

Increased Ecological Stability of Dijo and Bilate Watersheds

Baseline survey

People in Need, April-May 2016

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# Executive Summary

Baseline status of the project’s logframe indicators:

|  |  |  |
| --- | --- | --- |
|  | **Indicators** | **Current Status** |
| **Overall Objective** | By 12/2018:   * final technical evaluation conducted by BoA and WAOs’ experts confirms the effectiveness of at least 75% of anti-erosion measures * at least 80% of supported farmers rank the provided support as “somehow” or “significantly” improving the productivity of their livelihoods | * to be measured in final evaluation * to be measured in final evaluation |
| **Specific Objective** | By 12/2018:   * in total, 1,060 hectares of land were treated against erosion * at least 70% of responsible kebele and FTC workers are able to explain the content of LMPs for the next 2 years, incl. the implementation strategy and responsible persons * 40% of trained farmers use at least 2 out of 4 promoted methods of sustainable farming * the average number of crops planted by supported farmers has increased by 20% | * to be measured in final evaluation * to be measured in final evaluation * 38.1% grow 2 out of 4 * Average number of crops grown in Meher + Belg season = 6.7 |
| **Results** | By 12/2018, at least:   * 1. 12 LMPs were officially accepted by the representatives of local inhabitants and FTCs   2. 4 agreements on anti-erosion cooperation among kebeles sharing the same watershed were concluded and successfully implemented   3. 75% of the target FTCs increased the average area of fodder grasses production by at least 250%   4. 50% of trained farmers grow fodder grasses   5. 40% of trained farmers constructed new contour measures   6. at least 90% of new enclosures don’t show any visible marks of cutting wood or an intensive grazing   7. 80% of FTCs promote at least 8 types of crops   8. in the past 2 years, 40% of farmers were trained by DA; in the past year, 60% received advice from a model farmer   9. 75% of farmers know the name of their model farmer   10. 65% of trained farmers use at least one agricultural method promoted as a part of result 3 | 1. To be measured during project monitoring 2. To be measured during project monitoring 3. Current average area of fodder grass production is 0.17ha 4. 21% of farmers grow fodder grass 5. 2.5% of farmers constructing contour measures 6. to be measured in final evaluation 7. 29 % of FTCs 8< crops 8. 71% of farmers trained by DA in past 2 years\*; 22% of farmers received advice from model farmer in past year 9. 33% know name of their model farmer 10. To be measured in final evaluation |

\**There is likely to be a high level of bias in this result of 71%, as the DAs were used during data collection to find the randomly selected houses from household lists. With DA presences, HHs are more likely to say that they have received a training. PIN will instead establish a results-based monitoring system to get more accurate data.*

## Model/follower farmer system

* 66% of follower farmers do not know who their model farmer is. The project will have to put in significant effort in order to reach the target indicator that 75% of households know their model farmer. **Only 22% of farmers received any advice from a model farmer in the previous year**.
  + *Implications for the project: The project’s target of 40% will require the project team to take strengthening the 1 to 5 approach as a priority.*
* Average landsize in target kebeles of Halaba is 1.5ha, average landsize of target kebeles in Sankura is 1.2ha. Average landsize of model farmers is 1.7ha, compared to “follower” farmer households with 1.4ha. A higher proportion of follower farmers’ land (27%) were effected by erosion than model farmers’ land (17%) Follower farmers’ land is more affected by erosion than model farmers’.

## Crops, grasses and trees grown

* Only 28.6% of FTCs are promoting at least 8 types of crops. All 14 FTCs are growing maize and teff, 12 FTCs are growing wheat, 11 FTCs are growing haricot bean
  + *Implications for the project: in order to reach the indicator of 80% of FTCs growing at least 8 types of crops, the project should use the results below and provide a different variety of crops from those already promoted (e.g. not maize or teff).*
* Households grow on average approximately 3 types of crops in both Meher and Belg seasons. 90% of households grow maize during the Belg season.
  + *Implications for the project: Belg seasons are often unreliable in this climate-change vulnerable area of the Rift Valley, the high dependency of the target communities on maize could be concerning.* ***Diversifying staple crop production*** *or* ***intercropping maize with crops of better ground cover*** *(e.g. haricot bean), combined with other Conservation Agriculture techniques to improve soil moisture could improve household resiliency*
* The average land used for fodder grass production in FTCs in 0.17 hectares.
  + *Implications for the project: In order to reach the target indicator, the project should consider the individual targets for each FTC as the following:*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Woreda | FTCs | Total land area of the FTC (hectare) | Total fodder grass area (hectare) | TARGET fodder grass area (hectare) |
| Sankura | MENZO | 3 | 0.125 | 0.31 |
|  | W/SIMBITA | 2.5 | 0.125 | 0.31 |
|  | BARCHO | 2.64 | 0.5 | 1.25 |
|  | FETEN | 2 | 0.08 | 0.20 |
|  | BARCHO KULUFO | 3 | 0.25 | 0.63 |
|  | WETETA | 3 | 0.25 | 0.63 |
|  | MENZO FETEN | 2.25 | 0.25 | 0.63 |
| Halaba | SIMBITA | 4 | 0 | 0.00 |
|  | BENDO CHOLOKSA | 3.5 | 0.06 | 0.15 |
|  | KULUBE | 1.75 | 0.25 | 0.63 |
|  | BESHENO | 3.5 | 0.06 | 0.15 |
|  | HANTAZO | 1.5 | 0.06 | 0.15 |
|  | WETETA | 1.5 | 0.12 | 0.30 |
|  | KULUFO | 2 | 0.25 | 0.63 |

## Land Cultivation activities

* Current agricultural practices of households are provided in the table below.
  + *Implications for the project: Minimum tillage, use of compost and inter-cropping should be prioritized for promotion above row sowing. The high result of crop-rotation should be critiqued by the project team, as perhaps it is not fully understood/sufficient explained during data collection.*

|  |  |  |  |
| --- | --- | --- | --- |
| Land cultivation practice | Technique | Total HHs | HHs both techniques |
| Effective soil preparation | Stated minimum land tillage (0-2 times) | 3 % | 0 % |
| Observed crop residue | 31 % |
| Row Sowing | Stated row sowing | 92 % | 92 % |
| Diversification of crops | Stated crop rotation | 94 % | 35 % |
| Stated inter-cropping | 37 % |
| Organic fertilizer/compost | Observed at least one compost pit | 17 % | 17 % |

* The low uptake of these particular practices could be explained by the lack of focus of agricultural trainings: minimum tillage, small-scale irrigation and mulching/permanent soil cover were the three topics least received by the interviewed households. In fact, **over 50% of farmers who received training from DA stated that they were taught to do maximum tillage to increase their production**.
  + *Implications for the project: Some DAs are promoting the opposite of Conservation Agriculture soil conservation practices and the project will need to work closely with Woreda Agriculture Offices and DAs to change their training topics.*
* Beekeeping can be complementary to NRM interventions and with only 11% of farmers practicing it (23% of model farmers). There could be potential to expand the practice in the target communities.
* **Almost all (98%) of respondents have not used any irrigation techniques**, showing the high dependency on rain-fed agriculture and lack of resiliency to climate change.

