6 | 87.5 | 92.0 | 94.3 | 90.1 | 92.2 |
| 3 | Potato, sweet potato, any food from enset, yam, *anchote,* cassava, or *taro* | 38.4 | 30.6 | 34.4 | 29.1 | 48.6 | 39.0 |
| 4 | *Kik, shiro, ful, helbet, siljo, ashuk, niforo* from beans, *qolo* from beans, *eshset* from beans, chickpeas, or peas | 57.8 | 22.6 | 39.8 | 58.6 | 27.7 | 42.9 |
| 5 | Carrots, pumpkin, or sweet potatoes like orange inside | 8.9 | 8.1 | 8.5 | 5.7 | 12.3 | 9.1 |
| 6 | Ethiopian kale, Swiss chard, broccoli, spinach, moringa leaves, cassava leaves, or sweet potato leaves | 18.1 | 75.4 | 47.4 | 18.9 | 80.6 | 50.3 |
| 7 | Tomatoes, eggplant, beetroot, zucchini, or head cabbage | 18.1 | 8.5 | 13.2 | 14.8 | 9.9 | 12.3 |
| 8 | Cucumber, lettuce, green pepper, cauliflower, or celery | 18.8 | 39.5 | 29.3 | 12.7 | 39.1 | 26.2 |
| 9 | Mango or papaya | 5.5 | 4.0 | 4.7 | 1.2 | 5.9 | 3.3 |
| 10 | Orange, mandarin, or grapefruit | 3.8 | 0.8 | 2.3 | 2.0 | 0.8 | 1.4 |
| 11 | Banana, avocado, pineapple, apple, or watermelon | 3.8 | 13.3 | 8.7 | 4.1 | 19.4 | 11.9 |
| 12 | Guava, dates, prickly pear, strawberries, prim, or peaches | 0.4 | 1.2 | 0.8 | 0.0 | 2.0 | 1.4 |
| 13 | Cakes, cookies, biscuits, sweet bread, *baklava, mushebek*, or *bombolino* | 0.8 | 0.4 | 0.6 | 0.0 | 0.0 | 0.0 |
| 14 | Ice cream, candy, or chocolates? | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 |

Table 67:Percentage of women of reproductive age who consumed various animal products

during the previous 24 hours

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **Item description** | **Sample Treatment *Kebele*s** | | | **Sample Control *Kebele*s** | | |
| **Oromia** | **SNNPR** | **Total** | **Oromia** | **SNNPR** | **Total** |
| 1 | Eggs | 1.7 | 0.8 | 1.2 | 2.0 | 2.8 | 2.4 |
| 2 | Cheese, cottage cheese, or *feta* | 2.1 | 0.4 | 1.2 | 0.0 | 0.4 | 0.2 |
| 3 | Yoghurt | 3.0 | 2.4 | 2.7 | 3.7 | 4.3 | 4.0 |
| 4 | Sausages, canned meat, or *quanta* | 0.4 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 |
| 5 | Beef, sheep, goat, or raw meat | 0.8 | 0.8 | 0.8 | 0.0 | 0.0 | 0.0 |
| 6 | Pork or camel | 0.8 | 0.4 | 0.6 | 0.0 | 0.0 | 0.0 |
| 7 | Chicken | 0.0 | 0.4 | 0.2 | 0.4 | 0.0 | 0.2 |
| 8 | Fish, dried fish, tuna, or canned fish | 0.0 | 0.4 | 0.2 | 0.4 | 0.0 | 0.2 |

Table 68: Percentage of women of reproductive age who consumed various food items during the previous 24 hours

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **Item description** | **Sample Treatment *Kebele*s** | | | **Sample Control *Kebele*s** | | |
| **Oromia** | **SNNPR** | **Total** | **Oromia** | **SNNPR** | **Total** |
| 1 | Groundnuts, peanut butter, *selit, suf fitfit, suf* water*,* or *qolo* with nuts or with *suf* | 3.0 | 1.2 | 2.1 | 2.0 | 0.0 | 1.0 |
| 2 | Potato chips | 1.3 | 2.0 | 1.6 | 1.2 | 4.0 | 2.6 |
| 3 | Indomini | 0.0 | 0.4 | 0.2 | 0.0 | 0.0 | 0.0 |
| 4 | Chips, fried dough, samosa, spring rolls, or deep-fried vegetables | 0.8 | 0.4 | 0.6 | 0.8 | 0.4 | 0.6 |
| 5 | Chicken, pizza, burger, | 0.4 | 0.8 | 0.6 | 0.0 | 0.0 | 0.0 |

Table 69: Percentage of women of reproductive age who consumed various drinks during the previous 24 hours

