**Illustrations, Tables and Figures**

**Table 1: Losses related to storage conditions in Tanzania (in percent of total maize losses)**

|  |  |  |
| --- | --- | --- |
| **Type of Loss** | **Type of farm scale** | |
| **Small** | **Large** |
| Lack of storage | 13 | 13 |
| Pest infestation | 40 | 50 |
| Poor quality of storage facilities | 23 | 25 |

*Source: World Bank, 2009*

**Table 2: Food Crops Preservation Practices in Rural Areas**

|  |  |  |
| --- | --- | --- |
| **Area** | **Crop(s) Preserved** | **Inputs/Local Herbs Used** |
| Kilosa | Cassava | Salting |
| Maize | Kitchen ash; or |
| Burnt rice ash |
| Moshi Rural | Bean or maize | Chilli pepper; or |
| Wild tobacco; or |
| Concoction of chilli pepper and *mabangi mwitu* leaves; or |
| Concoction of *urutupa* and *mabangi mwitu* leaves; or |
| Concoction of *urutupa* and chilli pepper; or |
| Kitchen ash |
| Kasulu | Bean or maize | *mshindwi* tree ash; or |
| a mixture of chilli pepper and *mshindwi* tree ash; or |
| a mixture of chilli pepper and *mtundu* tree ash; or |
| a concoction of chilli pepper and ash from any tree, or |
| Kitchen ash |
| Peas | concoction of chilli pepper and ash from any tree |
| Mpwapwa | Bean or maize | *msakasaka* plant leaves; or |
| ground neem leaves; or |
| *kajashi* tree ash; or |
| *mluku* tree leaves; or |
| a mixture of *msonobali* and chilli pepper, or |
| Kitchen ash or goat dung ash or maize cobs ash |
| Sorghum | Kitchen ash or goat dung ash or maize cobs ash |
| Karagwe | Maize | *kajai* plant leaves; or |
| *kajashi* tree ash; or |
| *masaka* plant leaves; or |
| the mixture of *kaswagala* and *kajai* tree leaves; or |
| Kitchen ash or mud or dry cow dung or anthill soil |
| Sorghum | *kajai* plant leaves; or |
| *mluku* tree leaves |
| Songea Rural | Bean or Maize | Kitchen ash |

***Source*:** Adapted from Lwoga et al., 2010

**Table 3: Gender Responsibilities in Agriculture**

|  |  |  |
| --- | --- | --- |
| **Activity** | **% of hours spent per day** | |
| **Male** | **Female** |
| Land preparation and planting | 44.2 | 55.8 |
| Weeding | 45.0 | 55.0 |
| Ridging, fertilizing and other non-harvest activities | 43.0 | 57.0 |
| Harvesting | 45.0 | 55.0 |
| Aggregate Agriculture | 44.6 | 55.4 |

***Source*:** National Panel Survey (NPS) 2012-2013

**Table 4: Percentage distribution of employed individuals aged 15+ years by selected industry and sex, Tanzania Mainland, 2014**

|  |  |  |  |
| --- | --- | --- | --- |
| **Industry** | **Male** | **Female** | **Gender Gap**  **(in favour of females)** |
| Agriculture, forestry and fishing | 64 | 69.9 | **5.9** |
| Accommodation and food service activities | 1.4 | 6.5 | **5.1** |
| Transportation and storage | 5.0 | 0.2 | **-4.8** |
| Construction | 4.0 | 0.1 | **-3.9** |
| Mining and quarrying | 1.7 | 0.4 | **-1.3** |
| Manufacturing | 3.6 | 2.6 | **-1.0** |
| Administrative and support service activities | 1.0 | 0.3 | **-0.7** |
| Wholesale and retail trade; repair of motor vehicles and motorcycles | 12.4 | 12.8 | **0.4** |
| Human Health and social work activities | 0.7 | 1.0 | **0.3** |
| Education | 2.1 | 2.1 | **0.0** |
| Others | 4.1 | 4.1 | **0.0** |