## Support & promotion from FTCs & DAs

* Only 1 FTC is providing inputs for anti-erosion members (Weteta FTC is providing trees).
* A summary of the activities and capacities of the FTCs and DAs is provided below:
  + *Implications for project implementation: support should be tailored to each FTC according to what is already done or known in order to maximize cost-effectiveness*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Growing agro-forestry crops | Providing agro-forestry crops to community | Demonstr-ating bee-keeping | DAs conducting community conversations | FTC has community agreement on over grazing | DAs know 3 conservation agriculture principles | FTCs with watershed campaign |
| Menzo | YES | NO | YES | YES | YES | NO | YES |
| W/Simbita | YES | NO | NO | YES | YES | NO | YES |
| Barcho | YES | NO | NO | YES | NO | NO | YES |
| Feten | YES | NO | NO | NO | YES | NO | YES |
| B/kulufo | NO | NO | NO | YES | NO | NO | NO |
| Weteta | YES | YES | YES | YES | YES | NO | YES |
| M/Feten | YES | NO | YES | NO | YES | YES | YES |
| Simbita | NO | NO | NO | YES | NO | NO | YES |
| B/ CHELOKSA | YES | NO | NO | YES | NO | NO | YES |
| Kulube | YES | NO | NO | YES | YES | NO | YES |
| Besheno | NO | NO | NO | YES | NO | NO | YES |
| Hantazo | YES | NO | NO | NO | YES | NO | NO |
| Weteta/Halaba | NO | NO | NO | NO | NO | NO | NO |
| Kulufo | NO | NO | NO | NO | NO | NO | YES |

## Soil Conservation Works

* The practice of soil conservation works is relatively low when looking at the different practices. Although physical measures, such as terracing are often stated as being practices (73% of households), 79% of households stated that they did not plant grass-strips.

**Tab. Conducting selected contour measures-terracing or grass strips**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Halaba | Sankura | Total |
| None | 27.3% | 10.4% | 20.8% |
| Only terracing | 63.3% | 88.3% | 72.9% |
| Only grass strips | 23.7% | 15.6% | 20.5% |
| Both terracing and grass strips | 1.2% | 4.5% | 2.5% |

* + *Implications for the project: The integration of biological and physical is essential for the sustainability of soil conservation and should be emphasized during trainings and awareness raising activities.*
* By far, the most frequent tree grown in the area is Eucalyptus (70% of households). The next most common trees are Cordia-Africana and Acacia (approximately one fifth of households).
  + *Implications for the project: Eucalyptus, whilst providing a good source of timber for construction can be damaging for soil and water conservation. The project should* ***promote growth of Eucalyptus only in carefully designated areas*** *and to diversify the types of trees grown.*

## Food Security & Coping Strategy Index

* **53% of households perceive crop production to be reducing year on year** (19% no change, 28% increase). Perceived improvement is significantly higher in Sankura (37 %), among male headed households (29 %) and among model farmers (42 %). Perhaps reflecting the better access to inputs these groups have.
* On average, households were able to provide **sufficient amount of food for all members of their family for 7 out of the past 12 months** (9 out of 12 months in the case of model farmers). The most frequent coping strategies utilized were limiting the portion size (90% of HHs) and reducing the number of meals eaten in a day (88%). Meaning that **the vast majority of the population are reliant on coping strategies that have harmful, negative effects on the nutritional status** of different family members.
* The **coping strategy index is lower for model farmers (140) compared to follower farmers (168)**: aligning with the finding that model farmers have larger land sizes and can usually be assumed to be wealthier than ordinary farmers.
* The **coping strategy index is higher for female headed households (193) than male headed households (163)**, reflecting that female-headed households tend to be more vulnerable and less resilient.

# Baseline survey

**Methodology**

The study summarizes results using 3 methods of data collection:

* Quantitative data collection using structured household interviews including observations. The target respondents for the community-based survey were household heads or other adult members of the households from the target areas.
* Focus group discussions were used to rank the severity of different coping strategies. 6 focus group discussions were conducted in randomly selected kebeles.
* Each Farmer Training Centre was surveyed, using an observation and key information checklist to understand the current capacities of FTCs and its staff.

**Data collection tools**

The final version of questionnaires was programed in an Open Data Kit system and translated to Amharic before the pilot test was conducted.

**Training and fieldwork**

Seven (7) Data collectors were recruited and had training on the questionnaire, tablet use and other data collection principles and disciplines. The data collection was held for six consecutive days, on average 66 questionnaires were collected per day. The first half day was used for pilot test and the data from the pilot test was also used for the survey since there were no major problems in the questionnaire.

**Sampling Technique**

The target population was considered as the habitants of kebeles where any of PIN’s activities are planned. A household is considered as the main cluster unit representing its members and final beneficiaries. Using the total number of targeted HHs, a final sample size has been calculated separately for each data collection stage for a 95% confidence level and 5 % confidence interval according to the formula below.

**Sample Size**

Where:

Z = Z value (e.g. 1.96 for 95% confidence level)

p = percentage picking a choice, expressed as decimal

(.5 used for sample size needed)

c = confidence interval, expressed as decimal

(in our case .**05 = ±5**)

Correction for Finite Population

Where: pop = population

In total, 399 questionnaires were used in the analysis, which means, with considering 95 % confidence level, confidence interval 4.78 %.

**Tab.: Distribution of population in targeted kebeles**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Total population | Total no. of HHs | No. of questionnaires | Data collected in |
| Woreda | **Halaba** |  |  |  |  |
| Kebele | **Weteta** | 3169 | 543 | 29 | 29 |
| **Sinbita** | 3330 | 566 | 30 | 30 |
| **Besheno** | 8046 | 919 | 49 | 48 |
| **Bendo** | 8830 | 941 | 50 | 49 |
| **Kulufo** | 3100 | 500 | 27 | 27 |
| **Hantazo** | 3762 | 450 | 24 | 24 |
| **Kulube** | 4594 | 718 | 38 | 38 |
| Woreda | **Sankura** |  |  |  |  |
| Kebele | **Weteta** | 2858 | 374 | 20 | 20 |
| **Fetene** | 1972 | 325 | 17 | 17 |
| **W/simbita** | 1716 | 319 | 17 | 17 |
| **Barecho** | 4803 | 622 | 33 | 33 |
| **Barecho Kulufo** | 1926 | 382 | 20 | 19 |
| **Menzo** | 3666 | 528 | 28 | 30 |
| **Menzo Fetene** | 2855 | 405 | 21 | 18 |
|  | 54627 | 7592 | 403 | 399 |
| Total |  |  |  |  |  |

**SAMPLING PROCEDURE**

The survey used a two-stage cluster sampling approach. The entire population in all 14 target kebeles was divided into smaller clusters, so called Development Teams (already existing, relatively small units of 15-60 households, commonly used by the kebele administration). The number of clusters per kebele was calculated by using a sampling with "probability proportional to population size" (kebeles with a larger population have a higher number of clusters selected, while considering the number of clusters per kebele and their actual size). Specific clusters were then randomly selected (from the lists of all clusters per each kebele) by using Excel’s RAND function. In the second step, for the final selection of interviewed households, a systematic random sampling from lists of HHs from each cluster was used.

# Main findings

# Demographic profile of respondents

Out of 399 respondents, about 61 % were men, 39 % were women. Regarding HH head, survey covered mainly male headed HH (about 91 % in total).

**Tab.: Gender and HH structure**

|  |  |  |  |
| --- | --- | --- | --- |
| Respondents | men | women | Total |
| Halaba | 61.63% | 38.37% | 100.00% |
| Sankura | 59.09% | 40.91% | 100.00% |
| Total | 60.65% | 39.35% | 100.00% |
| N | 242 | 157 | 399 |
|  |  |  |  |
| HH head | **male** | **female** | **Total** |
| Halaba | 92.65% | 7.35% | 100.00% |
| Sankura | 87.66% | 12.34% | 100.00% |
| Total | 90.73% | 9.27% | 100.00% |
| N | 362 | 37 | 399 |

Vast majority of respondents are married (92 %), significantly more women are widowed (14 %). On average, respondents are 39 years old.

**Tab.: Marital status and age**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Men | women | Total |
| single | 1.65% | 1.91% | 1.75% |
| married | 97.52% | 84.08% | 92.23% |
| widowed | 0.83% | 14.01% | 6.02% |
| N | 242 | 157 | 399 |
| average age | 41.3 | 35.6 | 39.1 |

Almost all respondents are engaged in agriculture (98 %) as a main livelihood option.

