

Baseline Report

Enhancing Woman's Market Access in Agribusiness in Mozambique

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AFRICA GENDER INNOVATION LAB



TRADE & COMPETITIVENESS GLOBAL PRACTICE



Preface

The Government of Mozambique is set to carry out the rehabilitation of two feeder roads in Tete province. This intervention is nested within the World Bank-funded Mozambique Integrated Growth Poles Project (IGPP). The World Bank's Africa Gender Innovation Lab (GIL) and Trade and Competitiveness (T&C) have partnered with the IGPP to assess the impact of this feeder roads rehabilitation intervention on household welfare. The impact evaluation will also use a rigorous randomized control trial approach to evaluate a novel policy intervention that supplements agricultural extension services targeted to women farmers with a pilot training on non-cognitive skills. This report summarizes the findings of the baseline survey of the impact evaluation. The survey took place in April-June 2016, and was administered to a sample of approximately 3,000 households in 150 communities.

Acknowledgements

The successful implementation of the baseline survey is the result of the contributions, support, and commitment of a wide range of people. In particular, we would like to thank:

- The district administrations of Macanga, Tsangano, Angonia, Moatize, Chifunde, and Chiuta, as well as the heads of administrative posts and localities who helped localize the survey communities, and assured a smooth communication and collaboration with community leaders.
- The community leaders of the 150 communities as well as the 3,000 interviewed households who agreed to participate in this survey and dedicated their time to answer our survey questions.
- The COWI survey team led by Rachi Ibrahimia Picardo, Ilundi Polonia Cabral, Elias Antonio Zavale, Catarina Simoes Mavila, Miguel de Jesus Mucavele and Mildon Filipe Binguanhane, as well as all the enumerators carrying out the interviews in sometimes rough conditions.
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INTRODUCTION

1. Background

Agriculture is the major source of livelihood for smallholder farmers in the Angonia Plateau in northern Mozambique (Tete province), one of the most fertile regions in the country, and the ability to sell produce in the markets plays a central role in poverty elimination. Market orientation however remains low with most of the farmers specializing in staple or subsistence crops. It is widely believed that a major reason hindering the commercialization of agriculture in the Plateau is the lack of appropriate road infrastructure connecting smallholders to market outlets. Recognizing this fact, the Government of Mozambique is investing in the rehabilitation and maintenance of two key feeder roads in the Angonia Plateau, through the Mozambique Integrated Growth Pole Project (IGPP). The road rehabilitation works are expected to take place between May 2017 and December 2018.

The 2010 Tete Provincial Roads Strategy highlights roads R603, R604, R605, N302, N303 and N322 as being priority roads for investment and maintenance. The government of Mozambique has further prioritized roads R604, R605, and N302 because of the high population concentration around these roads and the significant constraints on agricultural production. Ultimately, the IGPP's technical and economic assessment concluded that upgrading R604 (from N304 near Mphulu through Tsangano to Ulongwe (100 km)) and R605 (from N304 near Ulongwe through Domue to Furancungo (99.6 km)) would lead to the maximum economic benefits. Critical sections of the two priority rural roads will be upgraded and maintained through spot improvements in grade, alignment, pavement condition and drainage (small bridges, culverts and roadside drains) to provide all weather road access.

To date, the amount of rigorous evidence on the effectiveness of rural road rehabilitation interventions is thin. The World Bank's Africa Gender Innovation Lab (GIL) and Trade and Competitiveness have partnered with the IGPP to assess the project's impact on households' farm and non-farm outcomes due to the rehabilitation of roads R604 and R605. The impact evaluation will also use a rigorous randomized control trial approach to evaluate a novel policy intervention that supplements agricultural extension services targeted to women farmers with a pilot training on non-cognitive skills. This intervention seeks to deepen the impact of the feeder roads rehabilitation program under the IGPP, and improve the ability of women to take advantage of better road infrastructure.

A baseline survey was conducted from April to June 2016 in the area of the rehabilitated roads to collect information on the communities and households before the start of the intervention. This report summarizes the findings of the baseline survey.

2. Impact evaluation research design

As most infrastructure development projects, rural road rehabilitation and construction projects are notoriously difficult to evaluate [Van de Walle 2009]. At the heart of the problem is the fact that the placement of these projects is typically nonrandom. Certain roads or communities are chosen and not others, for specific reasons. These reasons can be technical, economic, socio-demographic, and/or political. Absent randomization the key challenge in evaluating these projects is to choose an appropriate comparison group. That is a group of roads and communities that, though not having been

selected for the project, closely resemble those who were.¹

Sometimes the assignment of these projects is based on whether a road scores above or below a cutoff point on a continuously measure variable, such as population concentration or some composite multi-dimensional index. This feature eases the identification of a credible comparison group. To the extent that roads around the cutoff point are sufficiently similar to each other, a regression discontinuity design (RDD) can be used to compare roads or communities “just above” and roads “just below” the cutoff [Casaburi et al. 2014, Asher and Novosad 2015]. More often than not however, the details of the prioritization used to decide which roads and communities to target do not follow a simple scoring procedure. The IGPP project falls into this category. The impact evaluation uses the following two complementary research designs. Together they will provide a rigorous, yet approximate, set of estimates of the causal impact of rehabilitating roads R604 and R605.

First, a popular strategy is to collect baseline and follow-up data and use a difference-in-difference (DD) methodology [e.g. Mu and Van de Walle 2007, Khandker et al. 2009, Ali 2011, and Aggarwal 2015]. This method compares the change over time in outcomes between communities in close proximity to rehabilitated roads and communities in close proximity to non-rehabilitated roads. In discussions with the project team and counterparts at ANE (Associacao Nacional de Estradas) and FE (Fundo de Estradas), roads N302 (between Farracungo and Mualadze (approx. 100km)) and R603 (between Farracungo and N9 (approx. 100km)) were selected for the comparison group. These roads are in the vicinity of roads R604 and R605, share the same agro-ecological characteristics, and are in an equally poor state. This method identifies the causal impact of road rehabilitation under the assumption that unobservable factors driving a wedge in underlying time-trends between communities along roads R604/R605 and communities along roads N302/R603 are constant across time.

Second, to further improve the robustness of the analysis, the impact evaluation will use a triple-difference (DDD) approach that combines variation across time, across rehabilitated and non-rehabilitated roads, and across distance to roads. This method compares changes in outcomes between communities that are in close proximity to roads and communities that are further away, both along rehabilitated and non-rehabilitated roads. It relaxes the common time-trend identification assumptions of the DD model described above. Under this approach, the identification assumption is that in the absence of the project the effect of proximity to roads on changes in outcomes over time is constant across rehabilitated and non-rehabilitated roads.

The impact evaluation will also use a rigorous randomized control trial approach to evaluate a novel policy intervention that supplements agricultural extension services targeted to women farmers with a pilot training on non-cognitive skills. This intervention seeks to deepen the impact of the feeder roads rehabilitation program under the IGPP, and ensure that women take advantage of better road infrastructure. A key point of the non-cognitive skills training is to help women stay motivated and overcome the psychological challenges associated with starting and running a cash crop business.

To do so, the 150 sample communities will be randomly allocated into three groups with 50 communities each. The first group of 50 communities will receive agricultural extension services only. The second group of 50 communities will receive agricultural extension services and training on non-

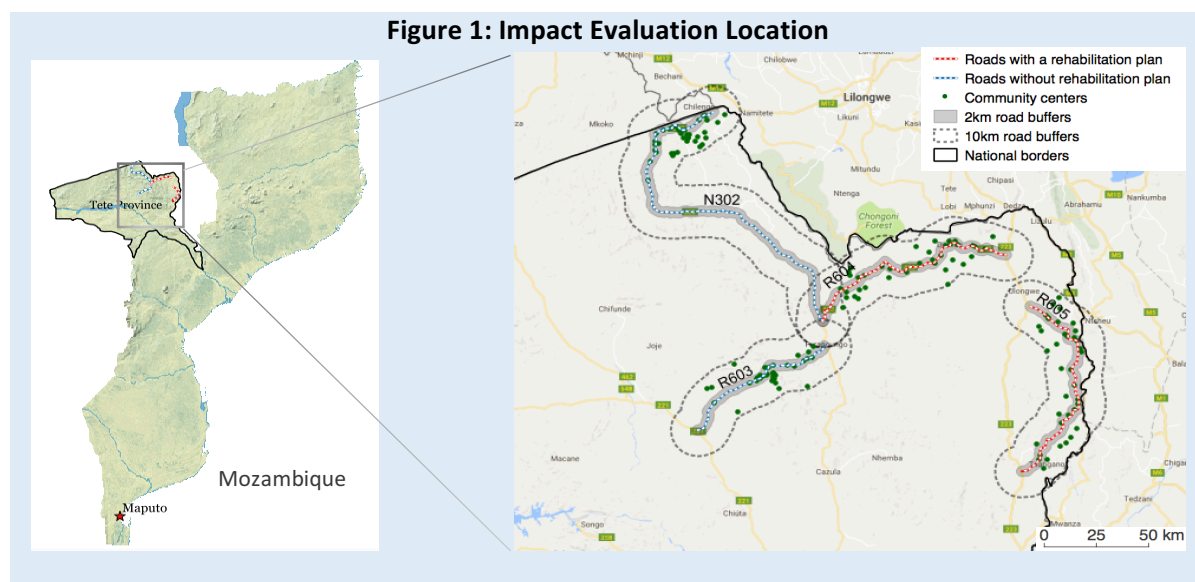
¹ If a project were to randomly select roads for rehabilitation, then roads randomized into and roads randomized out of the project would be *statistical identical* to each other, with the only difference being their project assignment status. In such case post-intervention data for these two groups of roads would suffice to measure the causal impact of the project. Given the random assignment, any observable differences in mean outcomes between them could be attributed to the project rather than to other factors.

cognitive skills. The third group of 50 communities will not receive any training and will thus form a comparison group. The random allocation of communities across the three experimental arms will be stratified by both road and distance to road. This careful design will provide novel evidence on whether feeder road infrastructure investment under IGPP on its own creates incentives for women farmers to adopt market oriented crops and strategies, and whether these effects can be bolstered by the provision of a comprehensive package of skills and agricultural extension services.

