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Zimbabwe's Harmonized Cash Transfer Programme: 12-month impact report on productive activities and labour allocation

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Abstract

This impact evaluation report uses a 12-month panel data set with a non-experimental design to analyse the impact of the Harmonized Cash Transfer Programme (HSCT) on individual and household economic decision-making, including agricultural and non-agricultural productive activities and assets, labour-supply credit and social networks. Attention is also paid to the role of household agricultural activities in household nutrition and dietary diversity. The general framework for empirical analysis consists of a double-difference estimation approach with a counterfactual. The findings reveal positive impacts of the HSCT on livelihood and nutrition indicators, although impacts vary based on the degree of labour constraint among beneficiary families.

Contents

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Abbreviations

AIR	American Institute of Research
CT	Cash Transfer
DFID	UK Department for International Development
CASS	Centre for Applied Social Sciences
DiD	Difference-in-Differences
FAO	Food and Agriculture Organization of the United Nations
GoZ	Government of Zimbabwe
HSCT	Harmonized Cash Transfer Programme
MoPSLSW	Ministry of Public Service, Labour and Social Welfare
pp	Percentage points
SD	Single Difference
UNICEF	United Nations Children's Fund
USD	United States Dollar
ZIMSTAT	Zimbabwe National Statistics Agency
ZIMVAC	Zimbabwe Vulnerability Assessment Committee

Executive summary

The Zimbabwe Harmonized Social Cash Transfer (HSCT) Programme is an unconditional cash transfer targeted to food-poor and labour-constrained households. Labour-constrained families living below the food poverty line are selected using ZIMSTATS household census data. Households that meet both criteria are considered eligible for the HSCT. As of March 2014, 55 509 households (247 645 individuals) in 20 districts had been covered by the programme. The Government of Zimbabwe (GoZ) intends to scale-up coverage to the national level (65 districts), and make the HSCT Zimbabwe's flagship social protection scheme.

This report uses data collected from a 12-month non-randomized design impact evaluation (2013 and 2014) to analyse the impact of the HSCT on productive activities, investments, asset accumulation, household nutrition, and labour allocation. Although the programme is designed to promote the purchase of immediate food needs and child welfare, there are good reasons to expect economic impacts. Beneficiary households are primarily agricultural producers and face a multitude of constraints which can be relaxed through receipt of a cash transfer. The report complements the study prepared by AIR (2015) which covers the full range of impacts of the programme using the same data and estimation approach.

Potential economic and productive impacts are conditioned by the demographic and productive characteristics of the households that receive the transfer. Over two thirds of the households are either moderately or severely labour constrained. Almost 70 percent of households are female-headed, and almost 60 percent are headed by an elderly person. The majority of households have an orphan. These households have low levels of productive assets – on average three years of education for the household head, with less than one hectare of land and a few agricultural implements. Crop production is focused on subsistence agriculture for home consumption, primarily maize and sorghum, using traditional technology with very low levels of modern inputs or access to credit. Over three quarters of beneficiary households own livestock, most have poultry, but over half of these households own cattle as well as small ruminants. At baseline just 12 percent of households had a non-farm enterprise. Labour markets are also thin – only five percent of adults worked in wage labour at baseline, and only a quarter in *maricho*, or casual wage, labour. Child labour is quite pervasive, with over half of all children aged 6-17 working in family crop activities.

First, the HSCT had a significant impact on beneficiary agricultural activities. The programme led to crop production diversification; households moved away from traditional crops such as maize and sorghum to groundnuts, roundnuts, and finger and pearl millet. The programme led to a shift in input use – a reduction in the already low use of pesticides, and an increase in the amount spent on chemical fertilizers, although significant only for severely constrained households.

Second, the programme led to an increase in the share of households owning livestock overall, as well as goats and chickens. The positive impact on the number of animals was significant for goats for unconstrained and moderately constrained households and for chickens for severely constrained households.

Third, the HSCT led to an increase in the proportion and profitability of households running a non-farm enterprise and in the share of households operating a non-farm enterprise. These businesses may constitute a viable alternative or complement to self-subsistence farming even though at this point the share of households with these enterprises is still quite small.

Fourth, participation in wage and casual labour (*maricho*) was not affected because of the HSCT. However, the programme led to a reduction in the number of days that adults worked on-farm. This result may be linked to the shift from maize to pearl millet and roundnut production, which are generally less labour intensive.

Fifth, the HSCT helped relax financial constraints and resulted in a higher volume of purchases on credit.

Sixth, the HSCT had positive and consistent impacts on food security and nutrition and allowed households to have a more diverse diet. Households did not increase daily caloric intake but diversified their source of calories with shifts from cereals to richer nutrient foods such as legumes.

Seventh, the programme appears to have strengthened existing social networks. Labour-unconstrained households increased their participation in informal savings and investment groups (*mukaro*) as well as their contributions to churches and burial societies. While transfers received from other social programmes (particularly in-kind for labour-unconstrained households) were significantly reduced as a result of the programme, the HSCT allowed beneficiary households to increase informal sharing arrangements within the community, particularly in the sharing of inputs.

1. Introduction

This paper reports findings from a household quantitative impact evaluation of Zimbabwe's Harmonized Social Cash Transfer (HSCT). The HSCT is implemented by the Ministry of Public Service, Labour and Social Welfare (MoPSLSW) of the Government of Zimbabwe (GoZ). The programme is funded jointly by the GoZ, the UK Department for International Development (DFID), and the United Nations Children's Fund (UNICEF), with the latter also providing implementation and technical support.

The programme is an unconditional social cash transfer targeting food-poor and labour-constrained households**.** Consequently, the two eligibility criteria for the HSCT are that a given household must be a) living below the food poverty line and unable to meet its most urgent basic needs; and b) face household labour constraints. Specifically, labour households are considered labour constrained if they: (i) had no able-bodied member aged 18-59; (ii) had one able-bodied member aged 18-59 but must care for more than three dependents; or (iii) has a dependency ratio between 2 and 3 but had a severely disabled or chronically ill household member requiring intensive care (American Institutes for Research, 2013).

The programme was launched in 2012, covering 10 districts and 16 637 households. As of March 2014, the programme had expanded to cover 20 districts and include 55 509 households. Efforts are ongoing to continue expansion to cover all 65 districts of Zimbabwe (estimated coverage of around 250 000 households). The transfer size ranges from USD 10 to USD 25, based on household size, and is delivered bi-monthly.[1] Estimates suggest the transfer size represents around 20 percent of sample median household consumption expenditure (American Institutes for Research, 2013).

The objective of the HSCT is to foster the greater well-being of poor and vulnerable families living in the poorest households in Zimbabwe. By supplementing household income the transfer aims to promote greater levels of education, health and nutrition – especially for children. While the transfer is unconditional, the HSCT features messaging conveying the programme's intended purpose and desired outcomes. Beneficiaries are urged to spend the cash to satisfy immediate food needs and support the schooling and health of their children.

UNICEF-Zimbabwe contracted the American Institutes for Research (AIR) to design and implement a one-year quantitative impact evaluation covering a wide variety of impact outcomes. Ruzivo Trust and the Centre of Applied Social Sciences (CASS) were locally contracted by AIR to conduct baseline and follow-up data collection, respectively. While many of the results presented here are included in the AIR report (American Institutes for Research, 2015), this particular study provides more detailed emphasis on the productive activities and labour allocation decisions of beneficiary households. This study should be seen as a complement to the AIR report.

While supporting immediate consumption needs and spending on children is the primary objective of the unconditional HSCT transfer, there are good reasons to believe additional impacts on productive and economic livelihoods can be achieved. Since the programme targets rural areas the majority of beneficiaries depend heavily on subsistence agriculture and live in

[1] One-person household receives USD 10; two-person household receives USD 15; three-person household receives USD 20; a four or more person household receives USD 25.

places where markets for financial services (such as credit and insurance), labour, goods and inputs are likely to be lacking or inadequate.

Our hypothesis is that the liquidity and security of regular and predictable cash transfers can increase productive and other income-generating investments, influence beneficiaries' roles in social networks, increase access to markets and inject resources into local economies. These impacts come through changes in individual and household behaviour (labour supply, investments and risk management) and through impacts on the local economy of the communities (e.g. social networks, labour and goods markets and multiplier effects) where the HSCT operates.

Previous research in other sub-Saharan countries has shown that unconditional cash transfers have an impact on agricultural and non-agricultural productive choices (Covarrubias *et al*., 2012; Asfaw *et al*., 2013; Daidone, Davis, Dewbre, and Covarrubias, 2014; Daidone, Davis, Dewbre, González-Flores, *et al*., 2014). This report will provide impact estimates of the HSCT on a range of household and individual level outcomes. At the household level we examine agricultural asset accumulation, agricultural production and use of inputs, saving behaviour and household labour supply.

2. Research design

The impact evaluation constitutes a non-randomized phase-in design at district level. This entailed identifying beneficiaries in six districts (Mudzi, UMP, Binga, Hwange, Chridezi, and Mwenezi) dispersed throughout the country. Eligible households in three districts (treatment group) were enrolled in the programme after completion of baseline survey data collection (May-June 2013), while eligible households in the remaining three districts (comparison group) were enrolled after follow-up data collection (May-June 2014). As can be seen in Figure 1, treatment and control districts are geographically contiguous, serving to improve the comparability of treatment and control groups along cultural, economic and ethnic dimensions (among others). Treatment households residing in 60 wards were randomly selected for inclusion in the study whereas control households were purposively drawn from 30 wards, with support from the MoPSLSW to help identify comparable households (American Institutes for Research, 2013).

In addition to collecting information on eligible households, non-eligible households were also surveyed at baseline. Comparing information on the relatively better-off households with information on those eligible for the HSCT allows for programme targeting analysis. The targeting process was deemed successful and even superior to many similar programmes in the region (American Institutes for Research, 2013). That same report demonstrated that the selection process of the comparison group was successful, in the sense that relevant observable characteristics were similar between comparison and treatment groups at the baseline. For the purpose of our study a different set of outcome variables are tested at baseline. These variables are more related to productive activities and constitute many of the outcomes that will be analysed in this report. Table A1 confirms that the non-experimental design was successful in balancing covariates, although some differences are apparent. For 27 variables out of 108, the standardized bias is greater than 10 percent, the conventional level for assuming covariate

balance (Rosenbaum and Rubin, 1985).[2] In light of these cases special efforts have been made to control for covariate imbalances in the analysis. The final study sample used in this report comprises a panel of 2 630 households, 1 748 households in the treatment group and 882 households in the comparison group. Specific details on sample construction and attrition can be found in Section 4.

3. Analytical approach

3.1. Difference-in-differences estimator

Since panel data are available with pre- and post-intervention information, the statistical approach we take to derive average treatment effects of the HSCT is the difference-in-differences (DiD) estimator. This entails calculating the change in an indicator (*Y*), such as maize production, between baseline and follow-up period for beneficiary (T) and non-beneficiary (C) households and comparing the magnitude of these changes.

Two key features of this design are particularly attractive for deriving unbiased programme impacts. First, using pre- and post-treatment measures allows us to net out unmeasured fixed time-invariant family or individual characteristics (such as entrepreneurial drive) that may affect outcomes. Second, using the change in a control group as a comparison allows us to account for general trends in the value of the outcome. For example, if there is a general increase in maize production because of higher rainfalls, deriving treatment effects based only on the treatment group will confound programme impacts on production with the general improvement in weather conditions.

The key assumption underpinning the DiD is that there is no systematic unobserved time-varying difference between the treatment and control groups. For example, if plot quality for the T group remains constant over time but the C group experiences on average deterioration and erosion, then we would attribute a greater increase in agricultural production in T to the programme rather than to any unobserved change in time-varying characteristics of the soil. In practice the random assignment to T and C, the geographical proximity of the samples, and the rather short duration between pre- and post-intervention measurements make this assumption reasonable.

In large-scale social experiments like the HSCT it is typical to estimate the DiD in a multivariate framework, controlling for potential intervening factors which might not be perfectly balanced across T and C units and/or are strong predictors of the outcome (*Y*). Not only does this allow us to control for possible confounders, but it also increases the efficiency of our estimates by reducing the residual variance in the model. The basic set-up of the estimation model is shown in equation (1):

$$Y_{it} = \beta_0 + \beta_1 D_{it} + \beta_2 R_t + \beta_3 (R_3 * D_i) + \sum \beta_i Z_i + \varepsilon_{it} \qquad (1)$$

where Y_{it} is the outcome indicator of interest; D_i is a dummy equal to 1 if household i received the treatment and 0 otherwise; R_t is a time dummy equal to 0 for the baseline and to 1 for the follow-up round; R_t* D_i is the interaction between the intervention and time dummies, and ε_{it} is the statistical error term. To control for household and community characteristics that may influence the outcome of interest beyond the treatment effect alone, we add in Z_i, a vector of

[2] Standardized bias is the difference in sample means between treatment and control groups as a percentage of the square root of the average of the sample variance of the respective groups.

household and community characteristics to control for observable differences across households at the baseline which could have an effect on Y_{it}. These factors are not only those for which some differences may be observed across treatment and control groups at the baseline, but also those which could have some explanatory role in the estimation of Y_{it}. As for coefficients, β_0 is a constant term; β_1 controls for the time-invariant differences between the treatment and control; β_2 captures changes over time; and β_3 is the double-difference estimator which captures the impact of the programme. It is worthwhile to point out that given our large sample size, we have the capacity to detect very small and substantively meaningless differences.

4. Data

The impact evaluation data come from two surveys conducted before and after households began receiving the HSCT programme. Most of the data derive from the household questionnaire, which is a multi-topic instrument capturing both household and household members' information. In order to measure impacts on investment, data were collected on household ownership of land, livestock, agricultural assets, non-agricultural assets and durable goods. To measure impacts on production, crop level information on planting and on harvests, input use and expenditures, market activity and family non-farm enterprises were captured. At the individual level, detailed information on labour allocation choices and domestic activities were also collected.

The same questionnaire was applied in both waves. To minimize potential seasonality effects on consumption patterns, harvest yields and other relevant outcomes, baseline and follow-up data collection occurred between May and June, in both 2013 and 2014. This period covers the winter season in Zimbabwe, which in some cases corresponds with winter school holidays and represents the end of harvest for most of the main crops. 3 025 households (2 934 eligible and 909 non-eligible) were successfully interviewed in 2013 while 2 630 eligible households were successfully interviewed in 2014.[3] Part of this drop in numbers reflects the decision to not sample ineligible households at follow-up, for financial reasons. Nevertheless the dissolution of households, through death/divorce and other logistical challenges, resulted in some difficulty with the re-location of households at follow-up.

Overall, the household attrition rate is 14 percent. Attrition can cause problems within an evaluation because it not only decreases the sample size (leading to less precise estimates of programme impact) but can introduce selection bias, which leads to incorrect impact estimates and may change the sample's characteristics to the extent that the generalizability of the study is reduced. American Institutes for Research (2015) conducted detailed attrition analysis and produced analytical weights to correct for the selective non-response. These weights are used in the study's analyses. *Vis-à-vis* the AIR overall evaluation report, we used the same methodological approach (difference-in-difference estimator, controlling for baseline covariates). When occurring, divergences in point estimates are due to the different samples used (panel vs full sample) and different approaches in constructing indicators.

[3] This means the surveys were recorded as being "completed" and not "partially completed".

