Hüsnü M. Özyeğin Foundation
Rural Development Program
Bitlis Kavar Pilot
Final Impact Evaluation Report
(2008-2013)

Date: March 5, 2014

Prepared for Hüsnü M. Özyeğin Foundation
by Development Analytics

Table of Contents

Introduction 2
Data and Methodology 3
Main Findings 5
1. Economic Development 5
Economic activity and Employment Rates 5
Youth Employment 7
Seasonal migration 7
Household Income 7
Asset accumulation 8
Agricultural Technology Use 9
2. Access to Basic Education, Health and Infrastructure Services 10
Education 10
Health Utilization 12
Water and Sanitation 13
4. Women's Empowerment and Participation in Decision-Making 13
5. Overall Life Satisfaction in the Villages 14
Conclusion 16
Annex Tables 17

Introduction

In the decade 2003-2013, Turkey experienced sustained growth that rapid poverty alleviation, particularly in urban areas. While growth was pro-poor in urban areas, the incidence of rural poverty remained high and stagnant through the decade. In the period, 2002-2009, while Turkey experienced significant reductions in urban poverty from 22 percent in 2002 down to 8.9 percent in 2009, rural poverty rates soared -according to official poverty statistics released by TURKSTAT- from 34.5 percent up to 38.7 percent.

The Özyeğin Rural Development Program was launched in January 2009, against a background of high and stagnant levels of rural poverty in Turkey. The program was initially launched in 6 pilot villages in the eastern Bitlis province of Turkey, in one of the least developed and conflict–ridden regions of the country. The Program was designed to reduce rural poverty by investing in the returns to the assets of the poor: mainly by means of investments in agricultural technology and human development in project villages. The program was also envisaged in this region as a post-conflict rehabilitation project that would facilitate building sustainable livelihoods for villagers returning to their villages after being forced to migrate by the military in mid-1990s. The model developed here by Özyeğin Foundation therefore had much appeal and potential for expansion in thousands of other post-conflict villages in eastern Turkey where waves of forced migration had moved about a million people out of their homes about a decade earlier.

The activities of the Özyeğin Rural Development Program mainly focused on increasing agricultural productivity through the transfer of agricultural technologies and improving village level cooperation for increasing economies of scale in production and sales of agricultural products. The program aimed to increase the productivity of the rural villagers and build their assets for sustainable future income and production. The agricultural activities included (i) the distribution and planting of high yield (inoculated) fruit trees; (ii) establishing a shared milk collection facility for the villages and (iii) building an inter-village farmers' cooperative for the collective sale of farm products. The Program also had a component that specifically targeted women and their economic empowerment. The specific activities that targeted women included (i) commercial growing of greenhouse flowers (*seracılık*), (ii) handicrafts courses and sales, (iii) training of women in apiculture (beekeeping) and distribution of beehives at subsidized prices. Improving access to basic services in education, health and infrastructure was another goal of the program. In order to achieve this goal, the Program staff was active in enrolling out-of-school children back in school or distance learning programs, and functional literacy programs were run with women in the villages. The content in these literacy programs also included sub-headings that aimed to increase utilization of health services during pregnancy and child birth, and had information on family planning methods.

Given these Program goals and activities, the evaluation for the program would require a multi-faceted approach to measuring and tracking household and individual level indicators over time. The evaluation was designed prior to the launch of the program in January 2009 and the baseline household surveys were collected as a census of the six treatment villages as well as six control villages in the neighboring district with similar initial outcome indicators. Program target indicators were selected consistently with the Millennium Development Goals, and were based on a household survey instrument that allowed for a

multi-dimensional measurement of poverty, income, agricultural technology use, access to services and women's empowerment.

This final evaluation report considers the impact of the Özyeğin Rural Development Program by looking particularly at changes in such economic and human development related outcome indicators five years after the launch of the program looking at a multitude of indicators that relate to program goals. The evaluation follows the quantitative differences-in-differences (diffs-in-diffs) methodology whereby households in the baseline sample are tracked over time in treatment and control villages on a number of indicators. The structure of the paper is as follows: Section 2 summarizes the data and methodology employed in the quantitative analysis. Section 3 provides the findings of the analysis under sub-headings that relate to (i) economic development (economic activity and agricultural technology adoption), (ii) access to basic education, health and infrastructure services, (ii) women's empowerment and (v) life satisfaction in the villages. Section 4 concludes with the main findings of the report.

Data and Methodology

When the design for the evaluation was being discussed in the last quarter of 2008, the treatment villages for the Program had already been selected by project staff. Selection of program villages was based on the criteria of highest poverty and need in the Bitlis province, and the Program also prioritized reaching villages where there was a higher proportion of forced migrant villagers returning home. Given that treatment villages had already been selected prior to evaluation design, it was not possible to run a randomized control trial. Rather the evaluation team decided to follow a differences-in-differences methodology following a group of control villages in the neighboring district over time, along with treatment villages. Hence, prior to the launching of the first pilot in Bitlis, a baseline household level survey was conducted in the 6 treatment villages where the program was going to be implemented for the next five years (2009-2014), as well as 6 comparable control villages in the same province. Such data collection was purposefully designed in order to enable a rigorous impact evaluation of the program. The control villages in this process were selected among a cluster of villages in the neighboring district that showed similar characteristics in terms of climate, ethnic composition and poverty levels. However, given purposive program placement and selection based on poverty criteria, there were certain characteristics that differed in the baseline between the treatment and control set of villages and households[1].

The questionnaires fielded in the pre-test included modules on income and economic welfare, use of agricultural technology, access to social services such as health and education and women's empowerment. The baseline quantitative data was collected from these villages during December 2008. In November 2013, five years after the launch of the program, a post-test was run in the same villages using a subset of the modules from the baseline survey. The quantitative survey was

[1] Baseline balancedness tests comparing treatment and control households Show that in control villages the households were more likely to have achieved secondary school education, and the average level of income was also higher in control villages. The proportion of households who reported to be forced migrants was also statistically significantly different between treatment and control villages, whereby a higher percentage of villagers in the treatment group reported to be forced migrants prior to program launch. Given these differences in observables across the treatment and control group of households, the analysis throughout the evaluation has taken into account baseline characteristics and has controlled for baseline characteristics in the diffs-in-diffs regressions..

conducted as a census in the project and control villages. In the final post-test modules a "life satisfaction" module has also been added to the survey instrument to ask retrospective questions to the household head and spouse on key aspects of life in the villages.

The number of households and individuals surveyed in each round of the survey are presented in Table 1.

Table 1 Total number of households and individuals in baseline and follow-up surveys

	Number of households		Number of individuals	
	Baseline	Follow-up	Baseline	Follow-up
Treatment villages	193	196	1,217	1,253
Control villages	134	135	892	887

This quantitative impact evaluation report aims to measure changes in welfare levels in the project villages as a result of the program (measured in terms of employment rates, reported income levels and agricultural technology adoption) as well as certain human development indicators such as children's enrollment rates in school and utilization of health care services, particularly for maternal health care. The program impact is calculated using a diffs-in-diffs methodology whereby the difference in the outcome indicator is taken for before and after the program in control and treatment villages and then the difference in those differences is calculated to give program impact. We measure first the program's impact on households that are in project villages and also the program's impact specifically on program beneficiaries for a number of indicators[2].

[2] Households that directly benefited from the Project are household that participated in at least one of these activities: participating in the cooperation, buying a beehive, cropping corn using silage machine, participating in handcrafting activities

The calculation of the average treatment effect (ATE) followed this approach looking at the difference in differences across the treatment and control groups and over time which can be summarized in this way:

$$Program\ impact\ (ATE) = (T_a - T_b) - (C_a - C_b)$$

where:

- T_a = Average treatment group (villages) results in the post-test (2013)
- T_b = Average treatment group (villages) results in the pre-test (2008)
- C_a = Average control group results in the post-test (2013)
- C_b = Average control group results in the pre-test (2008)

In addition to calculating the program impact using averages, regression analyses were run in order to see the statistical significance of the program impact. The diffs in diffs regression follows the specification below:

$$Y = \beta_0 + \beta_1 Treatment + \beta_2 After + \boldsymbol{\beta_3}(Treatment\ x\ After) + \boldsymbol{\beta_4 x_i} + u$$

In this equation, variable Y denotes different outcome variables such as household income or individual's employment status etc. The coefficients can be interpreted as the following:

- β_1 accounts for the differences between treatment and control group in the baseline
- β_2 accounts for the time trend common to both groups
- β_3 is the coefficient for the interaction term between the treatment and being in the post-test sample. It is the differences-in-differences estimator, and hence the program impact.

The analysis controls for baseline characteristics of household (xi) throughout, in order to account for observable differences across treatment and control groups in the baseline.

Following the average treatment effect estimation, the analysis then focuses on the Treatment Effect on the Treated (TOT) estimations where the treatment effect is calculated specifically for households that interacted with the program and were direct program beneficiaries in the villages. Hence in the first analysis (ATE) treated households include all the households in the project villages whereas in the latter analysis treated households are only the ones that directly benefited from the project in some way. Households that directly benefited from the Project are defined as household that participated in at least one of these activities: participating in the cooperation, buying a beehive, cropping corn using silage machine, or women in the household participating in handcrafting activities.

In the treatment effect on the treated (TOT) calculations, the regression specification remains the same except that the variable *Treatment* gets value 1 when the household or the individual is a direct beneficiary of the project, and zero otherwise.

In order to eliminate any bias in results, the diffs-in-diffs analysis is carried out through the report using a balanced panel, with the sample limited only to households that responded to both rounds of the survey[3]. The changes in the indicators have also been cross-tabulated in the annex tables by the asset quintiles of households (poorest quintile being quintile 1) and the educational attainment levels (of the individual worker or the household head). In this way, for each indicator it becomes possible to look at benefit incidence (who was more likely to benefit from the program) for each indicator.

[3] To be precise, for the analysis regarding life satisfaction of the individuals, the sample has been limited to the individuals who were living in the villages 5 years ago as well. And for the analysis regarding women's health care services utilization and women's empowerment in the households the sample has been limited to the women who have answered in both rounds of the survey and who were between 15-45 years of age in the baseline.

Main Findings

Following the project's goals we have analyzed the progress in a number of indicators about economic development, infrastructure, and access to education and health services in the villages. Finally we have looked at the impact of the program on villagers' life satisfaction.