**Tab.: Occupation**

|  |  |  |  |
| --- | --- | --- | --- |
|  | men | women | total |
| Agriculture (crop and animal production) | 98.37% | 96.89% | 97.79% |
| Petty trade | 1.63% | 1.86% | 1.72% |
| Wage works | 0.00% | 1.24% | 0.49% |
| Total | 100.00% | 100.00% | 100.00% |
| N | 242 | 157 | 399 |

# Knowledge of “model” farmer households and land size

The Government of Ethiopia’s agricultural extension services, relies on a “1 to 5” approach. Farmer Training Centres and kebele-based agriculture extension workers, otherwise known as Development Agents (DAs), provide trainings and other kinds of support to selected “model” farmers. These “model” farmers are then expected to transfer their acquired knowledge and skills to 5 “follower” farmers . About 10 % of respondents were members of “model” farmer households; the remaining 90 % were members of “follower” farmer households.

**Tab. Proportion of model and follower farmer respondents in the survey**

|  |  |  |  |
| --- | --- | --- | --- |
| Row Labels | Model HH | Follower HH | Total |
| Halaba | 7.76% | 92.24% | 100.00% |
| Sankura | 13.64% | 86.36% | 100.00% |
| Total | 10.03% | 89.97% | 100.00% |
| N | 40 | 359 | 399 |

Despite the potential of the 1 to 5 approach to be an effective and efficient model for building the skills of agricultural households across Ethiopia, achieving its practical implementation in the target areas is shown to be limited. Approximately two thirds of “follower” farmers don’t know or remember the name of their model farmer. Only about 22 % received any advice from a model farmer in last 12 months.

**Tab.: Knowledge of model farmer’s name and received advice**

|  |  |  |  |
| --- | --- | --- | --- |
| Model farmer name | knows | doesn't know | Total |
| Halaba | 33.19% | 66.81% | 100.00% |
| Sankura | 33.83% | 66.17% | 100.00% |
| Total | 33.43% | 66.57% | 100.00% |
| N | 120 | 239 | 359 |
|  |  |  |  |
| Received advice in 12 months | **Yes** | **no** | **Total** |
| Halaba | 20.35% | 79.65% | 100.00% |
| Sankura | 25.56% | 74.44% | 100.00% |
| Total | 22.28% | 77.72% | 100.00% |
| N | 80 | 279 | 359 |

Respondents, who received any advice, got the advice about 3 times in last 12 months on average.

**Tab.: Occasions of received advice from a model farmer in last 12 months**

|  |  |  |  |
| --- | --- | --- | --- |
| Occasions of received advice | Halaba | Sankura | Total |
| 1 | 6.52% | 5.88% | 6.25% |
| 2 | 21.74% | 29.41% | 25.00% |
| 3 | 30.43% | 23.53% | 27.50% |
| 4 | 21.74% | 17.65% | 20.00% |
| 5 | 8.70% | 14.71% | 11.25% |
| 6 | 8.70% | 8.82% | 8.75% |
| 7 | 2.17% | 0.00% | 1.25% |
| Grand Total | 100.00% | 100.00% | 100.00% |
| Average | 3.4 | 3.3 | 3.4 |
| N | 46 | 34 | 80 |

Average size of HH’s land is about 1.4 hectare. Plots are slightly larger in Halaba (1.5 ha) in comparison with 1.2 ha in Sankura. Also “model” farmers’ plot is slightly larger on average (1.7 ha), in comparison with “follower" farmer households (1.4 ha). This is aligned with the common assumption that model farmers tend to be wealthier than follower farmers.

**Tab.: Average HHs’ land size**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Model HH | Follower HH | Total |
| Halaba | 1.7 | 1.5 | 1.5 |
| Sankura | 1.6 | 1.1 | 1.2 |
| Total | 1.7 | 1.4 | 1.4 |
|  |  |  |  |
|  | **male headed HH** | **female headed HH** | **Total** |
| Halaba | 1.5 | 1.3 | 1.5 |
| Sankura | 1.2 | 1.2 | 1.2 |
| Total | 1.4 | 1.3 | 1.4 |

On average, about a quarter of HH land is affected by erosion. The proportion of affected land is significantly higher among follower farmers (27 %) than model farmers (17 %).

**Tab.: Proportion of HH land affected with erosion**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Model HH | Follower HH | Total |
| Halaba | 18.3% | 28.5% | 27.6% |
| Sankura | 14.7% | 22.8% | 21.3% |
| Grand Total | 16.5% | 26.8% | 25.6% |
|  |  |  |  |
|  | **male headed HH** | **female headed HH** | **Total** |
| Halaba | 28.6% | 13.4% | 27.6% |
| Sankura | 21.6% | 19.3% | 21.3% |
| Total | 26.4% | 16.2% | 25.6% |

# Crops and grasses grown

## 3.3.1 Household level production

HHs grow, on average, approximately the same amount of crops in both Meher (3.4) and Belg season (3.3). There are no significant differences when comparing male and female headed households. In Belg season, it seems that model HHs successfully grow more crops than follower farmers.

**Tab.: Crops grown on average in different seasons**

|  |  |  |  |
| --- | --- | --- | --- |
| Meher season | | | |
|  | **Halaba** | **Sankura** | **Total** |
| Average no of crops | 3.5 | 3.2 | 3.4 |
|  |  |  |  |
| HH head | **male** | **female** | **Total** |
| Average no of crops | 3.4 | 3.1 | 3.4 |
|  |  |  |  |
| model HH | **model** | **follower** | **Total** |
| Average no of crops | 4.1 | 3.3 | 3.4 |
| Belg season | | | |
|  | **Halaba** | **Sankura** | **Total** |
| Average no of crops | 3.5 | 3.0 | 3.3 |
|  |  |  |  |
| HH head | **male** | **female** | **Total** |
| Average no of crops | 3.3 | 3.2 | 3.3 |
|  |  |  |  |
| model HH | **model** | **follower** | **Total** |
| Average no of crops | 3.1 | 3.4 | 3.3 |
| Both seasons | | | |
|  | **Halaba** | **Sankura** | **Total** |
| Average no of crops | 7.0 | 6.2 | 6.7 |
|  |  |  |  |
| HH head | **male** | **female** | **Total** |
| Average no of crops | 6.8 | 6.3 | 6.7 |
|  |  |  |  |
| model HH | **model** | **follower** | **Total** |
| Average no of crops | 7.2 | 6.7 | 6.7 |

In Meher season, the main types of crop sown are wheat (about three quarters of households), followed by teff (60 %) and pepper or onion (about 55 %).

**Graph: Crops grown in Meher season**

In Belg season, almost 90 % of households sow maize, followed by sorghum (about a half of HHs) and black beans or haricot beans (about 40 % of households). Maize, although sown in the Belg season, is also reliant on the Meher rains for its growth. Due to the fact that Belg seasons are often unreliable in this climate-change vulnerable area of the Rift Valley, the high dependency of the target communities on maize could be concerning. Diversifying staple crop production or intercropping maize with crops of better ground cover (e.g. haricot bean), combined with other Conservation Agriculture techniques to improve soil moisture could improve household resiliency.

**Graph: Crops grown in Belg season**

**Tab.: Improved fodder grown in past 12 months**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Halaba | Shankura | Total |
| yes | 12.24% | 32.47% | 20.05% |
| m2 (average) | 57.4 | 43.4 | 48.7 |
|  | **model HH** | **follower HH** | **Total** |
| yes | 30.00% | 18.94% | 20.05% |
| m2 (average) | 76.7 | 43.7 | 48.7 |
|  | **male headed HH** | **female headed HH** | **Total** |
| yes | 20.72% | 13.51% | 20.05% |
| m2 (average) | 50.5 | 21.0 | 48.7 |