3. Sample and data

The sample consists of 3,000 smallholder farm households in 150 communities randomly selected along both rehabilitated roads (R604 and R605) and non-rehabilitated roads (N302 and R603) in the Tete province (see Figure 1). The communities are equally distributed along the four roads, with half of them located 0-2 km away from the roads and the other half located 2-10 km away from the roads. Within each community, 20 households were randomly selected to be part of the sample. Eligible households are those residing in sample communities engaged in smallholding agriculture.

Baseline data were collected from the 3,000 households across the four roads from April to June 2016. To assess any changes in outcomes as a result of the road rehabilitation intervention, data will be collected from the same households in the midline survey in 2018 and in the endline survey in 2019. The surveys collect data on a number of outcomes: (i) agricultural production and sales, crop choices, farm input usage, farming practices, and farm size; (ii) employment; (iii) measures of market participation; (iv) cognitive and non-cognitive skills; (v) women empowerment and intra-household bargaining; (vi) household and farm durable assets, (vii) individual and household welfare and consumption. The surveys also include a short community questionnaire in order to capture heterogeneity across communities in the sample.



4. Structure of this report

The report is organized into three parts. Part I focus on the characteristics of the communities, such as

their i) remoteness; ii) access to electricity, water and communication services; iii) access to agricultural inputs markets; iv) access to agricultural output markets; v) access to land; vi) prevalence of natural shocks; vii) food security; and viii) social traditions. Part II describes basic characteristics of the households in the sample, namely their composition and welfare. It also provides a detailed description of the individual characteristics of the heads of these households and their spouses, such as their i) age; ii) education; iii) skills; iv) economic activities outside the farm; v) access to credits and extension services; vi) women's bargaining power and financial dependency; and x) hypothetical money use. Part III documents farm characteristics including i) crops grown; ii) livestock and agricultural tools; iii) agricultural techniques; iv) yields and market sales; v) transport costs; vi) agricultural losses; vii) farm tenure, farm size and farm management and viii) inputs use.

Within each part, we highlight some differences between i) communities in close proximity to roads and communities that are further away; and ii) between communities along roads that will be rehabilitated by the IGPP ("treatment" roads) and those along roads that will not be rehabilitated ("control" roads).

PART I. CHARACTERISTICS OF THE COMMUNITIES

Part I examines the characteristics of the communities. This part is divided into three sections. Section 1 highlights the main findings. Section 2 focuses on differences between communities that are in close proximity to the roads (0-2 km from the roads) and communities that are further away (2-10 km away). Section 3 looks at differences between communities located along treatment roads and communities located along control roads.

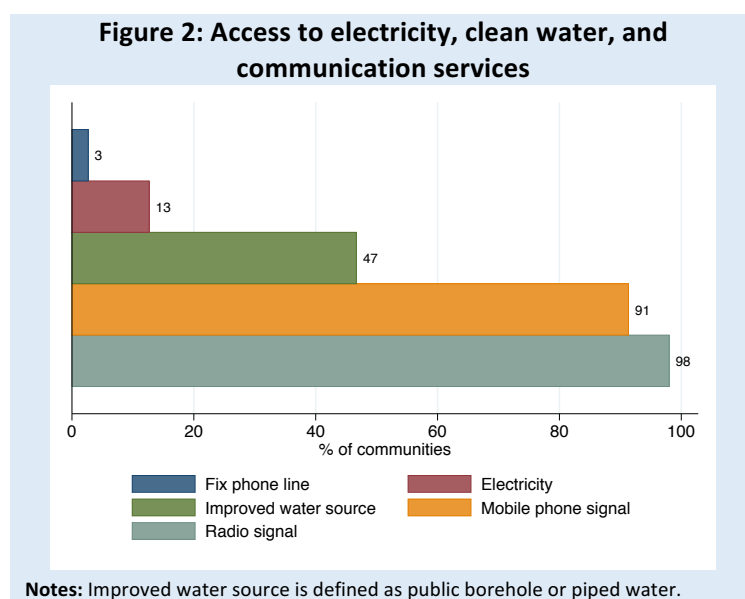
Section 1. Overview of the community characteristics

1.1. Remoteness

Table 1 focus on remoteness. We see that none of the communities in the sample are accessible by a paved road. 42% of the communities are accessible by an unpaved road, and the remaining communities are accessible by a path or trail. These routes are not passable in the rainy months for about one-third of the communities. Walking is the most common mode of transportation for about 80% of the communities, and only 28% of the communities have access to public transportation.

1.2. Access to basic services

Table 2 examines access to basic services, such as electricity, mobile phone and radio signal coverage and Table 3 provides statistics on the access to water (also see Figure 2). Very few (13%) communities have access to electricity. About half (53%) lack access to improved water sources (public boreholes or piped water): rivers and lakes are the main source of water for 28% of the communities, and households need to walk at least 30 minutes to fetch water in about one-fourth of the communities. Interestingly, nearly all communities (93% and 90%, respectively) are located in areas where there is mobile phone coverage and access to radio (Radio Mozambique or Community Radio).



1.3. Access to inputs markets

Table 4A-4C documents access to farm inputs at the community level, shining light on the existing agricultural market linkages. We see that the majority (86%) of communities uses fertilizer. Almost half (47%) of the communities purchase seeds, whereas the use of pesticides is less common (37% of communities purchase pesticides). Given the proximity of our sample to Malawi and Zambia, foreign markets are major suppliers of agricultural inputs (Figure 3). For example, among communities that buy seeds, 48% of them purchased such seeds mostly from outside Mozambique. These communities mainly get supplies in agricultural inputs from shops, inputs fairs or specialized companies (Figure 4). Seeds, like agricultural tools, are in large majority purchased in shops (72%), whereas fertilizer is mainly bought is specialized companies (42%).

Figure 3: Access to Inputs Market - “Where do farmers principally buy the input?”

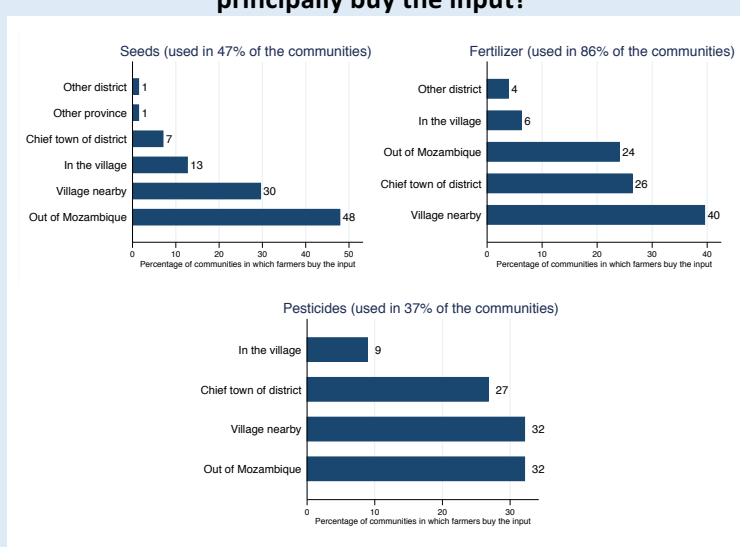
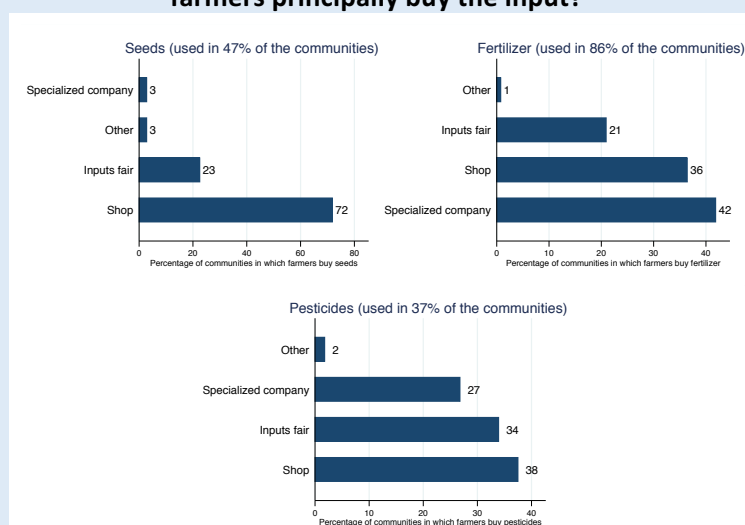


Figure 4: Access to Inputs Market - “In what kind of place do farmers principally buy the input?”