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S/N** | **Item description** | **Sample Treatment *Kebele*s** | | | **Sample Control *Kebele*s** | | |
| **Oromia** | **SNNPR** | **Total** | **Oromia** | **SNNPR** | **Total** |
| 1 | Dairy milk, milk powder, or milk with tea | 33.8 | 7.3 | 20.2 | 37.7 | 17.4 | 27.4 |
| 2 | Tea with sugar, coffee with sugar, mix of coffee and tea with sugar, macchiato, or milk with sugar | 48.1 | 32.3 | 40.0 | 50.8 | 37.5 | 44.1 |
| 3 | Fresh fruit juice, packed fruit juice or fruit drinks | 1.3 | 0.8 | 1.0 | 0.8 | 0.8 | 0.8 |
| 4 | Soft drinks such as Coke, Fanta, Sprite, Sofi Malt, or Malta Guinness | 0.8 | 0.4 | 0.6 | 0.4 | 0.0 | 0.2 |

**Brief dietary assessment - Frequency of consumption of vegetables**

The baseline survey also assessed the frequency of vegetable consumption among women respondents using a one month recall period. About 61and 59 percent of women respondents from treatment and control kebeles, respectively, indicated that they usually ate one meal that constituted vegetables. Furthermore, about 35 and 38 percent, in the same order, disclosed that they usually ate two meals with vegetable contents. On the other hand, about 4 and 3 percent, respectively, said they usually eat three meals with vegetable contents. The disaggregated results are presented in Table 70.

Table 70: Frequency of consumption of meals with vegetable content during the previous one month

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Region** | **Response** | **Statistics** | **Type of *kebele* by treatment** | | **Total** |
| **Treatment** | **Control** |
| Oromia | 1 meal | Frequency | 173 | 186 | 359 |
| Percent | 73.0% | 76.2% | 74.6% |
| 2 meals | Frequency | 57 | 58 | 115 |
| Percent | 24.1% | 23.8% | 23.9% |
| 3 meals | Frequency | 7 | 0 | 7 |
| Percent | 3.0% | 0.0% | 1.5% |
| SNNPR | 1 meal | Frequency | 122 | 106 | 228 |
| Percent | 49.2% | 41.9% | 45.5% |
| 2 meals | Frequency | 112 | 131 | 243 |
| Percent | 45.2% | 51.8% | 48.5% |
| 3 meals | Frequency | 14 | 16 | 30 |
| Percent | 5.6% | 6.3% | 6.0% |
| Total | 1 meal | Frequency | 295 | 292 | 587 |
| Percent | 60.8% | 58.8% | 59.8% |
| 2 meals | Frequency | 169 | 189 | 358 |
| Percent | 34.8% | 38.0% | 36.5% |
| 3 meals | Frequency | 21 | 16 | 37 |
| Percent | 4.3% | 3.2% | 3.8% |
| Total | Frequency | 485 | 497 | 982 |
| Percent | 100.0% | 100.0% | 100.0% |

The baseline survey further examined the quantity of vegetable consumption among women respondents using a one month recall period. About 17 percent of women respondents from both kebeles indicated that they usually ate half or less serving spoon of vegetable per meal. Further, about 28 and 26 percent, respectively, said they usually ate one serving spoon while about 36 percent from both kebeles said they usually ate two serving spoons per meal. About 11 and 12 percent from the treatment and control kebeles, respectively, stated that they usually ate three serving spoons per meal. About 9 percent from both kebeles said they usually had more than three serving spoons of vegetables per meal. The disaggregated results are presented in Table 71.

Table 71: Number of serving spoons of vegetables used in a meal that contained them

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Region** | **Response category** | | **Statistics** | **Type of *Kebele* by treatment** | | **Total** |
| **Treatment** | **Control** |
| Oromia | ½ serving spoon or less | Frequency | | 48 | 45 | 93 |
| Percent | | 20.3% | 18.4% | 19.3% |
| 1 serving spoon/meal | Frequency | | 84 | 89 | 173 |
| Percent | | 35.4% | 36.5% | 36.0% |
| 2 serving spoons/meal | Frequency | | 66 | 75 | 141 |
| Percent | | 27.8% | 30.7% | 29.3% |
| 3 serving spoons/meal | Frequency | | 21 | 14 | 35 |
| Percent | | 8.9% | 5.7% | 7.3% |
| More than 3 spoons/meal | Frequency | | 18 | 21 | 39 |
| Percent | | 7.6% | 8.6% | 8.1% |
| SNNPR | ½ serving spoon or less | Frequency | | 35 | 39 | 74 |
| Percent | | 14.1% | 15.4% | 14.8% |
| 1 serving spoon/meal | Frequency | | 50 | 39 | 89 |
| Percent | | 20.2% | 15.4% | 17.8% |
| 2 serving spoons/meal | Frequency | | 107 | 106 | 213 |
| Percent | | 43.1% | 41.9% | 42.5% |
| 3 serving spoons/meal | Frequency | | 32 | 44 | 76 |
| Percent | | 12.9% | 17.4% | 15.2% |
| More than 3 spoons/meal | Frequency | | 24 | 25 | 49 |
| Percent | | 9.7% | 9.9% | 9.8% |
| Total | ½ serving spoon or less | Frequency | | 83 | 84 | 167 |
| Percent | | 17.1% | 16.9% | 17.0% |
| 1 serving spoon/meal | Frequency | | 134 | 128 | 262 |
| Percent | | 27.6% | 25.8% | 26.7% |
| 2 serving spoons/meal | Frequency | | 173 | 181 | 354 |
| Percent | | 35.7% | 36.4% | 36.0% |
| 3 serving spoons/meal | Frequency | | 53 | 58 | 111 |
| Percent | | 10.9% | 11.7% | 11.3% |
| More than 3 spoons/meal | Frequency | | 42 | 46 | 88 |
| Percent | | 8.7% | 9.3% | 9.0% |
| Total | Frequency | | 485 | 497 | 982 |
| Percent | | 100.0% | 100.0% | 100.0% |