## 3.3.2 FTC crop production

|  |  |  |  |
| --- | --- | --- | --- |
| Woreda | FTCs | No of Crops | Crops they are growing |
| Sankura | MENZO | 7 | Maize, Haricot bean, Teff Wheat, Pepper, Sorghum, Finger millet |
|  | W/SIMBITA | 3 | Maize, wheat. Teff |
|  | BARCHO | 5 | Maize, Teff, Wheat, Haricot bean, Sorghum |
|  | FETEN | 4 | Maize, Haricot bean, Teff, Wheat |
|  | BARCHO KULUFO | 3 | Maize, Wheat, Teff |
|  | WETETA | 6 | Maize, Finger millet, Haricot bean, potato, wheat, Teff, |
|  | MENZO FETEN | 8 | Teff, Wheat, Haricot bean, Maize, Potato, Sorghum, Finger millet, Barley |
| Halaba | SIMBITA | 4 | Maize, Wheat, Teff, haricot bean |
|  | BENDO CHOLOKSA | 4 | Maize, Sorghum, Teff, Haricot bean |
|  | KULUBE | 4 | Maize, Sorghum, Teff, Haricot bean |
|  | BESHENO | 9 | Maize, Finger millet, sorghum, Haricot bean, wheat, Barley, Pea, Chick pea, Teff |
|  | HANTAZO | 8 | Maize, Finger millet, Sorghum, Haricot bean, Wheat, Pepper, Teff, Barley |
|  | WETETA | 4 | Maize, Sorghum, Wheat, Teff |
|  | KULUFO | 8 | Sorghum, Haricot bean, Maize, Finger millet, Potato, pepper, Teff, Wheat |

From the targeted 14 FTCs four (4) of the promote at least 8 types of crops and these are from Menzo Feten of Sankura Woreda and from Besheno, Hantazo and Kulufo of Halaba Woreda. This means only 28.6% of the FTCs are currently promoting at least 8 types of crops. The targeted FTCs grow 6 crops on average. Using the full sample of FTCs in the targeted Kebeles, it’s found that maize and teff are the most commonly produced crops, with almost all of the FTCs surveyed reported that they grow the crops, following by wheat which is being grown by 13 FTCs.

## 3.3.3 FTC fodder grass production

Average area of land used for fodder grass production is 0.17 hectares.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Woreda | FTCs | Total land area of the FTC (hectare) | Total fodder grass area (hectare) | TARGET fodder grass area (hectare) |
| Sankura | MENZO | 3 | 0.125 | 0.31 |
|  | W/SIMBITA | 2.5 | 0.125 | 0.31 |
|  | BARCHO | 2.64 | 0.5 | 1.25 |
|  | FETEN | 2 | 0.08 | 0.20 |
|  | BARCHO KULUFO | 3 | 0.25 | 0.63 |
|  | WETETA | 3 | 0.25 | 0.63 |
|  | MENZO FETEN | 2.25 | 0.25 | 0.63 |
| Halaba | SIMBITA | 4 | 0 | 0.00 |
|  | BENDO CHOLOKSA | 3.5 | 0.06 | 0.15 |
|  | KULUBE | 1.75 | 0.25 | 0.63 |
|  | BESHENO | 3.5 | 0.06 | 0.15 |
|  | HANTAZO | 1.5 | 0.06 | 0.15 |
|  | WETETA | 1.5 | 0.12 | 0.30 |
|  | KULUFO | 2 | 0.25 | 0.63 |

# Land cultivation activities

**Land cultivation practices to be promoted by PIN are: effective soil preparation (minimum tillage & crop residual), row sowing, diversification of crops (inter-cropping & crop rotation) and use of organic fertilizers/compost.** PIN’s aim is HHs to practice at least 2 out of 4 promoted practices. As row sowing is declaratory practices by all HHs and minimum (no) tillage by no HH, the table below shows how a combination of remaining 2 practices is spread among the HHs. In total, the practices are used in 24 % of HHs, more in Sankura and more among male headed households.

**Tab.: Practicing 1out of 4 full land cultivation practices**

|  |  |  |  |
| --- | --- | --- | --- |
| Land cultivation practice | Technique | Total HHs | HHs both techniques |
| Effective soil preparation | Stated minimum land tillage (0-2 times) | 3 % | 0 % |
| Observed crop residue | 31 % |
| Row Sowing | Stated row sowing | 92 % | 92 % |
| Diversification of crops | Stated crop rotation | 94 % | 35 % |
| Stated inter-cropping | 37 % |
| Organic fertilizer/compost | Observed at least one compost pit | 17 % | 17 % |

**Tab.: HHs practicing any 2 out of 4 full land cultivation practices**

|  |  |  |
| --- | --- | --- |
| Row sowing | Diversification of crops | 29.3% |
| Row sowing | **Organic fertilizer/compost** | 8.5% |
| Diversification of crops | **Organic fertilizer/compost** | 4.3% |
| Effective soil preparation | **Row sowing** | 0.0% |
| Effective soil preparation | **Diversification of crops** | 0.0% |
| Effective soil preparation | **Organic fertilizer/compost** | 0.0% |

**Tab.: HHs practicing any 3 out of 4 full land cultivation practices**

|  |  |  |  |
| --- | --- | --- | --- |
| Organic fertilizer/compost | Row sowing | Diversification of crops | 4.0% |
| Organic fertilizer/compost | **Row sowing** | **Effective soil preparation** | 0.0% |
| Organic fertilizer/compost | **Diversification of crops** | **Effective soil preparation** | 0.0% |
| Diversification of crops | **Effective soil preparation** | **Row sowing** | 0.0% |

**Tab.: HHs practicing 4 out of 4 full land cultivation practices**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Organic fertilizer/compost | Row sowing | Diversification of crops | Effective soil preparation | 0.0% |

**Tab.: HHs practicing 0 out of 4 full land cultivation practices**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Organic fertilizer/compost | Row sowing | Diversification of crops | Effective soil preparation | 0.0% |

**EFFECTIVE SOIL PREPARATION**

Regarding land tillage, it is more frequent in Sankura, among female headed households and model farmers.

**Tab.: Land tillage frequency**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| 1 time tillage | 0.82% | 0.00% |  | 0.55% | 0.00% |  | 0.00% | 0.56% | 0.50% |
| 2 times tillage | 3.67% | 1.30% |  | 3.04% | 0.00% |  | 0.00% | 3.06% | 2.76% |
| 3 times tillage | 25.71% | 13.64% |  | 21.82% | 13.51% |  | 17.50% | 21.45% | 21.05% |
| 4 times tillage | 38.78% | 48.70% |  | 42.82% | 40.54% |  | 32.50% | 43.73% | 42.61% |
| more than 4 x | 31.02% | 36.36% |  | 31.77% | 45.95% |  | 50.00% | 31.20% | 33.08% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

More than two thirds of households don’t leave any crop residue on the farming land (measured through observation). Nevertheless, when they do it, it is more common practice in Halaba (37 %) than in Sankura (21%).

**Tab.: Crop residue leaving on the land**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| yes | 37.14% | 20.78% |  | 30.94% | 29.73% |  | 37.50% | 30.08% | 30.83% |
| no | 62.86% | 79.22% |  | 69.06% | 70.27% |  | 62.50% | 69.92% | 69.17% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

Vast majority of households (92 %) use in row sowing technique, few combine it with broadcasting. This high level of practice means that this should not be the focus of the project’s messaging. However, given that this was measured through an interview, rather than observation, so there could be cases of people saying they use row sowing as this is what they are told to do, but in reality practice broadcasting as it is their traditional way of sowing.

**ROW SOWING**

**Tab.: Sowing technique used**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| row sowing | 88.98% | 97.40% |  | 91.99% | 94.59% |  | 100.00% | 91.36% | 92.23% |
| row sowing and broadcasting | 11.02% | 2.60% |  | 8.01% | 5.41% |  | 0.00% | 8.64% | 7.77% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

**DIVERSIFICATION OF CROPS**

Almost all households perform crop rotation (95%) and crops are rotated by all model farmers.

**Tab.: Crop rotation usage**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| yes | 94.29% | 94.81% |  | 94.48% | 94.59% |  | 100.00% | 93.87% | 94.49% |
| no | 5.71% | 5.19% |  | 5.52% | 5.41% |  | 0.00% | 6.13% | 5.51% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

Inter-cropping is used by about 37 % of households. It is used significantly more often by model farmers (43 %) then follower farmers (36 %), and male headed households (38 %) in comparison with female headed households (27 %).