4.1. Sample and descriptive statistics

Table 1 compares characteristics of the sample of eligible households at baseline in the two treatment arms.[4] Households in the two groups are observationally equivalent in terms of most of the confounders. The only differences occur with regard to the share of female-headed households that appears to be slightly higher among the treated and to the average number of members aged 60 and over in the households which is higher among the controls.

The average household size is 4.8 members, almost equally distributed among both sexes. On average, there are 0.42 working-age males per household which is equivalent to saying that roughly only one out of two households has a male member of working age. The average number of working-age females per household is also below one but higher than the number of men (0.71 per household). The age structure of the average household is slightly skewed towards children aged between 6 and 12 years (1.25 per household). The average number of fit to work members is slightly below one per household. This is reflected in a high share of dependents (80 percent). As a result, almost 78 percent of the households are either moderately or severely labour constrained.[5] The average age of the household head is relatively high (57 years) and with three years of completed education. Moreover, half of the household heads are single and one-third of them are widowed.

Table 1 **Balance at baseline of household demographic characteristics**

	Treatment	Control	Total	Diff.	
hh size	4.76	4.78	4.77	-0.02	
# males	2.10	2.18	2.13	-0.09	
# females	2.66	2.60	2.64	0.06	
% female-headed	70.33	64.99	68.53	5.34	***
age of head	57.06	58.75	57.63	-1.69	
% single-headed	51.95	51.16	51.68	0.79	
% married head	47.95	48.84	48.25	-0.89	
% widow-headed	38.20	38.88	38.43	-0.68	
% elderly head	56.28	59.48	57.36	-3.19	
% child head	2.37	2.22	2.32	0.14	
# members under 5	0.68	0.70	0.69	-0.02	
# members 6-12	1.26	1.24	1.25	0.03	
# members 13-17	0.82	0.78	0.81	0.04	
# male members 18-59	0.42	0.41	0.42	0.01	

[4] Descriptive statistics at baseline for some indicators, especially those related to labour and crop production, differ slightly from the baseline report of AIR because of the different treatment of missing values and outliers. In the baseline report, outliers and missing values were replaced with stochastic imputation. In this report, imputation has not been used.

[5] We define a household severely labour constrained if there is no able-bodied member or fit-to-work member (FTW), i.e. no adult member (18-59 years of age) without chronic illnesses and disabilities (corresponding to approximately 46 percent of panel households). A household is moderately labour constrained if there is at least one able-bodied member and the ratio of members not fit-to-work (NF) to FTW is greater or equal to three (32 per cent of households). Finally a household is labour unconstrained if there is at least one able-bodied member and the dependency ratio is less than three (21 percent of households).

	Treatment	Control	Total	Diff.	
# female members 18-59	0.71	0.72	0.71	-0.01	
# male members over 60	0.30	0.37	0.32	-0.07	***
# female members over 60	0.56	0.56	0.56	0.00	
# members fit to work	0.83	0.84	0.83	-0.01	
% labour unconstrained	21.54	21.37	21.48	0.16	
% moderately labour constrained	31.44	34.72	32.55	-3.28	
% severely labour constrained	47.02	43.91	45.97	3.11	
% orphan in hh	56.68	59.86	57.75	-3.19	
share of dependents	80.22	80.21	80.22	0.01	
# members in school	1.88	1.78	1.85	0.10	
education of head	3.13	3.48	3.24	-0.35	*
Observations	2 029	1 034	3 063		

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$.

At baseline, most eligible households had cultivated or owned land in the past 12 months (92 percent). Homestead gardening represents 26 percent of all plots. Some differences emerge in terms of plot management by gender (Table 2). The vast majority (90 percent) of female-managed plots are found in female-headed households, while almost 30 percent of male-managed plots are found in female-headed households. Female-managed plots were significantly less likely to be owner operated. However male-managed plots were more likely to have lower quality soils (in slight or steep slope and suffering mild or severe erosion). Land size does not differ in terms of the gender of the person responsible for the plots, which in general are quite small (only 0.9 hectare per plot on average).

Table 2 **Land characteristics at baseline, by gender of the person responsible for the plot**

	Female	Male	Total	Diff.	
operated land (ha)	0.88	0.88	0.88	0.00	
% plots					
female-headed hh	90.1	28.7	68.1	61.4	***
male-headed hh	9.9	71.3	31.9	-61.4	***
owned	88.3	93.3	90.1	-5.0	***
loam soil type	22.3	31.2	25.5	-8.9	***
clay soil type	14.7	17.4	15.7	-2.7	**
sandy soil type	31.3	32.4	31.7	-1.1	
poor quality	21.7	30.8	25.0	-9.1	***
slight/steep slope	33.4	39.4	35.6	-6.0	***
mild/severe erosion	44.3	51.5	46.9	-7.1	***
# plots	3 015	1 680	4 695		

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$. ha: hectares

Since a great majority of the sample have access to land, unsurprisingly most households are also engaged in agricultural activities with particular reliance on crop production (87 percent). By far the most important crop is maize, which is grown by 66 percent of crop producers (Table 3). About half of households produce sorghum, a fifth finger millet, 15 percent groundnut, eight percent pearl millet followed by a smattering of cotton and other legume crops like beans and cowpeas. Significant differences do not emerge between treatment and control households in the production of any crops, except for a slightly higher share of pearl millet producers in the treatment arm. The average number of crops in both treatment and control localities is around 1.8; a relatively large portion of households combine maize cultivation with other crops – about 38 percent with sorghum, 18 percent with groundnuts and 13 percent with finger millet. These findings concur with the AIR baseline report.

Table 3 **Share of households producing given crops, over those who are crop producers at baseline**

	Treatment	Control	Total	Diff.	
maize	63.6	71.8	66.4	-8.1	
sorghum	44.8	50.1	46.6	-5.2	
finger millet	23.8	17.4	21.6	6.4	
groundnuts	14.6	17.5	15.6	-2.9	
pearl millet	9.3	6.0	8.2	3.3	*
cotton	3.8	2.9	3.5	0.9	
roundnuts	3.2	2.3	2.9	0.9	
cowpeas	2.5	2.3	2.4	0.1	
other crops	4.0	3.7	3.9	0.3	
Observations	1 787	903	2 690		

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$.

The diversity of crop production at plot level was significantly greater for male-managed plots, even though the magnitude of this difference is negligible, at 0.1 more crops per plot planted on male-managed plots (Table 4). Intercropping was quite diffuse, around 48 and 53 percent in female- and male-managed plots respectively. In terms of crops, a significant difference is observed for maize production, which has been planted in around 58 and 62 percent female- and male-managed plots respectively. Moreover, the use of imported and hybrid seeds is greater among male-managed plots, while the use of local seeds is greater among female-managed plots. Finally, male-managed plots benefit from greater amounts of seeds for maize and sorghum production, even if observed quantities are indeed quite small for both groups.

Table 4 **Crop production at baseline, by gender of the person responsible for the plot**

	Female	Male	Total	Diff.	
# crops	1.5	1.5	1.5	-0.1	**
intercropping (%)	47.9	52.8	49.9	-4.9	**
Crops planted (%)					
maize	57.8	61.7	59.4	-3.9	**
sorghum	41.0	41.1	41.0	-0.1	
groundnut	14.5	11.9	13.4	2.6	*
finger millet	19.6	18.2	19.0	1.4	
pearl millet	6.7	7.5	7.0	-0.8	
Type of seeds used (%)					
imported	16.2	21.1	18.2	-4.9	***
local	71.8	63.8	68.6	8.0	***
hybrid	11.9	14.9	13.1	-3.0	**
Amount of seeds used (kg)					
maize	5.8	7.6	6.5	-1.8	***
sorghum	3.3	4.0	3.6	-0.7	**
groundnut	1.5	1.7	1.6	-0.2	
# plots	1 898	1 281	3 179		

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$.

These agricultural households are mainly subsistence farmers and a large share of crop production is destined for own consumption. In Table 5 we show the share of farmers consuming their produce by crop. Overall, around 80 percent of producers reported to have consumed at least part of their harvest, with households in the treatment arm showing a slightly smaller share. At crop level, no difference is observed between the treatment and the control groups. Since the harvest season for cereals was not completed at the time of the baseline survey, it is not surprising that the share of own consumption on total harvest (here unreported) was quite low.

Table 5 **Share of households consuming their produced crops at baseline**

	Treatment	Control	Total	Diff.	
overall	76.1	81.7	77.9	-5.6	*
5. maize	57.5	52.1	55.5	5.4	
6. sorghum	45.7	52.1	48.0	-6.4	
7. finger millet	56.7	65.3	59.0	-8.6	
8. groundnut	49.4	53.5	51.0	-4.2	
9. pearl millet	56.9	60.4	57.7	-3.5	
Observations	1 787	903	2 690		

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$.

On the other side of the coin, subsistence farming means a low degree of market participation of farm-households. In Table 6 we show averages of some indicators of market participation in the evaluation sample. Market participation at baseline seems systematically higher among the treated households although only 3.3 percent of all households sell any of their crops in the market.

Table 6 **Participation in crop markets at baseline**

	Treatment	Control	Total	Diff.	
% households selling					
any crop	4.08	1.77	3.30	2.31	**
maize	3.89	0.49	2.66	3.39	***
sorghum	3.03	0.93	2.27	2.09	**
finger millet	0.97	1.33	1.06	-0.36	
groundnut	2.78	3.87	3.20	-1.08	
pearl millet	1.87	0.00	1.40	1.87	*
Observations	1 787	903	2 690		

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$.

Most producers used traditional production systems. Only 26 percent used any type of crop inputs (Table 7). Most of these inputs were organic fertilizers; 12 percent used chemical fertilizers and hired labour and only 2.5 percent used pesticides. Purchases of inputs involved even a lower share of households (8 percent), because manure was probably mainly produced by household livestock. On average, only USD4.10 was spent in the last rainy season for crop production inputs and labour was hired for only five days.[6] Similar findings were presented in the AIR Baseline Report.

Table 7 **Crop input use and purchase in last season at baseline**

	Treatment	Control	Total	Diff.	
% households using					
any crop input	24.39	28.57	25.79	-4.17	
chemical fertilizers	9.96	16.72	12.23	-6.76	
organic fertilizers	17.45	15.61	16.84	1.84	
pesticides	2.74	2.10	2.52	0.64	
hired labour	11.75	14.39	12.63	-2.64	
% households purchasing					
any crop input	7.05	10.29	8.14	-3.25	
chemical fertilizers	5.42	9.74	6.87	-4.32	
organic fertilizers	0.78	0.44	0.66	0.34	
pesticides	2.01	1.32	1.78	0.69	
amount spent, $					
any crop input	2.87	6.40	4.05	-3.53	*
chemical fertilizers	2.34	5.72	3.47	-3.39	*

[6] Data on hired labour were collected in a separate section of the questionnaire, without information on amount spent.

	Treatment	Control	Total	Diff.
organic fertilizers	0.09	0.12	0.10	-0.02
pesticides	0.44	0.55	0.47	-0.11
hired labour†	5.08	4.25	4.80	0.83
Observations	1 787	903	2 690	

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$. † Amount of hired labour refers to days, not amount spent.

Most households have livestock, with around 75 percent of households owning at least one animal. More than 60 percent have poultry, 44 percent own small ruminants, prevalently goats rather than sheep, and about 40 per-cent have cattle – either ox, calf, bull, or female adult (Table 8).[7] Some differences in livestock holdings are observed between the two treatment arms, as control households are four percentage points more likely to own any type of livestock and poultry than the treatment group. Herd size is also slightly larger in the control group for cattle, poultry and small ruminants.

Table 8 **Livestock holdings at baseline, by treatment status**

	Treatment	Control	Total	Diff.	
% households owning					
livestock	73.8	78.7	75.4	-4.9	**
cattle	38.4	42.7	39.9	-4.3	
poultry‡	60.7	65.6	62.3	-4.9	*
small ruminants	42.1	46.5	43.6	-4.4	
donkeys	6.3	5.5	6.0	0.8	
pigs	3.5	2.6	3.2	0.9	
herd size					
TLU total†	1.1	1.4	1.2	-0.3	**
cattle	1.7	2.1	1.8	-0.4	**
poultry	3.4	3.9	3.6	-0.5	**
small ruminants	1.8	2.2	2.0	-0.4	*
donkeys	0.2	0.2	0.2	0.0	
pigs	0.1	0.1	0.1	0.0	
Observations	2 029	1 034	3 063		

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$. †TLU stands for Tropical Livestock Units. ‡Poultry includes chickens, turkeys, pigeons and guinea fowls.

[7] In the AIR baseline report, the share of households owning the different types of animals is calculated with respect to those households owning any type of livestock; furthermore, the average herd size is calculated on those households owning the specific livestock type. The figures shown in Table 8 refer to the overall sample and concur with those presented in the baseline report.

Differences between male and female livestock owners are evident (Table 9). While 21 percent of male owners of livestock live in female-headed households, only 7 percent of female owners live in male-headed households. Overall, males involved in livestock production have over twice the herd size as females (as measured in Tropical Livestock Units, or TLU). Among male livestock owners, 68 percent own cattle and 64 percent own small ruminants, compared to 44 and 54 percent, respectively, among female livestock owners. A higher share of female owners own poultry, although their average herd size is relatively smaller (4.2 vs 5.6) as compared to male owners.

Table 9 Livestock holdings at baseline, by gender of owner

	Female	Male	Total	Diff.	
female-headed hh (%)	93.1	20.8	66.1	72.3	***
male-headed hh (%)	6.9	79.2	33.9	-72.3	***
% households owning					
cattle	43.6	68.4	52.9	-24.8	***
poultry	84.5	79.5	82.6	4.9	**
small ruminants	53.8	64.4	57.8	-10.5	***
donkeys	5.7	11.9	8.0	-6.3	***
pigs	3.7	5.2	4.2	-1.5	*
herd size					
TLU total†	1.2	2.3	1.6	-1.0	***
cattle	1.8	3.4	2.4	-1.7	***
poultry	4.2	5.6	4.7	-1.4	***
small ruminants	2.3	3.1	2.6	-0.8	***
donkeys	0.2	0.3	0.2	-0.2	***
pigs	0.1	0.2	0.1	-0.1	*
Observations	1 497	814	2 311		

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$. †TLU stands for Tropical Livestock Units. ‡Poultry includes chickens, turkeys, pigeons and guinea fowls.

Relatively few households (12 percent) report operating a non-farm enterprise (NFE), mainly in the form of a shop, petty trading, or selling processed foods (Table 10). The vast majority (92 percent) of the sample involved in a NFE declared to run only one activity which was operated on average for six and half months out of the past year. Most businesses were operated by females. For those operating a NFE, the activity seems to be a profitable alternative to subsistence agriculture – 82 percent of households operating a NFE report a profit. Only one quarter of households running a NFE report ownership of assets used exclusively for business purposes.

Table 10 Non-farm enterprise activity at baseline

	Treatment	Control	Total	Diff.
% hh operating NFE†	12.4	12.7	12.5	-0.3
# businesses operated	1.1	1.1	1.1	-0.1
% hh with female responsible for a NFE	63.5	62.6	63.2	0.9
# months in operation last year	6.6	6.8	6.7	-0.2
% hh reporting profit	81.3	81.7	81.5	-0.3
% hh reporting asset ownership	25.8	26.0	25.8	-0.2
Observations	252	131	383	

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$. NFE: non-farm enterprise. † Share of households operating NFE is calculated on the full sample of eligible households (3 063 observations). The figures for the rest of the indicators have been drawn on the subsample of those operating NFEs (383 observations).