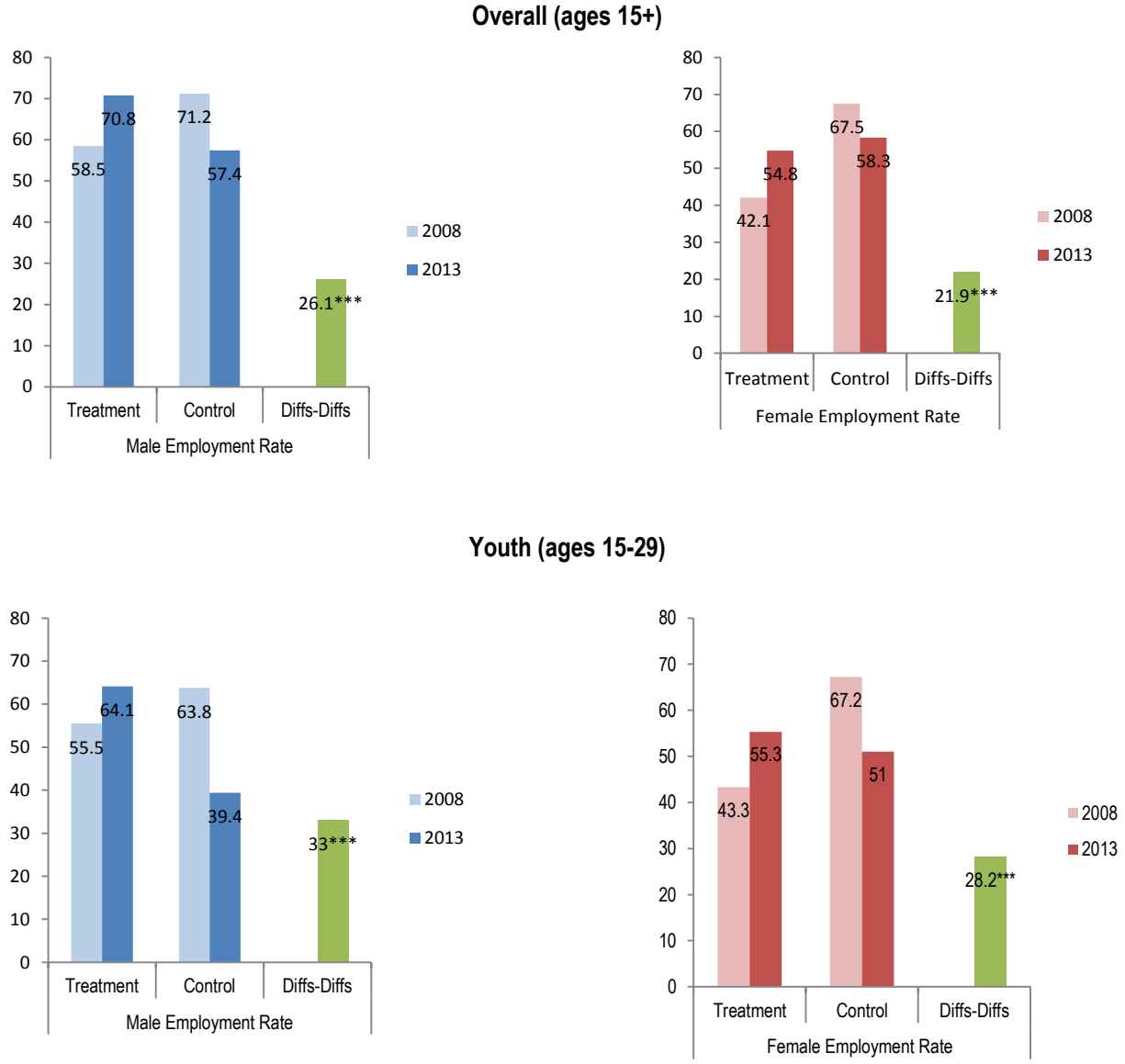
1. Economic Development

Economic activity and Employment Rates

One of the main goals of the Özyeğin Rural Development Model was to increase the overall participation of villagers in economic life. Labor force participation and employment rates of the adult population in the villages are outcome indicators that have been analyzed to assess the success of the program in reaching this goal. When the program was launched, the unemployment rate was high in both groups of villages, especially among young men. In the five year period after the program implementation, employment rates have improved significantly in project villages. The percentage of working age male population (ages 15+) in project villages that are "employed" has increased from 58.5 percent to 70.8 percent. The unemployment rate has come down from 13.1 percent to 6.5 percent for this group and inactivity rates have decreased from 28.4 percent to 22.7 percent. For women, similarly there has been an increase in the percentage of women in employment. The increase in employment rate was from 42.1 percent to 54.8 percent. Moreover unemployment as well as inactivity rates have come down for this group (See Figure 1).

In contrast, we observe a reduction in the overall employment rate for both men and women in control villages with the male employment rate going down from 71.2 percent to 57.4 percent and the female employment rate going down from 67.5 percent to 58.3 percent (See Figure 1). This indicates that in the counterfactual, the employment level in the project villages could have come down in the absence of the program. The differences in differences estimator for the program impact on employment (for ages 15+) is estimated at 26.1 percentage points for men and 21.9 percentage points for women (The impact was statistically significant in increasing employment and decreasing inactivity rates of men and women in the project villages with p<0.01). (See Tables 1-2 in the annex for detailed results)

Figure 1. Employment rate increased for men and women in project villages



Note: Sample consists of individuals aged 15+ living in households that exist in both rounds of the survey. The stars report significance results from the regressions. *** p<0.01, ** p<0.05, * p<0.1

Youth Employment

Youth employment rate (for individuals of age between 15-29) has increased as well in project villages both for men and women and the impact of the program for this group was actually higher than the impact on the overall working age population. For men (ages 15-29) the employment rate has risen from 55.5 percent to 64.1 percent while for women in the same age group this rate has increased from 43.3 to 55.3 percent. In contrast, there is a reduction in youth employment rates in the control villages with the employment rate of young men going down from 63.8 percent to 39.4 percent and employment rate of young women going down from 67.2 percent to 51 percent (See Figure 1). The differences in differences estimator for the program impact on youth employment is estimated at 33 percentage points for men and 28.2 percentage points for women (The impact of the project on labor force participation and employment rates are statistically significant for young men and women with $p<0.01$). (See Tables 3-4 in the annex for detailed results)

Seasonal migration

Seasonal migration was common among men in the baseline survey of 2008[4] in treatment villages. About 12.7 percent of men reported having to seasonally migrate outside of the province within the past year in order to find jobs. These men were mostly employed in the construction, services and manufacturing sectors and more than half of them worked in Istanbul. In the differences in differences estimates, seasonal migration rate has dropped both in project villages and control villages for men in the 5 year period. For men in project villages, average seasonal employment rate dropped 6.1 percentage points from 12.7 percent in 2008 to 6.6 percent in 2013. In contrast for men in control villages it dropped from 5.9 percent to 1.7percent, hence 4.2 percentage points, making the overall impact of the program 1.9 percentage points (The impact was not statistically significant).

Household Income

The program has had a significant impact on household per capita income levels in real terms, mainly as a result of a negative trend in incomes of households in control villages. In the five year period after program implementation average per capita real income[5] has increased by 27 percent while it decreased by 59 percent in the control villages. When the program was launched in 2008, the levels of reported income in the project villages were on average 93.2 TL per capita per month. The median level of income was even lower at 60 TL per capita per month. Compared to the project villages, mean per capita income level in control villages was higher in 2008. Average per capita income was reported to be 175.1 TL and median per capita income was 77.3 TL in control villages. These levels of income qualified these households as falling below the national poverty line in Turkey with the national poverty line established by TURKSTAT being 825 TL for a family of 4 people as of 2009[6]. However by 2013, average per capita income in project villages has risen to 118.5 TL in real terms while in control villages it has fallen down to 71.8 TL (See Figure 2). Hence the program impact is 128.6 TL in real terms (The impact of the project on per capita income was statistically significant. With $p<0.01$)

Per capita real income of the households has increased even more in the households that directly

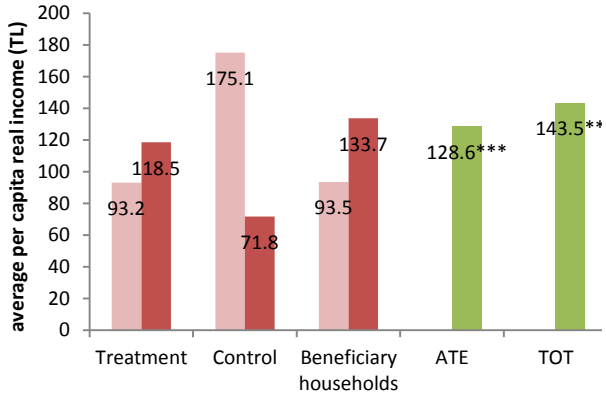
[4] The definition of seasonal employment in the collection of the data is whether the person had to work outside of the village in the past 12 months.

[5] For calculation of the real income, consumer price index of December 2008 and November 2013 has been used. Hence all the prices are in December 2008 TL.

[6] The poverty line is calculated by TUIK for a modal household including two adults and two children. (TURKSTAT, Turkey Poverty Estimates, 2011).

benefited from the project[7] in the project villages (treatment effect on the treated households). For these direct beneficiary households average income per capita has increased from 93.5 TL to 133.7 TL in real terms which is an increase of 43%. The effect of the program on the treated is then 143.5 TL in real terms (The impact of the program on the direct beneficiary households compared to the control group is statistically significant with p<0.01). (See Tables 5-6 for a detailed analysis of changes in income)

Figure 2. Average per capita monthly real income increased in project villages and especially for beneficiary households



Note: Sample consists of households that exist in both rounds of the survey. The stars report significance results from the regressions. *** p<0.01, ** p<0.05, * p<0.1. ATE: Average Treatment Effect. TOT: Treatment Effect on the Treated

Asset accumulation

Asset accumulation is important for poverty reduction as it enables the poor to build productive capital and generate future sustainable income. In this evaluation, we consider the impact of the program on asset accumulation in treatment village households in terms of the total number of animals and trees. There may have been other ways in which the households accumulated wealth through the project period, which are not measured here, hence the asset accumulation estimate provided here is a lower bound estimate of project impact. (See Table 7)

- The total number of animals (cows, sheep and goat) has increased more in project villages compared to control villages in the five year period. By 2013 total number of cows in project villages has increased to 693 from 362 in 2008. While in control villages total number of cows stayed almost stagnant around 174. Number of sheep and goats in total has also increased more for project villages from 1655 to 2552 while in control villages the increase was from 929 to 1440. Hence the diffs-in-diffs estimate of impact is 333 cows and 386 sheep and goat. The estimated value of these assets in terms of animal livestock is about 3,688 USD per household in the treatment villages (323,545 USD in total in treatment villages)[8].
- The total number of trees (apple, walnut, cherry, pear, apricot, and plum) was already higher in project villages. But it has increased more in project villages as well compared to the control villages, and the increase in project villages in five years is almost 20 folds of the increase in control villages. Total number of trees in project villages increased from 3,652 to 6,609. In contrast the increase in control villages was only from 638 to 789 making the differences in differences estimate 2,806 trees. The estimated value of these assets in terms of fruit trees is about 14,500 USD per household in the treatment villages

[7] Households that directly benefited from the Project are household that participated in at least one of these activities: participating in the cooperation, buying a beehive, cropping corn using silage machine, participating in handcrafting activities

[8] The sales value of a cow is taken as 1,500 TL and the sales value of a sheep/goat is taken at 550 TL in current prices in this calculation.