*Source: ILFS (2014)*

**Table 5: Distribution of sample size according to village**

|  |  |  |  |
| --- | --- | --- | --- |
| **Region** | **District** | **Village** | **Number** |
| Dodoma | Bahi | Bahi | 3 |
| Bahi Sokoni | 4 |
| Kigwe | 8 |
| Kongwa | Kibaigwa | 21 |
| Iringa | Iringa Rural | Igula | 3 |
| Ndiwili | 6 |
| Tagamenda | 8 |
| Kilolo | Luhindo | 5 |
| Lulanzi | 4 |
| Mbeya | Kyela | Ikambi | 20 |
| Mbarali | Itamboleo | 14 |
| Mbeya Rural | Inyala | 6 |
| Makwenje | 1 |
| **Total** | | | **103** |

**Source:** Survey Data

**Table 6: Description of variables used in estimation**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Description** | **Hypothesis** |
| *logfarmsize* | size of land (in acres) cultivated by the household (log) | *regressand* |
| *age* | age of the respondent in years | + |
| *accland* | 1 if respondent considers easy access to land, 0 otherwise | + |
| *mrtstatus* | 1 if the respondent is married, 0 otherwise | + |
| *edn* | 1 if respondent's highest education level is primary and above, 0 otherwise | + |
| *nchild* | 1 if household has 4+ children, 0 if has 0-3 children | + |
| *disstrgchoice* | dissatisfaction with storage facilities in use (1 if dissatisfied, 0 otherwise) | - |

**Table 7: Distribution of sample size according to age**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Age** | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70+ | **Total** |
| **Sample** | 19 | 28 | 30 | 13 | 7 | 6 | **103** |

*Source: Survey Data.*

**Table 8: Decision making on various aspects of farming (%)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Husband/**  **Male** | **Wife/**  **Female** | **Husband & Wife** | **Children & Wife** |
| Food crops selling | 10.8 | 38.6 | 47.0 | 3.6 |
| Time to sell | 15.0 | 36.3 | 45.0 | 3.8 |
| Revenue keeper from sale of food crops | 16.3 | 67.5 | 13.8 | 2.5 |
| How revenue should be spent | 17.7 | 36.7 | 41.8 | 3.8 |

**Source:** Survey Data

**Table 9: Households staple food allocation to storage and market**

|  |  |  |
| --- | --- | --- |
|  | **As Percentage of Produced Quantities** | |
| **Staple Food Crops** | **Stored** | **Sold** |
| Maize | 60.6 | 39.1 |
| Beans | 43.2 | 56.8 |
| Paddy | 55.0 | 45.0 |
| Sorghum | 72.7 | 27.3 |
| Millet | 67.5 | 32.5 |
| Cassava | 54.9 | 45.1 |
| Sweet Potatoes | 53.0 | 47.0 |

**Source:** National Sample Census of Agriculture, 2007/08

**Figure 1: Regional distribution of household average annual income from food crops selling**

**Source:** Survey Data

**Figure 2: Percentage distribution of access to land by region**

**Source:** Survey Data

**Table 10: Primary food processing methods**

|  |  |  |
| --- | --- | --- |
| **Method** | **Sample crops** | **Mechanism/Operationalization** |
| Threshing | Groundnuts, Beans, Sorghum, Paddy, Sunflower, Millet | -Hitting with sticks |
| Winnowing | Beans, Sorghum, Paddy, Sunflower, Millet | -Through throwing the grain into the air using a sieve/winnower  -Falling the grains from the air using a basket |
| Shelling | Maize | -Manually using hands  -Hitting with sticks |
| Peeling | Cassava, Sweet Potatoes, Peas | -Using hands and knife |
| Drying | Cassava, Groundnuts, Maize, Paddy, Sunflower, Vegetable, Eggplant | -Exposure to sunlight by spreading in a thin layer or on the ground  -Sweet potatoes and cassava after being cut into small pieces and soaked are then exposed to sun  -Vegetables (such as *mchicha*) are partially boiled before being exposed to sun  -Eggplant after being peeled and cut into small pieces, is then rinsed with water and exposed to sun for drying |