When comparing non-farm business activities at the level of the business by the gender of the household member primarily responsible for the business (Table 11), male managers have greater asset ownership than female decision-makers. The vast majority of female-managed NFEs are in female-headed households, while 34 percent of male-managed businesses are in female-headed households. The number of businesses operated by the household and the number of months in operation do not vary significantly by the gender of the person responsible. However, male-managed NFEs were more likely at baseline to own assets dedicated exclusively for these business.

Table 11 Non-farm enterprise activity at baseline, by gender of the person responsible for the business

	Females	Males	Total	Diff.	
% NFEs in female-headed hh	85.8	34.8	66.2	51.0	***
% NFEs in male-headed hh	14.2	65.2	33.8	-51.0	***
# months in operation last year	6.1	6.7	6.3	-0.6	
% NFEs with asset ownership	17.8	38.0	25.5	-20.2	***
% NFEs reporting profit	84.9	81.4	83.5	3.5	
# non-farm enterprises	253	158	411		

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$.

There are no significant differences between treatment and control groups at baseline in the supply of adult paid labour (Table 12). Males and females do have different levels of participation (Table 13). While men are much more likely to be formally employed than women (9.9 vs 2.7 percent) and work more days for a wage, women are more likely to be engaged in *maricho* casual work, although on average for fewer days.

Table 12 **Adult paid labour supply at baseline, by treatment status**

	Treatment	Control	Total	Diff.
% individuals in wage labour	5.3	5.5	5.3	-0.2
days in wage labour last year	142.9	134.0	139.7	8.9
wage payments last year (USD)	1,169	950	1,091	219
% individuals in *maricho*	26.7	25.2	26.2	1.5
days in *maricho* last year	37.1	38.1	37.5	-1.0
maricho payments last year (US$)	270	229	256	41
Observations	4 038	2 133	6 171	

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$.

Table 13 **Adult paid labour supply at baseline, by gender**

	Females	Males	Total	Diff.	
% individuals in wage labour	2.7	9.9	5.3	-7.2	***
days in wage labour last year	123.6	147.2	139.7	-23.6	*
wage payments last year (USD)	1 074.1	1 099.3	1 091.3	-25.3	
% individuals in *maricho*	28.5	22.5	26.2	5.9	***
days in *maricho* last year	35.6	41.5	37.5	-5.9	**
maricho payments last year (USD)	227.3	318.7	256.1	-91.4	
Observations	3 880	2 282	6 162		

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$.

Child labour – primarily unpaid family labour – is common among the households in this sample (Table 14). Over 50 percent of children aged six to 17 are involved in crop activities (planting, weeding, other non-harvest work and harvesting), 40 percent are involved in domestic chores, around a fifth herd livestock and another ten percent participate in household non-farm businesses. While formal wage labour is rare, 2.9 percent do some *maricho* (casual) work. Overall, the share of children participating in these various activities increases with age. For instance, one-third of children of primary school age do some farming activity, while the share for the older children (14-17 years of age) reaches 78 percent. Most of these indicators related to child labour do not show statistically significant differences between the two treatment arms.

Table 14 **Child participation in farm and off-farm work at baseline, by treatment status**

	Treatment	Control	Total	Diff.	
10. domestic chores					
6-10 yrs	26.2	30.1	27.5	-3.9	
11-13 yrs	47.8	47.8	47.8	-0.1	
14-17 yrs	57.0	53.0	55.7	4.0	
6-17 yrs	41.5	42.1	41.7	-0.6	
11. crop activities					
6-10 yrs	32.3	31.6	32.1	0.8	
11-13 yrs	63.0	59.7	61.9	3.3	
14-17 yrs	79.3	75.9	78.1	3.4	
6-17 yrs	55.1	53.1	54.4	2.0	
12. livestock activities					
6-10 yrs	13.2	10.8	12.4	2.5	
11-13 yrs	21.7	18.7	20.8	3.0	
14-17 yrs	20.5	21.6	20.8	-1.2	
6-17 yrs	17.8	16.3	17.3	1.5	
13. non-farm business					
6-10 yrs	6.1	9.0	7.0	-2.9	*
11-13 yrs	10.5	13.5	11.5	-3.0	
14-17 yrs	11.6	15.3	12.8	-3.7	
6-17 yrs	9.0	12.2	10.1	-3.2	
14. forestry					
6-10 yrs	11.9	7.8	10.6	4.1	
11-13 yrs	15.1	8.9	13.1	6.2	**
14-17 yrs	10.7	8.4	9.9	2.4	
6-17 yrs	12.5	8.3	11.1	4.2	*
maricho labour					
6-10 yrs	0.9	0.4	0.7	0.6	
11-13 yrs	4.1	3.5	3.9	0.6	
14-17 yrs	5.2	4.7	5.0	0.4	
6-17 yrs	3.1	2.6	2.9	0.5	
15. wage labour					
6-10 yrs	0.4	0.1	0.3	0.3	
11-13 yrs	0.6	0.5	0.5	0.1	
14-17 yrs	1.4	1.6	1.5	-0.1	
6-17 yrs	0.8	0.7	0.7	0.1	
Observations	4 234	2 087	6 321		

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$.

Participation of children in labour activities varies a great deal by gender (Table 15). Girls are much more involved in domestic chores as compared to boys (on average 52 vs 32 percent for all children aged six to 17), while boys are more involved in livestock activities (27 vs seven per cent), especially older boys, and forestry, particularly among boys in secondary school age. There are few differences between boys and girls in the other labour categories.

Table 15 **Child participation in farm and off-farm work at baseline, by gender**

	Girls	Boys	Total	Diff.	
16. domestic chores					
6-10 yrs	33.6	21.3	27.5	12.3	***
11-13 yrs	60.5	35.6	47.8	24.9	***
14-17 yrs	68.9	42.7	55.7	26.3	***
6-17 yrs	51.7	31.9	41.7	19.9	***
17. crop activities					
6-10 yrs	32.6	31.6	32.1	1.0	
11-13 yrs	62.9	61.0	61.9	1.9	
14-17 yrs	76.9	79.3	78.1	-2.4	
6-17 yrs	54.4	54.4	54.4	-0.1	
18. livestock activities					
6-10 yrs	6.5	18.4	12.4	-12.0	***
11-13 yrs	8.9	32.2	20.8	-23.3	***
14-17 yrs	7.2	34.1	20.8	-26.9	***
6-17 yrs	7.4	27.1	17.3	-19.8	***
19. non-farm business					
6-10 yrs	7.3	6.8	7.0	0.6	
11-13 yrs	13.1	10.0	11.5	3.2	**
14-17 yrs	12.2	13.5	12.8	-1.3	
6-17 yrs	10.4	9.7	10.1	0.7	
20. forestry					
6-10 yrs	10.2	11.0	10.6	-0.8	
11-13 yrs	10.8	15.2	13.1	-4.4	**
14-17 yrs	8.4	11.4	9.9	-3.0	**
6-17 yrs	9.8	12.3	11.1	-2.5	**
maricho labour					
6-10 yrs	1.1	0.3	0.7	0.8	*
11-13 yrs	4.3	3.5	3.9	0.8	
14-17 yrs	5.5	4.5	5.0	1.0	
6-17 yrs	3.3	2.5	2.9	0.8	*
21. wage labour					
6-10 yrs	0.3	0.3	0.3	0.0	
11-13 yrs	0.2	0.9	0.5	-0.6	*
14-17 yrs	1.1	1.9	1.5	-0.8	
6-17 yrs	0.5	0.9	0.7	-0.4	*
Observations	3 138	3 183	6 321		

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$.

Per capita caloric intake is used as a proxy for the quantity of food eaten. The average caloric intake is about 2 065 calories per member of the household which is just under the food poverty line for Zimbabwe (Table 16). Considering that the data were collected during or just after the harvest period, these average values can be considered as upper bounds of caloric intakes within a year period. Household members are likely to have consumed lower quantities of calories during off-harvest periods. Almost all households (98 percent) experienced some level of food insecurity in the 12 months prior to the survey, and over a third experienced severe food insecurity, based on the Food Insecurity Experience Scale (FIES) (Ballard *et al*., 2013).[8]

Dietary diversity reflects an improvement in household food access. Since there is no ideal target, we used the FANTA approach to set as a threshold the levels of diversity found in the upper tertile of the consumption distribution (Swindale and Bilinsky, 2006). In this case the minimum number on a scale of 0-12 to reach the upper tertile is eight. Overall 23 percent of households reach that target, and the difference between treatment and control households is not statistically significant.

Table 16 **Household Food Security and Nutrition at baseline**

	Treatment	Control	Total	Diff	
per capita daily caloric intake	2,067	2,062	2,066	5	
% hh mild food insecurity†	98.0	96.9	97.6	1.1	*
% hh moderate food insecurity	89.9	86.0	88.6	4.0	**
% hh severe food insecurity	38.1	33.1	36.4	5.0	*
dietary diversity score (dds)	5.7	6.1	5.9	-0.3	
% hh reaching target dds	21.6	26.6	23.3	-5.0	
Observations	2 029	1 034	3 063		

Note: difference significant at level * $p < .1$, ** $p < .05$, *** $p < .01$. †The share of households with mild food insecurity includes also those households with moderate or severe food insecurity. The share with moderate food insecurity includes those with severe food insecurity.

[8] The Food Insecurity Experience Scale (FIES) is derived from eight questions, Mild Food Insecurity refers to a state of being worried, anxious, apprehensive, afraid or concerned that there might not be enough food, the ability to get healthy nutritious food or a balanced diet, and/or if the household had a limited variety of food. Moderate Food Insecurity refers to the experience of having missed or skipped a meal, eating fewer quantities than they should, or experiencing no food because of a lack of resources. Finally, Severe Food Insecurity accounts for the physical experience of feeling hungry, not being able to eat enough food because of lack of resources or not eating anything in a whole day.

5. Results and discussion

This section shows the impact of the HSCT on beneficiary households over several broad groups of outcome variables: crop production, livestock production, NFEs, savings/credit decisions, household labour supply and household dietary diversity. Since the take-up rate among eligible households in treated districts is below 100 percent, our impact estimates represent an intention-to-treat (ITT) effect and not the average treatment effect. All t-statistics reported in the tables are clustered at ward level and we provide heterogeneous impacts and disaggregate results by the degree of labour constraints facing households (severely labour-constrained, moderately labour-constrained and labour-unconstrained, see footnote 5).

A graphical display of the distribution of these three types of households can be seen in Figure 2. While it is visually most striking to note just how constrained the severely constrained households are (i.e. the "missing generation" gap), this group has a median household size of three compared to around six in the two other groups. The implications of this can again be seen graphically in Figure 3, showing the distribution of the HSCT per capita transfer value across groups. The box plots reveal that the median per capita transfer size is higher for labour-constrained households (around USD 7) than it is for less constrained households (around USD 4). Given that labour constraints feature in the targeting of the HSCT and that those most constrained receive a higher per capita transfer, this is a natural dimension through which to observe the heterogeneity of impact.

5.1. Crop production

We look at various dimensions of the productive process in order to ascertain whether households have increased spending in agricultural activities, including crop production and agricultural input use.

Table 17 shows impact estimates on crop input use and purchases. Generally fertilizers are the first type of input that farmers tend to buy when liquidity constraints are relaxed. In the qualitative analysis of the programme, Oxford Policy Management (2013) finds mixed evidence on the impacts of the HSCT on agricultural inputs. In Chivi District the median expenditure on seeds, fertilizer and labour remained very low among beneficiaries because of the scarcity of fertile land and poor climatic conditions. Whereas in Goromonzi district proportional spending on agricultural inputs was much higher than in Chivi. Beneficiaries in Goromonzi explained that with land available and a favourable climate, the HSCT enabled them to make their land more productive.

The quantitative analysis partially mirrors the mixed evidence depicted above. Overall, the adoption and the purchase of inputs have remained mostly unchanged after the introduction of the HSCT. The programme positively affected the purchase of chemical fertilizers for labour-constrained households only, as shown by a 2.5 USD increase in the expenditures for this crop input. Furthermore, it appears that a smaller share of households is using pesticides as a result of the programme, especially among the severely labour constrained.

Table 17 **Impact of HSCT on crop input use and purchase, by labour constraints**

	All			Unconstr.		Mod. constr.			Sev. constr.		
	ITT		B	ITT	B	ITT	B		ITT		B
Share of hh using crop inputs											
Any input	0.026		0.238	0.051	0.257	0.015	0.259		0.016		0.212
	[0.58]			[0.77]		[0.27]			[0.26]		
chemical fertilizers	-0.003		0.111	-0.023	0.117	-0.022	0.122		0.004		0.1
	[-0.09]			[-0.45]		[-0.50]			[0.09]		
organic fertilizers	0.04		0.154	0.057	0.17	0.051	0.17		0.031		0.134
	[1.27]			[0.96]		[1.23]			[0.77]		
pesticides	-0.029	*	0.029	-0.042	0.049	-0.029	0.036		-0.026	*	0.014
	[-1.82]			[-1.17]		[-0.89]			[-1.93]		
Share of hh purchasing crop inputs											
Any input	0.014		0.082	-0.001	0.091	0.013	0.092		0.019		0.069
	[0.54]			[-0.03]		[0.29]			[0.61]		
chemical fertilizers	0.024		0.068	-0.014	0.073	0.031	0.073		0.031		0.061
	[1.14]			[-0.45]		[0.96]			[1.09]		
organic fertilizers	0.001		0.005	-0.005	0.008	0.007	0.004		0		0.004
	[0.27]			[-0.44]		[0.79]			[0.04]		
pesticides	-0.013		0.022	-0.004	0.037	-0.016	0.025		-0.018		0.012
	[-0.92]			[-0.09]		[-0.53]			[-1.61]		
Purchase of crop inputs, USD											
Any input	1.093		4.387	1.188	6.196	-0.642	4.791		1.866		3.158
	[0.75]			[0.24]		[-0.29]			[1.20]		
chemical fertilizers	1.345		3.58	-1.049	4.723	0.821	3.781		2.534	*	2.847
	[1.26]			[-0.33]		[0.51]			[1.72]		
organic fertilizers	0.167		0.077	0.127	0.071	0.302	0.122		0.094		0.046
	[1.46]			[0.72]		[1.34]			[0.48]		
pesticides	-0.431		0.736	2.056	1.414	-1.766	0.897		-0.773	*	0.269
	[-0.63]			[0.83]		[-1.48]			[-1.82]		
Observations	5 260			1 150		1 756			2 354		

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$. †For the amount spent on chemical fertilizers, organic fertilizers and pesticides we have one, three and three missing values respectively. The number of observations used for these indicators in the overall sample is therefore 5 257, 5 259 and 5 259.

In terms of agricultural assets, the programme overall did not have major impacts, with the exception of an increase in the ownership of sickles, especially among labour-unconstrained households (Table 18). Similar results are presented in the overall Impact Evaluation Report of the programme (American Institutes for Research, 2015), where larger impacts were found among smaller households, especially for yokes, sickles and axes. In the heterogeneity analysis by labour constraints, we did not observe significant deviations from the average, with the exception of a reduction of the number of axes and ox carts for labour-unconstrained households and an increase in the number of ox carts for severely labour-constrained households.