(1,275,500 USD in total in treatment villages[9]).

We therefore estimate that the total value of assets (in terms of animals and trees) accumulated by households in treatment villages is about: 18,226 USD (per household) as a result of the program.

Agricultural Technology Use

We next consider the impact of the project on the agricultural technology use by looking at a number of indicators. The indicators representing technology use are tree inoculation, use of mowing machine, use of haymaker and use of milking machine. We present the prevalence of the use of these technologies in year 2008 and the technology adoption rate[10] from 2008 to 2013, meaning the percentage increase in the village in the number of households using that technology. (See Tables 8-9)

- **Tree inoculation**: Tree inoculation increased more in Project villages compared to control villages. In 2008, 20% of the households in Project villages reported using inoculation for their trees while in control villages this proportion was higher with 21.1%. In 2013, in Project villages the proportion that has started using this technology after 2008 (adoption rate) is 26.3 percent while in control villages it is 15.6 percent. Hence the program impact is 10.7 percentage points (statistically significant with $p<0.05$). Moreover the impact was higher for poorer households. Among the poorest households which are the ones in the bottom asset quintile, only 8 percent had reported having inoculated fruit trees in 2008. In 2013 the adoption rate was 32 percent 5 years after the launch of the Özyeğin Rural Development Program. In comparison, in the control villages, the baseline prevalence was 4.5 percent and the adoption rate was 13.6 percent, making the impact of the program 18.4 percentage points.
- **Use of Mowing Machine :** Use of mowing machine was rather prevalent in 2008 in project villages with 32.5 percent of project village households compared to 3.7 percent of control village households reported using the technology. The increase in the use of this technology was higher in project villages with an adoption rate of 33.8 percent. In control villages the adoption rate was smaller with 17.4 percent. The overall impact of the program is 16.4 percentage points (statistically significant with $p<0.01$). The impact was higher for poorer households. Technology adoption rate is 36 percent in project villages among poor households while in control villages it is 18.2 percent, making the impact of the program 17.8 percentage points.
- **Use of Haymaker:** The prevalence of using the haymaker has increased more for the households in the project villages. The adoption rate is 25 percent in project villages while it is 16.5 percent in control villages. Hence the impact is 8.5 percentage points (statistically significant with $p<0.1$). For the households in the lowest asset quintile the impact of the program was higher. The adoption rate is

[9] The net present value calculation for a fruit tree is made in the following way: each apple tree produces about 50 kg of fruit, sold at 2TL in the market. The net present value of 100 TL in perpetuity, where the interest rate is 10 percent, is calculated at 1000 TL. This value is simply multiplied by the estimated program impact of an additional 2,806 trees in Project villages.

[10] Technology adoption rate is calculated as taking the difference of the technology use before and after the program. Then if the household has started using the technology after the Project's start then the variable takes value 1. If the household has already been using the technology or has dropped using the technology then the variable takes 0.

40 percent in project villages among the poor households. In contrast only 18.2 percent of the poor households in control villages have adopted this technology in the 5 year period. Hence the impact on poor households is 21.8 percentage points.

- **Use of Milking Machine:** The prevalence of using the milking machine has increased for the households in the project villages with an adoption rate of 9.3 percent while the adoption rate in control villages is zero. Therefore no one in the control villages has started using this technology over this time period (Impact is statistically significant with p<0.01). For the households in the lowest asset quintile the impact of the program was similar with the overall impact. In 2008, no one from this group in the project villages was using milking machines. In 2013 the adoption rate is 9.1 percent. In comparison, the poorest group of households in control villages didn't report any use of milking machine either in 2008 or in 2013.

Except the technology tree inoculation in all other three of the technologies the impact of the project was higher for the direct beneficiaries of the project compared to the control group.

2. Access to Basic Education, Health and Infrastructure Services

Education

Educational enrolment: As of 2008, children under the age of 15 made up 39 percent of the village population in project villages while children and young adults (aged 0-24) in total made up 61% of the total population in project villages. Large households with many children were common in project villages. The average household size was 6.3 people compared to 4.1 on average in Turkey[11]. Hence, the area under consideration has larger households and more children per household than the average levels in Turkey and their well-being and investments in their potential through education has been a high priority for program activities.

Enrolment rates have increased both for boys and girls in all age groups in the project villages and in the control villages. Figure 4 provides the probability of enrolment by age level of children for project and control before and after program implementation.

For the age group 6-14, there was an increase in the probability of enrolment for both girls and boys in both project villages and control villages. The enrolment probability in this age group for boys has increased from 85.2 percent to 90.4 percent in project villages while the probability increased from 92.3 to 97.9 percent in control villages, making the overall impact of the program negative due to the higher improvement level in control villages (however the diffs-in-diffs estimator is not statistically significant). For girls in this age group there was even a higher increase in enrolment probabilities. The enrolment probability has increased from 71.6 percent to 93.6 percent in project villages while the probability increased from 74 to 82.9 percent in control villages, making the overall impact of the program 13.1 percentage points (statistically significant with p value <0.1).

For the age group 15-18, there was an increase in the probability of enrolment both for boys and girls and higher in project villages. The enrolment probability in this age group for boys has increased from 43.6 percent to 67.7 percent in project villages while in control villages the probability stayed almost stable from 50 to 52.5 percent. Hence the

[11] Source data: TURKSTAT statistics coming from the Household Budget Survey 2006.

overall impact of the program is 21.6 percentage points. There was even a higher increase in enrolment probabilities for girls in the age group 15-18. The enrolment probability in this age group for girls has **increased from 13 percent to 61.7 percent** in project villages while the probability increased from 10.3 to 44.2 percent in control villages. Hence the overall impact of the program is 14.8 percentage points[12].

Finally for the age group 19-25, there has been an increase in the probability of enrolment for both male and female young adults and in particular the increase has been higher in the project villages. In 2008 the probability of enrolment for males aged between 19-25 was very low with 7.4 percent in the project villages. In 2013 this rate has increased to 34.8 percent. In the control villages there has been a high increase as well, from 17.4 percent to 42.6 percent. But the overall increase has been higher in the project villages; making the impact of the program 2.2 percentage points for males (the difference is not statistically significant). The increase in the probability of enrolment in this age group for female young adults was starker in project villages compared to control villages. In project villages the probability of enrolment has risen from 5.3 percent to 34.5 percent for females aged 19-25 while in control villages there was only a very slight increase from 5.6 percent to 6.4 percent. (statistically significant with p-value <0.01).

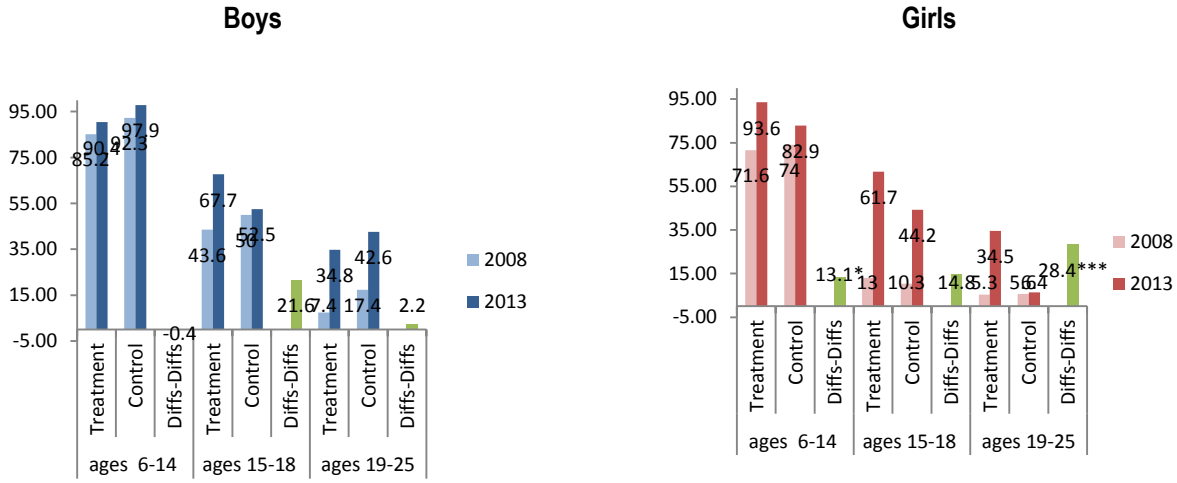
Educational attainment: With higher levels of enrolment, particularly among young girls, one observes that educational attainment levels have also risen in project villages. Basic education attainment levels[13] have increased in project villages both for men and women. In 2008, in project villages 69.8 percent of men (older than 15) had completed at least 8 years of education. This level has risen to 80.4 percent by 2013. In contrast in the control villages basic education attainment among men was already high with 83.9 percent of men older than 15 having a basic education degree at least. By 2013 this level has risen to 87.7 percent. Hence the overall impact of the program was 6.8 percentage points. The increase in basic education attainment levels in the five year period was starker for women. In 2008, 28.2 percent of women in project villages had finished a t least 8 years of education while this level has increased to 48.6 percent by 2013. There has been a similar increase in the control villages as well from 36.5 percent to 53.3 percent. (The differences in differences estimator -for both genders- is not statistically significant in regression results).

Literacy rates: Illiteracy was prevalent in 2008 among the population both in project villages and control villages and especially among women. In project villages illiteracy rate among males aged 15+ was 18.5 percent. After 5 years this rate has dropped down to 10 percent. While in control villages illiteracy rate among the male population declined less over the years. In 2008 the rate was11.4 percent and it dropped down to 6.3 percent. Hence the overall impact of the program is 3.4 percentage points. For females the improvements were smaller in the project villages compared to control villages. Illiteracy among the female population in project villages has dropped down from 50.9 percent to 42.3 percent while it dropped down from 52.7 percent to 37.9 percent in control villages. It is difficult, therefore, to establish program impact on male or female literacy levels.