**Tab.: Intercropping usage**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| yes | 35.10% | 38.96% |  | 37.57% | 27.03% |  | 42.50% | 35.93% | 36.59% |
| no | 64.90% | 61.04% |  | 62.43% | 72.97% |  | 57.50% | 64.07% | 63.41% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

About 40 % of HHs also combine two or more crops on their land at one moment. Among crops, most frequently used for inter-cropping, are maize (in 90 % of cases), black beans/haricot beans (in 50 % of cases) and sorghum (40 %). While sorghum is significantly more often used for inter-cropping in Halaba, lima beans/butter beans are significantly more often used in Sankura.

Most frequent combination of crops is maize and sorghum, over 34 % of combinations, followed by maize with black beans/haricot beans (over 25 %) and maize with lima beans/butter beans (over 17 %).

**Tab. Most frequent combinations of inter-cropping**

|  |  |  |
| --- | --- | --- |
| Combination | | Frequency |
| maize | **sorghum** | 34.25% |
| maize | **black beans/haricot beans** | 25.34% |
| maize | **lima beans/butter beans** | 17.12% |

**Graph: Crops used for inter-cropping**

**USE OF ORGANIC FERTILIZERS**

About a half of households confirm that they prepare and use compost. But when they were asked about amount of compost produced, more than 80 % admits that it was zero pits. This could be due to the traditional preparation techniques, that do not use the pit method.

**Tab.: Compost usage in last Belg or Meher season**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| yes | 48.16% | 55.84% |  | 50.83% | 54.05% |  | 47.50% | 51.53% | 51.13% |
| no | 51.84% | 44.16% |  | 49.17% | 45.95% |  | 52.50% | 48.47% | 48.87% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |
| Amount (no. of pits) |  |  |  |  |  |  |  |  |  |
| 0 | 82.20% | 84.88% |  | 84.78% | 70.00% |  | 73.68% | 84.32% | 83.33% |
| Average (excluded 0) | 2.5 | 2.7 |  | 2.8 | 1.3 |  | 5.0 | 2.1 | 2.6 |

The vast majority of respondents (98 %) haven’t used any irrigation in last 12 months, with exception of model farmers (among whom 13 % have been able to irrigate).

**Tab.: Small- scale irrigation usage in last 12 months**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| yes | 2.45% | 1.30% |  | 2.21% | 0.00% |  | 12.50% | 0.84% | 2.01% |
| no | 97.55% | 98.70% |  | 97.79% | 100.00% |  | 87.50% | 99.16% | 97.99% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |
| Average land size irrigated (ha) | 0.5 | 0.4 |  | 0.5 | 0.0 |  | 0.3 | 0.7 | 0.5 |

Only about 11 % of households are involved in beekeeping, model farmers significantly more often (about 23 %, compared to 9% of follower farmers).

**Tab.: Involvement in beekeeping**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| yes | 11.02% | 9.74% |  | 10.77% | 8.11% |  | 22.50% | 9.19% | 10.53% |
| no | 88.98% | 90.26% |  | 89.23% | 91.89% |  | 77.50% | 90.81% | 89.47% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

# Support & promotion from FTCs & DAs

The vast majority of the FTCs (93%) do not currently provide supplies of inputs for required anti-erosion measures while only one of the FTCs (Weteta Kebele of Sankura Kebele) grows cordis-africana, grevillea and Junipers to provide it to the farmers and the rest explained that they don’t get the seedlings sufficiently due to financial limitations and due to the fact that the area has water (rain) scarcity. Almost all of the FTCs stated that they are not giving sufficient support to the farmers in treating/preventing erosion at their own fields, providing field-based demonstration but they point out that they let the farmers know at least some of the negative consequences of soil erosion like flood, reduction of productivity and land degradation

**Tab.: Promoted practices by FTCs**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| FTCs | Inter-cropping | Crop rotation | Sowing inline | Use of organic fertilizer | Mulching (residue cover) | Minimum tillage |
| MENZO | NO | YES | YES | YES | NO | YES |
| W/SIMBITA | YES | YES | YES | NO | NO | YES |
| BARCHO | NO | YES | YES | YES | YES | NO |
| FETEN | YES | YES | YES | YES | YES | NO |
| BARCHO KULUFO | NO | YES | YES | NO | NO | NO |
| WETETA | YES | YES | YES | YES | YES | NO |
| MENZO FETEN | NO | YES | NO | YES | YES | NO |
| SIMBITA | NO | YES | YES | NO | NO | NO |
| BENDO CHOLOKSA | YES | YES | YES | YES | YES | YES |
| KULUBE | NO | YES | YES | NO | YES | NO |
| BESHENO | NO | YES | YES | NO | YES | NO |
| HANTAZO | YES | YES | YES | YES | YES | NO |
| WETETA | NO | YES | YES | NO | NO | NO |
| KULUFO | YES | YES | YES | NO | NO | NO |

Tab.: Topics promoted by the FTCs

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Growing agro-forestry crops | Providing agro-forestry crops to community | Demonstr-ating beekeeping | DAs conducting community conversations | FTC has community agreement on over grazing | DAs know 3 conservation agriculture principles | FTCs with water shed campaign |
| Menzo | YES | NO | YES | YES | YES | NO | YES |
| W/Simbita | YES | NO | NO | YES | YES | NO | YES |
| Barcho | YES | NO | NO | YES | NO | NO | YES |
| Feten | YES | NO | NO | NO | YES | NO | YES |
| B/kulufo | NO | NO | NO | YES | NO | NO | NO |
| Weteta | YES | YES | YES | YES | YES | NO | YES |
| M/Feten | YES | NO | YES | NO | YES | YES | YES |
| Simbita | NO | NO | NO | YES | NO | NO | YES |
| B/ CHELOKSA | YES | NO | NO | YES | NO | NO | YES |
| Kulube | YES | NO | NO | YES | YES | NO | YES |
| Besheno | NO | NO | NO | YES | NO | NO | YES |
| Hantazo | YES | NO | NO | NO | YES | NO | NO |
| Weteta/Halaba | NO | NO | NO | NO | NO | NO | NO |
| Kulufo | NO | NO | NO | NO | NO | NO | YES |

About 71 % of households confirm that they have received training from development agents in the last two years. Significantly more often in Sankura (82 %) than in Halaba (63 %).

**Tab.: Training received from DA’s in last 2 years**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| yes | 63.27% | 82.47% |  | 69.89% | 78.38% |  | 75.00% | 70.19% | 70.68% |
| no | 36.73% | 17.53% |  | 30.11% | 21.62% |  | 25.00% | 29.81% | 29.32% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

Most frequent topics related to the crop production were row planting (about 95 %), proper use of chemical fertilizer (about 80 %), and crop protection (managing plant diseases, weeds and other pests) (55 %).

**Graph: Trainings’ topics related to crop production**

Almost all households that received trainings mentioned trainings focused on physical measures construction, such as terracing, check dams, etc.

**Graph: Trainings’ topics related to soil conservation**

Regarding animal husbandry, development agents were more active in Sankura than in Halaba. Dairy farming training was mentioned by 80 % of respondents (who received training) in Sankura, in comparison to 60 % in Halaba. Poultry production training was mentioned by 75 % of respondents (who received training) in Sankura, in comparison to 58 % in Halaba. Fattening training was mentioned by 60 % of respondents (who received training) in Sankura, in comparison to 42 % in Halaba.

**Graph: Trainings’ topics related to animal husbandry**

In most of the FTCs, the Das themselves didn’t get comprehensive and sufficient amount of trainings and most of the trainings they received are about sowing in line, crop production, water shade campaign, natural resource management, animal husbandry and Irrigation. DAs in one of the FTCs (Kulufo) did not get any kind of training yet.