Table 18 **Impacts of HSCT on agricultural assets, by labour constraints**

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	B	ITT	B	ITT	B	ITT	B
6. hh owns (%)								
hoe	-0.018	0.944	-0.037	0.966	-0.021	0.967	-0.003	0.916
	[-0.89]		[-1.06]		[-0.89]		[-0.11]	
axe	-0.007	0.775	0.008	0.813	-0.033	0.802	-0.015	0.736
	[-0.21]		[0.20]		[-0.60]		[-0.34]	
chicken house	-0.006	0.495	-0.027	0.561	0.029	0.540	-0.026	0.426
	[-0.18]		[-0.54]		[0.50]		[-0.53]	
ox plough	-0.014	0.480	0.001	0.581	0.018	0.546	-0.072	0.377
	[-0.38]		[0.02]		[0.33]		[-1.26]	
livestock corral	0.010	0.451	0.019	0.530	0.016	0.533	-0.010	0.347
	[0.29]		[0.29]		[0.32]		[-0.24]	
sickle	0.088 **	0.417	0.179 *	0.466	0.057	0.452	0.057	0.366
	[2.18]		[1.77]		[1.03]		[0.83]	
yokes	-0.022	0.445	-0.019	0.576	-0.002	0.507	-0.056	0.331
	[-0.57]		[-0.23]		[-0.03]		[-0.94]	
chains	-0.047	0.377	-0.038	0.506	-0.029	0.428	-0.084	0.272
	[-1.00]		[-0.51]		[-0.53]		[-1.14]	
rope	-0.046	0.331	0.002	0.460	-0.048	0.372	-0.072	0.235
	[-1.15]		[0.03]		[-0.90]		[-1.26]	
granary	0.001	0.303	-0.066	0.369	0.048	0.361	-0.025	0.226
	[0.02]		[-1.14]		[1.03]		[-0.68]	
ox cart	-0.033	0.215	-0.070	0.286	0.033	0.246	-0.065	0.155
	[-1.19]		[-1.27]		[0.64]		[-1.57]	
# owned by hh								
hoe	0.1	2.6	-0.2	3.2	0.1	3.1	0.1	2.0
	[0.73]		[-1.18]		[0.61]		[0.67]	
axe	0.0	1.1	-0.2 *	1.1	0.0	1.1	0.1	1.0
	[0.15]		[-1.91]		[0.06]		[1.16]	
chicken house	0.0	0.5	0.0	0.6	0.1	0.6	0.0	0.4
	[0.09]		[-0.66]		[0.94]		[-0.33]	
ox plough	0.0	0.4	0.0	0.5	0.0	0.5	0.0	0.3
	[0.12]		[0.24]		[0.19]		[-0.06]	
livestock corral	0.0	0.5	0.0	0.6	0.0	0.6	0.0	0.4
	[-0.17]		[-0.19]		[-0.05]		[-0.24]	
sickle	0.1 ***	0.5	0.2	0.6	0.1	0.5	0.1 *	0.4
	[2.71]		[1.37]		[1.58]		[1.94]	
yokes	0.0	0.5	0.0	0.7	0.1	0.6	0.1	0.3
	[0.73]		[-0.03]		[0.78]		[1.13]	
chains	0.0	0.4	0.0	0.5	0.0	0.5	0.0	0.3
	[-0.24]		[0.14]		[0.03]		[-0.28]	
rope	0.0	0.3	0.1	0.4	-0.1	0.4	-0.1	0.2

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	**B**	**ITT**	**B**	**ITT**	**B**	**ITT**	**B**
	[-0.70]		[0.88]		[-0.82]		[-1.03]	
granary	0.0	0.3	-0.1	0.4	0.0	0.4	0.0	0.2
	[-0.44]		[-1.56]		[0.21]		[-0.45]	
ox cart	0.0	0.2	-0.1 *	0.2	0.0	0.2	0.0 *	0.1
	[0.01]		[-1.79]		[0.64]		[1.82]	
Observations	5 260		1 150		1 756		2 354	

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

We have seen above that maize and sorghum are the primary staples of Zimbabwean agriculture. As can be seen in Table 19, the HSCT leads to a significant increase in the share of households producing groundnuts, a cash crop, for severely labour-constrained households (7.6 pp from a base of 16 percent), pearl millet (9.3 pp from a base of 9 percent) and roundnuts (4 pp), and a decrease in finger millet production. The corresponding impact of the programme on additional harvest is, on average, 10 kg for groundnuts, 34.5 kg for pearl millet and 3.5 kg for roundnuts. While the increase in production of these crops is significant overall for producers, the impact is particularly strong among severely labour-constrained households. Similar finding are shown in American Institutes for Research (2015), with impact results of higher magnitude on groundnuts and roundnuts for smaller households.

Table 19 Impact of HSCT on crop production, by labour constraints

	All			Unconstr.			Mod. constr.			Sev. constr.		
	ITT		B	ITT		B	ITT		B	ITT		B
% hh in crop production												
any crop	-0.029		0.892	-0.045		0.948	0.006		0.948	-0.054		0.821
	[-0.98]			[-1.63]			[0.26]			[-0.97]		
maize	-0.015		0.593	-0.023		0.598	-0.003		0.646	-0.013		0.549
	[-0.31]			[-0.33]			[-0.05]			[-0.19]		
sorghum	-0.036		0.426	-0.119	**	0.515	-0.018		0.472	-0.012		0.344
	[-1.04]			[-2.18]			[-0.36]			[-0.22]		
groundnut	0.050		0.154	-0.021		0.134	0.053		0.165	0.076	**	0.156
	[1.43]			[-0.46]			[1.04]			[2.09]		
finger millet	-0.042	*	0.182	-0.007		0.176	-0.015		0.179	-0.080	***	0.187
	[-1.76]			[-0.14]			[-0.39]			[-2.87]		
pearl millet	0.093	**	0.092	0.130	**	0.112	0.093	*	0.111	0.081	*	0.068
	[2.49]			[2.31]			[1.85]			[1.82]		
roundnuts	0.040	***	0.029	0.038		0.039	0.020		0.030	0.047	***	0.022
	[3.25]			[1.30]			[1.08]			[3.15]		
cowpeas	-0.004		0.025	0.008		0.039	-0.009		0.026	-0.001		0.016
	[-0.35]			[0.31]			[-0.38]			[-0.05]		
sunflower	-0.009	**	0.011	-0.011		0.018	-0.005		0.008	-0.010	**	0.009
	[-2.18]			[-0.88]			[-0.56]			[-2.06]		
beans	-0.003		0.009	-0.013		0.020	0.001		0.010	-0.001		0.004
	[-0.56]			[-0.72]			[0.11]			[-0.34]		
cotton	-0.033		0.039	-0.019		0.068	-0.054	*	0.038	-0.023		0.026
	[-1.64]			[-0.34]			[-1.76]			[-0.83]		
harvested crop, kg												
maize	-56.5		81.8	-162.3	**	117.8	-40.9		93.1	-29.5		54.8
	[-1.65]			[-2.03]			[-1.02]			[-1.43]		
sorghum	-66.5		50.3	-131.3	**	77.4	-33.5		60.5	-61.3	**	28.9
	[-1.47]			[-2.21]			[-0.38]			[-2.57]		
groundnut	7.7		21.8	7.7		25.3	8.1		23.5	10.2		18.7
	[1.22]			[0.43]			[0.86]			[1.44]		
finger millet	-1.0		22.9	-10.4		29.7	-9.8		27.6	6.7		15.9
	[-0.21]			[-0.98]			[-1.19]			[0.87]		
pearl millet	34.5	***	12.5	32.7	**	15.9	52.8	***	19.5	26.2	*	5.5
	[2.70]			[2.18]			[2.71]			[1.93]		
roundnuts	3.5	**	2.1	2.2		2.1	5.9	*	2.1	4.2		2.1
	[2.19]			[1.02]			[1.86]			[1.49]		
Observations	5 260			1 150			1 756			2 354		

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

Overall, there are no significant impacts of the HSCT in terms of the use households make of the crops produced (Table 20). One exception is the allocation of output to by-products, which increased threefold, compared to (low) baseline values. Interestingly, this is not the case for the severely constrained households, possibly because the by-products require able-bodied members to work on them. However, extra care should be used when interpreting these results as fieldwork in both survey waves occurred during or right after the harvest of main cereals. This is therefore one explanation as to why we observe a small share of households selling their crops. Moreover, these results would not be surprising for two main reasons: i) high levels of food insecurity affecting the beneficiary households, who therefore need to consume at home the harvested crops; ii) difficulty accessing markets because of remoteness, lack of transport and roads.

Table 20 Impacts of HSCT on crop use, by labour constraints

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	B	ITT	B	ITT	B	ITT	B
hh crop use (%)								
own consumed	-0.015	0.547	-0.081	0.654	0.022	0.601	-0.020	0.450
	[-0.28]		[-0.89]		[0.34]		[-0.32]	
stored	-0.076	0.617	-0.092	0.663	-0.025	0.654	-0.113	0.567
	[-1.57]		[-1.34]		[-0.47]		[-1.58]	
sold	-0.012	0.028	-0.053	0.028	0.013	0.035	-0.008	0.023
	[-0.57]		[-1.41]		[0.45]		[-0.29]	
by-product	0.030 **	0.011	0.039	0.016	0.045 **	0.009	0.017	0.011
	[2.01]		[1.53]		[2.05]		[1.08]	
animal feed	0.008	0.008	-0.003	0.007	0.013 *	0.004	0.003	0.010
	[1.55]		[-0.34]		[1.75]		[0.34]	
Observations	5 260		1 150		1 756		2 354	

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

5.2. Livestock production

As previously discussed livestock activities represent an important component of household livelihoods. Evidence from other countries suggests that livestock is one of the areas of investment incurred through cash transfers, especially poultry and small ruminants. HSCT re-affirms this trend as beneficiaries' spent part of the transfer on livestock – after only one year of the HSCT (Table 21). Overall, HSCT families were more likely to own livestock (5 pp. increase from a base of 78 percent) – particularly goats (7 pp. increase from a base of 46 percent) and chickens (6 pp. increase from a base of 64 percent) – than their control counterparts. In looking at the subcategories, most of these positive impacts are driven by moderately and severely labour-constrained households. Among moderately labour-constrained households, the HSCT increased ownership of chickens by 7 pp (from a base of 70 percent) and goat ownership by 11 pp (from a base of 52 percent). For severely constrained households, there was a decrease in ownership of cattle, but this was compensated by an equivalent increase in the ownership of chickens and sheep. Thus, the HSCT led to a shift towards smaller animals, especially among severely labour-constrained households.[9]

[9] The AIR Impact Evaluation Report results are slightly different from those shown in Table 21. No impact was observed on chicken and substantially no impacts were found in the heterogeneity analysis by household size,

Table 21 **Impacts of HSCT on livestock ownership, by labour constraints**

	All			Unconstr.			Mod. constr.			Sev. constr.		
	ITT		B	ITT		B	ITT		B	ITT		B
hh owns (%)												
any livestock	0.047	*	0.779	0.073	**	0.844	0.022		0.845	0.055		0.696
	[1.88]			[2.10]			[0.60]			[1.41]		
cattle	-0.037		0.431	-0.074		0.511	0.048		0.495	-0.084	**	0.340
	[-1.66]			[-1.49]			[1.17]			[-2.35]		
goats	0.068	*	0.462	0.102	*	0.527	0.111	**	0.525	0.007		0.380
	[1.96]			[1.85]			[2.44]			[0.15]		
chickens	0.060	**	0.640	0.005		0.694	0.072	*	0.698	0.083	**	0.567
	[2.15]			[0.07]			[1.68]			[2.48]		
donkeys	0.023		0.083	-0.003		0.116	0.025		0.105	0.030		0.050
	[1.02]			[-0.11]			[0.81]			[1.52]		
sheep	0.006		0.028	-0.018		0.031	-0.003		0.038	0.025		0.018
	[0.67]			[-0.92]			[-0.20]			[1.64]		
pigs	0.001		0.030	-0.028		0.033	0.019		0.031	0.004		0.028
	[0.14]			[-1.38]			[1.61]			[0.26]		
hh owns (#)												
TLU total	0.0		1.4	-0.4	**	1.7	0.3		1.6	0.0		1.0
	[-0.18]			[-1.99]			[1.62]			[-0.28]		
cattle	-0.1		2.0	-0.5		2.5	0.3		2.4	-0.1		1.5
	[-0.50]			[-1.34]			[1.01]			[-0.51]		
goats	0.0		2.0	-0.8	**	2.6	0.7	**	2.2	-0.1		1.4
	[0.30]			[-2.32]			[2.29]			[-0.58]		
chickens	0.1		3.7	-1.1		4.9	0.4		4.3	0.6	*	2.7
	[0.33]			[-1.49]			[0.79]			[1.79]		
donkeys	0.1		0.2	-0.1		0.3	0.2		0.3	0.1		0.1
	[0.81]			[-0.87]			[1.20]			[0.89]		
sheep	0.0		0.1	0.0		0.1	-0.1		0.1	0.1		0.1
	[0.06]			[-0.50]			[-0.90]			[1.15]		
pigs	0.0		0.1	-0.1		0.1	0.0		0.1	0.0		0.1
	[-0.06]			[-1.14]			[0.93]			[0.04]		
Observations	5260			1150			1756			2354		

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

Lastly, no significant changes are observed in the share of households selling livestock, or in the proportion of households selling livestock by-products (here unreported). The only statistically significant result is an overall increase in sales of milk, although the magnitude is small (USD 0.55) and limited to labour-unconstrained households.

except on donkeys for small households. A likely source of divergence is on the sample used. While we used panel observations, the AIR report used the full sample including attritors at baseline.

5.3. Non-farm business activities

Cash transfers potentially have effects on non-farm enterprises by removing liquidity constraints that prevent families from starting and/or maintaining small businesses. As can be seen from the data, the non-farm businesses operated by beneficiary households are small scale yet a profitable source of income. Overall results reported in Table 22 suggest the HSCT encouraged families to engage in NFEs (5 pp. increase from a base of 12 per cent) and increased the number of businesses they operate. The percentage of households reporting profit also increased (5 pp. from a base of 10 per cent). The impact of the programme is significant among severely labour constrained households that significantly operated more businesses and reported both more profits and higher asset ownership.

Table 22 Impacts of HSCT on non-farm business activities

	All			Unconstr.		Mod. constr.		Sev. constr.		
	ITT		B	ITT	B	ITT	B	ITT		B
hh operates NFE	0.048	**	0.116	0.032	0.146	0.044	0.149	0.040		0.074
	[2.30]			[0.69]		[1.22]		[1.60]		
# businesses	0.059	**	0.125	0.037	0.172	0.060	0.159	0.048	*	0.075
	[2.45]			[0.72]		[1.44]		[1.84]		
months in operation	0.119		0.705	0.391	0.971	-0.251	0.829	0.209		0.475
	[0.95]			[1.14]		[-1.10]		[1.20]		
hh reports profits	0.051	***	0.1	0.036	0.133	0.051	0.131	0.042	*	0.059
	[2.77]			[0.95]		[1.48]		[1.75]		
hh reports asset	0.010		0.03	-0.032	0.04	0.010	0.04	0.023	*	0.017
	[0.76]			[-1.12]		[0.44]		[1.86]		
N	5 260			1 150		1 756		2 354		

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$. NFE: non-farm enterprise.