[12] Note that while point estimates show that there is a large increase in project villages for enrolment of both girls and girls at the junior secondary school level, due to the small sample size for this age group it is difficult to establish statistical significance.

[13] These are the individuals who are 15 years old or older and who have completed at least basic education (8 years of education).

Figure 4. Enrolment rates in the villages has increased in all age levels and both for boys and girls



Note: Sample consists of children living in households that exist in both rounds of the survey.
The stars report significance results from the regressions. *** p<0.01, ** p<0.05, * p<0.1

Health Utilization

In this section, we consider health indicators that relate to the Millennium Development Goals in terms of maternal and child mortality, and hence focus on antenatal care utilization during pregnancy, proportion of deliveries at health facility and the use of family planning (contraceptive) methods.

Number of antenatal care visits in the last pregnancy has increased more in project villages compared to control villages. In 2008 an average woman in project villages reported going to visit the doctor 3.5 times during her last pregnancy while this number has increased to 6.3 in 2013. In control villages on the other hand the increase was only from 4.3 visits to 5.7 visits. Hence the overall impact is 1.5 visits on average. There has been a larger improvement for women living in beneficiary households[14] (treatment effect on the treated was higher). Average number of visits was 3.1 times in 2008 and it increased to 6.9, making the treatment effect on the treated 2.4 visits per pregnancy. Percent of births a woman gave in a hospital has increased in project villages slightly more than in control villages; however the difference was not statistically significant. (An average woman in the project villages has given 24.1 percent of the births in a hospital in 2008 while in 2013 this has increased to 35. While in control villages the increase was from 35.5 to 44.7. Hence the overall impact was 1.7 percentage points).

During the time period analyzed in the surveys, there has been a decline in the percentage of women using modern birth control methods both in project villages and control villages. On average 47.6 percent of women in project villages used modern birth control methods in 2008, while this levels has dropped down to 40.6 by 2013. While in control villages the decline was higher, from 42.1 percent to 33.3 percent. However there has been an improvement among women on this indicator in project beneficiary households. On average 38.5 percent of women living in beneficiary households used modern birth control methods in 2008 and this level rose slightly in 2013 to 41.2 percent.

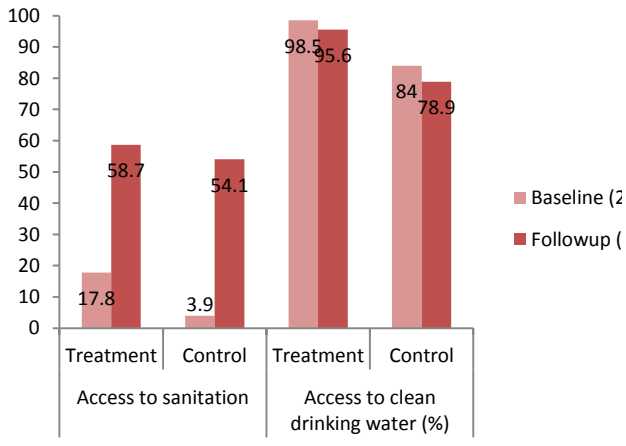
[14] Households that directly benefited from the Project are household that participated in at least one of these activities: participating in the cooperation, buying a beehive, cropping corn using silage machine, participating in handcrafting activities

Water and Sanitation

Access to clean water and sanitation are basic survival needs and has significant implications for public health, particularly through their impact on infant mortality rates. In this section of the report, we focus on indicators that related to safe drinking water and sanitation, as these indicators also link up with the Millennium Development Goals on reducing infant and child mortality.

The proportion of households that can reach clean drinking water has decreased in both project and control villages though the results are not statistically significant. Access to sanitation (defined as the percentage of households connected to the sewerage system) has increased in both project and control villages: In 2008 only 17.8 percent of the households reported they had access to sanitation in project villages while in 2013 this level has risen to 58.7 percent. However in the same time period, there was a more significant improvement in control villages. The proportion of households that have access to sanitation increased from 3.9 percent to 54.1 percent. The results relating to sanitation are likely to be a function of province level improvements in infrastructure services, rather than a specific output of the project.

Figure 3. Percentage of households that are connected to sewage increased while access to clean drinking water dropped



Villagers' level of satisfaction with the infrastructure in the village was asked in the survey as well. 50 percent of the villagers in project villages reported that they feel more satisfied with infrastructure compared to 5 years ago. In comparison in the control villages a slightly smaller proportion of people reported that they feel more satisfied. This rate was 46.1 percent in control villages.

4. Women's Empowerment and Participation in Decision-Making

Özyeğin Rural Development Program included promotion of a number of income generating activities for women. These income generating activities in return were expected to increase women's participation in decision making at home hence empowering women. It was difficult to establish an average program impact on women's empowerment indicators; however the survey results showed some significant empowerment impact on women that directly benefited from the program's activities.

As a proxy for women's economic empowerment, we use the variable on whether they "participate in household decision-making with regards to how household income is spent" at home. On average, the percentage of women reporting that they participate in household decision making regarding "how to spend household income" increased only slightly in project villages from 52.5 percent to 54.2 percent, while the increase was higher in control villages from 40.4 percent to 44.7 percent. On the other hand, the average improvement in women's participation in decision making in the household was higher for women *who live in households that directly benefited from the program*[15] compared to women living in control villages, regarding decisions

[15] Direct beneficiaries are individuals living in households at least one member of which is a member of the cooperative, or has bought beehive, or doing handicraft or producing corn silage.

on household spending and spending CCT (Conditional Cash Transfer) money. Participation in household decision making regarding household spending increased from 51.6 percent to 61.3 percent for these households. And participation in household decisions regarding spending CCT money has increased from 33.3 percent to 46.7 percent.

5. Overall Life Satisfaction in the Villages

Life satisfaction of the individuals in the villages has been measured in the post-test data in a survey module asking retrospective questions on "satisfaction" compared to five years ago when the project was launched. A number of indicators were measured including satisfaction with the village, household income and also satisfaction from the services like health, education and infrastructure in the villages. . The respondents needed to choose among three options: (i) whether their level of contentment has increased, (ii) whether it stayed the same, or (iii) whether it has decreased. Results show that overall, life satisfaction rose more in project villages in the time period analyzed compared to control villages, especially for men.(See Table 17 for detailed results)

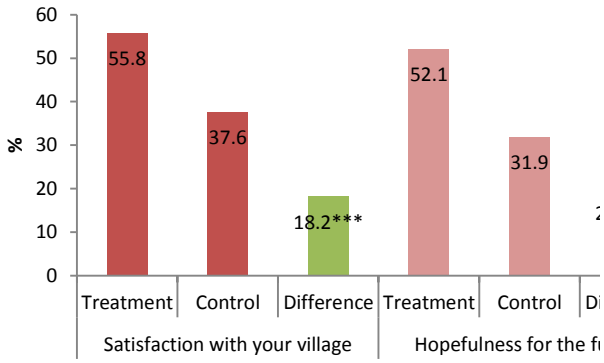
Overall, individuals in project villages reported feeling more satisfied with their village compared to 5 years ago. On average 55.8 percent of the individuals in Project villages reported that they feel more satisfied with their village compared to 37.6 percent reporting so in control villages. Furthermore the impact of living in a project village was found to be statistically significant in the regression. In line with this result most of the individuals in project villages (66.7 percent) reported that their "devotion to their village" (*köye bağlılık*) has increased over the 5 years. While in control villages this proportion is lower with 51.8 percent. Lastly, individuals in project villages further reported that their willingness to migrate to a city has decreased with 64.5 percent of the villagers reporting so, compared to 45.3 percent of villagers reporting a decrease in control villages.

There has been an increase in satisfaction with public services and cultural activities in the project villages as well. 65.9 percent of individuals living in project villages reported that they feel more satisfied with the health services in their village (or near their village) compared to five years ago. This level is also high in control villages with 59.6 percent of individuals reporting that they feel more content compared to five years ago. Satisfaction with the cultural and social activities in the villages increased rather mildly compared to satisfaction with the public services. However the difference between project and control villages is stark. In the project villages, 31 percent of the individuals reported feeling more satisfied with this aspect about their village compared to 3.6 percent of individuals reporting so in the control villages.

Satisfaction with education services has risen as well and more so in the project villages. 61.2 percent of individuals living in project villages reported that they feel more satisfied with the education services in their village (or near their village) compared to five years ago. This level is lower with 51.8 percent, for control villages. Individuals in project villages also reported that they feel more satisfied with the infrastructure in the village compared to five years ago. 50 percent of individuals living in project villages reported that they feel more satisfied with the infrastructure in the village compared to 46.1 percent of individuals in control villages. People in project villages feel more satisfied with the transportation services as well. 64.1 percent of villagers living in project villages reported being more satisfied with the transportation services while only 44.7 percent of villagers in control villages reporting an increase in their content on this topic.

The villagers' satisfaction with more personal aspects of their lives has also been investigated. Firstly, the proportion of individuals reporting that they are more satisfied with the houses they are living in is 45.6 percent in project villages, compared to 32.6 percent in control villages. Secondly, satisfaction about employment and income has also risen more in project villages. Proportion of villagers who are more satisfied with their jobs compared to 5 years ago is 37.3 percent compared to a rather low 19.1 percent in control villages. Compared to 5 years ago, 28.2 percent of villagers living in project villages feel more satisfied with the income from their jobs compared to a 9.4 percent in control villages. Similarly satisfaction with the overall household income has risen for a higher proportion of villagers in project villages compared to control villages. 31.8 percent of men in project villages reported an increase in their satisfaction compared to 14.2 percent in control villages. Lastly living in project villages had a significant impact on the self-confidence and being "hopeful" of the future with 52.1 percent of individuals in project villages reporting that they feel more hopeful about the future compared to 5 years ago and 54.8 percent reporting that they feel more self-confident. These proportions are lower in control villages with 31.9 percent of villagers reporting that they feel more hopeful for the future and 37.6 percent of villagers reporting they feel more self-confident compared to 5 years ago.