Tables 5A-5I provides information on the distance to the closest output and input market infrastructures. 8 communities over the total of 150 communities host an agricultural fair. The closest shop to buy seeds or fertilizer is situated about 23km away from the village center. The closest market connection for the smallholder farmers appears to be informal markets, which are on average located 12km away from communities, with no significant difference between communities close and far from roads. This informal market is reached by foot in 80% of the cases, or by small bus (“chapa”) for 9% of the communities. Therefore, data confirm that these communities are very isolated from the agricultural markets, and crucially need improved linkages to access the markets.

1.4. Access to output markets

Table 6 shows statistics on the different types of places where the farmers sell their production. The most common places where the local farmers sell their production are specialized companies (34%). The second most common selling places are the markets or the fairs nearby (27%). We also notice the importance of the local and informal markets within neighbors who sell or exchange their productions between themselves. It represents the second business channel in 24% of the communities.

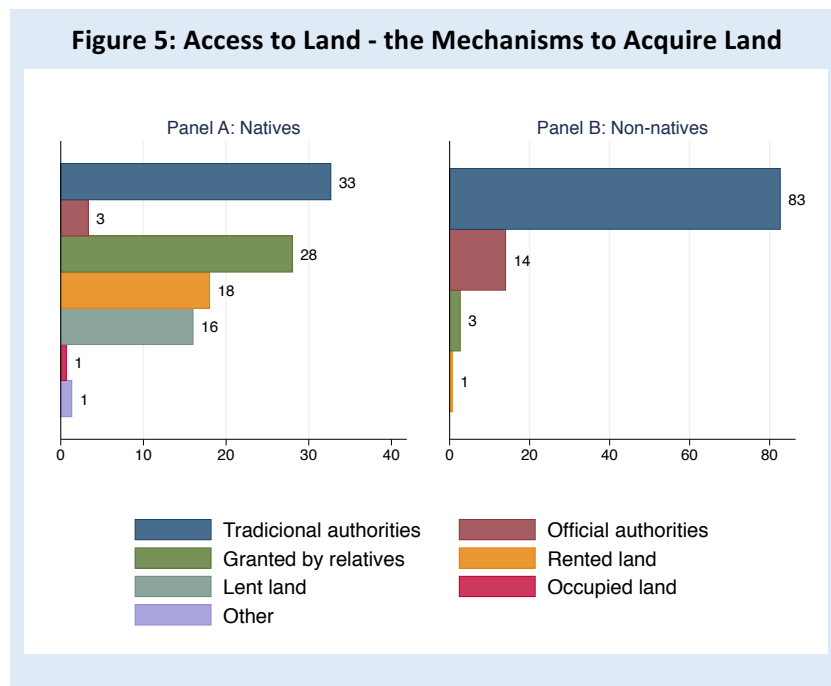
Table 6 also provides statistics on the presence of itinerant vendors in the communities. Itinerant vendors are common operate in 40% of the communities, and those are from outside Mozambique in 46% of the cases. This is an additional evidence of strong market linkages with neighboring countries in the region: not only farmers travel to Malawi or Zambia to supply themselves with seeds, fertilizer or pesticide, but also Malawian or Zambian vendors cross the borders to sell their products in Mozambique.

On the contrary to the supply of inputs, the sale of output happens in large majority within Mozambique. In only 12% and 16% of the communities, the farmers sell their production to neighboring countries in the first place and second place respectively.

1.5. Access to land

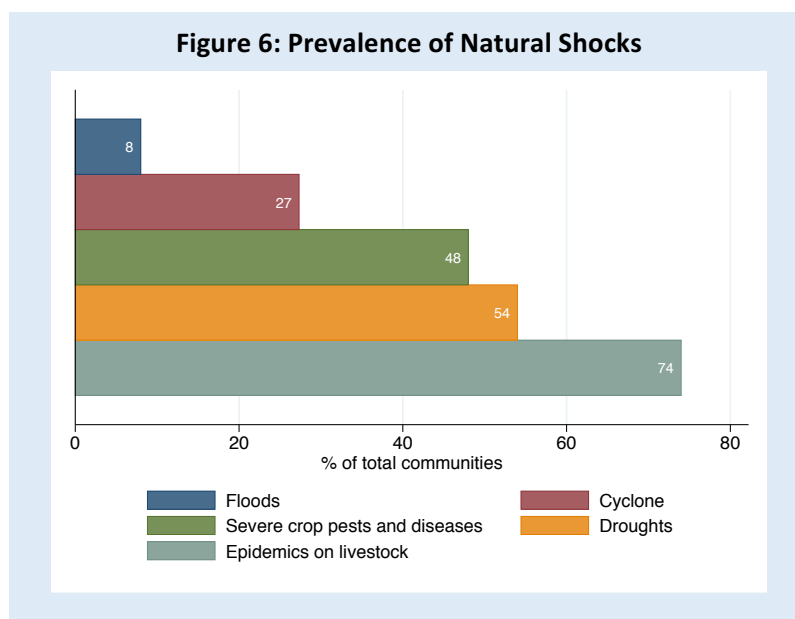
Table 7A-7C provides statistics on the availability of land around the communities. About 57% of the communities report to have available land for agricultural production. Available land is in 75% of the cases situated in virgin non-cultivated areas and in 19% of the cases on left-away crops. Pasturelands are available in 80% of the communities.

Concerning land rights, 57% of the communities have some knowledge of land laws and access to land is described as “easy” by the community leader in 71% of the communities. The large majority of the land transactions are informal: buying and selling pieces of land as in a formal monetary transaction, occurs in only 5% of the communities. Instead, land market is ruled mostly by the traditional authorities. As Figure 5 illustrates, the mechanisms to get access to land differ whether the individual is native of the village or not. If the individual is a native, traditional authorities monitor the land transactions in 83% of the communities and the state authorities do so in 14% of the communities. For individuals coming from other villages, heritage account for 28% of the first mechanisms of land acquisition, traditional authorities for 34% and public authorities for only 3%. Also, renting and borrowing are two other first means of access to land for native farmers in respectively 18% and 16% of the communities.



1.6. Prevalence of natural shocks

Table 8A-8C provides statistics on the incidence of following natural shocks during the agricultural season 2014/2015: floods, cyclones, crops diseases, droughts and livestock epidemics (see also Figure 6). A total of 74% of the communities recorded severe epidemics on the livestock, and in more than 80% of them the epidemics impacted more than half of the households (Table 8C). The second most common natural shock is drought (54% of the communities), followed by severe crop pests and diseases (48%). On top of the droughts affecting the region, communities are also in an area of frequent cyclone episodes: 27% of the communities were affected. It is worth noting that in most cases there was no or very limited help from organizations or the government following a natural shock.



1.7. Crop calendar

Table 9 provides the percentage of communities growing the major cash crops, staple crops and fruits as well as the months during which these crops were planted and harvested during the 2014/2015 agricultural year. The months of planting and harvest of each crop correspond to the months for which at least 20% of the 150 communities reported to plant or harvest the crop respectively. For cash and staple crops, the planting period lies between September and February. The harvest generally starts in April and ends in August. For tobacco, the harvest period is earlier in the year, between January and April. Regarding the fruit crops, we only have information on the harvest periods. Fruits are mostly harvested in April, May and June, except for mango and malambe which are harvested later in the year around October and November. Banana is a crop harvested all along the year.

1.8. Food security

Table 10 provides the average percentage of households who grow cassava, sweet potato and Irish potato in case of drought. Those subsistence crops are particularly resistant to droughts and provide important quantity of carbohydrates. Therefore, in case of natural shock or major crop loss, the prevalence of households cultivating these crops provide a good measure of food security in the community. On average, sweet potatoes, cassava or Irish potato are cultivated in respectively 80%, 53% and 8% of the communities when a drought impacts the households.

1.9. Social traditions

Table 11 documents the different social traditions in the region. Some communities follow patrilineal traditional rules where the father or the family of the father decides on the inheritance rights; other communities follow matrilineal rules where the mother or mother's family decides. We notice that the communities follow in majority patrilineal rules (67%). 17% of the communities follow more matrilineal rules and 6% put fathers and mothers on an equal footing concerning inheritance choices. Concerning marriage traditions, there is a tendency towards rural matrilocality - the husband moves in with the wife's family - in 60% of the communities.