**Tab.: Trainings DAs have received**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trainings | sowing in line | crop production | water shed campaign | natural resource mgmt | animal husbandry | Irrigation | Skill training | Input usage |
| Menzo |  |  |  | **X** | **X** |  |  |  |
| W/Simbita |  | **X** |  | **X** | **X** |  |  |  |
| Barcho | **X** | **X** |  |  |  |  |  |  |
| Feten | **X** |  |  |  |  |  |  |  |
| B/kulufo | **X** |  |  |  |  |  |  |  |
| Weteta | **X** | **X** |  |  |  |  |  |  |
| M/Feten | **X** |  |  |  |  |  |  |  |
| Simbita |  |  |  |  |  |  | **X** |  |
| B/CHELOKSA |  |  |  |  |  | **X** |  |  |
| Kulube |  |  |  |  |  | **X** |  |  |
| Besheno |  |  | **X** |  |  | **X** |  |  |
| Hantazo |  |  | **X** |  |  | **X** |  |  |
| Weteta/ Halaba |  |  |  |  |  |  |  | **X** |
| Kulufo |  |  |  |  |  |  |  |  |

# Soil conservation works

In general, about three quarters of households have undertaken any soil conservation works at their farm land in last 12 months. There is significant difference when comparing activities in Sankura (90 % have undertaken) and in Halaba (67 %). Also model farmer mentioned soil conservation activities more often (83 %).

**Tab.: Soil conservation works conducted in last 12 months**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| yes | 66.94% | 90.26% |  | 76.52% | 70.27% |  | 82.50% | 75.21% | 75.94% |
| no | 33.06% | 9.74% |  | 23.48% | 29.73% |  | 17.50% | 24.79% | 24.06% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

Regarding terracing, more than one quarter of households haven’t done any work, significantly more frequently in Halaba. Households that undertook terracing have done 160 meters on average, significantly more in Halaba, among male headed household and model farmers.

**Tab.: Terracing works conducted**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| 0 meters | 36.73% | 11.69% |  | 26.24% | 35.14% |  | 20.00% | 27.86% | 27.07% |
| Average meters (excluded 0) | 178.5 | 137.3 |  | 162.6 | 121.9 |  | 197.4 | 154.5 | 159.2 |
| Max meters | 1200 | 800 |  | 1200 | 300 |  | 1000 | 1200 | 1200 |

Regarding check dams, more than two thirds of households haven’t done any work, significantly more frequently in Halaba. Households that undertook check dam works have done 97 meters on average, significantly more in Halaba, among female headed households.

**Tab.: Check dam works conducted**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| 0 meters | 72.24% | 61.04% |  | 67.68% | 70.27% |  | 67.50% | 67.97% | 67.92% |
| Average meters (excluded 0) | 120.4 | 88.8 |  | 92.8 | 136.0 |  | 116.7 | 95.5 | 96.6 |
| Max meters | 600 | 300 |  | 600 | 200 |  | 250 | 600 | 600 |
| N/A | 22.04% | 11.04% |  | 17.96% | 16.22% |  | 25.00% | 16.99% | 17.79% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

Regarding micro-basins, almost three quarters of households haven’t done any work. Households that undertook micro-basin works have done 28 meters on average.

**Tab.: Micro-basin works conducted**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| 0 meters | 73.88% | 70.13% |  | 72.10% | 75.68% |  | 67.50% | 72.98% | 72.43% |
| Average meters (excluded 0) | 18.8 | 32.1 |  | 26.4 | 50.0 |  | 17.0 | 28.9 | 28.2 |
| Max meters | 40 | 75 |  | 75 | 70 |  | 25 | 75 | 75 |
| N/A | 21.63% | 12.34% |  | 18.23% | 16.22% |  | 27.50% | 16.99% | 18.05% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

Regarding grass strips, almost 80 % of households haven’t done any work. Households that planted grass strips have done 34 meters on average.

**Tab.: Grass strip planted**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| 0 meters | 76.33% | 84.42% |  | 79.01% | 83.78% |  | 72.50% | 80.22% | 79.45% |
| Average meters (excluded 0) | 16.3 | 41.4 |  | 33.9 | 0 |  | 50.0 | 32.1 | 33.9 |
| Max meters | 36 | 80 |  | 80 | 0 |  | 50.0 | 80 | 80 |
| N/A | 22.45% | 11.04% |  | 18.23% | 16.22% |  | 25.00% | 17.27% | 18.05% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

**Tab. Conducting selected contour measures-terracing or grass strips**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Halaba | Sankura | Total |
| None | 27.3% | 10.4% | 20.8% |
| Only terracing | 63.3% | 88.3% | 72.9% |
| Only grass strips | 23.7% | 15.6% | 20.5% |
| Both terracing and grass strips | 1.2% | 4.5% | 2.5% |

In last 5 years, HHs have grown most frequently eucalyptus (about 70 % of HHs). One fifth of households have grown Cordia Africana, similar proportion of households have grown acacia.

**Graph: Trees grown in last 5 years**

Regarding fruit trees, more than 20 % of HHs haven’t grown anything. In general, fruits trees are significantly more often grown in Sankura than in Halaba. In Sankura, most frequent fruit trees grown are avocado, mango (both about 38 %) and papaya (25 %). In Halaba, most frequent fruit trees grown are avocado (25 %), papaya (15 %) and kashmire and banana (13%).

**Graph: Fruit trees grown in last 5 years**

# Improved energy usage

Almost all households (99.8%) use traditional fuel – firewood or charcoal.

**Tab.: Type of fuel used**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| Firewood/charcoal | 99.59% | 100.00% |  | 99.72% | 100.00% |  | 100.00% | 99.72% | 99.75% |
| Biogas | 0.41% | 0.00% |  | 0.28% | 0.00% |  | 0.00% | 0.28% | 0.25% |
| Total | 100.00% | 100.00% |  | 100.00% | 100.00% |  | 100.00% | 100.00% | 100.00% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

Almost all households (99.5%) use traditional stove – gulicha.

**Tab.: Stove type used**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| Traditional (gulicha) | 99.59% | 99.35% |  | 99.45% | 100.00% |  | 97.50% | 99.72% | 99.50% |
| Improved fuel saving stove (Lakech, Mirti, Gonze, etc.) | 0.41% | 0.00% |  | 0.28% | 0.00% |  | 0.00% | 0.28% | 0.25% |
| N/A | 0.00% | 0.65% |  | 0.28% | 0.00% |  | 2.50% | 0.00% | 0.25% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

# Food security & Coping Strategy Index

Regarding the crop production and its volume in general, more than a half of households perceive the trend as declining, 20 % of households observe no change and more than a quarter think their production is improving. Perceived improvement is significantly higher in Sankura (37 %), among male headed households (29 %) and among model farmers (42 %). Perhaps reflecting the better access to inputs these groups have.

**Tab.: Perceived trends in crop production in last 5 years**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| improving | 22.45% | 37.01% |  | 29.01% | 18.92% |  | 42.50% | 26.46% | 28.07% |
| no change | 23.27% | 12.99% |  | 17.96% | 32.43% |  | 5.00% | 20.89% | 19.30% |
| declining | 54.29% | 50.00% |  | 53.04% | 48.65% |  | 52.50% | 52.65% | 52.63% |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

On average, households were able to provide sufficient amount of food for all members for 7 months out of last 12 months, with significantly more time for model farmers’ households (8.7 months).

**Tab.: Sufficient food in last 12 months (in months)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Halaba | Sankura |  | male head | female head |  | model hh | follower hh | Total |
| Average | 7.2 | 6.8 |  | 7.1 | 6.7 |  | 8.7 | 6.9 | 7.1 |
| Modus | 6.0 | 6.0 |  | 6.0 | 6.0 |  | 12.0 | 6.0 | 6.0 |
| N | 245 | 154 |  | 362 | 37 |  | 40 | 359 | 399 |

Regarding coping strategies used when households didn’t have enough food or money to purchase food, there are no significant differences in strategies when comparing woredas, except borrowing food and consumption of seed stocks- which was done more often by households in Halaba.