5.4. Impact on hiring in of non-family labour

Some interesting stories emerge on the hiring of non-family labour for agricultural and NFE activities (Table 23). Oxford Policy Management (2013) found that very few beneficiaries reported being able to hire casual workers to undertake piecemeal jobs for them. In line with the qualitative study, beneficiary households do not seem to have increased hiring of labour for crop activities. If any, we observe some decline in the hiring of child labour and adult males, even though small in magnitude. Furthermore, despite increases in the share of households owning livestock, there was no equivalent increase in the hiring of labour for livestock activities as a result of the HSCT. For moderately constrained households (those that increased livestock ownership the most) there was a reduction of almost 17 days of hired labour in the last year. This reduction, however, lacks statistical significance. Lastly, we see a little increase in hired labour for non-farm business in severely labour-constrained households (1 pp. increase for the proportion of households hiring and 0.4 days). Even though modest in magnitude, this result corroborates findings on the increased engagement in non-farm enterprises of households with less labour capacity, as a result of the HSCT.

Table 23 Impacts of HSCT on hired labour, by labour constraints

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	B	ITT	B	ITT	B	ITT	B
% hh hiring labour								
any activity	0.028	0.126	0.056	0.110	-0.017	0.100	0.044	0.154
	[1.14]		[1.02]		[-0.47]		[1.31]	
crop activity	0.033	0.115	0.063	0.096	-0.003	0.084	0.036	0.148
	[1.44]		[1.13]		[-0.08]		[1.10]	
livestock	-0.015 *	0.021	-0.015	0.013	-0.024	0.021	-0.007	0.025
	[-1.78]		[-0.98]		[-1.51]		[-0.55]	
NFE	0.003	0.003	0.006	0.004	-0.005	0.005	0.009 *	0.001
	[0.78]		[0.72]		[-0.85]		[1.68]	
days hh hired labour								
any activity	-7.7 *	9.9	-14.1	15.6	-4.3	7.4	-6.4 *	9.0
	[-1.73]		[-0.89]		[-0.92]		[-1.90]	
crop activity	-1.9	4.7	3.8	2.9	0.3	4.1	-6.6 **	6.1
	[-1.01]		[1.47]		[0.08]		[-2.37]	
livestock	-5.9	5.2	-17.6	12.7	-4.6 *	3.3	-0.2	2.8
	[-1.52]		[-1.13]		[-1.83]		[-0.12]	
NFE	0.1	0.1	-0.2	0.1	0.0	0.0	0.4	0.1
	[0.91]		[-1.08]		[-0.25]		[1.62]	
% hh hiring labour for crop activities								
male	0.016	0.090	0.049	0.062	-0.001	0.070	0.009	0.120
	[0.82]		[1.17]		[-0.02]		[0.29]	
female	0.005	0.061	-0.017	0.052	-0.002	0.045	0.015	0.078
	[0.29]		[-0.47]		[-0.06]		[0.64]	
children	0.003	0.009	-0.006	0.005	0.003	0.006	0.005	0.014
	[0.44]		[-0.72]		[0.35]		[0.36]	
days hh hired labour for crop activties								
male	-1.1	2.7	5.0 **	1.8	-0.8	2.4	-4.5 **	3.3
	[-0.77]		[2.14]		[-0.24]		[-2.60]	
female	-0.3	1.6	-1.1	1.1	1.0	1.6	-1.0	1.9
	[-0.40]		[-1.02]		[0.57]		[-1.01]	
children	-0.5	0.4	0.0	0.0	0.1	0.1	-1.0 *	1.0
	[-1.60]		[0.00]		[0.61]		[-1.77]	
Observations	5 260		1 150		1 756		2 354	

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

5.5. Impact on Credit

One motivating hypothesis for expecting productive impacts from the HSCT derives from its potential to relax various economic constraints, including access to credit, for poor rural households residing in areas with poorly functioning markets. Table 24 shows the impact of HSCT on various indicators regarding loans and credit. The programme does not seem to affect the capacity of beneficiaries to pay off their debts: even though we observe a reduction in the share of households borrowing and in the amounts owed, these estimates lack statistical significance. However, we also observe that HSCT is increasing the creditworthiness of beneficiary households; they are now able to purchase more often on credit (seven pp from a base value of 20 percent), especially households with labour capacity (13 pp). Furthermore, after purchasing on credit, labour-constrained households are more able to make repayments

and the outstanding amount is lower compared to control households. These results concur with AIR impact report results, even though in this report a larger reduction in the amount of credit outstanding is observed. The source of divergence is most likely in the different sample used in the estimation.

Table 24 Impact of HSCT on credit, by labour constraints

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	B	ITT	B	ITT	B	ITT	B
loans older than 12 months								
% hh still owing money	-0.003	0.092	-0.062	0.099	0.010	0.109	0.005	0.076
	[-0.14]		[-1.61]		[0.33]		[0.17]	
outstanding amount (USD)	-2.0	7.7	-9.1	10.7	-2.6	10.2	0.3	4.3
	[-0.54]		[-1.53]		[-0.39]		[0.10]	
loans last 12 months								
% hh borrowing	-0.020	0.136	-0.075	0.177	0.041	0.157	-0.039	0.100
	[-0.57]		[-1.33]		[0.85]		[-0.84]	
amount borrowed (USD)	-2.9	11.4	-9.1	31.9	3.0	7.6	-5.0	4.0
	[-0.44]		[-0.42]		[0.44]		[-1.52]	
outstanding amount (USD)	-6.6	15.2	-11.0	42.3	-3.1	9.8	-7.5	5.6
	[-0.88]		[-0.51]		[-0.30]		[-1.39]	
purchases on credit last 12 months								
% hh purchasing	0.070 *	0.195	0.134 **	0.268	0.088 *	0.222	0.025	0.137
	[1.87]		[2.01]		[1.71]		[0.63]	
amount of purchases (USD)	1.0	7.7	7.3	11.6	-2.1	10.1	0.4	3.9
	[0.41]		[1.39]		[-0.52]		[0.23]	
outstanding amount (USD)	-2.7	4.9	2.2	7.8	-6.3 *	5.9	-2.2 *	2.7
	[-1.52]		[0.53]		[-1.96]		[-1.68]	
Observations	5 260		1 150		1 756		2 354	

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

5.6. Impact on Food Security and Nutrition

The impact of the HSCT on food security and nutrition was assessed alongside a number of dimensions, including dietary diversity, caloric intake and self-perception food security questions. The section complements the analysis carried out by American Institutes for Research (2015), including the caloric consumption indicator and by disaggregating all outcomes by labour-constraint status.

The Household Dietary Diversity Score (HDDS) was estimated by summing up twelve food groups consumed, which implies that the score lies within a range of 0-12 (Kennedy *et al.*, 2011). As there is no established HDDS threshold in terms of indicating adequacy of dietary diversity, we set a threshold of the average diversity of the upper consumption tertile at baseline (Swindale and Bilinsky, 2006). We also analysed the total number of items consumed by the households (145 items) to identify possible shifts within the same food group. The results are strong and consistent; the HSCT led to increased dietary diversity, both overall and by each of the labour-constrained categories. Moreover, the household dietary diversity score target for

this sample is eight; the HSCT led to an 8.7 pp increase in the share of households reaching the target, which corresponds to a 33 percent increase from the baseline of 27 percent (Table 25). These results endorse the qualitative findings, where beneficiaries in all communities reported that the transfer enabled them to increase the quantity and variety of food they consumed (Oxford Policy Management, 2013).

Table 25 Impacts of HSCT on household dietary diversity, by labour constraints

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	B	ITT	B	ITT	B	ITT	B
HDDS	0.621 ***	6.097	0.576 *	6.341	0.525 *	6.312	0.660 ***	5.809
	[2.76]		[1.74]		[1.87]		[2.85]	
# consumed items	1.330 **	10.578	0.706	11.112	1.463 *	11.016	1.230 **	9.969
	[2.33]		[0.73]		[1.95]		[2.45]	
% hh reach the target	0.087 **	0.266	0.077	0.294	0.101	0.308	0.065	0.220
	[2.27]		[1.09]		[1.60]		[1.43]	
Observations	5 256		1 148		1 756		2 352	

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

Where did the more diverse food come from? The household survey instrument captures food data using expenditure in food items during the reference period regardless if they were consumed or stored during this period. Furthermore it includes also own-produced items and gifts. At baseline all agro-ecological zones in Zimbabwe were near the end of harvesting for maize and sorghum (FAO, 2015). At follow-up the harvesting period overlapped a little with the post-harvest period. This could lead to an overestimation of the amount destined for own consumption, although this should be the same for treatment and control households.[10]

The HSCT did not have a significant impact on daily caloric intake. This result is consistent with American Institutes for Research (2015), which found no impact of the programme on food expenditures. We find, however, a shift in the composition of calories from different sources. The HSCT led to a significant increase in the daily caloric intake from purchases, and a decrease from own production and from gifts, even though the decrease for the latter two sources is not statistically significant (Table 26). In terms of the heterogeneity of the results, the increase of calories from purchases seems to be driven mainly by severely labour-constrained households.

[10] Given available information, the acquisition of food is used as a proxy of intake, or the actual food eaten during the recall period. Intake and acquisition have a positive relationship, and acquisition provides a close idea of the amount of food eaten by household members (Cafiero *et al.*, 2014). We use the total number of household members who usually live in the household for the per capita estimation.

Table 26 Impacts of HSCT on caloric intake, by labour constraints

	All			Unconstr.			Mod. constr.			Sev. constr.		
	ITT		B	ITT		B	ITT		B	ITT		B
Daily caloric intake per capita												
total	84		2110	-234		1815	206		1605	134		2648
	[0.53]			[-1.28]			[1.21]			[0.49]		
from												
purchases	217	***	354	78		412	99	*	304	383	***	362
	[3.87]			[0.65]			[1.88]			[5.23]		
own production	-31		1138	-393	**	1112	171		1017	-19		1245
	[-0.29]			[-2.37]			[1.21]			[-0.10]		
gifts	-101		619	76		292	-58		285	-228		1042
	[-1.49]			[1.20]			[-0.95]			[-1.54]		
Observations	5 260			1 150			1 756			2 354		

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

Consistent with the results on dietary diversity, the HSCT also led to a clear shift in the type of food items consumed. The HSCT led to a 6.6 pp reduction (from a baseline of 64 percent) in the share of calories from cereals, and an increase in the share of calories coming from roots and tubers (1.2 pp) and legumes, nuts and seeds (4.8 pp), and for labour-unconstrained households, dairies (Table 27). Similar trends are found in the AIR impact report, looking at the share of food expenditures, though for the most part the reported changes are not statistically significant.

Table 27 Impacts of HSCT on share of caloric intake, by labour constraints

	All			Unconstr.			Mod. constr.			Sev. constr.		
	ITT		B	ITT		B	ITT		B	ITT		B
share of calories from												
cereal	-0.066	***	0.638	-0.084	**	0.640	-0.037		0.634	-0.072	***	0.641
	[-4.06]			[-2.19]			[-1.56]			[-3.70]		
roots and tubers	0.012	***	0.006	0.001		0.006	0.016	***	0.007	0.014	***	0.005
	[3.32]			[0.21]			[2.78]			[4.16]		
vegetables	0.009		0.076	0.038	**	0.078	0.007		0.073	-0.006		0.078
	[1.20]			[2.18]			[0.74]			[-0.72]		
fruits	0.000		0.010	0.002		0.012	0.002		0.008	-0.004		0.009
	[0.13]			[0.37]			[1.01]			[-1.27]		
meat and poultry	-0.004		0.026	0.000		0.027	-0.004		0.025	-0.006		0.025
	[-0.71]			[0.01]			[-0.80]			[-0.83]		
fish and seafood	-0.001		0.006	-0.011	*	0.006	0.003		0.006	0.003		0.006
	[-0.17]			[-1.70]			[0.68]			[0.76]		
legumes	0.048	***	0.112	0.029		0.107	0.032		0.124	0.069	***	0.106
	[2.79]			[0.74]			[1.60]			[4.02]		
milk and dairy	0.003		0.007	0.006	**	0.008	0.001		0.007	0.002		0.006
	[1.49]			[2.39]			[0.53]			[0.72]		
oils and fats	0.005		0.067	0.010		0.068	0.000		0.061	0.003		0.072
	[0.73]			[0.91]			[0.02]			[0.26]		
sweets	0.002		0.036	0.010		0.033	-0.013	**	0.037	0.010	*	0.037
	[0.79]			[1.42]			[-2.17]			[1.95]		
miscellaneous	0.000		0.005	0.001		0.005	-0.002		0.006	0.001		0.005
	[0.35]			[0.74]			[-1.07]			[1.32]		

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	B	ITT	B	ITT	B	ITT	B
Observations	5 254		1 148		1 755		2 351	

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

As with American Institutes for Research (2015), food insecurity is proxy measured using the FIES, and results are disaggregated by labour constraint (Table 28). Surprisingly, given positive impacts on dietary diversity and caloric consumption, the HSCT led to a significant reduction only in Mild Food Insecurity among all households and for the severely labour constrained. However, the programme did lead to positive and significant impacts on self-assessed poverty improvement. The HSCT changed beneficiary households' perceptions of their well-being compared to the previous year. Overall, households reported being in a better state (40 pp. increase) and less likely to be in a worse state (20 pp. reduction), as compared with the control group.

Table 28 **Impacts of HSCT on subjective food insecurity, by labour constraints**

	All			Unconstr.			Mod. constr.			Sev. constr.		
	ITT		B	ITT		B	ITT		B	ITT		B
FIES	0.002		2.258	-0.017		2.184	0.044		2.234	-0.012		2.314
	[0.03]			[-0.14]			[0.55]			[-0.13]		
hh food insecurity (%)												
mild	-0.021	**	0.980	-0.020		0.973	-0.003		0.980	-0.034	**	0.983
	[-2.16]			[-0.85]			[-0.27]			[-2.22]		
moderate	-0.001		0.894	0.010		0.866	0.008		0.898	-0.007		0.905
	[-0.03]			[0.16]			[0.17]			[-0.15]		
severe	0.018		0.381	-0.020		0.341	0.037		0.356	0.025		0.420
	[0.50]			[-0.29]			[0.76]			[0.48]		
compared with 12 months ago hh is (%)												
better	0.368	***	0.081	0.288	***	0.097	0.412	***	0.087	0.377	***	0.069
	[12.70]			[5.58]			[8.61]			[8.99]		
same	-0.149	***	0.322	-0.090		0.361	-0.242	***	0.314	-0.091	*	0.308
	[-4.25]			[-1.15]			[-3.59]			[-1.73]		
worst	-0.219	***	0.596	-0.198	***	0.542	-0.169	**	0.599	-0.286	***	0.622
	[-4.87]			[-3.04]			[-2.28]			[-5.74]		
Observations	5 258			1 150			1 755			2 353		

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

5.7. Impact on labour supply

The extent to which a household has available labour is likely to condition the potential for productive impacts. If labour is available and under-utilized due to liquidity or knowledge constraints, an increase in work participation would be expected for less labour-constrained households. Conversely, households with tighter labour constraints may be less responsive (or reduce labour supply) in their work participation if members are not fit to work. Furthermore, household labour supply is likely to vary over the course of the year. The overall impact of the HSCT on labour supply depends on the nature and location of the activity in question, as well as the household's demographics.