Section 2. Differences in community characteristics by distance to roads

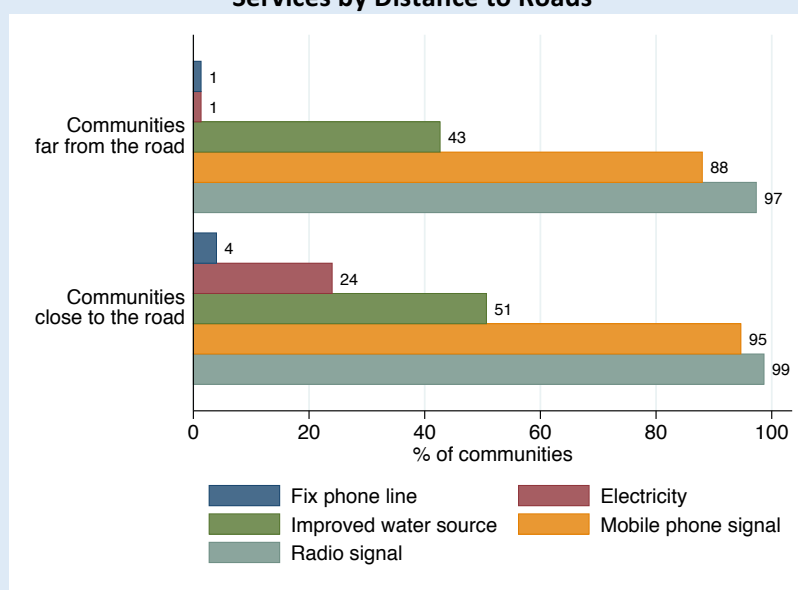
2.1. Access to the communities

In Table 1, we notice that during the rainy season, the main route is operational in 55% of the communities close to roads, against 80% of communities far from roads. Also, 40% of the communities close to roads have access to public transport, against 14% of the communities far from roads. In 87% of the communities far from roads walking is the main way to commute, compared with 72% of the communities close to roads.

2.2. Access to basic services

We notice in Table 2 and 3, that the difference in access to electricity is significant between communities close and far from the roads (see also Figure 7). 18 communities along the roads have access to electricity against a single one located far from the roads.

Figure 7: Access to Electricity, Clean Water and Communication Services by Distance to Roads



Notes: Improved water source is defined as public borehole or piped water.

2.3. Access to inputs markets

Table 4 reveals that use and supply of agricultural inputs significantly differ in a number of aspects depending on the distance to the roads. In about 55% of the communities close to roads, farmers commonly buy seeds whereas it is only the case for 39% of the communities far from roads. The trend is opposite for pesticides: farmers commonly buy pesticides in 30% of the communities close to roads compared with 44% of the communities far from roads. With respect to the places where farmers buy inputs, we note that farmers living close to roads significantly buy more from outside Mozambique. Indeed, foreign markets represent the main place of supply for 36 and 57% of communities close to roads for fertilizer and pesticides respectively. These numbers drop to 12 and 15% respectively for communities far from roads. Instead, farmers in communities far from roads significantly buy more from villages nearby.

Table 5 shows that distances from inputs market infrastructures also differs between communities close and far from the roads. Agricultural fairs are located on average 16km away from communities along roads, and 25km away from communities far from roads. The closest farming house which sells seeds is on average located 24km away from communities close to roads and 33km from communities far from roads. This is on average a 2-hour travel for households living in communities close to roads and additional 40 minutes for communities far from roads.

2.4. Access to output markets

Table 6 shows that formal and informal markets are significantly more present in communities close to roads compared to communities far from roads. Street vendors are also more frequent along the roads. However, the place where farmers sell their production is not significantly different by distance to roads.

Section 3. Differences in community characteristics by roads

3.1 Access to the communities

In Table 1, we notice significant differences between the level of accessibility of communities depending on which roads they are close to. Communities along roads that will not be rehabilitated, N302 and R603, are better linked by roads and public transports throughout the entire year compared with R604 and R605 that will be rehabilitated. 80% of the communities along N302 and R603 are accessible the entire year compared with 57% of communities along R604 and R605. Also, 40% of the communities along N302 and R603 have access to public transport during the rainy season compared with 15% of the communities along R604 and R605.

3.2. Access to basic services

We note in Table 2 very few significant differences in access to electricity or communication services between roads, except that communities along roads R604 and R605 have better access to Radio Comunitaria by 10 percentage points compared with communities along R603 and N302. In terms of access to water, we notice in Table 3 that 43% of the communities along roads R604 and R605 use rivers or lakes as first source of water, whereas it is only the case for 13% of the communities along roads N302 and R603.

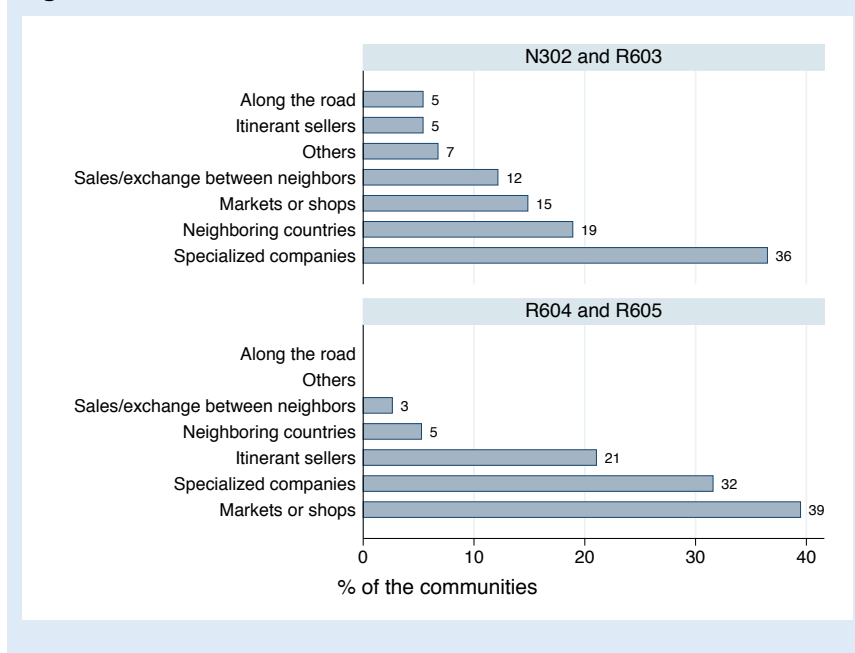
3.3. Access to inputs markets

In Table 4, we notice an important difference between the roads that will be rehabilitated and the roads that will not be rehabilitated: communities along N302 and R603 never report to supply themselves in agricultural inputs fairs whereas it is an important place of supply along R604 and R605. However, communities along N302 and R603 buy fertilizer and pesticide from specialized companies in the first place in 65% and 68% of the cases respectively. It is far less common for communities along R604 and R605 (22% and 3% respectively).

3.4. Access to outputs markets

The difference in output markets is not significant between communities close or far from the roads, whereas it is significant between control and treatment roads (Figure 8). In communities along N302 and R603, specialized firms are the most common place where farmers sell their production (36%), followed by neighboring countries in the second place (19%) and markets or fairs in the third place (15%). However, along R604 and R605, markets or shops are the first buyers of the local agricultural production and specialized companies the second.

Figure 8: Most Common Places Where Farmers Sell their Production



3.5. Access to land

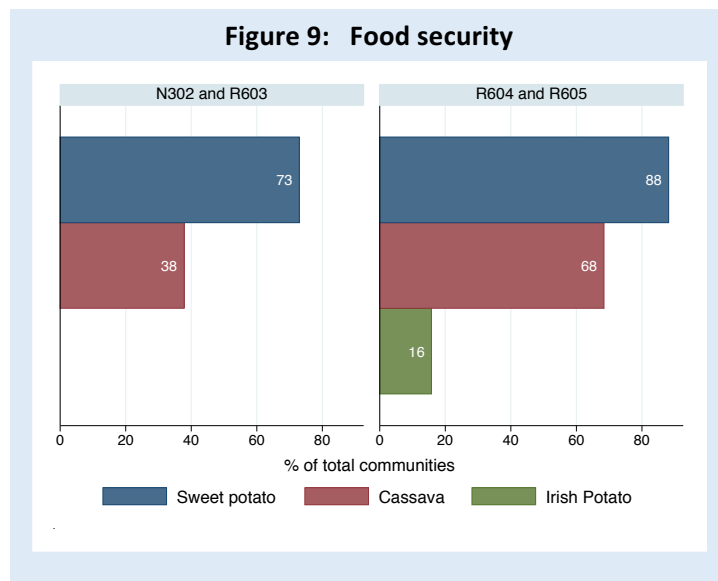
Land availability significantly differs between communities along treatment roads, where 80% of communities have available land for crop production, and control roads with only 34% of the communities (Table 7A-7C). This difference is also significant in the case of available land for husbandry with respectively 94 and 37% of the treatment and control communities.

3.6. Prevalence of natural shocks

The occurrence of shocks was similar during the 2014/15 season across roads, except for cyclones that impacted 35% of the communities along roads R604 and R605 (close to the Malawian borders), while only 20% of the communities along roads N302 and R603 (Table 2B).