**Graph: Proportion of HHs which had to use the coping strategy (woreda)**

**Graph: Proportion of HHs which had to use the coping strategy (male vs. female headed hh)**

**Tab.: Proportion of households that used the coping strategy in last 7 days**

|  |  |  |  |
| --- | --- | --- | --- |
| Coping Strategy used in last 7 days | Model | Follower | Total |
| Limit portion size at mealtimes? | 75.00% | 92.13% | 90.40% |
| Reduce number of meals eaten in a day? | 72.50% | 89.33% | 87.63% |
| Rely on less preferred and less expensive foods? | 45.00% | 73.18% | 70.35% |
| Borrow food, or rely on help from a friend or relative? | 37.50% | 60.67% | 58.33% |
| Purchase food on credit? | 42.50% | 54.80% | 53.55% |
| Consume seed stock held for next season? | 25.00% | 50.00% | 47.49% |
| Labor works to other households for exchange of food/cash ? | 17.50% | 47.86% | 44.76% |
| Feed working members of household at the expense of non-working members? | 35.90% | 38.70% | 38.42% |
| Restrict adult consumption in order for small children to eat? | 25.00% | 38.98% | 37.56% |
| Send household members to eat elsewhere? | 10.00% | 35.29% | 32.75% |
| Send household members to beg? | 12.50% | 21.85% | 20.91% |
| Sold child labor ? | 5.13% | 15.73% | 14.68% |
| Gather wild food, hunt, or harvest immature crops? | 0.00% | 9.27% | 8.33% |
| Sold firewood/ charcoal ? | 5.41% | 7.08% | 6.92% |
| Sold grasses? | 0.00% | 3.13% | 2.81% |

**Tab.: Average number of times the coping strategy has been used in the past 7 days**

|  |  |  |  |
| --- | --- | --- | --- |
| Coping Strategy used in last 7 days | model | ordinary | Grand Total |
| Borrow food, or rely on help from a friend or relative? | 0.0 | 2.8 | 2.8 |
| Rely on less preferred and less expensive foods? | 2.0 | 3.0 | 3.0 |
| Labor works to other households for exchange of food/cash ? | 2.6 | 3.1 | 3.0 |
| Consume seed stock held for next season? | 3.5 | 3.4 | 3.4 |
| Sold grasses? | 2.5 | 3.4 | 3.4 |
| Sold firewood/ charcoal ? | 5.0 | 3.3 | 3.4 |
| Reduce number of meals eaten in a day? | 3.0 | 3.5 | 3.5 |
| Purchase food on credit? | 2.8 | 3.6 | 3.6 |
| Send household members to eat elsewhere? | 4.9 | 4.2 | 4.3 |
| Gather wild food, hunt, or harvest immature crops? | 4.0 | 4.4 | 4.4 |
| Sold child labor ? | 0.0 | 4.5 | 4.5 |
| Send household members to beg? | 4.6 | 5.0 | 5.0 |
| Restrict adult consumption in order for small children to eat? | 5.0 | 5.0 | 5.0 |
| Feed working members of household at the expense of non-working members? | 4.6 | 5.1 | 5.1 |
| Limit portion size at mealtimes? | 4.9 | 5.2 | 5.2 |

**Graph: Proportion of HHs which had to use the coping strategy (model vs. following hh)**

Regarding coping strategies used when households didn’t have enough food or money to purchase food, there are significant differences almost in all strategies when comparing model and following households, except borrowing food – all of them were more often used by following farmers.

**Graph: Frequency of coping strategy usage in last 7 days (male vs female headed hh)**

**Graph: Frequency of coping strategy usage in last 7 days (model vs following hh)**

6 focus group discussions were conducted in randomly selected kebeles (Menzo Feten, Feten, Warabe Sinbita, Bendo Choloksa, Besheno and Weteta) in order to weight in terms of severity the different coping strategies. The different strategies were grouped into 4 different levels of severity: 1 being the least severe, 4 being the most severe. The results from each focus group discussion is presented below, the most frequent number was used as the consensus ranking.

**Tab.: Results of the focus group discussions’ severity weighting**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Focus Group Ranking for Each Individual Behavior | | | | | | |
| **FGD1** | **FGD2** | **FGD3** | **FGD4** | **FGD5** | **FGD6** | **Consensus Ranking** |
| Rely on less preferred and less expensive foods | 4 | 4 | 4 | 4 | 3 | 4 | 4 |
| Borrow food, or rely on help from a friend or relative | 3 | 2 | 2 | 4 | 4 | 4 | 4 |
| Purchase food on credit | 3 | 3 | 3 | 4 | 3 | 3 | 3 |
| Gather wild food, hunt, or harvest immature crops | 1 | 2 | 2 | 3 | 3 | 3 | 3 |
| Consume seed stock held for next season | 3 | 1 | 1 | 4 | 4 | 4 | 4 |
| Send household members to eat elsewhere | 2 | 3 | 2 | 3 | 2 | 2 | 2 |
| Send household members to beg | 2 | 2 | 3 | 4 | 3 | 3 | 3 |
| Limit portion size at mealtimes | 3 | 3 | 4 | 4 | 4 | 4 | 4 |
| Restrict adult consumption in order for small children to eat | 3 | 4 | 2 | 3 | 4 | 3 | 3 |
| Feed working members of household at the expense of non-working members | 2 | 3 | 1 | 2 | 3 | 2 | 2 |
| Reduce number of meals eaten in a day | 3 | 2 | 3 | 4 | 4 | 4 | 4 |
| Sold grasses | 1 | 1 | 2 | 4 | 2 | 1 | 1 |
| Labor works to other households for exchange of food/cash | 3 | 4 | 4 | 4 | 3 | 1 | 4 |
| Sold child labor | 1 | 1 | 1 | 4 | 3 | 4 | 1 |
| Sold firewood/ charcoal | 1 | 1 | 4 | 4 | 1 | 3 | 1 |

The Coping Strategy Index was calculated by the total sum of the frequency (number of times the coping strategy was used in past 7 days) multiplied by the severity weighting of each coping strategy.

**Tab.: Coping Strategy Index calculation for all HHs and disaggregated for Halaba and Sankura Woredas**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Coping Strategy | Severity | Grand Total | | Halaba | | Sankura | |
|  |  | **Freq** | **Score** | **Freq** | **Score** | **Freq** | **Score** |
| Borrow food, or rely on help from a friend or relative? | 4 | 2.8 | 11 | 2.5 | 10 | 3.9 | 16 |
| Rely on less preferred and less expensive foods? | 4 | 3.0 | 12 | 2.9 | 11 | 3.1 | 12 |
| Labor works to other households for exchange of food/cash ? | 4 | 3.0 | 12 | 3.2 | 13 | 2.7 | 11 |
| Consume seed stock held for next season? | 4 | 3.4 | 13 | 3.4 | 14 | 3.3 | 13 |
| Sold grasses? | 1 | 3.4 | 3 | 3.5 | 3 | 2.7 | 3 |
| Sold firewood/ charcoal ? | 1 | 3.4 | 3 | 3.3 | 3 | 3.6 | 4 |
| Reduce number of meals eaten in a day? | 4 | 3.5 | 14 | 3.4 | 14 | 3.8 | 15 |
| Purchase food on credit? | 3 | 3.6 | 11 | 3.6 | 11 | 3.6 | 11 |
| Send household members to eat elsewhere? | 2 | 4.3 | 9 | 4.1 | 8 | 4.6 | 9 |
| Gather wild food, hunt, or harvest immature crops? | 3 | 4.4 | 13 | 4.2 | 13 | 4.8 | 14 |
| Sold child labor ? | 1 | 4.5 | 5 | 4.5 | 5 | 0.0 | 0 |
| Send household members to beg? | 3 | 5.0 | 15 | 5.1 | 15 | 4.6 | 14 |
| Restrict adult consumption in order for small children to eat? | 3 | 5.0 | 15 | 4.9 | 15 | 5.1 | 15 |
| Feed working members of household at the expense of non-working members? | 2 | 5.1 | 10 | 5.3 | 11 | 4.7 | 9 |
| Limit portion size at mealtimes? | 4 | 5.2 | 21 | 5.1 | 20 | 5.2 | 21 |
| Coping Strategy Index |  |  | **167** |  | **165** |  | **167** |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Coping Strategy | Severity | Model Farmer | | Follower Farmer | | MHH | | FHH | |
|  |  | **Freq** | **Score** | **Freq** | **Score** | **Freq** | **Score** | **Freq** | **Score** |
| Borrow food, or rely on help from a friend or relative? | 4 | 0.0 | 0 | 2.8 | 11 | 2.3 | 9 | 5.6 | 22 |
| Rely on less preferred and less expensive foods? | 4 | 2.0 | 8 | 3.0 | 12 | 2.9 | 12 | 3.3 | 13 |
| Labor works to other households for exchange of food/cash ? | 4 | 2.6 | 10 | 3.1 | 12 | 3.0 | 12 | 3.2 | 13 |
| Consume seed stock held for next season? | 4 | 3.5 | 14 | 3.4 | 13 | 3.3 | 13 | 3.9 | 15 |
| Sold grasses? | 1 | 2.5 | 3 | 3.4 | 3 | 3.6 | 4 | 1.7 | 2 |
| Sold firewood/ charcoal ? | 1 | 5.0 | 5 | 3.3 | 3 | 3.3 | 3 | 3.7 | 4 |
| Reduce number of meals eaten in a day? | 4 | 3.0 | 12 | 3.5 | 14 | 3.5 | 14 | 3.7 | 15 |
| Purchase food on credit? | 3 | 2.8 | 8 | 3.6 | 11 | 3.5 | 10 | 4.2 | 13 |
| Send household members to eat elsewhere? | 2 | 4.9 | 10 | 4.2 | 8 | 4.3 | 9 | 4.7 | 9 |
| Gather wild food, hunt, or harvest immature crops? | 3 | 4.0 | 12 | 4.4 | 13 | 4.4 | 13 | 4.5 | 14 |
| Sold child labor? | 1 | 0.0 | 0 | 4.5 | 5 | 4.0 | 4 | 7.0 | 7 |
| Send household members to beg? | 3 | 4.6 | 14 | 5.0 | 15 | 4.9 | 15 | 5.6 | 17 |
| Restrict adult consumption in order for small children to eat? | 3 | 5.0 | 15 | 5.0 | 15 | 5.0 | 15 | 5.4 | 16 |
| Feed working members of household at the expense of non-working members? | 2 | 4.6 | 9 | 5.1 | 10 | 5.1 | 10 | 5.5 | 11 |
| Limit portion size at mealtimes? | 4 | 4.9 | 20 | 5.2 | 21 | 5.1 | 20 | 5.6 | 22 |
| Coping Strategy Index |  |  | **140** |  | **168** |  | **163** |  | **193** |