Figure 5. The program had a positive impact on villagers' reported satisfaction with the village and their "hopefulness" of the future



Note: Sample consists of individuals that also exist in the baseline survey.
The stars report significance results from the regressions. *** p<0.01, ** p<0.05, * p<0.1

One last topic that was investigated was if the villagers feel more satisfied with the communication and cooperation in their villages and cooperation with the other villages. Again a higher portion of individuals in project villages reported that they are more satisfied with the communication inside the village and between villages compared to individuals living in control villages. 63.1 percent of individuals in project villages reported that they feel more satisfied with "communication and cooperation" inside the village and 59.1 percent of individuals reported that they feel more satisfied with "communication and cooperation" in between villages. These proportions are lower for control villages with 51.1 percent and 47.1 percent respectively.

Conclusion

As the Özyeğin Rural Development Program concludes its five years in Bitlis, in the Kavar Cluster of villages, the program is able to demonstrate significant impact on households in the project villages on a number of indicators. The program has had a significant impact on raising employment levels, among both men and women in the villages and particularly among the youth. A higher percentage of treatment village households are active in the labor market as a result of the program. The program has also contributed to real gains in household income as measured by monthly per capita income of individuals measured in real terms (in 2008 prices). The impact of the program is estimated at 43 percent increase in real per capita incomes of the villagers that directly participated in program activities. Increased productive asset accumulation such as animal livestock and trees constituted one way in which the villagers benefited from the program. Another mechanism that contributed to higher incomes was the adoption of agricultural technologies and having access to a village cooperative for the sale of their agricultural products.

In terms of access to basic education and health services, the program has contributed to the enrolment rates of children, particularly girls in school. Most significantly, the enrolment rates of girls in secondary school has increased by 14.8 percentage points (for 15-18 age group) and 28.4 (for 19-25 age group) as a result of the program. The program has also had demonstrated impact on the utilization of health services during pregnancy and birth by women, which is important for consequently having an impact on maternal and infant mortality rates.

The impact of the program on women's empowerment was difficult to establish looking at the average change in empowerment of women in the treatment villages. However, when the impact of the program was considered directly on households that benefited directly from program activities, one could see a positive impact of the program on women's empowerment, in terms of participation in economic decisions-making in the home.

Finally, and perhaps most importantly, in terms of overall life satisfaction in the villages, the program had a positive impact on the villager's reported satisfaction with the village and their hopefulness for the future. These villagers also reported that they were more satisfied with the level of "communication and cooperation" within their village now compared to before, and these increases in satisfaction levels were higher for project villages than for control villages. Given the post-conflict nature of these villages, establishing a safe base for economic and social activity, and improving cooperation among villagers and across villages in the district has been one of the successes of the program. Beyond the direct economic and human development gains established by the Program, these somewhat difficult to measure contributions to the feeling of security, safety, peace and cooperation within the villages, are also considered to be a very important contribution of the program to the development of the post-conflict development of this area.

Annex Tables

Table 1 Labor Force Status for Individuals (ages 15+) in Treatment and Control Villages Before and After Program Implementation

Treatment Villages		Employed		Unemployed		Inactive		Worked in past year as a Seasonal Worker	
		Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up
Gender	Female	42.1	54.8	5.6	2.1	52.3	43.1	1.2	1.4
	Male	58.5	70.8	13.1	6.5	28.4	22.7	12.7	6.6
Educational Attainment of	Illiterate or no diploma	43.4	57.7	7.3	1.2	49.3	41.1	2.9	0.8
	Primary School	61.4	72.7	11.6	6.7	27	20.6	12.1	5.6
	Basic Education or Junior High	57.4	69.2	5.6	11.5	37	19.2	10.9	7.3
	Secondary School or Above	52.4	81.3	14.3	12.5	33.3	6.3	0	6.3
Household Asset Quintile	Quint 1 (Poorest)	40.3	65.2	6.9	2.9	52.8	31.9	13.2	0
	Quint 2	54.3	56	7.4	6.7	38.3	37.3	8.5	12.3
	Quint 3	42.8	58.6	7.8	3.8	49.4	37.6	8.2	3
	Quint 4	57.3	65.4	14.6	5.1	28	29.5	5.4	3.7
	Quint 5 (Richest)	54.4	69.2	7.2	4.1	38.4	26.7	2.8	3.4
Village name	Dibekli	50	79.7	5.7	1.7	44.3	18.6	7.5	1.5
	Tokaclı	44.2	67.2	8.2	4.5	47.6	28.4	5.2	4.2
	Bolalan	54.9	64.9	5.9	5.2	39.2	29.9	9.6	1.3
	Düzcealan	35.5	63.9	12.9	2.8	51.6	33.3	0	8.3
	Kolbası	68.8	30.4	1	10.9	30.2	58.7	1.9	4.3
	Yassıca	40.5	73.4	24.3	0.8	35.1	25.8	10.5	7.4
TOTAL	in Treatment Group	50.3	63.3	9.4	4.5	40.3	32.2	6.9	4.1

Note: Sample consists of individuals living in households that exist in both rounds of the survey.

Control Villages		Employed		Unemployed		Inactive		Worked in past year as a Seasonal Worker	
		Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up
Gender	Female	67.5	58.3	5.3	1.3	27.2	40.4	0.4	0
	Male	71.2	57.4	13.7	8.7	15.1	33.9	5.9	1.7
Educational Attainment of	Illiterate or no diploma	70.3	65.8	4.2	4.1	25.5	30.1	1.2	0
	Primary School	70.7	62.4	12	2.3	17.4	35.3	3.7	0
	Basic Education or Junior High	64.6	56.8	20.8	11.4	14.6	31.8	10.2	2.2
	Secondary School or Above	53.3	45.5	20	27.3	26.7	27.3	0	9.1
Household Asset Quintile	Quint 1 (Poorest)	79	62.8	6.5	3.8	14.5	33.3	1.5	2.5
	Quint 2	76.5	50.9	6.9	9.4	16.7	39.6	2.9	0
	Quint 3	51.3	57.8	11.5	4.8	37.2	37.3	5.1	1.2
	Quint 4	77	52.5	2.7	3.8	20.3	43.8	1.4	1.3
	Quint 5 (Richest)	65.6	64.6	15.3	2.7	19.1	32.7	3.7	0
Village name	Akcalı	78.9	38.9	0	0	21.1	61.1	0	5.6
	Asağı Ölek	33.3	66.7	33.3	0	33.3	33.3	11.1	0
	Bayramalan	58.1	80.8	9.3	0	32.6	19.2	2.3	0
	Bölükyazı	69	53.7	10.2	5.8	20.8	40.5	2.3	0.6
	İcgecit	79.1	65	6	8.3	14.9	26.7	7.5	0
	Yukarı Ölek	83.3	42.9	0	0	16.7	57.1	0	14.3
TOTAL	in Control Group	69.4	57.8	9.4	5	21.3	37.2	3.1	0.9

Note: Sample consists of individuals living in households that exist in both rounds of the survey.

Table 2 Employment rates in treatment and control villages and difference in difference estimators

	Male Employment Rate		Female Employment Rate		Male Seasonal Employment Rate	
	Treatment	Control	Treatment	Control	Treatment	Control
Baseline (2008)	58.5	71.2	42.1	67.5	12.7	5.9
Followup (2013)	70.8	57.4	54.8	58.3	6.6	1.7
DifferenceFollowup-Baseline	12.3	-13.8	12.7	-9.2	-6.1	-4.2
Diffs in Diffs estimator	26.1***		21.9***		-1.9	

Note: Sample consists of individuals living in households that exist in both rounds of the survey. The stars report significance results from the regression. *** p<0.01, ** p<0.05, * p<0.1

Table 3 Labor Force Status for Individuals (ages 15-29) in Treatment and Control Villages Before and After Program Implementation

Treatment Villages		Employed		Unemployed		Inactive	
		Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up
Gender	Female	43.3	55.3	5.7	4.9	51.1	39.8
	Male	55.5	64.1	17.5	9.2	27	26.8
Educational Attainment of	Illiterate or no diploma	47.3	57.4	7.7	5.6	45.1	37
	Primary School	52.5	67.2	14.1	9.4	33.3	23.4
	Basic Education or Junior High	56	65.9	6	13.6	38	20.5
	Secondary School or Above	43.8	77.8	18.8	11.1	37.5	11.1
Household Asset Quintile	Quint 1 (Poorest)	44.8	55.6	6.9	7.4	48.3	37
	Quint 2	63.4	50	4.9	12.5	31.7	37.5
	Quint 3	36.8	52.2	11.8	9	51.5	38.8
	Quint 4	55.3	65.2	17.1	6.1	27.6	28.8
	Quint 5 (Richest)	48.4	68.5	10.9	4.1	40.6	27.4
Village name	Dibekli	50	95.5	5.9	0	44.1	4.5
	Tokaclı	39.2	55	13.5	10	47.3	35
	Bolalan	53.7	60.5	6.1	7.9	40.2	31.6
	Düzcealan	30	52.9	20	5.9	50	41.2
	Kolbası	80.6	31.4	2.8	14.3	16.7	54.3
	Yassıca	35.7	70.9	28.6	1.8	35.7	27.3
TOTAL	in Treatment Group	49.3	60	11.5	7.2	39.2	32.8

Note: Sample consists of individuals living in households that exist in both rounds of the survey.

Control Villages		Employed		Unemployed		Inactive	
		Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up
Gender	Female	67.2	51	6.7	0	26.1	49
	Male	63.8	39.4	18.1	15.2	18.1	45.5
Educational Attainment of	Illiterate or no diploma	79	72.7	4.8	3	16.1	24.2
	Primary School	56.8	47.2	17.3	1.9	25.9	50.9
	Basic Education or Junior High	63.2	41.4	21.1	17.2	15.8	41.4
	Secondary School or Above	53.8	25	15.4	37.5	30.8	37.5
Household Asset Quintile	Quint 1 (Poorest)	82.8	53.3	6.9	6.7	10.3	40
	Quint 2	70.2	44.9	8.5	10.2	21.3	44.9
	Quint 3	48.8	41.2	9.8	8.8	41.5	50
	Quint 4	80	37.5	2.9	5	17.1	57.5
	Quint 5 (Richest)	58.3	50	22.2	6.3	19.4	43.8
Village name	Akcalı	100	50	0	0	0	50
	Aşağı Ölek	0	66.7	66.7	0	33.3	33.3
	Bayramalan	65	70.4	10	0	25	29.6
	Bölükyazı	65	41.2	12.3	7.4	22.7	51.5
	İcgecit	66.7	37.5	10	20.8	23.3	41.7
	Yukarı Ölek	100	25	0	0	0	75
TOTAL	in Control Group	65.6	45.3	12.1	7.5	22.3	47.3

Note: Sample consists of individuals living in households that exist in both rounds of the survey.