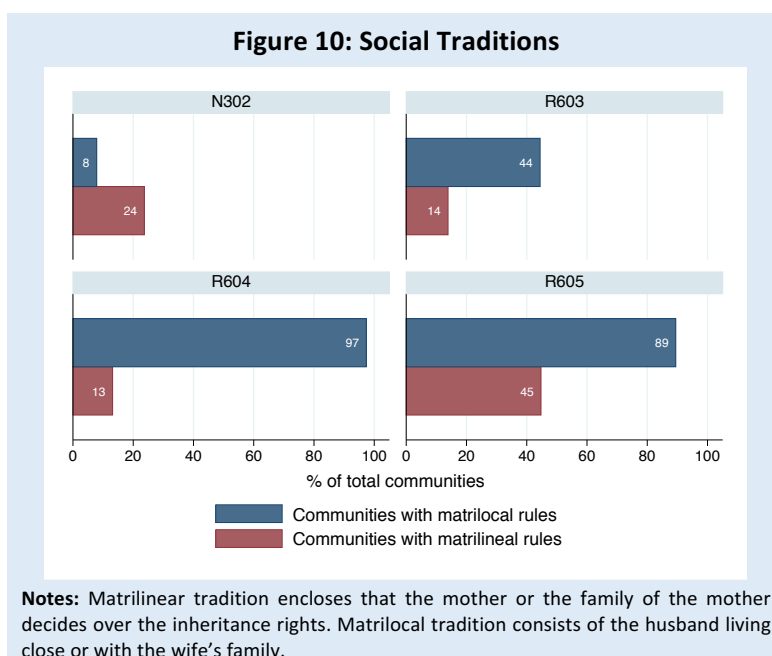
3.7. Food security

There are significant differences between communities along roads R604 and R605 that will be rehabilitated and roads R603 and N302 that will not be rehabilitated in terms of plantation of the cassava and Irish potato (Figure 9). Cassava is more importantly cultivated along the treatment roads (68% of the communities), compared with the control roads (38%). In case of drought, Irish potato is not grown along roads N302 and R603, whereas it is in 16% of the communities along R604 and R605.



3.8. Social traditions

Significantly less communities along the roads that will not be rehabilitated follow matrilineal and matrilineal rules. The difference is illustrated in Figure 10. Communities along roads R605 and R604 are in large majority matrilineal, whereas N302 is located in an area where patrilineal tradition dominates. This could certainly be explained by different cultural traditions varying by areas. In Angonia and Tsangano districts close to the Malawian border, matrilocality is widespread while the patrilineal tradition prevails in the Chifunde district in the northern part of Tete province close to the Zambian border.



PART II. CHARACTERISTICS OF THE HOUSEHOLDS AND INDIVIDUALS

Part II examines the characteristics of the households as well as the characteristics of the individuals. This part is divided into four sections. Section 1 provides an overview of the household characteristics, namely the household structure and the household welfare. Section 2 describes the characteristics of the household heads and the heads' spouse. These characteristics are presented separately by gender or by type of individuals classified into three categories: married men, married women and non-married women. Section 3 contains relevant elements of comparison between households living close to the roads and those living far from the roads. Finally, Section 4 compares households along roads that will be rehabilitated with households along roads that will not be rehabilitated.

Section 1. Households characteristics

1.1. Household structure

Table 12 provides statistics on the household's demographics characteristics. The surveyed households are on average composed of 4.7 members, of which on average 2.5 are less than 15 years old and 2.2 are adults (18 years old or more). Regarding the household gender ratio, there are on average slightly more women than men in the households with a women ratio equal to 53%.

As illustrated in Figure 11, about three quarters of the sampled households are male-headed households. The other quarter is divided between women living alone – widows, single, divorced or separated women - who constitute 17% of the households, and the few couple households with a woman as the head (9%).

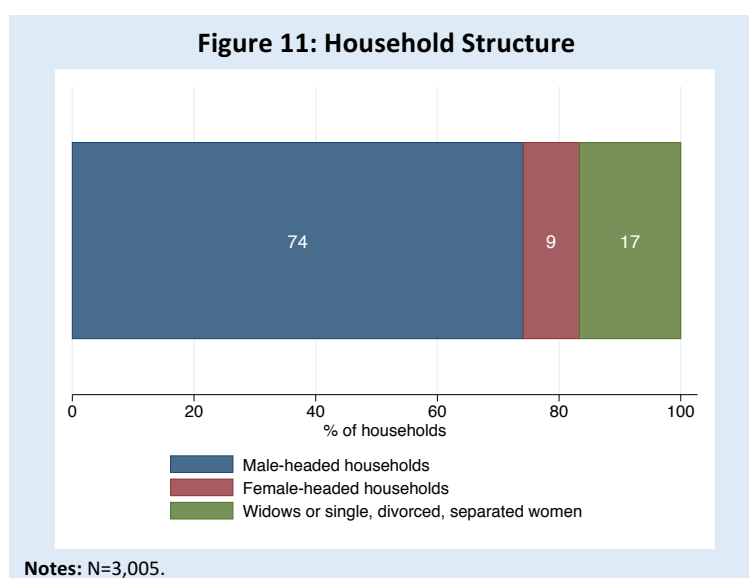
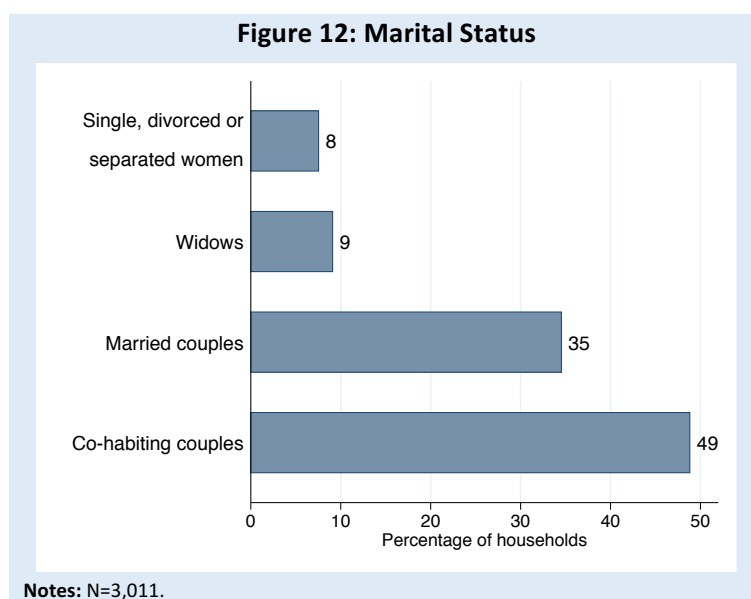


Figure 12 shows the distribution of the households by marital status. Among the household heads, 9% are widows and 8% are divorced, separated or single. The other household heads are in couple, either married (35%) or living with a partner (49%).



1.2. Household welfare

Table 13 provides statistics on the household ownership of durable goods. Overall, 90% of the sampled households own a latrine. On average, 60 % of the households possess a radio and 54% possess a mobile phone. With respect to transport means, 60% of the households own a bicycle and 12% own a motorbike. The total number of assets own is on average 4.8.

In Table 14, we find statistics on the household consumption, housing quality, subjective welfare and food security. On average, households consume annually the equivalent of 24,600 MZN and the annual consumption per capita is around 5,700 MZN. 23% of the households report to live in a house with a roof made of improved material (other than hay or straw, such as zinc or tiles). 22% of the households own improved walls (made of concrete blocks or bricks) and 36% report to live in better economic situation today than two years ago. With respect to food security, we remark a high incidence of hunger in the region. More than 38% of the interviewed households reported to have been through a starvation period between February 2015 and January 2016. On average, the households experienced 1.2 months of food insecurity over the year.

Table 15 compares welfare variables for female versus male-headed households. The statistics show that in all welfare dimensions – consumption, assets, housing and food security –, female-headed households are more deprived than male-headed households. The annual consumption per capita in female-headed households is significantly and largely inferior to the one of male-headed households: 3,983 MZN compared with 6,336 MZN. The average male-headed households' asset index is also almost the double of that of female-headed households: 5.5 assets for male-headed households compared with 2.9 for female-headed households on average. With respect to food security, female-headed households went hungry 1.7 months compared with 1 month for male-headed households.

Section 2. Individual characteristics by gender

2.1. Population distribution

We can find on Figure 13 the distribution by age and gender of all the household members of the sample. The wide base of the pyramid reveals the presence of large young cohorts in the sample. It

reveals a high fertility rate and consequently an important dependency ratio for young adults. In addition, this could have consequences in terms of population growth in the region and therefore for the necessity to increase agricultural output.