# **4. Concluding Remarks**

This baseline survey established comprehensive baseline data for the project on “Provision of Vegetable Seed and Complementary Training to Vulnerable Households” that aims to rebuild people’s livelihoods and diversify their diets and income. The data required for the baseline survey were gathered through a sample survey covering households living in eight zones of Oromia and SNNPR of Ethiopia. The zones covered in Oromia Region were East Hararghe, West Hararghe, Bale and East Bale whereas those in SNNPR were Wolaita, Konso, Hadiya, and Kembata-Tembaro. A total of 1190 sampled households (593 intervention and 597 control) were covered in the baseline survey. The report provided baseline results that describe households targeted by an emergency crop support program and a comparison group of households outside the target areas.

About 40 percent of the households surveyed are headed by female. About 55 and 45 percent of households surveyed in the treatment and control kebeles, respectively, were headed by females. About 65 and 15 percent of the study respondents in both groups indicated that they had grown vegetables in home garden during the last Meher and dry season, respectively. About 20 and 4 percent of the respondents indicated that they cultivated vegetables outside the home garden during the last Meher and dry seasons, respectively. The farming experience in vegetable production among treatment and control households sampled from the same regions was almost similar whereas the variation across study regions was found to be significant. The mean farming experience in the SNNPR was about 13.71 years with a standard deviation of 7.966 while it was about 4.23 years with standard deviation of 3.103 in Oromia region. Similarly, the mean revenue obtained from selling vegetables was higher in SNNPR than in Oromia region.

Households sampled from both regions and groups indicated that they were experiencing various forms of shocks in the course of sustaining their livelihoods. The three dominant forms of shocks reported were drought/irregular rain (89 %), high prices of agricultural inputs (8%), and early or late onset of agricultural seasons (76%). The findings of the baseline also showed that households had lower level of efficacy to bounce back from the shocks they were experiencing. The findings of the survey revealed that households in the study areas were experiencing severe and acute food insecurity. The level and depth of poverty and vulnerability was high in both treatment and control kebeles showing that the project was targeting the most venerable and destitute households.

The level of awareness of households on nutrition and diet was relatively high as reflected in the majority of assessment questions used in the baseline survey. Indeed, about 63 and 59 percent of respondents from treatment and control kebeles, respectively, mentioned that cooking vegetables for a long time makes them more nutritious. This finding calls for further education and awareness on cooking vegetables. Households are using various coping mechanisms to address the food insecurity they are experiencing. Reducing the quantity of vegetables eaten, eating less preferred vegetables, eating vegetables less often, and producing more vegetables for home consumption are the dominant coping strategies mentioned by respondents drawn from both the treatment and control kebeles.

1. Ethiopian Institute of Agricultural Research (2021). *Agricultural Research for Ethiopian Renaissance: Challenges, Opportunities and Directions*. EIAR: Addis Ababa. [↑](#footnote-ref-1)
2. Development Assistance Committee. DAC Criteria for Evaluating Development Assistance <http://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>. [↑](#footnote-ref-2)
3. Van Den Berg, F., Pedersen, E., Bouma, J., & Bakker, R. (2008). *Visual and acoustic impact of wind turbine farms on residents* (p. 64). University of Groningen. [↑](#footnote-ref-3)
4. Hussain, I. and Hanjra, M. (2010). Irrigation and poverty alleviation: *Review of the empirical evidence. Irrigation and Drainage*, 53(1):1–15. [↑](#footnote-ref-4)
5. Duflo, E., & Pande, R. (2007). Dams. *Quanrterly Journal of Economics*, 122(2), 601-646. [↑](#footnote-ref-5)
6. Kabeer, N., & Waddington, H. (2015). Economic impacts of conditional cash transfer programmes: a systematic review and meta-analysis. *Journal of Development Effectiveness*, 7(3), 290-303. [↑](#footnote-ref-6)
7. It refers to the sum of Treatment (T) and Control (C) kebeles that have a One-to-One proportion. [↑](#footnote-ref-7)
8. We followed a formula developed by Likert (1932) which helped us to form a grouped frequency of mean score values of the respondents. Given this formula, a mean value of five-point Likert scale question items have an interpretation grouped in this manner. A mean value between 1.00 and 1.80 implies an opinion of strong disagreement. A mean value between 1.81 and 2.60 represents an opinion of disagreement. A neutral opinion lies between a mean value of 2.61 and 3.40. A mean value that lies between 3.41 and 4.20 implies an opinion of agreement; and strong agreement lies between a mean value of 4.21 and 5.00. [↑](#footnote-ref-8)