Table 4 Youth (ages 15-29) employment rates in treatment and control villages and difference in difference estimators

	Male Employment Rate		Female Employment Rate	
	Treatment	Control	Treatment	Control
Baseline (2008)	55.5	63.8	43.3	67.2
Followup (2013)	64.1	39.4	55.3	51
DifferenceFollowup-Baseline	8.6	-24.4	12	-16.2
Diffs in Diffs estimator	33***		28.2***	

Note: Sample consists of individuals living in households that exist in both rounds of the survey. The stars report significance results from the regression. *** p<0.01, ** p<0.05, * p<0.1

Table 5 Monthly average and median real income per capita of households in treatment and control villages

Treatment villages	Monthly mean income per capita		Monthly median income per capita	
	Baseline	Follow-up	Baseline	Follow-up
Educational Attainment of Household Head in baseline				
Illiterate or no diploma (n=53)	110.1	90.1	50	60.3
Primary school (n=93)	79.7	131.7	60	58.7
Basic education or Junior High School (n=5)	128	156.3	108.3	88
Senior High School or Above (n=4)	119.8	155.4	112.5	158.4
Total (n=155)	92.9	119.2	60	60.3
Quintiles of Household Assets (1-5)				
Asset Quint 1 (n=25)	84.6	102.1	37.7	70.4
Asset Quint 2 (n=24)	61.5	247.8	60	65.4
Asset Quint 3 (n=41)	99.9	84.8	60	60.3
Asset Quint 4 (n=40)	109.5	72.1	52.7	51.5
Asset Quint 5 (n=30)	93.6	132	83.3	93.8
Total (n=160)	93.2	118.5	60	64.2
Koy ID (01-12) - (1-6 in Treatment 7-12 in Control)				
Dibekli (n=16)	37.9	67.9	30	51.5
Tokacli (n=35)	81.3	76.6	83.3	60.3
Bolalan (n=36)	50.8	116.2	32.1	67.3
Duzcealan (n=10)	125.8	147	100	117.3
Kolbasi (n=30)	153.3	226	83.3	82.1
Yassica (n=33)	110.9	104.4	50	47.1
Total (n=160)	93.2	118.5	60	64.2

Note: Sample consists of households that exist in both rounds of the survey.

Control villages	Monthly mean income per capita		Monthly median income per capita	
	Baseline	Follow-up	Baseline	Follow-up
Educational Attainment of Household Head in baseline				
Illiterate or no diploma (n=18)	90.8	65.4	62.5	39.1
Primary school (n=79)	198.8	71.8	77.8	49.1
Basic education or Junior High School (n=9)	42	64.2	18.2	39.5
Senior High School or Above (n=3)	397.2	154	200	154
Total (n=109)	175.1	71.8	77.3	46.9
Quintiles of Household Assets (1-5)				
Asset Quint 1 (n=22)	137.1	73.4	52.8	46.9
Asset Quint 2 (n=28)	142.9	96.4	84.4	40.6
Asset Quint 3 (n=19)	374.3	64.7	136.9	43
Asset Quint 4 (n=17)	105.8	42.7	85	44.8
Asset Quint 5 (n=23)	121.9	66.1	63.5	66
Total (n=109)	175.1	71.8	77.3	46.9
Koy ID (01-12) - (1-6 in Treatment 7-12 in Control)				
Akcali (n=8)	114.3	100.7	100	23.5
Asagi Olek (n=3)	16.7	15.6	0	0
Bayramalan (n=11)	51.5	33.9	49	32
Bolukyazi (n=66)	233.3	66.3	81.4	51.5
Icgecit (n=19)	110.6	111.4	100	58.7
Yukari Olek (n=2)	25	30.2	25	30.2
Total (n=109)	175.1	71.8	77.3	46.9

Beneficiary households	Monthly mean income per capita		Monthly median income per capita	
	Baseline	Follow-up	Baseline	Follow-up
Circumstance: Educational Attainment of Household Head in				
Illiterate or no diploma (n=22)	81.2	79.3	45.8	52.8
Primary school (n=41)	95.4	157.8	80	58.7
Basic education or Junior High School (n=4)	87.4	160.2	83.3	84.2
Senior High School or Above (n=2)	182.5	246.3	182.5	246.3
Total (n=69)	92.9	135.3	71.4	60.3
Circumstance: Quintiles of Household Assets (1-5)				
Asset Quint 1 (n=8)	148.4	126.8	166.7	96.8
Asset Quint 2 (n=15)	72.7	295.5	62.5	60.3
Asset Quint 3 (n=12)	150.6	50.2	80	44
Asset Quint 4 (n=20)	65	52.4	52.1	50.3
Asset Quint 5 (n=17)	99.2	140	80.1	97.2
Total (n=72)	93.5	133.7	71.4	60.3
Koy ID (01-12) - (1-6 in Treatment 7-12 in Control)				
Dibekli (n=7)	40.6	68.3	37.7	70.4
Tokacli (n=8)	139	116.3	114.3	79.2
Bolalan (n=12)	50.6	83.5	48.2	58.7
Duzcealan (n=2)	125	155.8	125	155.8
Kolbasi (n=20)	87.2	300.5	80	82.1
Yassica (n=23)	116.8	83.9	61.3	42.2
Total (n=72)	93.5	133.7	71.4	60.3

Note: Sample consists of households that exist in both rounds of the survey.

Table 6 Average real monthly income per capita in treatment villages, control villages and for the project beneficiary households and difference in difference estimators

	Average real income per capita		
	Treatment	Control	Beneficiary households
Baseline (2008)	93.2	175.1	93.5
Follow-up (2013)	118.5	71.8	133.7
Difference Followup-Baseline	25.3	-103.3	40.2
Diffs in Diffs estimator	128.6***		143.5**

Note: Sample consists of households that exist in both rounds of the survey. The stars report significance results from the regressions. *** p<0.01, ** p<0.05, * p<0.1

Table 7 Total number of animals and tress in treatment and control villages and difference in difference estimators

Total	Cows		Sheep and goat		Trees	
	Treatment	Control	Treatment	Control	Treatment	Control
Baseline (2008)	362	174	1655	929	3652	638
Follow-up (2013)	693	172	2552	1440	6609	789
Difference Followup-Baseline	331	-2	897	511	2957	151
Diffs in Diffs estimator	333		386		2806	

Note: Sample consists of households that exist in both rounds of the survey.

Table 8 Prevalence of Agricultural Technology Use and Technology Adoption rates in treatment villages, control villages and among project beneficiaries

			Inoculation of Trees (%)		Use of Mowing Machine (%)		Use of Haymaker (%)		Use of Milking Machine (%)	
			Baseline	Adoption	Baseline	Adoption	Baseline	Adoption	Baseline	Adoption
Treatment Villages	Educational Attainment of HH	Illiterate or no diploma	20.8	24.5	39.6	26.4	52.8	15.1	2.6	2.6
		Primary School	19.4	25.8	30.1	35.5	45.2	28.0	2.8	11.1
		Basic Education or Junior High	40.0	0.0	40.0	40.0	40.0	40.0	0.0	40.0
		Secondary School or Above	25.0	50.0	25.0	50.0	50.0	25.0	0.0	0.0
	Household Asset Quintile	Quint 1 (Poorest)	8.0	32.0	16.0	36.0	28.0	40.0	0.0	9.1
		Quint 2	29.2	16.7	29.2	20.8	33.3	25.0	5.3	0.0
		Quint 3	14.6	24.4	29.3	31.7	43.9	19.5	3.1	3.1
		Quint 4	22.5	27.5	30.0	40.0	55.0	20.0	0.0	3.1
		Quint 5 (Richest)	26.7	30.0	56.7	36.7	63.3	26.7	4.2	33.3
	Village name	Dibekli	18.8	50.0	18.8	62.5	37.5	56.3	0.0	30.0
		Tokaçlı	22.9	34.3	37.1	28.6	45.7	14.3	0.0	3.7
		Bolalan	22.2	22.2	36.1	30.6	55.6	22.2	3.7	11.1
		Düzcealan	40.0	10.0	50.0	10.0	60.0	0.0	0.0	0.0
		Kolbası	13.3	13.3	33.3	33.3	56.7	23.3	0.0	18.2
		Yassıca	15.2	27.3	24.2	36.4	27.3	33.3	7.7	0.0
	TOTAL	**in Treatment Group**	20.0	26.3	32.5	33.8	46.3	25.0	2.5	9.3

Control Villages	Educational Attainment of HH	Illiterate or no diploma	22.2	22.2	5.6	22.2	22.2	11.1	0.0	0.0
		Primary School	20.3	13.9	2.5	16.5	3.8	15.2	2.1	0.0
		Basic Education or Junior High	22.2	11.1	0.0	11.1	0.0	33.3	0.0	0.0
		Secondary School or Above	33.3	33.3	33.3	33.3	33.3	33.3	0.0	0.0
	Household Asset Quintile	Quint 1 (Poorest)	4.5	13.6	0.0	18.2	4.5	18.2	0.0	0.0
		Quint 2	21.4	7.1	10.7	14.3	10.7	14.3	0.0	0.0
		Quint 3	21.1	21.1	0.0	21.1	5.3	15.8	0.0	0.0
		Quint 4	11.8	35.3	5.9	17.6	17.6	17.6	8.3	0.0
		Quint 5 (Richest)	43.5	8.7	0.0	17.4	0.0	17.4	0.0	0.0
	Village name	Akçalı	12.5	0.0	0.0	25.0	0.0	25.0	0.0	0.0
		Aşağı Ölek	0.0	33.3	0.0	100.0	0.0	100.0	0.0	0.0
		Bayramalan	27.3	9.1	9.1	9.1	9.1	9.1	0.0	0.0
		Bölükyazı	22.7	13.6	3.0	12.1	7.6	12.1	0.0	0.0
		İçgeçit	21.1	26.3	0.0	21.1	0.0	21.1	7.1	0.0
		Yukarı Ölek	0.0	50.0	50.0	50.0	100.0	0.0	0.0	0.0
	TOTAL	**in Control Group**	21.1	15.6	3.7	17.4	7.3	16.5	1.4	0.0
Beneficiary Households	Educational Attainment of HH	Illiterate or no diploma	18.2	13.6	13.6	36.4	27.3	22.7	0.0	5.6
		Primary School	17.1	26.8	31.7	39.0	46.3	34.1	0.0	19.4
		Basic Education or Junior High	50.0	0.0	50.0	50.0	50.0	50.0	0.0	50.0
		Secondary School or Above	0.0	50.0	0.0	100.0	50.0	50.0	0.0	0.0
	Household Asset Quintile	Quint 1 (Poorest)	12.5	50.0	0.0	62.5	0.0	75.0	0.0	50.0
		Quint 2	13.3	20.0	26.7	20.0	26.7	26.7	0.0	0.0
		Quint 3	16.7	16.7	8.3	41.7	33.3	33.3	0.0	10.0
		Quint 4	30.0	15.0	25.0	45.0	50.0	25.0	0.0	5.6
		Quint 5 (Richest)	11.8	29.4	47.1	47.1	58.8	29.4	0.0	40.0
	Village name	Dibekli	28.6	28.6	14.3	57.1	28.6	57.1	0.0	40.0
		Tokaçlı	12.5	62.5	37.5	50.0	25.0	37.5	0.0	16.7
		Bolalan	25.0	16.7	50.0	25.0	66.7	16.7	0.0	22.2
		Düzcealan	0.0	50.0	0.0	50.0	50.0	0.0	0.0	0.0
		Kolbaşı	20.0	15.0	25.0	40.0	50.0	35.0	0.0	26.7
		Yassıca	13.0	17.4	13.0	43.5	21.7	34.8	0.0	0.0
	TOTAL	in Project Beneficiaries in Treatment Group	18.1	23.6	25.0	41.7	38.9	33.3	0.0	16.4

Note: Sample consists of households that exist in both rounds of the survey.