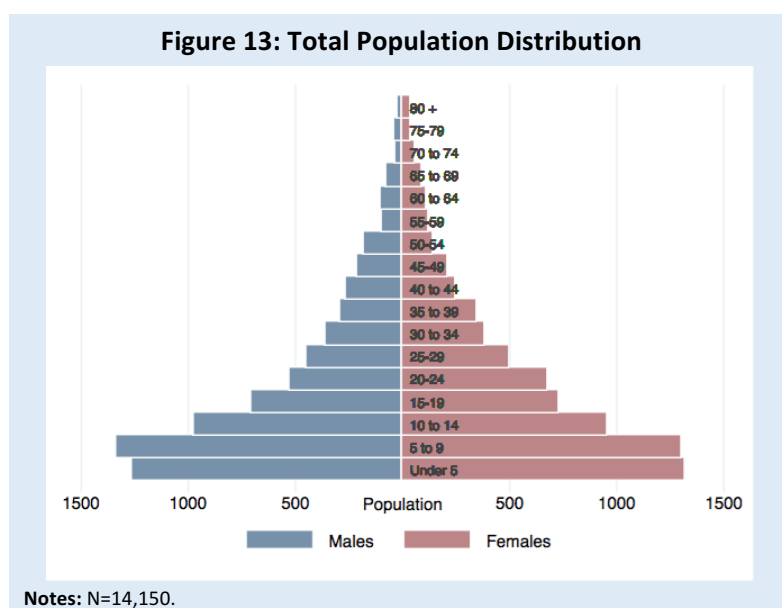
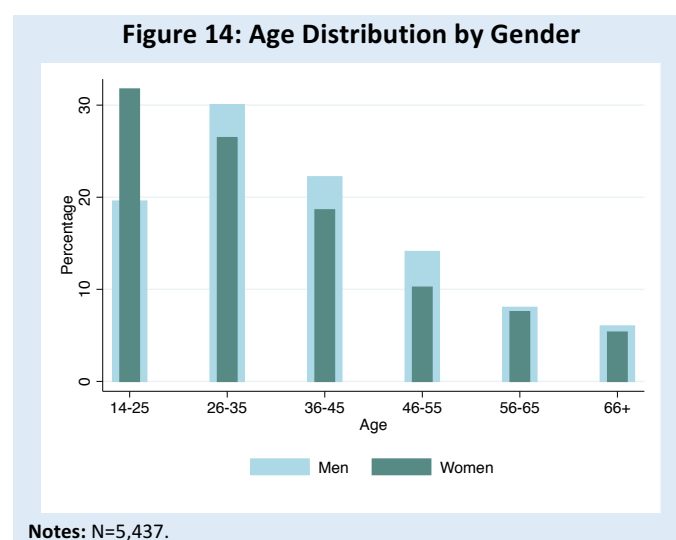


Table 16 and 17 report the statistics for age, marital status and level of education of the household heads and their spouse, for women and men respectively. On average, women are younger than men. In Figure 14, we observe that more than 30% of the women are between 14 (the youngest wife in the sample) and 25 years old, against 20% of the men. The non-married women are on average 49 years old whereas the married women are about 33 years old. This is because the group of non-married women is in majority composed of widows. The men are on average 39 years old.



2.2. Education

In Panel B of Table 16 and 17, we find the average level of education of women and men respectively. We note a significant gender gap in the literacy rate and the level of education, but also an important difference between married women and non-married women. These differences are summed up in

Table 18. About 63% of the men can read and write against 26% of the married women and only 14% of non-married women. In terms of level of education, men accomplished on average 3.6 years of schooling compared with 2 years for married women and 1.2 years for non-married women.

2.3. Cognitive skills

To measure the level of cognitive skills, the questionnaire included three different sets of questions: the first set of questions is made of simple mathematical problem solving questions with multiple choice answers. An example of question is: « You want to buy 30 unities of cassava. Each unit costs 15MZN. How much does your total purchase cost you? ». The second set of questions consists of a digit span test for which the respondent has to remember series of numbers. The third set of questions is made of six logical patterns based on the Raven's test, for which the respondent needs to choose out of four possibilities the image that completes the pattern. Results are presented in Table 18 for married men, married women and non-married women separately. Concerning mathematics questions, men obtained significantly higher scores than women. However, in the digit span and Raven's tests, the differences between men and married women are significant but small, and not significant between men and non-married women.

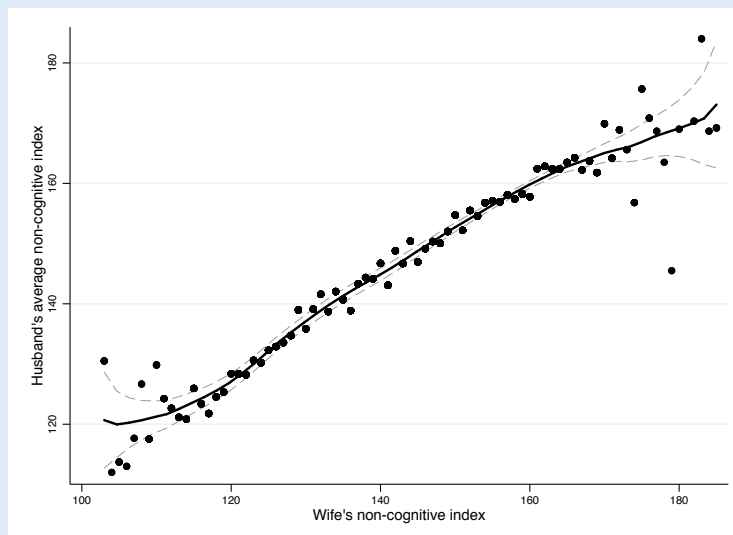
2.4. Non-cognitive skills

The non-cognitive skills questionnaire has been designed to capture the level of eight different traits essential for the adoption of a business mindset: grit, generalized self-efficacy, entrepreneurial identity, personal initiative, idea generation, goal orientation towards learning, need for autonomy and locus of control. The respondents had to answer if they agree or disagree to 32 different statements, each one of them corresponding to a personality trait. The answers are integers ranging from 1 to 6 according to the following scale: 6=Strongly agree, 5=Agree, 4=Partly agree, 3=Partly disagree, 2=Disagree and 1=Strongly disagree. Examples of statements for grit are: « I finish whatever I begin », « Setbacks don't discourage me » or « I am a hard worker ». The answers are summed up by traits to construct a trait score.

Table 19 and 20 provides all the averages for each question and each trait score for women and men respectively. A first analysis of the data shows evidence of a gender gap in non-cognitive skills although very small: men on average have slightly higher positive trait scores than women. Table 21 reports the mean scores for married men, married women and non-married women. We note that on average non-married women have higher trait scores than married women in the following dimensions: need for autonomy, locus of control, generalized self-efficacy, grit, and personal initiative. On the contrary, married women have higher positive trait scores compared with non-married women in entrepreneurial identity, idea generation and goal orientation toward learning. The differences between married women's scores and married men's score are significant but also very small, with married men scoring higher than married women.

An interesting feature to analyze in the data is the correlation between husbands and wives' non-cognitive skills. Figure 15 plots the non-cognitive scores – which is the sum of the scores of the eight different traits – of the husbands and their wives. We observe a clear upward trend suggesting an assortative mating on non-cognitive skills: high ability men tend to be married with high ability women.

Figure 15: Non-cognitive Skills of Husbands and Wives



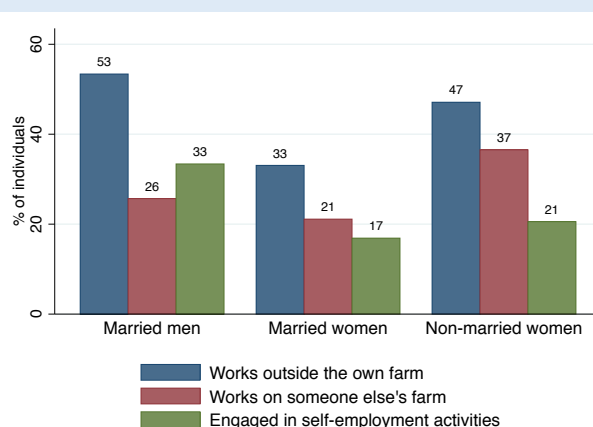
Notes: The figure plots the husbands' average non-cognitive index for a given value of the wives' non-cognitive index. The line plots predicted values of a kernel-weighted local polynomial regression of husbands' non-cognitive index on the wives' non-cognitive index. Dashed lines represent 95% confidence intervals. The wives' non-cognitive index is truncated at the top and bottom 1% of the total distribution.

2.5. Economic activities outside the farm

Table 22 and 23 describe the paid work activities for women and men respectively. Most of the works defined as “paid work” are actually agricultural work (including “ganho-ganho” agreements). Only 1% and 5% of the women and men respectively were engaged in paid off-farm activities in the past 12 months. Among the men engaged in paid off-farm activities, 5% were construction workers and 4% were civil servants.