*Source: Survey Data.*

*Figure 3: A research assistant with a woman who is processing cassava (peeling) for storage*



*Figure 4: Drying of vegetables before storage for durability*



*Figure 5: Sun drying by spreading on the ground*

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**Table 11: Commonly used food storage structures**

|  |  |  |
| --- | --- | --- |
| ***Storage facility*** | ***Adoption***  ***(%)*** | ***Duration of Storage***  ***(Months)*** |
| Granary (*Kihenge*) | 4 | 7 |
| Sack/bag | 95 | 9 |
| Aerial/ceiling: hanging from tight lines above fire places | 1 | 6 |
| Underground storage | 3 | 7 |
| Clay pots/baskets/plastic tins | 3 | 8 |

**Source:** Survey Data

*Figure 6: Maize stored in a granary*

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**Table 12: Household food storage reasons**

|  |  |  |  |
| --- | --- | --- | --- |
| **Purpose of storage** | **Dodoma** | **Iringa** | **Mbeya** |
| Food for household | 100.0 | 100.0 | 100.0 |
| Seed for planting | 84.9 | 34.8 | 59.3 |
| To sell at higher price later | 39.4 | 43.5 | 55.6 |
| To meet future cash needs | 15.2 | 73.9 | 59.3 |
| Others | 9.1 | 0.0 | 0.0 |

*Source: Survey Data*

**Table 13: Food storage protectants used in surveyed areas**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ***Storage Protectant*** | | | |
| ***Storage facility*** | **Artificial/Industrial Chemicals**  **(Spraying/Dusting)** | **Neem Leaves**  **(mwarobaini)** | **Cowdung/Ashes/Magadi** | **Smoking** |
| Granary (*Kihenge*) |  | 0 |  | 0 |
| Sack/Bag |  |  |  | 0 |
| Aerial/Ceiling | 0 | 0 | 0 |  |
| Underground Storage | 0 | 0 | 0 | 0 |
| Clay pots/Baskets/Plastic tins | 0 | 0 | 0 | 0 |

*Source: Survey Data*

*Figure 7: Farmers reported food losses*

*Figure 8: Damaged maize from storage*



**Table 14: Regression results of employment model**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Coefficient** | **Robust**  **Std. Err.** | **P-Values** |
| *age* | 0.00026152 | 0.0052791 | 0.961 |
| *mrtstatus* | 0.32657193\* | 0.1345515 | 0.017 |
| *edn* | -0.07750317 | 0.1625508 | 0.635 |
| *nchild* | 0.30182096\* | 0.1403690 | 0.034 |
| *accland* | -0.04790627 | 0.1561152 | 0.760 |
| *disstrgchoice* | -0.37221404\* | 0.1533397 | 0.017 |
| *\_cons* | 0.87596429\*\* | 0.2968106 | 0.004 |

*Source: Survey Data* legend: \* p<0.05; \*\* p<0.01

**Table 15: Respondents suggested improvements for better food storage**

|  |  |  |  |
| --- | --- | --- | --- |
| **Suggested improvements** | **Suggested Storage facility** | | **Percentage (%)** |
| Provision of safe and secure storage facilities | Use of drums | 19.1 % | 55.8 |
| Hermetic storage bags | 13.2 % |
| Use of *vihenge* | 10.3 % |
| Others | 13.2% |
| Manufacture of effective storage protectants | *-Nil-* | *-Nil-* | 32.4 |
| A method that does not require to put/add artificial protectants | *-Nil-* | *-Nil-* | 11.8 |

*Source: Survey Data*