Table 9 Technology adoption rates from 2008 to 2013 and differences in the adoption rates

	Tree inoculation						Mowing machine					
	Overall			Poor hhs			Overall			Poor hhs		
	Treatment	Control	Beneficiary households	Treatment	Control	Beneficiary households	Treatment	Control	Beneficiary households	Treatment	Control	Beneficiary households
Adoption rate	26.3	15.6	23.6	32.0	13.6	50.0	33.8	17.4	41.7	36.0	18.2	62.5
Difference	10.7**		8	18.4		36.4**	16.4***		24.3***	17.8		44.3**
	Haymaker						**Milking machine**					
	Overall			Poor hhs			Overall			Poor hhs		
	Treatment	Control	Beneficiary households	Treatment	Control	Beneficiary households	Treatment	Control	Beneficiary households	Treatment	Control	Beneficiary households
Adoption rate	25.0	16.5	33.3	40.0	18.2	75.0	9.3	0.0	16.4	9.1	0.0	50.0
Difference	8.5*		16.8***	21.8		56.8***	9.3***		16.4***	9.1		50*

Note: Sample consists of households that exist in both rounds of the survey. The stars report significance results from the regressions. *** p<0.01, ** p<0.05, * p<0.1

Table 10 Infrastructure in treatment and control villages and difference in difference estimators

	Household's toilet pours into sewage (%)		Household has clean drinking water (%)	
	Treatment	Control	Treatment	Control
Baseline (2008)	17.8	3.9	98.5	84
Follow-up (2013)	58.7	54.1	95.6	78.9
Difference Follow-up-Baseline	40.9	50.2	-2.9	-5.1
Diffs in Diffs estimator	-9.3		2.2	

Note: Sample consists of households that exist in both rounds of the survey.

Table 11 Probability of Enrolment by Age group, primary school attainment rate and illiteracy rates in treatment and control villages

			Probability of Enrolment for children aged 5		Probability of Enrolment for children ages 6-14		Probability of Enrolment for children ages 15-		Probability of Enrolment for ages 19-25		Basic education attainment for individuals aged		Illiteracy rate for individuals aged 15+	
			Baseline	Follow-up	Baseline	Follow-	Baseline	Follow-	Baseline	Follow-	Baseline	Follow-	Baseline	Follow-up
Treatment Villages	**Gender**	Female	7.7	35.3	71.6	93.6	13	61.7	5.3	34.5	28.2	48.6	50.9	42.3
		Male	16.7	25	85.2	90.4	43.6	67.7	7.4	34.8	69.8	80.4	18.5	10
	Educational Attainment of HH	Illiterate or no diploma	14.3	37.5	68.7	83.6	29.3	56.5	3.7	22.2	27.6	51.8	45.1	34.7
		Primary School	12.5	27.8	80.8	95.1	19.1	65.4	7.5	34.8	60.2	71.7	30.4	21.4
		Basic Education or Junior	0	0	100	75	28.6	100	12.5	45.5	57.1	52.9	20.8	20
		Secondary School or Above	0		100	100	75	100	0	75	77.8	91.7	13.3	5.3
	Number of children at home	1-2 children	0	33.3	79.5	97.2	29.5	66.7	8.3	38.3	50.8	60	28.2	22.3
		3-4 children	13.3	23.1	80.5	93.8	26.5	64.3	5.7	35.6	51.8	70.7	32.6	22.4
		5 or more children	14.3	40	75	87.5	11.1	65.6	0	28.6	46.4	67.9	38.6	24.5
	Household Asset Quintile	Quint 1 (Poorest)	0	20	62.5	72.2	18.2	77.8	0	21.4	37.7	60.6	46.6	36.5
		Quint 2	0	25	82.9	100	21.4	70.6	0	23.1	46.2	65.4	35.4	30.7
		Quint 3	30	33.3	77.1	96.9	26.5	53.1	3.1	33.3	49.4	67.3	37	26.3
		Quint 4	0	75	84.5	94.2	30	64	15.9	29.2	45.2	60.1	38.7	25.9
		Quint 5 (Richest)	0	20	80	92.7	28.6	73.1	3	47.5	56.3	69	23	15.3
	Village name	Dibekli	0		84	91.3	21.4	66.7	4.3	30	48.6	56.1	32.9	25.4
		Tokaçlı	42.9	40	73.3	95.8	18.2	52.2	5.7	32.3	43.9	63.6	37.3	29
		Bolalan	0	40	71.8	81	30	58.6	4.7	35.3	51.4	65.8	31.5	25.3
		Düzcealan	0		82.4	100	14.3	62.5	0	33.3	50	73.7	43.3	22.2
		Kolbaşı	0	50	94.6	100	46.7	78.6	15	45.5	55.6	66.3	35.4	19.8
		Yassıca	0	75	78	94.2	28	78.3	4.5	34.6	40.9	65.4	36.7	25.2
	TOTAL	**in Treatment Group**	12	31	78.4	92.1	26.6	65.1	6.3	34.7	47.9	64.8	35.3	25.1
Control Villages	**Gender**	Female	66.7	23.1	74	82.9	10.3	44.2	5.6	6.4	36.5	53.3	52.7	37.9
		Male	63.6	78.6	92.3	97.9	50	52.5	17.4	42.6	83.9	87.7	11.4	6.3
	Educational Attainment of HH	Illiterate or no diploma	60	33.3	92.3	95.2	50	36.4	18.8	54.5	20.8	43.1	60	37.3
		Primary School	64.3	63.2	83.6	90.6	22.6	50	9.6	17.6	65.2	73.6	29.1	20.7
		Basic Education or Junior High	100	33.3	74.2	88.2	50	46.7	0	40	64.5	79.6	27.3	14
		Secondary School or Above			100	100	0	100	16.7	20	12.5	61.5	33.3	25
	Number of children at home	1-2 children	100	50	86.7	90.5	8.3	50	2.9	13.5	64.3	68.7	28.6	19.6
		3-4 children	55.6	60	84.3	93	38.5	48.6	18.2	33.3	64	74.5	26.5	15.3
		5 or more children	66.7	50	81.2	88.9	41.7	47.2	8.3	23.8	56	75.8	41.2	25.4
	Household Asset Quintile	Quint 1 (Poorest)	25	80	91.5	93	40	42.9	14.3	27.3	54.2	64.8	43.3	22.7
		Quint 2	83.3	20	80.9	88.4	36.4	44.4	10.5	21.4	47.1	69.9	37	21.1
		Quint 3	60	66.7	83.3	91.2	33.3	50	7.1	37.5	63.4	70.6	34.2	26.6
		Quint 4	100	66.7	78.9	96.2	33.3	47.1	5	29.4	54.5	72.1	30.4	16.9

	Quint 5 (Richest)	75	50	81	87.9	5.6	60	15	13.6	67.2	71.4	26.4	23.6
Village name	Akçalı		0	60	33.3	100	0	0	100	27.8	40	66.7	44.4
	Aşağı Ölek	0		55.6	33.3	0	40	0	100	66.7	90.9	0	0
	Bayramalan	100		74.2	84.2	57.1	42.9	0	15.4	62.2	75.9	25.6	13.2
	Bölükyazı	69.2	66.7	87.7	96.7	21.3	48.1	12.2	18.2	60	68.4	33.4	23.9
	İçgeçit	66.7	66.7	84.6	88.9	27.3	62.5	14.3	45.5	59.6	77.9	28.1	16.9
	Yukarı Ölek	0		100	100	66.7	100	.	100	0	62.5	75	42.9
TOTAL	**in Control Group**	65	51.9	83.3	91.1	28.2	48.2	11	24.5	58.3	69.9	33.1	22.2

Note: Sample consists of individuals living in households that exist in both rounds of the survey.