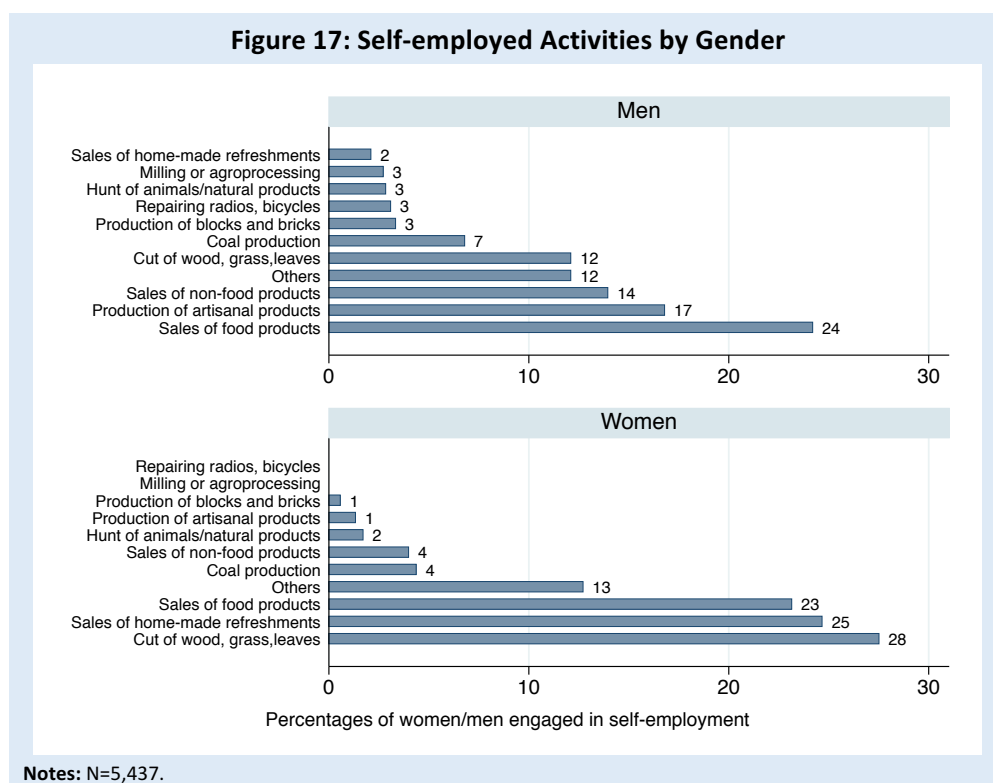
Figure 16 shows that about half of men (53%) and half of non-married women (47%) seek complementary revenues outside their own farming activities, which includes farming activities on someone else’s farm. 26% of married men, 21% of married women and 37% of non-married women have worked on someone else’s farm in the past 12 months. Compared with married women, non-married women are more importantly engaged in activities outside their own farm. This could reflect the greater need of non-married women to complete their revenues as they do not receive financial support from a partner.

Figure 16: Economic Activities Outside the Farm



Notes: N=5,437.

Table 24 and 25 report statistics on the self-employment activities of women and men respectively (see also Figure 17). We notice that men and women are engaged in different types of activities: 28% of women cut wood, grass or leaves, 25% produce and sell home-made refreshments and 23% sell food products. Concerning men, 24% sell food products, 17% produce artisanal works and 14% sell non-food products.

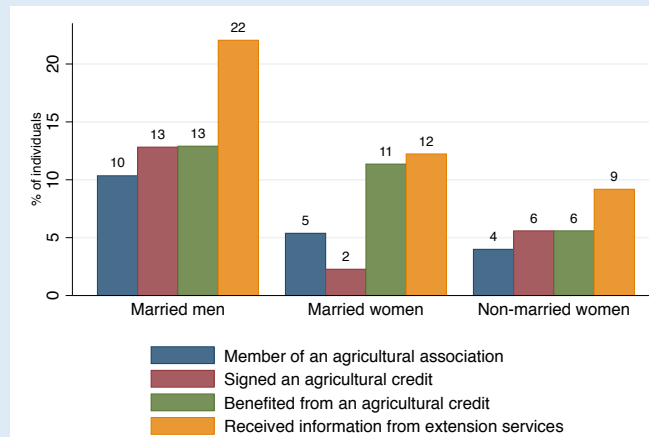


2.6. Access to agricultural credits and extensions

Table 26 reports statistics on the access to agricultural credits. Table 27 and 28 provide statistics on the access to agricultural extension and association for women and men respectively. First, we highlight the low density of agricultural services in the region: only 12% of the households contracted an agricultural credit, 16% of the individuals received information from an agricultural extension and 7% are part of an agricultural association.

Second, these statistics reveal an important gender gap in terms of access to agricultural services. In Figure 18, we notice that only 12% of the married women compared with 22% of their partners received information from extension services. The number drops to 9% for non-married women. Agricultural credits as well as membership in agricultural association are also not common across the three types of individuals and are much lower for women. Only 5% of married women and 4% of non-married women are part of an agricultural association compared with 10% of the married men. Married women are signatories for only 2% of the credits, even though 11% of them benefit from the credit.

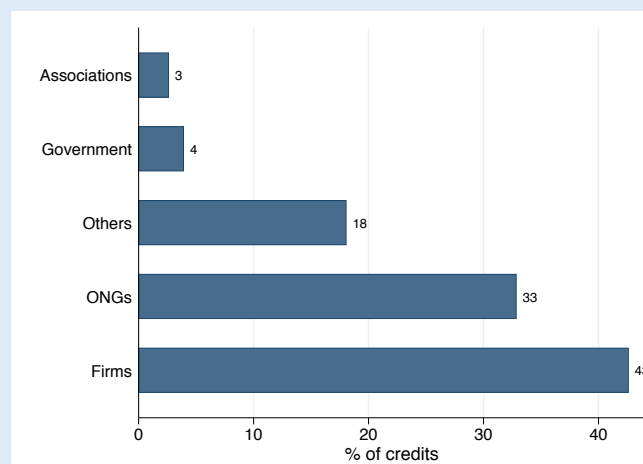
Figure 18: Access to Extension Services Agricultural Credit and Association



Notes: N=5,437.

Figure 19 shows that firms are the most important lenders of agricultural credits (43%), followed by NGOs (33%). Government and association accounts for only 4% and 3% of the credit lenders respectively.

Figure 19: Sources of Agricultural Credits

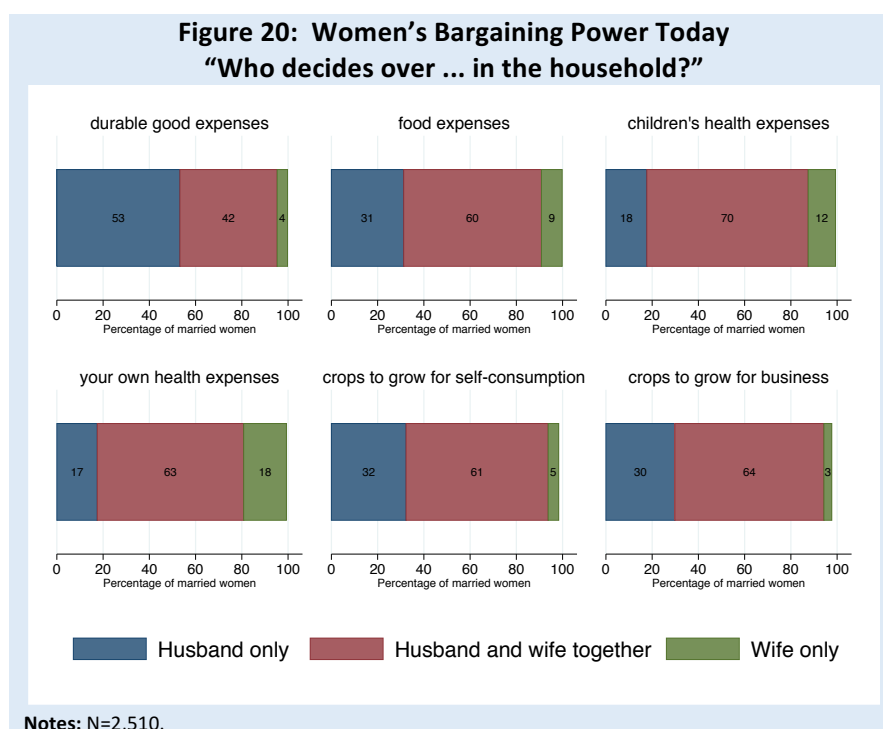


Notes: N=615.

2.7. Women's financial dependency and bargaining power

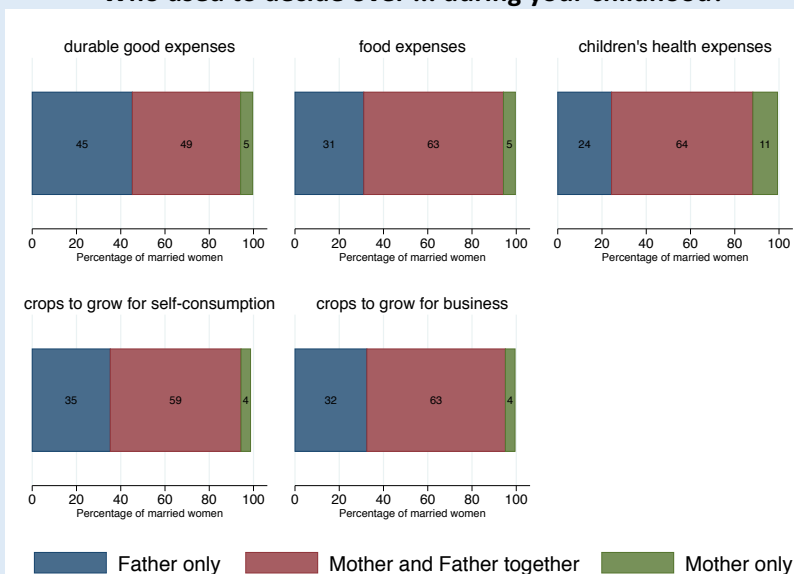
First, we look at data concerning the financial dependency of women all summed up in Table 29. 45% of the women in the sample bring money home. Among the married women who bring money home, the majority (79%) report that the amount they bring is inferior to the amount their husband brings home. About 39% give part of the money to the husband and 16% give the totality. On average, the wife remains relatively financially dependent since the husband contributes alone to the expenditures (food or others) in 70% of the cases. On average, married women financially contribute more when it concerns children's school expenditures: she finances alone or together with her husband the daughters' and sons' school expenditures in respectively 62% and 59% of the cases.