To assess the impact on household labour supply, information was collected covering two time periods: the last year and the last seven days. The former captured information on the number of months and days in a typical month an individual was engaged in a particular activity, and the latter captured hours and days in that activity. We analyse data at household level by aggregating individual information available in the time use and wage labour sections of the questionnaire. The former section is administered to all household members aged six and above, while the latter to members aged ten and above. We decided to analyse labour supply and report results at household level for two reasons: 1) in theoretical agricultural household models, consumption and production decisions, and consequently labour supply, are taken jointly (Singh *et al*., 1986); the household represents the decision-making unit, which is also the unit of analysis; and 2) attrition rate at individual level is much higher than at household level, thus we would like to avoid more serious issues of selection bias. However, we also did some robustness checks, by carrying out individual-level analysis for some indicators and varying samples (panel individuals within panel households, panel individuals within the full sample of households, etc.), and impact results remain substantially stable.

As shown in Table 29, and as opposed to what is generally found in impact evaluations of unconditional cash transfer programmes, we do not observe any reduction of off-farm adult labour supply, neither in formal wage employment nor in casual *maricho* labour. All the indicators used, including the share of households participating in a particular type of labour, the number of days worked and the value of payments lack statistical significance. Furthermore, we do not observe any significant effect if we disaggregate between agricultural and non-agricultural employment or by gender (here unreported).

Table 29 Impacts of HSCT on adult wage labour supply, by labour constraints

	All		Unconstr.		Mod. const.r		Sev. constr.	
	ITT	B	ITT	B	ITT	B	ITT	B
hh in wage labour (%), last year								
overall	0.005	0.096	0.001	0.201	0.029	0.109	-0.019	0.033
	[0.24]		[0.01]		[0.83]		[-1.19]	
agriculture	-0.002	0.020	-0.015	0.042	0.012	0.018	-0.005	0.011
	[-0.14]		[-0.33]		[0.85]		[-0.46]	
non-agriculture	0.017	0.079	0.057	0.175	0.018	0.090	-0.012	0.022
	[1.12]		[1.25]		[0.56]		[-0.97]	
hh in wage labour (days), last year								
overall	0.2	14.7	8.4	35.0	-2.6	13.3	-2.2	5.5
	[0.09]		[1.07]		[-0.47]		[-0.91]	
agriculture	-0.1	3.4	5.1	7.6	-3.5	1.9	-0.8	2.3
	[-0.06]		[1.37]		[-1.07]		[-0.36]	
non-agriculture	0.7	11.2	3.3	27.5	1.7	10.9	-1.5	3.2
	[0.34]		[0.51]		[0.44]		[-1.01]	
hh wage labour payments, last year								
overall	23.7	108.7	79.5	276.9	26.9	101.0	-12.0	29.4
	[0.77]		[1.04]		[0.52]		[-0.77]	
agriculture	-2.8	22.5	35.5	42.6	-35.3	31.8	-2.2	5.2
	[-0.18]		[1.16]		[-0.96]		[-0.37]	
non-agriculture	26.7	86.0	44.0	234.3	63.0	68.7	-9.9	24.3
	[1.20]		[0.73]		[1.56]		[-0.65]	
hh in *maricho* labour, last year								
% hh participating	-0.009	0.439	0.025	0.585	0.018	0.573	-0.039	0.263
	[-0.27]		[0.38]		[0.33]		[-0.87]	
days	-5.3	23.6	-4.9	34.5	-5.5	31.3	-4.1	12.1
	[-1.36]		[-0.61]		[-0.79]		[-1.20]	
payments	6.7	153.5	-124.0	236.1	47.3	183.9	16.4	88.2
	[0.16]		[-1.15]		[0.69]		[0.37]	
N	5 260		1 150		1 756		2 354	

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

The programme did appear to have an impact on family labour devoted to farming (Table 30). We observe a clear reduction in on-farm labour, especially in the number of days worked on the farm in the last rainy season (-20 days). This reduction is particularly strong in magnitude in labour-unconstrained households (-35.8 days), both for female household members and for male household members (-9 and -11 days overall). The impact on the share of households farming is not significant overall, but is negative and significant for labour-unconstrained households (-4.5 pp). In terms of the type of activity, the decrease is statistically significant for land preparation and harvesting, while for other non-harvest tasks, such as weeding and fertilizing, we do not see significant impacts. This reduction in on-farm labour is difficult to interpret. Probably the shift from maize to pearl millet and roundnut production observed in Table 19 contributed to these results, since maize cropping is more labour-intensive than the other types of crops. However, more research is needed in order to shed light on these results.

Table 30 **Impacts of HSCT on adult on-farm labour supply, by labour constraints**

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	B	ITT	B	ITT	B	ITT	B
hh farming, last rainy season (%)								
overall	-0.022	0.876	-0.045 *	0.951	0.002	0.945	-0.026	0.784
	[-0.84]		[-1.76]		[0.09]		[-0.49]	
female	-0.030	0.814	-0.058 *	0.909	-0.034	0.902	-0.008	0.699
	[-1.14]		[-1.86]		[-1.17]		[-0.15]	
male	-0.029	0.459	-0.110	0.732	0.051	0.524	-0.053	0.271
	[-1.56]		[-1.54]		[1.62]		[-1.56]	
land preparation	-0.035	0.849	-0.040 *	0.949	-0.006	0.935	-0.048	0.733
	[-1.45]		[-1.68]		[-0.20]		[-1.04]	
weeding/fertilizing	-0.033	0.863	-0.050 **	0.946	-0.014	0.941	-0.040	0.762
	[-1.35]		[-2.17]		[-0.42]		[-0.74]	
harvesting	-0.057	0.750	-0.129 **	0.814	-0.043	0.823	-0.028	0.662
	[-1.48]		[-2.32]		[-1.10]		[-0.44]	
hh farming, last rainy season (days)								
overall	-20.4 **	109.0	-35.8 ***	156.9	-21.5	135.3	-13.5	64.6
	[-2.62]		[-3.25]		[-1.56]		[-1.63]	
female	-9.1 **	68.9	-12.9 *	90.0	-13.0	86.4	-5.6	44.8
	[-2.10]		[-1.74]		[-1.43]		[-1.04]	
male	-11.2 ***	39.1	-22.7 **	66.5	-8.4	47.3	-7.8 *	19.0
	[-3.08]		[-2.54]		[-1.55]		[-1.88]	
land preparation	-8.7 ***	38.0	-14.3 **	54.9	-11.0 *	48.2	-5.2 *	21.5
	[-2.86]		[-2.57]		[-1.98]		[-1.70]	
weeding/fertilizing	-5.0	56.0	-7.2	80.0	-7.0	69.2	-3.9	33.7
	[-1.39]		[-1.47]		[-0.97]		[-0.96]	
harvesting	-6.7 ***	15.0	-14.3 ***	21.9	-3.5	17.9	-4.5 **	9.3
	[-3.01]		[-3.41]		[-1.00]		[-2.31]	
N	5 260		1 150		1 756		2 354	

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

In terms of adult time use, Table 31 shows that there are few significant impacts of HSCT. Adult females in moderately labour-constrained households are slightly less engaged in domestic chores. Furthermore, and coherently with what we observed in Table 22, adults in severely labour-constrained households are more engaged in non-farm businesses. In the same group of households, it is worth mentioning the correspondent reduction in livestock herding. This can be linked to the fall in cattle ownership observed in Table 21.

Table 31 Impacts of HSCT on adult time use, by labour constraints[11]

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	B	ITT	B	ITT	B	ITT	B
adult domestic chores (%), yesterday								
overall	-0.012	0.881	-0.015	0.958	-0.033	0.914	0.006	0.818
	[-0.57]		[-0.32]		[-1.14]		[0.17]	
female	0.011	0.809	0.052	0.903	-0.051 *	0.875	0.049	0.711
	[0.47]		[0.76]		[-1.93]		[1.49]	
male	-0.012	0.219	-0.012	0.286	0.008	0.22	-0.037	0.185
	[-0.39]		[-0.18]		[0.17]		[-1.43]	
collect water	0.017	0.752	-0.073	0.883	-0.021	0.801	0.093 *	0.649
	[0.49]		[-1.25]		[-0.53]		[1.83]	
collect firewood	0.029	0.526	-0.067	0.624	0.033	0.589	0.054	0.428
	[0.77]		[-1.04]		[0.58]		[1.11]	
children caretaking	-0.024	0.823	0.031	0.936	-0.034	0.877	-0.043	0.725
	[-1.01]		[0.49]		[-0.97]		[-1.27]	
adult domestic chores (hours), yesterday								
overall	-0.2	4.9	-0.3	7.1	-0.5	5.6	0.1	3.3
	[-0.48]		[-0.35]		[-1.17]		[0.19]	
female	-0.2	4.3	-0.4	6.1	-0.7 *	5.0	0.2	2.7
	[-0.73]		[-0.48]		[-1.84]		[0.80]	
male	0.0	0.6	0.1	0.9	0.2	0.6	-0.2 *	0.5
	[0.31]		[0.24]		[1.09]		[-1.74]	
collect water	0.0	1.1	0.1	1.7	-0.2	1.1	0.0	0.8
	[-0.09]		[0.44]		[-1.41]		[0.27]	
collect firewood	0.1	0.9	0.1	1.3	0.0	1.0	0.1	0.6
	[0.74]		[0.51]		[0.11]		[0.53]	
children caretaking	-0.2	3.0	-0.6	4.2	-0.3	3.6	0.0	1.9
	[-1.04]		[-0.86]		[-0.91]		[-0.21]	
adult time use (%), last week								
non-farm business	0.065	0.274	0.079	0.355	0.05	0.299	0.066 **	0.214
	[1.53]		[1.28]		[0.78]		[1.99]	
livestock herding	-0.005	0.258	0.013	0.364	-0.002	0.322	-0.024	0.155
	[-0.15]		[0.21]		[-0.04]		[-0.69]	
forestry	0.033	0.128	0.089 *	0.154	0.016	0.128	0.005	0.115
	[1.07]		[1.79]		[0.39]		[0.11]	
maricho labour	-0.019	0.207	-0.043	0.303	-0.041	0.264	0.012	0.114
	[-0.81]		[-0.61]		[-1.01]		[0.37]	
wage labour	0	0.049	-0.002	0.099	-0.008	0.054	0	0.021
	[0.02]		[-0.03]		[-0.27]		[0.01]	
adult time use (hours), last week								
non-farm business	1.5	5.6	2.2	9.0	0.2	6.1	1.6 **	3.4
	[1.19]		[0.91]		[0.09]		[2.00]	
livestock herding	-0.2	7.4	1.3	11.0	-0.1	9.4	-1.7 **	3.9
	[-0.16]		[0.48]		[-0.04]		[-2.12]	
forestry	0.3	0.7	0.6	1.0	0.0	0.6	0.3	0.6
	[1.29]		[1.21]		[-0.07]		[1.22]	

[11] **Note**: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	**B**	**ITT**	**B**	**ITT**	**B**	**ITT**	**B**
maricho labour	-0.8	5.4	-5.5	11.1	0.7	5.6	0.7	2.5
	[-0.85]		[-1.41]		[0.52]		[0.83]	
wage labour	-0.2	1.9	-0.4	4.5	-1.1	1.8	0.3	0.6
	[-0.29]		[-0.21]		[-0.86]		[0.55]	
N	5 260		1 150		1 756		2 354	

We investigate also child labour outcomes and time use. Most evidence, especially form Latin America, shows that social protection programmes similar to HSCT can reduce child labour (Tirivayi *et al*., 2013). Therefore we expect the HSCT to have an impact on this dimension, reducing households' need for help from children, either in domestic chores or in farming activities, or their engagement in off-farm labour, even though participation in casual labour and wage employment is not very common for children in the rural areas targeted by this study, as seen in Table 14. For each indicator, we investigate the programme's impact on participation in the activity and intensity of participation. For farming activities and domestic chores, the sample is made up of children aged six to 17, while for wage employment, the sample includes children from ten to 17 years of age. As shown in Table 31, we observe a general reduction in on-farm labour, even though most of the results are not statistically significant. Consistent with the AIR impact report, the number of days worked by girls is negative and statistically significant, with a minor difference in the magnitude.[12] Furthermore, there is no impact of HSCT on *maricho*/casual labour and wage labour (results not reported).

Table 32 Impacts of HSCT on children on-farm labour, by labour constraints

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	**B**	**ITT**	**B**	**ITT**	**B**	**ITT**	**B**
children in hh farming, last rainy season (%)								
overall	-0.013	0.571	-0.052	0.589	0.035	0.727	-0.038	0.442
	[-0.47]		[-1.01]		[0.87]		[-0.93]	
girls	-0.004	0.398	-0.081 *	0.404	0.032	0.531	-0.007	0.293
	[-0.16]		[-1.84]		[0.75]		[-0.18]	
boys	-0.018	0.393	0.016	0.390	-0.023	0.520	-0.033	0.298
	[-0.78]		[0.31]		[-0.50]		[-0.92]	
land preparation	-0.002	0.496	-0.004	0.500	0.004	0.624	-0.012	0.395
	[-0.06]		[-0.07]		[0.08]		[-0.29]	
weeding/fertilizing	0.001	0.520	-0.038	0.528	0.048	0.659	-0.035	0.410
	[0.03]		[-0.71]		[0.96]		[-0.76]	
harvesting	-0.029	0.411	-0.096	0.429	-0.011	0.516	-0.024	0.322
	[-0.80]		[-1.57]		[-0.17]		[-0.53]	
children in hh farming, last rainy season (days)								
overall	-5.2	52.7	-9.7	46.2	-3.5	75.5	-7.0	38.5
	[-1.13]		[-1.08]		[-0.34]		[-1.05]	
girls	-4.6 *	26.6	-4.5	24.0	-3.9	37.0	-6.6	20.0
	[-1.93]		[-0.84]		[-0.73]		[-1.52]	
boys	-0.6	26.1	-5.2	22.2	0.3	38.4	-0.3	18.5

[12] The statistical unit in AIR estimates is the individual, not the household. Furthermore, children aged 18 are included in the estimation. This may explain the slight difference in the point estimates.

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	B	ITT	B	ITT	B	ITT	B
	[-0.19]		[-0.92]		[0.05]		[-0.08]	
land preparation	-1.0	17.9	-1.3	16.2	-0.7	26.2	-2.2	12.4
	[-0.57]		[-0.33]		[-0.18]		[-0.89]	
weeding/fertilizing	-1.8	27.3	-3.4	23.1	-0.3	39.0	-3.6	20.4
	[-0.75]		[-0.82]		[-0.06]		[-1.06]	
harvesting	-2.4	7.5	-5.0 **	6.9	-2.5	10.2	-1.2	5.6
	[-1.64]		[-2.53]		[-0.89]		[-0.71]	
N	5 260		1 150		1 756		2 354	

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

With respect to children's time use, HSCT does not have a substantial impact on domestic chores, except for boys in labour-unconstrained households, where we observe a 15 pp drop in the share of households with at least one child doing work at home (Table 33). Furthermore, we observe also a 7.5 pp reduction in the share of households with a child involved in livestock herding the week prior to the survey.