Table 12 Difference in difference estimator for enrolment rates, illiteracy rates and basic education attainment rate

	Enrolment rate for age 5				**Enrolment rate for ages 6-14**				**Enrolment rate for ages 15-18**				**Enrolment rate for ages 19-25**				**Basic education attainment rate**				**Illiteracy rate (ages 15+)**			
	Male		Female		Male		Female		Male		Female		Male		Female		Male		Female		Male		Female	
	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control	Treatment	Control
Baseline (2008)	16.7	63.6	7.7	66.7	85.2	92.3	71.6	74	43.6	50	13	10.3	7.4	17.4	5.3	5.6	69.8	83.9	28.2	36.5	18.5	11.4	50.9	52.7
Followup (2013)	25	78.6	35.3	23.1	90.4	97.9	93.6	82.9	67.7	52.5	61.7	44.2	34.8	42.6	34.5	6.4	80.4	87.7	48.6	53.3	10	6.3	42.3	37.9
Difference Posttest-Baseline	8.3	15	27.6	-43.6	5.2	5.6	22	8.9	24.1	2.5	48.7	33.9	27.4	25.2	29.2	0.8	10.6	3.8	20.4	16.8	-8.5	-5.1	-8.6	-14.8
Diffs in Diffs estimator	-6.7		71.2**		-0.4		13.1*		21.6		14.8		2.2		28.4***		6.8		3.6		-3.4		6.2	

Note: Sample consists of individuals living in households that exist in both rounds of the survey. The stars report significance results from the regressions. *** p<0.01, ** p<0.05, * p<0.1

Table 13 Women's Fertility Choices and Maternal Health

Treatment villages	2008			2013		
	Percentage of births in hospital (%)	Number of antenatal care visits during last Pregnancy	Using modern birth control methods (%)	Percentage of births in hospital (%)	Number of antenatal care visits during last Pregnancy	Using modern birth control methods (%)
Educational Attainment (level of schooling)						
Illiterate or no diploma	21.6	2.9	63.6	30.2	5.2	31.3
Primary school	31.4	4.5	33.3	42.5	8.8	50
Basic education or Junior High School	0	0		100	9	0
Total	24.3	3.5	50	35.3	6.4	38.7
Circumstance: Quintiles of Household Assets (1-5)						
Asset Quint 1	24.1	6	33.3	46.9	8.8	28.6
Asset Quint 2	28.7	1.3	50	39.5	2.2	50
Asset Quint 3	25.7	3.4	50	25.8	7.7	50
Asset Quint 4	7.7	2.6	60	28.6	7.8	33.3
Asset Quint 5	40.6	3.5	33.3	37.2	5	40
Treatment Total	24.1	3.5	47.6	35	6.3	40.6

Beneficiary households	2008			2013		
	Percentage of births in hospital (%)	Number of antenatal care visits during last Pregnancy	Using modern birth control methods (%)	Percentage of births in hospital (%)	Number of antenatal care visits during last Pregnancy	Using modern birth control methods (%)
Educational Attainment (level of schooling)						
Illiterate or no diploma	26.8	3	50	32.9	4.8	20
Primary school	27.9	3.1	33.3	39.9	9.9	45.5
Total	27.3	3.1	41.7	36	7.1	37.5
Circumstance: Quintiles of Household Assets (1-5)						
Asset Quint 1	100	1		100	6	0
Asset Quint 2	30	1.3	40	44.2	2.5	50
Asset Quint 3	18.1	4	0	19	11.4	50
Asset Quint 4	9.7	3.4	50	23.2	8.9	50
Asset Quint 5	47.5	3.5	50	38	4.6	25
Beneficiary Households in Treatment villages Total	26.8	3.1	38.5	35.4	6.9	41.2

Control villages	2008			2013		
	Percentage of births in hospital (%)	Number of antenatal care visits during last Pregnancy	Using modern birth control methods (%)	Percentage of births in hospital (%)	Number of antenatal care visits during last Pregnancy	Using modern birth control methods (%)
Educational Attainment (level of schooling)						
Illiterate or no diploma	31.2	4.2	36.4	43.3	5.4	35.7
Primary school	42.3	4.6	50	45.6	6.4	30
Total	35.4	4.3	42.1	44.1	5.7	33.3
Circumstance: Quintiles of Household Assets (1-5)						
Asset Quint 1	30.4	3.7	25	38.9	7.5	50
Asset Quint 2	34.4	3.4	25	34.4	5.2	22.2
Asset Quint 3	42.1	3.4	33.3	68	4.3	42.9
Asset Quint 4	44.2	4.2	25	79.2	4.3	
Asset Quint 5	27.6	8.5	100	20.3	5.8	0
Control Total	35.5	4.3	42.1	44.7	5.7	33.3

Note: Sample limited to women responding to the survey in both rounds and between the ages of 15-45 in baseline.

Table 14 Difference in difference estimator for indicators of women's health

	Percentage of births in hospital (%)			Number of antenatal care visits			Using modern birth control methods (%)		
	Treatment	Control	Beneficiary households	Treatment	Control	Beneficiary households	Treatment	Control	Beneficiary households
Baseline (2008)	24.1	35.5	26.8	3.5	4.3	3.1	47.6	42.1	38.5
Followup (2013)	35	44.7	35.4	6.3	5.7	6.9	40.6	33.3	41.2
Difference Followup-Baseline	10.9	9.2	8.6	2.8	1.4	3.8	-7	-8.8	2.7
Diffs in Diffs estimator	1.7		-0.6	1.4		2.4	1.8		11.5

Note: Sample limited to women responding to the survey in both rounds and between the ages of 15-45 in baseline.

Table 15 Women's Empowerment: Participation in decision making in the households

Treatment Villages	2008			2013		
	Participation in decisions of household spending (%)	Participation in decisions of raising children (%)	Participation in decision of using CCT money (%)	Participation in decisions of household spending (%)	Participation in decisions of raising children (%)	Participation in decisions of using CCT money (%)
Educational Attainment (level of schooling)						
Illiterate or no diploma	44.7	66.7	50	47.4	51.4	45.9
Primary school	68.4	58.8	29.4	68.4	70.6	47.1
Basic education or Junior High	0	0	0	0	0	100
Total	51.7	63	42.6	53.4	56.4	47.3
Circumstance: Quintiles of						
Asset Quint 1	58.3	54.5	27.3	58.3	63.6	36.4
Asset Quint 2	61.5	69.2	30.8	46.2	46.2	30.8
Asset Quint 3	50	64.3	64.3	50	50	71.4
Asset Quint 4	30.8	72.7	54.5	53.8	66.7	58.3
Asset Quint 5	71.4	50	33.3	71.4	66.7	33.3
Treatment Total	52.5	63.6	43.6	54.2	57.1	48.2

Beneficiary households	2008			2013		
	Participation in decisions of household spending (%)	Participation in decisions of raising children (%)	Participation in decision of using CCT money (%)	Participation in decisions of household spending (%)	Participation in decisions of raising children (%)	Participation in decisions of using CCT money (%)
Educational Attainment (level of						
Illiterate or no diploma	37.5	64.3	35.7	50	50	43.8
Primary school	64.3	66.7	25	71.4	69.2	46.2
Total	50	65.4	30.8	60	58.6	44.8
Circumstance: Quintiles of						
Asset Quint 1	50	0	0	50	50	0
Asset Quint 2	37.5	62.5	12.5	50	50	25
Asset Quint 3	71.4	71.4	71.4	57.1	57.1	85.7
Asset Quint 4	33.3	85.7	42.9	66.7	75	62.5
Asset Quint 5	80	50	0	80	60	20
Treated in Treatment	51.6	66.7	33.3	61.3	60	46.7

Control villages	2008			2013		
	Participation in decisions of household spending (%)	Participation in decisions of raising children (%)	Participation in decision of using CCT money (%)	Participation in decisions of household spending (%)	Participation in decisions of raising children (%)	Participation in decisions of using CCT money (%)
Educational Attainment (level of schooling)						
Illiterate or no diploma	33.3	33.3	44.4	36.7	60	40
Primary school	56.3	75	25	62.5	38.5	46.2
Total	41.3	48.8	37.2	45.7	52.6	42.1
Circumstance: Quintiles of						
Asset Quint 1	58.3	41.7	33.3	50	41.7	8.3
Asset Quint 2	15.4	41.7	33.3	30.8	66.7	66.7
Asset Quint 3	36.4	44.4	22.2	45.5	37.5	50
Asset Quint 4	50	66.7	50	50	100	66.7
Asset Quint 5	60	60	80	60	25	50
Control Total	40.4	47.7	38.6	44.7	51.3	43.6

Note: Sample limited to women responding to the survey in both rounds and between the ages of 15-45 in baseline.

Table 16 Difference in difference estimator for indicators of women's empowerment

	Participation in decisions of household spending (%)			Participation in decisions of raising children (%)			Participation in decisions of using CCT money (%)		
	Treatment	Control	Beneficiary households	Treatment	Control	Beneficiary households	Treatment	Control	Beneficiary households
Baseline (2008)	52.5	40.4	51.6	63.6	47.7	66.7	43.6	38.6	33.3
Followup (2013)	54.2	44.7	61.3	57.1	51.3	60	48.2	43.6	46.7
Difference Followup-Baseline	1.7	4.3	9.7	-6.5	3.6	-6.7	4.6	5	13.4
Diffs in Diffs estimator	-2.6		5.4	-10.1		-10.3	-0.4		8.4

Note: Sample limited to women responding to the survey in both rounds and between the ages of 15-45 in baseline.

Table 17 Levels of life satisfaction in the village, percentage of individuals reporting an increase compared to 5 years ago

Life satisfaction (% reporting an increase)	Male			Female			Overall		
	Treatment	Control	Difference	Treatment	Control	Difference	Treatment	Control	Difference
Satisfaction from your house	49.1	21.1	28***	43	39.1	3.9	45.6	32.6	13**
Satisfaction from your village	58.8	29.8	29***	53.3	41.4	11.9	55.8	37.6	18.2***
Satisfaction from your job	39.5	8.8	30.7***	34.6	25.3	9.3	37.3	19.1	18.2***
Satisfaction from the income from your job	24.1	1.8	22.3***	32.4	14.3	18.1***	28.2	9.4	18.8***
Satisfaction from monthly household income	28.1	7	21.1***	36.4	18.4	18***	31.8	14.2	17.6***
Satisfaction from relations with the neighbors	75	66.7	8.3	64.8	62.1	2.7	70	65.2	4.8
Satisfaction with the health services	69.3	63.2	6.1	62.6	56.3	6.3	65.9	59.6	6.3
Satisfaction with the education services	66.4	49.1	17.3**	55.2	51.7	3.5	61.2	51.8	9.4*
Satisfaction with the social and cultural activities in the village	27.4	1.8	25.6***	35.5	4.7	30.8***	31	3.6	27.4***
Satisfaction with the infrastructure in the village	54.5	36.8	17.7**	46.2	50.6	-4.4	50	46.1	3.9
Satisfaction with transportation services in the village	60.5	36.8	23.7***	66.4	48.3	18.1**	64.1	44.7	19.4***
Your self-confidence	52.6	29.8	22.8***	57	41.4	15.6**	54.8	37.6	17.2***
Hopefulness for the future	50	22.8	27.2***	54.2	36.8	17.4**	52.1	31.9	20.2***
Communication and cooperation in between villagers	68.4	52.6	15.8**	56.1	49.4	6.7	63.1	51.1	12**
Communication and cooperation in between villages	70.2	46.4	23.8***	46.7	47.1	-0.4	59.1	47.1	12**
Your attachment to your village	72.8	42.9	29.9***	61.3	57	4.3	66.7	51.8	14.9***
Your willingness to migrate to the city (% reporting a decrease)	68.4	48.2	20.2***	60.7	43	17.7**	64.5	45.3	19.2***