The Coping Strategy Index measurement becomes interesting when compared across different groups of people. The key differences found are:

* The coping strategy index is lower for model farmers (140) compared to follower farmers (168): aligning with the finding that model farmers have larger land sizes and can usually be assumed to be wealthier than ordinary farmers.
* The coping strategy index is higher for female headed households (193) than male headed households (163), reflecting that female-headed households tend to be more vulnerable and less resilient.

# Conclusions

## Model/follower farmer system

* 66% of follower farmers do not know who their model farmer is. The project will have to put in significant effort in order to reach the target indicator that 75% of households know their model farmer. **Only 22% of farmers received any advice from a model farmer in the previous year**.
  + *Implications for the project: The project’s target of 40% will require the project team to take strengthening the 1 to 5 approach as a priority.*
* Average landsize in target kebeles of Halaba is 1.5ha, average landsize of target kebeles in Sankura is 1.2ha. Average landsize of model farmers is 1.7ha, compared to “follower” farmer households with 1.4ha. A higher proportion of follower farmers’ land (27%) were effected by erosion than model farmers’ land (17%) Follower farmers’ land is more affected by erosion than model farmers’.

## Crops, grasses and trees grown

* Only 28.6% of FTCs are promoting at least 8 types of crops. All 14 FTCs are growing maize and teff, 12 FTCs are growing wheat, 11 FTCs are growing haricot bean
  + *Implications for the project: in order to reach the indicator of 80% of FTCs growing at least 8 types of crops, the project should use the results below and provide a different variety of crops from those already promoted (e.g. not maize or teff).*
* Households grow on average approximately 3 types of crops in both Meher and Belg seasons. 90% of households grow maize during the Belg season.
  + *Implications for the project: Belg seasons are often unreliable in this climate-change vulnerable area of the Rift Valley, the high dependency of the target communities on maize could be concerning.* ***Diversifying staple crop production*** *or* ***intercropping maize with crops of better ground cover*** *(e.g. haricot bean), combined with other Conservation Agriculture techniques to improve soil moisture could improve household resiliency*

## Land Cultivation activities

* Current agricultural practices of households are provided in the table below.
  + *Implications for the project: Minimum tillage, use of compost and inter-cropping should be prioritized for promotion above row sowing. The high result of crop-rotation should be critiqued by the project team, as perhaps it is not fully understood/sufficient explained during data collection.*

|  |  |  |  |
| --- | --- | --- | --- |
| Land cultivation practice | Technique | Total HHs | HHs both techniques |
| Effective soil preparation | Stated minimum land tillage (0-2 times) | 3 % | 0 % |
| Observed crop residue | 31 % |
| Row Sowing | Stated row sowing | 92 % | 92 % |
| Diversification of crops | Stated crop rotation | 94 % | 35 % |
| Stated inter-cropping | 37 % |
| Organic fertilizer/compost | Observed at least one compost pit | 17 % | 17 % |

* The low uptake of these particular practices could be explained by the lack of focus of agricultural trainings: minimum tillage, small-scale irrigation and mulching/permanent soil cover were the three topics least received by the interviewed households. In fact, **over 50% of farmers who received training from DA stated that they were taught to do maximum tillage to increase their production**.
  + *Implications for the project: Some DAs are promoting the opposite of Conservation Agriculture soil conservation practices and the project will need to work closely with Woreda Agriculture Offices and DAs to change their training topics.*
* Beekeeping can be complementary to NRM interventions and with only 11% of farmers practicing it (23% of model farmers). There could be potential to expand the practice in the target communities.
* **Almost all (98%) of respondents have not used any irrigation techniques**, showing the high dependency on rain-fed agriculture and lack of resiliency to climate change.

## Support & promotion from FTCs & DAs

* Only 1 FTC is providing inputs for anti-erosion members (Weteta FTC is providing trees).
* A summary of the activities and capacities of the FTCs and DAs has been provided in the results section.
  + *Implications for project implementation: support should be tailored to each FTC according to what is already done or known in order to maximize cost-effectiveness*

## Soil Conservation Works

* The practice of soil conservation works is relatively low when looking at the different practices. Although physical measures, such as terracing are often stated as being practices (73% of households), 79% of households stated that they did not plant grass-strips.
  + *Implications for the project: The integration of biological and physical is essential for the sustainability of soil conservation and should be emphasized during trainings and awareness raising activities.*
* By far, the most frequent tree grown in the area is Eucalyptus (70% of households). The next most common trees are Cordia-Africana and Acacia (approximately one fifth of households).
  + *Implications for the project: Eucalyptus, whilst providing a good source of timber for construction can be damaging for soil and water conservation. The project should* ***promote growth of Eucalyptus only in carefully designated areas*** *and to diversify the types of trees grown.*

## Food Security & Coping Strategy Index

* **53% of households perceive crop production to be reducing year on year** (19% no change, 28% increase). Perceived improvement is significantly higher in Sankura (37 %), among male headed households (29 %) and among model farmers (42 %). Perhaps reflecting the better access to inputs these groups have.
* On average, households were able to provide **sufficient amount of food for all members of their family for 7 out of the past 12 months** (9 out of 12 months in the case of model farmers). The most frequent coping strategies utilized were limiting the portion size (90% of HHs) and reducing the number of meals eaten in a day (88%). Meaning that the vast majority of the population are reliant on coping strategies that have harmful, negative effects on the nutritional status of different family members.
* The **coping strategy index is lower for model farmers (140) compared to follower farmers (168)**: aligning with the finding that model farmers have larger land sizes and can usually be assumed to be wealthier than ordinary farmers.
* The **coping strategy index is higher for female headed households (193) than male headed households (163)**, reflecting that female-headed households tend to be more vulnerable and less resilient.