Table 33 Impacts of HSCT on children time use, by labour constraints

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	B	ITT	B	ITT	B	ITT	B
children domestic chores (%), yesterday								
overall	-0.065	0.517	-0.147 *	0.469	-0.064	0.641	-0.014	0.446
	[-1.39]		[-1.78]		[-1.42]		[-0.23]	
girls	-0.022	0.396	-0.046	0.376	0.000	0.500	-0.013	0.326
	[-0.52]		[-0.60]		[-0.01]		[-0.25]	
boys	-0.055	0.239	-0.151 **	0.192	-0.038	0.303	-0.027	0.215
	[-1.65]		[-2.50]		[-0.75]		[-0.83]	
collect water	-0.042	0.453	-0.101	0.402	-0.061	0.556	0.010	0.399
	[-1.17]		[-1.40]		[-1.37]		[0.21]	
collect firewood	-0.057	0.272	-0.095	0.217	-0.050	0.331	-0.061	0.254
	[-1.49]		[-1.30]		[-0.79]		[-1.65]	
children caretaking	-0.028	0.351	-0.071	0.294	0.038	0.453	-0.059	0.301
	[-0.68]		[-0.97]		[0.66]		[-1.32]	
children domestic chores (hours), yesterday								
overall	-0.3	2.3	-0.1	2.1	-0.2	2.9	-0.4	2.0
	[-0.88]		[-0.20]		[-0.45]		[-1.39]	
girls	-0.1	1.7	0.3	1.5	-0.2	2.1	-0.2	1.4
	[-0.43]		[0.60]		[-0.56]		[-0.67]	
boys	-0.2	0.7	-0.4	0.5	0.0	0.8	-0.2	0.6
	[-1.43]		[-1.23]		[-0.08]		[-1.64]	
collect water	0.1	0.8	0.2	0.8	0.2	0.9	0.0	0.7
	[0.65]		[0.62]		[1.03]		[0.13]	
collect firewood	-0.2	0.6	-0.2	0.5	-0.2	0.7	-0.2 *	0.6

	All			Unconstr.			Mod. constr.			Sev. constr.		
	ITT		B	ITT		B	ITT		B	ITT		B
	[-1.50]			[-0.71]			[-1.04]			[-1.87]		
children caretaking	-0.2		0.9	-0.1		0.7	-0.1		1.3	-0.2		0.7
	[-1.04]			[-0.48]			[-0.61]			[-1.16]		
children time use (%), last week												
non-farm business	0.030		0.116	0.048		0.135	0.043		0.145	0.005		0.083
	[1.43]			[1.49]			[1.24]			[0.25]		
livestock herding	-0.076	**	0.259	-0.084		0.269	-0.122	**	0.348	-0.035		0.185
	[-2.27]			[-1.15]			[-2.58]			[-0.91]		
forestry	0.029		0.112	-0.017		0.124	0.044		0.130	0.036		0.092
	[1.09]			[-0.46]			[1.12]			[1.27]		
maricho labour	0.022		0.042	0.003		0.027	0.032		0.052	0.024		0.042
	[1.58]			[0.12]			[1.13]			[1.44]		
wage labour	-0.003		0.011	-0.020		0.007	-0.001		0.017	0.002		0.009
	[-0.48]			[-1.59]			[-0.04]			[0.30]		
children time use (hours), last week												
non-farm business	0.2		1.6	0.7		1.6	0.4		2.0	-0.2		1.2
	[0.56]			[0.94]			[0.68]			[-0.49]		
livestock herding	-2.0		8.0	1.5		7.8	-5.4	**	11.3	-1.3		5.5
	[-1.57]			[0.66]			[-2.16]			[-1.16]		
forestry	0.4		0.8	-0.4		0.9	0.5		0.9	0.7		0.6
	[1.31]			[-1.28]			[0.97]			[1.57]		
maricho labour	1.0	*	1.0	0.0		0.5	2.0		1.3	0.8	*	0.9
	[1.93]			[0.05]			[1.65]			[1.70]		
wage labour	0.1		0.5	-0.7	*	0.3	0.7		1.0	0.0		0.2
	[0.15]			[-1.89]			[0.61]			[-0.04]		
N	5 260			1 150			1 756			2 354		

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

5.8 Impact on social networks and informal transfers

Oxford Policy Management (2013) shows that "the HSCT was gradually enabling some individuals to rebuild and solidify their existing social networks and better engage with their communities through church offerings, funeral contributions and generally through increased opportunity for reciprocity with their friends and neighbours". Receipt of the HSCT is supposed to increase beneficial risk-sharing arrangements and economic collaboration underpinned by social capital. The main hypothesis is that changes in social networks linked to the transfer positively affect the most vulnerable and least powerful people in a community through greater inclusion and increased ability to make "social contributions", thus improving their livelihood choices. In this quantitative report, we partially confirm these results. As shown in Table 34, while no significant result is found overall, at subgroup level we found a 10 pp increase in participation for unconstrained household into *mukaro*, an informal savings group and investment club. Furthermore, participation in burial societies increased by 4 pp for severely labour-constrained households. The same group of households slightly increased their contribution to churches (1.4USD) and to burial societies (1.2USD).

Table 34 Impacts of HSCT on social networks, by labour constraints

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	B	ITT	B	ITT	B	ITT	B
hh participation (%)								
any network	0.009	0.842	0.031	0.884	-0.011	0.881	-0.008	0.791
	[0.32]		[0.62]		[-0.33]		[-0.17]	
church	0.020	0.645	0.062	0.708	-0.027	0.733	0.014	0.545
	[0.76]		[1.12]		[-0.71]		[0.32]	
women livelihood group	0.002	0.023	0.028	0.020	-0.025	0.034	0.009	0.016
	[0.31]		[1.58]		[-1.41]		[0.85]	
business cooperative	0.005	0.009	0.010	0.014	0.006	0.011	0.000	0.006
	[0.86]		[0.71]		[0.66]		[-0.00]	
mukaro	0.043	0.593	0.105 **	0.612	0.063	0.599	-0.007	0.579
	[1.12]		[2.09]		[1.24]		[-0.14]	
farmer group	0.025	0.046	0.054	0.066	0.034	0.056	0.008	0.030
	[1.51]		[1.65]		[1.28]		[0.39]	
burial society	0.005	0.054	-0.025	0.055	-0.007	0.054	0.040 *	0.054
	[0.34]		[-1.23]		[-0.32]		[1.90]	
hh contribution (USD)								
any network	1.4	12.1	6.9	22.9	-0.9	13.4	2.5	5.6
	[0.38]		[0.89]		[-0.16]		[1.12]	
church	-0.1	4.6	-2.4	7.3	-0.3	4.9	1.4 *	2.9
	[-0.07]		[-0.59]		[-0.16]		[1.69]	
women livelihood group	0.1	0.7	0.8	0.8	-0.8	1.4	0.1	0.1
	[0.15]		[0.97]		[-0.56]		[0.71]	
business cooperative	-0.5	0.4	0.0	0.1	-1.4	1.1	-0.1	0.0
	[-0.99]		[-0.11]		[-0.93]		[-0.85]	
mukaro	-1.2	9.5	12.3	22.0	-2.5	8.5	-2.6	3.9
	[-0.27]		[1.08]		[-0.44]		[-0.76]	
farmer group	-0.2	0.4	0.0	0.7	-0.3	0.5	-0.2	0.1
	[-0.61]		[-0.04]		[-0.61]		[-0.80]	
burial society	-0.3	1.7	-2.1	4.0	0.1	1.4	1.2 *	0.7
	[-0.33]		[-1.15]		[0.08]		[1.82]	
Observations	5 254		1 150		1 753		2 351	

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

Furthermore, the HSCT led to an increase in the share of households making or receiving informal transfers. These transfers take the form of sharing arrangements, particularly around agricultural inputs and labour. The programme led to a 5.7 pp increase in the share of households sharing inputs (from a base of 25 percent) and a 11.2 pp increase (from a base of 65 percent) in the share of households receiving any kind of transfer (Table 35). The HSCT led to a 2.8 pp increase (from a base of 2.6 percent) in the share of beneficiary households sharing inputs.

Table 35 Impacts of HSCT on informal transfers, by labour constraints

	All			Unconstr.			Mod. constr.			Sev. constr.		
	ITT		B	ITT		B	ITT		B	ITT		B
hh received informal transfers (%)												
total	0.112	**	0.655	0.209	**	0.575	0.052		0.620	0.132	**	0.722
	[2.08]			[2.39]			[0.75]			[2.48]		
in cash	0.024		0.266	-0.045		0.201	-0.024		0.261	0.094		0.303
	[0.57]			[-0.71]			[-0.40]			[1.46]		
in kind	0.072		0.508	0.100		0.422	0.026		0.460	0.111		0.587
	[1.13]			[1.08]			[0.40]			[1.47]		
in labour	0.000		0.208	0.053		0.122	-0.002		0.159	-0.011		0.289
	[0.00]			[0.73]			[-0.06]			[-0.26]		
in ag inputs	0.057	*	0.248	0.035		0.209	0.068		0.234	0.070		0.278
	[1.67]			[0.59]			[1.62]			[1.54]		
value of informal transfers received, USD												
total	8.4		78.2	38.5		74.6	-22.8		88.0	10.0		72.5
	[0.48]			[1.51]			[-0.83]			[0.76]		
in cash	2.5		29.3	12.3		31.3	-17.3		38.9	6.9		20.9
	[0.28]			[0.66]			[-1.05]			[1.23]		
in kind	5.8		48.9	26.2		43.3	-5.5		49.0	3.0		51.7
	[0.52]			[1.33]			[-0.43]			[0.29]		
hh made informal transfers (%)												
total	-0.018		0.168	-0.018		0.204	0.056		0.178	-0.063		0.143
	[-0.58]			[-0.24]			[1.20]			[-1.42]		
in cash	0.014		0.031	0.032		0.054	0.015		0.029	0.001		0.020
	[1.04]			[1.02]			[0.55]			[0.08]		
in kind	-0.017		0.096	-0.051		0.125	0.077	**	0.101	-0.063	*	0.077
	[-0.72]			[-0.99]			[2.08]			[-1.93]		
in labour	-0.025		0.067	-0.005		0.093	-0.033		0.075	-0.024		0.047
	[-1.25]			[-0.08]			[-0.93]			[-0.84]		
in ag inputs	0.028	*	0.052	0.015		0.053	0.037		0.068	0.032		0.039
	[1.74]			[0.55]			[0.97]			[1.53]		
value of informal transfers made, USD												
total	-4.8		7.2	-1.2		5.8	-12.7		11.8	0.1		4.4
	[-1.02]			[-0.30]			[-1.21]			[0.02]		
in cash	-1.0		2.9	0.8		2.8	-1.6		2.3	-2.5		3.3
	[-0.51]			[0.36]			[-0.66]			[-0.49]		
in kind	-3.7		4.3	-2.0		3.0	-11.1		9.5	2.6		1.0
	[-1.17]			[-0.79]			[-1.32]			[0.91]		
Observations	5 260			1 150			1 756			2 354		

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

The survey instrument provides some information also on a wide range of social programmes, both public and private. At baseline, around 8 percent of the eligible sample received cash support, mainly from the Basic Education Assistance Module (BEAM), while around half of the sample received in-kind support, particularly in the form of food parcels or agricultural inputs. The qualitative study states that one of the unintended consequences of the cash transfers was the exclusion of beneficiaries from other forms of support provided to the community. Overall, we found a significant reduction in the incidence of receiving cash from other social programmes. The impact is higher among households with labour capacity, where the probability of receiving any type of support decreased by 16 pp (Table 36). As opposed to the full sample, the impact on labour-unconstrained households is concentrated on in-kind transfers.

Table 36 Impacts of HSCT on access to programs, by labour constraints

	All		Unconstr.		Mod. constr.		Sev. constr.	
	ITT	B	ITT	B	ITT	B	ITT	B
hh received transfers from social programmes (%)								
overall	-0.032	0.560	-0.164 *	0.530	0.051	0.538	-0.037	0.593
	[-0.68]		[-1.91]		[0.86]		[-0.72]	
in cash	-0.029 *	0.080	-0.044	0.078	-0.031	0.068	-0.019	0.091
	[-1.82]		[-1.64]		[-1.43]		[-0.75]	
in kind	-0.041	0.537	-0.160 *	0.511	0.066	0.507	-0.065	0.573
	[-0.83]		[-1.88]		[1.10]		[-1.15]	
Total value received from social programmes (USD)								
overall	18.6	58.4	7.0	61.1	33.8	62.0	5.3	54.2
	[1.50]		[0.41]		[1.63]		[0.52]	
in cash	5.8	4.9	1.6	4.1	12.4	4.7	-0.7	5.5
	[1.00]		[0.57]		[0.81]		[-0.33]	
in kind	11.0	56.6	4.6	59.5	22.0 *	59.2	2.6	53.1
	[1.08]		[0.28]		[1.93]		[0.25]	
Observations	5 250		1 149		1 752		2 349	

Note: Estimations use difference-in-difference modelling among panel households. ITT is the intention-to-treat effect (the impact), B is the overall baseline mean of the indicator shown in the preceding column, robust *t* statistics clustered at ward level in parentheses; significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

6. Conclusions

This report uses data collected from a 12-month non-randomized phase-in design at district level (2013 and 2014) to analyse the impact of the Zimbabwe Harmonized Social Cash Transfer on productive activities and investments, asset accumulation, household food security and nutrition and household labour allocation.

These impacts are conditioned by the demographic and productive characteristics of the households that receive the transfer. Over two-thirds of the households are either moderately or severely labour constrained. Almost 70 percent of households are female-headed, and almost 60 percent are headed by an elderly person. The majority of households have an orphan. These households have low levels of productive assets – on average three years of education for the household head, with less than one hectare of land and a few agricultural implements. Crop production is focused on subsistence agriculture for home consumption, primarily maize and sorghum, using traditional technology with very low levels of modern inputs or access to credit. Over three-quarters of beneficiary households own livestock, most with poultry, but over half of these households own cattle as well as small ruminants. At baseline just 12 percent of households had a non-farm enterprise. Labour markets are also thin – only five percent of adults worked in wage labour at baseline, and only a quarter in *maricho* casual wage labour. Child labour is quite pervasive, with over half of all children aged 6-17 working in family crop activities.

Within this context of relatively low productive potential, the HSCT did have a significant impact on beneficiary agricultural activities – their most important source of income. The programme led to a diversification in crop production; households moved away from traditional crops such as maize and sorghum to groundnuts, roundnuts and finger and pearl millet. The programme led to a shift in input use: a reduction in the already low use of pesticides, and an increase in the amount spent chemical fertilizers, though significant only for severely constrained households. Overall, market participation from crop production remains low. On the other hand, the programme led to an increase in the share of households owning livestock overall, as well as goats and chickens. The positive impact on the number of animals was significant for goats for unconstrained and moderately constrained households and for chickens for severely constrained households.

In addition to agricultural production, the HSCT is associated with an increase in the proportion and profitability of households running a non-farm enterprise and in the share of households operating a non-farm enterprise, particularly among severely labour-constrained households. According to the data these operations can generate considerable amounts of cash, and thus may constitute a viable alternative to self-subsistence farming even though at this point the share of households with these enterprises is still quite small. In terms of labour supply, the HSCT did not constitute a disincentive to work, and participation in wage and casual labour has not decreased because of the programme. However, the programme led to a reduction in the number of days that adults worked on-farm. This result may be linked to the shift from maize to pearl millet and groundnut production, which are generally less labour-intensive.

Besides agricultural and other income-generating activities we examined impacts on access to credit, nutrition and dietary diversity. In turn, the HSCT helped relax financial constraints and resulted in a higher volume of purchases on credit. Positive and consistent impacts in food security and nutrition indicators were found allowing households to have better access to a more diverse diet. Yet households did not increase daily caloric intake, but diversified their source

of calories with shifts from cereals to richer nutrient foods (roots and tubers, vegetables, legumes, nuts, seeds) and sweets, and hence a decrease in the levels of food insecurity.

Positive impacts were also found on social networks, with labour-unconstrained households increasing their participation in *mukaro* groups and also moderately increasing their contributions into churches and burial societies. The programme also allowed beneficiary households to increase informal sharing arrangements within the community. However, the probability of receiving transfers from other social programmes (particularly in-kind for labour-unconstrained households) was significantly reduced – an unintentional negative effect of the HSCT.

Finally, many of the impacts on productive activities and food security indicators were observed in labour-constrained households, which are much smaller than households with labour capacity; hence they received a larger per capita HSCT transfer. The impact analysis of this report therefore concurs with the overall evaluation of the programme made by AIR, which found impacts on consumption and across other domains mainly among smaller households and fewer impacts on the full sample or among larger households.

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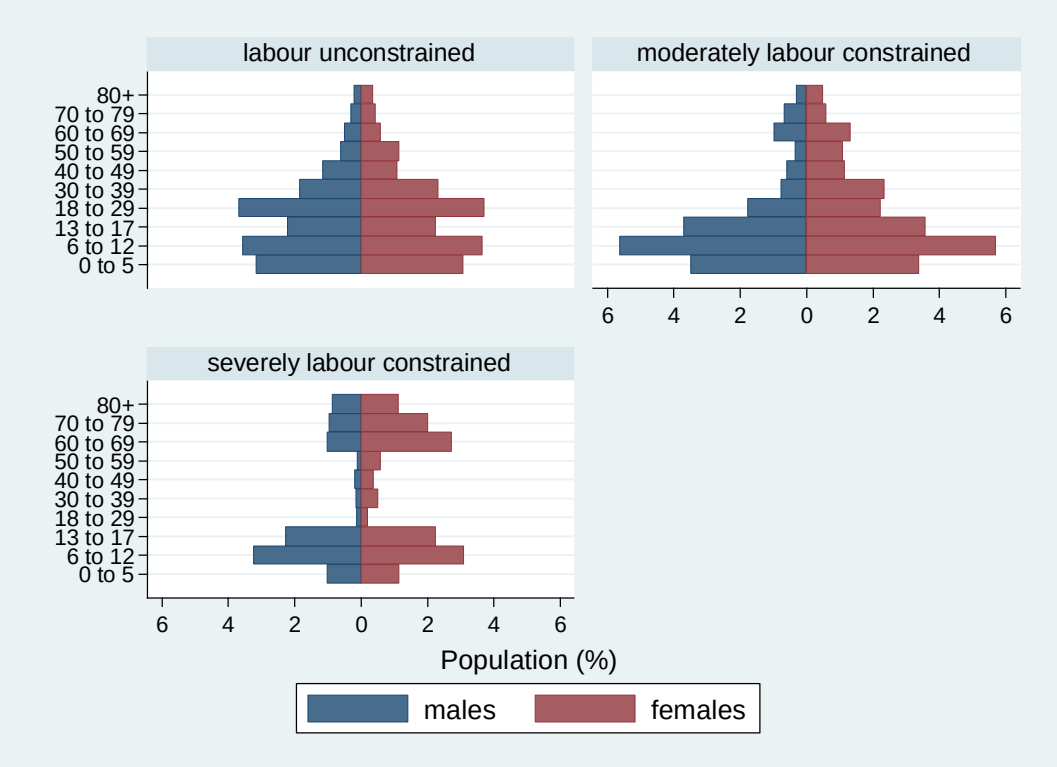
Appendix: Tables & Figures

Figure 1 Treatment and control districts included in the evaluation

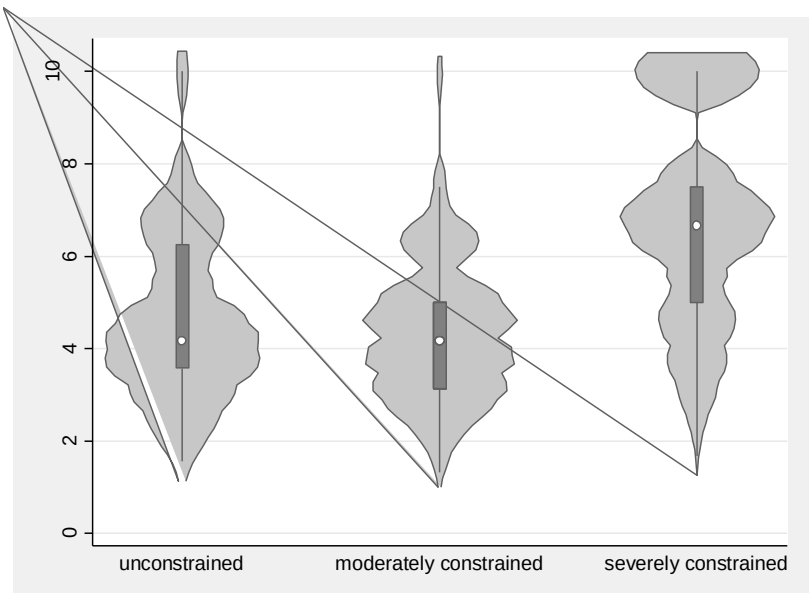
Note: Treatment districts are indicated by blue circles and control districts are encircled in red.
Source: map from Atlas of Zimbabwe - Wikimedia Commons

Figure 2 **Age pyramids for households facing different labour constraints**



Source: authors' own elaboration from raw data.

Figure 3 **Violin plot of per capita HSCT transfer value**



Source: authors' own elaboration from raw data.

Table A1 Observable baseline balance

Indicator	Mean (T)	Mean (C)	diff	p-value	Total N	% bias
hh in crop production	0.805	0.748	0.057	0.100	1,486	13.68
hh planted maize	0.680	0.642	0.037	0.844	1,138	7.88
hh planted sorghum	0.231	0.188	0.043	0.219	1,138	10.47
hh planted wheat	0.044	0.024	0.020	0.378	1,138	11.25
hh planted beans	0.086	0.106	-0.019	0.417	1,138	6.58
hh planted peas	0.014	0.007	0.006	0.129	1,138	6.16
hh planted vegetables	0.771	0.745	0.027	0.579	1,138	6.22
hh planted fruits	0.095	0.049	0.046	0.075	1,138	17.70
quantity harvested, maize, kg	51.767	34.295	17.472	0.025	1,138	15.73
quantity harvested, sorghum, kg	15.480	12.030	3.450	0.311	1,138	6.67
quantity harvested, wheat, kg	3.525	2.500	1.025	0.784	1,138	3.77
hh participated in crop market	0.071	0.062	0.009	0.904	1,138	3.66
total earnings from selling crops	9.624	16.515	-6.891	0.064	1,138	8.28
hh used any crop inputs	0.978	0.978	0.000	0.649	1,138	0.09
hh used seed	0.969	0.974	-0.005	0.679	1,138	3.00
hh used pesticide	0.127	0.124	0.003	0.707	1,138	0.91
hh used organic fertilizer	0.339	0.374	-0.035	0.156	1,138	7.33
hh used inorganic fertilizer	0.231	0.184	0.046	0.586	1,138	11.40
hh purchased any crop inputs	0.439	0.394	0.045	0.351	1,138	9.09
hh purchased seed	0.325	0.308	0.017	0.494	1,138	3.66
hh purchased pesticide	0.092	0.102	-0.011	0.683	1,138	3.60
hh purchased organic fertilizer	0.025	0.026	0.000	0.193	1,138	0.08
hh purchased inorganic fertilizer	0.114	0.084	0.030	0.637	1,138	9.93
hh expenditure for crop inputs	63.447	58.088	5.360	0.849	1,138	2.81
hh expenditure for seed	23.749	25.082	-1.333	0.879	1,138	1.81
hh expenditure for pesticide	5.524	4.224	1.299	0.671	1,138	4.97
hh expenditure for organic fertilizer	3.820	4.735	-0.915	0.585	1,138	2.51
hh expenditure for inorganic fertilizer	30.354	24.046	6.309	0.888	1,138	4.47
hired ag. labour: days for crop activities	3.680	2.166	1.514	0.327	1,138	6.45
hh owns/herds any livestock	0.613	0.579	0.034	0.275	1,486	6.92
sheep owned by hh	0.238	0.238	0.000	0.970	886	0.08
goats owned by hh hh	0.203	0.213	-0.010	0.906	886	2.35
horse owned by hh	0.107	0.075	0.032	0.699	886	11.21
donkey owned by hh	0.301	0.278	0.023	0.959	886	5.13
chicken owned by hh	0.485	0.502	-0.018	0.697	886	3.52
pig owned by hh	0.203	0.292	-0.089	0.003	886	20.71
cattle owned by hh	0.557	0.493	0.064	0.786	886	12.78
# sheep owned by hh	1.415	1.187	0.228	0.920	886	5.13
# goats owned by hh	1.212	1.112	0.100	0.947	886	2.73
# horse owned by hh	0.153	0.093	0.059	0.474	886	13.79
# donkey owned by hh	0.513	0.423	0.090	0.841	886	9.84
# chicken owned by hh	2.279	2.421	-0.141	0.964	886	3.54
# pig owned by hh	0.286	0.369	-0.083	0.016	886	10.86
# cattle owned by hh	1.627	1.341	0.286	0.751	886	13.97
hh participates in livestock mkt.	0.275	0.318	-0.043	0.243	886	9.34
hh sold livestock by-products	0.096	0.091	0.005	0.429	886	1.70
hh earnings from all by-product sales	39.775	34.535	5.240	0.552	886	1.82
hh used any livestock inputs	0.509	0.432	0.076	0.918	886	15.35
hh used feed	0.419	0.364	0.055	0.925	886	11.22
hh used fodder	0.214	0.180	0.034	0.359	886	8.56
hh used vet services	0.227	0.208	0.019	0.702	886	4.63
hh purchased any livestock inputs	0.395	0.360	0.035	0.789	886	7.30
hh purchased feed	0.378	0.334	0.044	0.873	886	9.11

Indicator	Mean (T)	Mean (C)	diff	p-value	Total N	% bias
hh purchased fodder	0.013	0.012	0.001	0.287	886	1.28
hh purchased vet services	0.122	0.145	-0.023	0.425	886	6.64
hh expenditure for livestock inputs	39.897	35.685	4.213	0.786	886	3.58
hh expenditure for feed	26.498	22.061	4.437	0.965	886	5.47
hh expenditure for fodder	3.913	4.533	-0.620	0.600	886	1.17
hh expenditure for vet services	9.487	9.091	0.396	0.861	886	1.10
hired ag. labour: days for livestock activities	4.498	1.638	2.860	0.102	886	9.40
hh owns any asset	0.629	0.554	0.075	0.155	1,257	15.32
hh owns hoe	0.573	0.505	0.068	0.249	1,257	13.60
hh owns sprayer	0.009	0.011	-0.002	0.393	1,257	1.98
hh owns plough	0.222	0.153	0.069	0.195	1,257	17.73
hh owns planter	0.108	0.054	0.054	0.003	1,257	19.95
hh owns tractor	0.008	0.008	0.000	0.890	1,257	0.36
hh owns cultivator	0.137	0.078	0.059	0.004	1,257	19.23
hh owns scotch cart	0.100	0.055	0.045	0.110	1,257	16.74
hh owns yokes	0.250	0.172	0.078	0.100	1,257	19.08
hh rents tractor	0.067	0.062	0.005	0.880	1,257	2.20
hh operating non-farm business last 12 months	0.198	0.179	0.020	0.306	1,486	4.99
hh operating non-farm business last 30 days	0.703	0.644	0.059	0.203	280	12.51
# of non-farm enterprises operated	1.054	1.030	0.024	0.539	280	10.92
# of employees	0.236	0.106	0.130	0.579	280	14.46
# months in operation	6.405	6.220	0.186	0.780	280	4.57
hh received public transfers	0.135	0.131	0.004	0.573	1,486	1.16
hh member received pension	0.112	0.108	0.004	0.589	1,486	1.34
hh received private transfers	0.424	0.388	0.036	0.765	1,486	7.33
hh received remittance from non-resident members	0.258	0.223	0.035	0.416	1,486	8.21
hh received cash support from family members	0.139	0.147	-0.008	0.420	1,486	2.36
hh received cash support from non-family members	0.066	0.068	-0.002	0.525	1,486	0.83
hh made private transfers	0.076	0.078	-0.002	0.238	1,486	0.81
hh received food from network members	0.700	0.763	-0.063	0.027	1,486	14.26
hh provided food to network members	0.470	0.501	-0.031	0.234	1,486	6.16
hh received help in time/labour from network members	0.116	0.108	0.008	0.677	1,486	2.60
hh provided help in time/labour to network members	0.183	0.160	0.024	0.756	1,486	6.29
hh received ag. inputs from network members	0.463	0.406	0.057	0.904	1,486	11.56
hh provided ag. inputs with network members	0.232	0.241	-0.009	0.536	1,486	2.18
hh saved money	0.510	0.475	0.035	0.923	1,486	7.02
amount of savings, last contribution	39.296	27.100	12.196	0.169	1,486	7.71
hh borrowed money, last 12 months	0.668	0.720	-0.052	0.047	1,486	11.27
outstanding amount of debts	271.625	233.588	38.036	0.682	1,269	7.26
hh bought on credit in last 12 months	0.373	0.347	0.026	0.830	1,468	5.39
individual in any labour activity, last 12 months	0.608	0.603	0.004	0.309	3,563	0.91
individual in paid-work outside the hh, last 12 months	0.333	0.336	-0.003	0.812	3,563	0.65
individual in any own agriculture activities, last 12 months	0.493	0.473	0.020	0.271	3,563	4.07
individual in non-farm business activities, last 12 months	0.062	0.073	-0.012	0.986	3,563	4.61
individual in any labour activity, last week	0.476	0.485	-0.009	0.975	3,563	1.74
individual in paid-work outside the hh, last week	0.325	0.329	-0.004	0.828	3,563	0.87
individual in any own agriculture activities, last week	0.254	0.234	0.021	0.450	3,563	4.80
individual in own non-farm business activities, last week	0.026	0.036	-0.010	0.642	3,563	5.79
hours last week: any labour	12.822	13.194	-0.372	0.990	3,563	1.77
hours last week: paid labour	4.851	5.294	-0.444	0.585	3,563	3.34
hours last week: crop and livestock	7.272	6.949	0.323	0.696	3,563	2.04
hours last week: own enterprise	0.699	0.951	-0.252	0.619	3,563	4.16
individual with permanent jobs	0.023	0.028	-0.006	0.354	3,563	3.56
individual with temporary jobs	0.040	0.048	-0.008	0.878	3,563	3.81
individual with occasional jobs	0.265	0.254	0.011	0.493	3,563	2.60

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