Second, we focus on the statistics on the intra-household bargaining power presented in Table 30. The women were asked who decides over the following four categories of expenditures in the household: expenditures for durable goods, expenditures for food, expenditures for health of the children and finally expenditures for her own health. In addition, they were asked who choose the crops to grow for self-consumption or to sell the production. Results are displayed in Figure 20. Married women have no say concerning the purchase of durable goods in 53% of the case. Regarding the choice of crops to grow for self-consumption or for business, married women have a say (alone or jointly with her husband) in respectively 66% and 67% of the cases. Women have on average more bargaining power when the expenditure concerns her own health or the health of the children.



Similar questions were asked to the women concerning their mother's bargaining power while they were still a child. Results can be found in Table 31 (see also Figure 21). 63% of the mothers used to have a say over the choice of crops to grow for self-consumption. 67% of them used to have a say over the choice of crops to grow for business. In 75% of the cases, the mothers could influence the decisions over the expenses on the children health. This is 7 percentage points lower than in today's household. Lastly, 45% of the mothers didn't have a say concerning the purchase of durable goods. Overall, from one generation to another, women's bargaining power did not progress significantly.

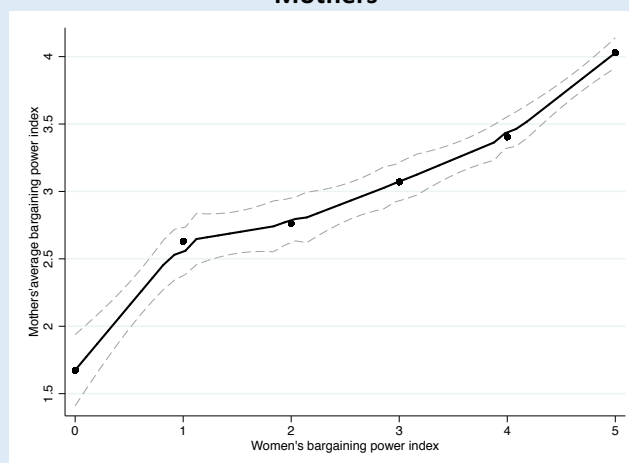
**Figure 21: Women's Bargaining Power of the Last Generation
"Who used to decide over ... during your childhood?"**



Notes: N=2,995.

We further investigate the relationship between women's bargaining power today and her mother's bargaining power during her childhood by plotting the mothers' average bargaining power index – the sum of five dummies for the five different decisions – on a given value for women's bargaining power index today. The result is presented in Figure 22. We observe a clear upward trend reflecting a strong positive correlation between today's and the past generation's women bargaining power. This suggests the existence of an intergenerational transmission of female intra-household bargaining power.

Figure 22: Bargaining Power of Women and their Mothers



Notes: The figure plots mothers' average bargaining power index for a given value of the women's bargaining power index. The line plots predicted values of a kernel-weighted local polynomial regression of mothers' average bargaining power index on the women's bargaining power index. Dashed lines represent 95% confidence intervals.

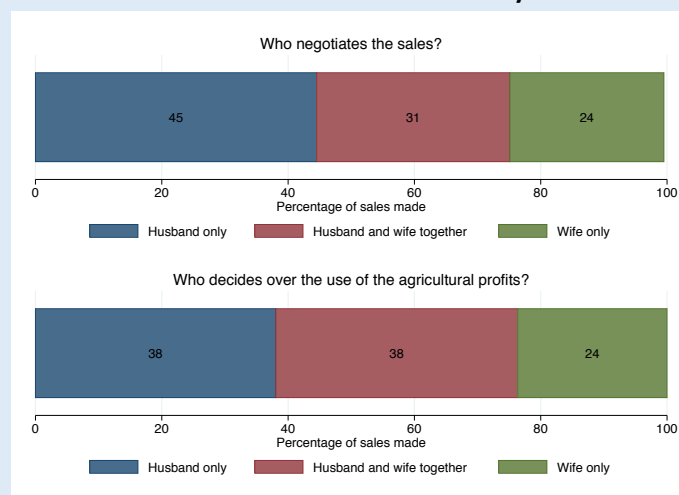
When it comes to the negotiations in the sales of the agricultural production, men decisional power largely overrides women's (Table 30). Figure 23 shows who negotiates the sales or decides on the use of the profits of the sales within couple households. Panel A focuses on the sales to the principal buyer

and Panel B on the sales to the second principal buyer. Results show that in 56% of the sales to the principal buyer, the husband negotiates alone and in 48% of the sales he decides alone on the use of the profits. When looking at the sales to the second principal buyer in Panel B, women seem to have greater decisional power: about a quarter of the sales and the use of profits are managed by the women only.

Figure 23: Women's Decisional Power on the Sales of the Agricultural Production
Panel A: Sales to the principal buyer **Panel B: Sales to the second buyer**



Notes: N=5,685. Percentages are calculated over the number of sales to the principal buyer of each crop produced and sold and only of the couple households.

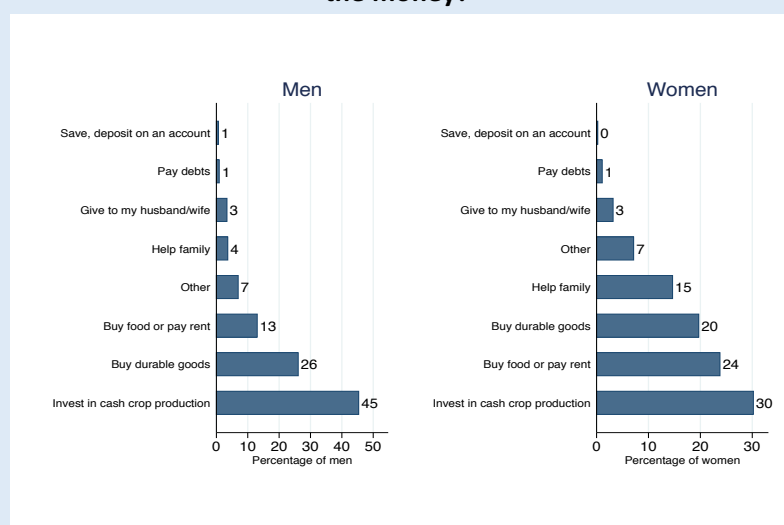


Notes: N=402. Percentages are calculated over the number of sales to the second principal buyer of each crop produced and sold and only of the couple households.

2.8. Hypothetical money use

Figure 24 displays the answers to the question “If you were given 10,000MT tomorrow, what will you do with the money?”. For 45% of men and 30% of women the answer was “to invest in cash crops”. In the second place, women would buy food or pay rent (24%) and men would buy durable goods (26%). Very few would save money.

Figure 24: Hypothetical Money Use
“If you were given 10,000 MT tomorrow, what will you do with the money?”



Notes: N=5,299.

Section 3. Differences in the characteristics by distance to roads

3.1. Household welfare

In Table 13, we note that households living close to the roads show higher welfare level compared with households living far from the roads. Indeed, they own on average more oil lamps, TVs, mobile phones, bikes and motorized vehicles compared to households living far from the roads (Table 13). On average, households close to the roads own 5.22 durable goods whereas households far from the roads own 4.37 durable goods. In addition, in Table 14 we notice an important difference in the level of consumption by distance to the roads: in 2015, the consumption level of the households close to the roads was around 6,400 MZN per capita, significantly higher than the one of the households living far from the roads, which is around 5,000 MZN per capita. In other words, households close to the roads consumed 28% more in value than households far from the roads. This is a meaningful variation between households located just a few kilometers apart. Looking at other welfare dimensions in Table 14, we note that households living along the roads report slightly more to be better off today than 2 years ago (39% of them), compared with the households living further than 2km from the road (33%). This difference is also apparent when looking at the percentage of households who suffered from famine in the 2014/2015 season: 39% of the households living far from the roads against 37% of the households living close to the road went through a famine period.

3.2. Literacy

Data on literacy in Table 16 and 17 reveal that the difference in literacy by distance to roads is significant. Indeed, we observe a higher literacy rate in communities close to roads both for women and men. The women literacy rate is 27% for communities close to the roads, against 22% only for communities located far from the roads. The literacy rate of men is 66% and 60% for communities close and far from the roads respectively.

Section 4. Differences in the characteristics by roads

4.1. Household welfare

We remark significant welfare differences between communities along roads that will be rehabilitated (R604 and R605, “treatment roads”) and communities along roads that will not be rehabilitated (N302 and R604, “control roads”). For instance, on the dwelling quality (Table 14), households along treatment roads live in a house with improved walls or with improved roof about 10 percentage points more than households living along control roads. Also, households along treatment roads experienced less (32% of the households) and shorter periods of food insecurity (0.9 months) compared with households along control roads (45% of the households for an average of 1.5 months of food insecurity). However, when looking at the consumption level in Table 14, the welfare difference goes in the opposite direction: households along control roads consume on average an additional 2,300 MZN per capita compared with households along treatment roads.

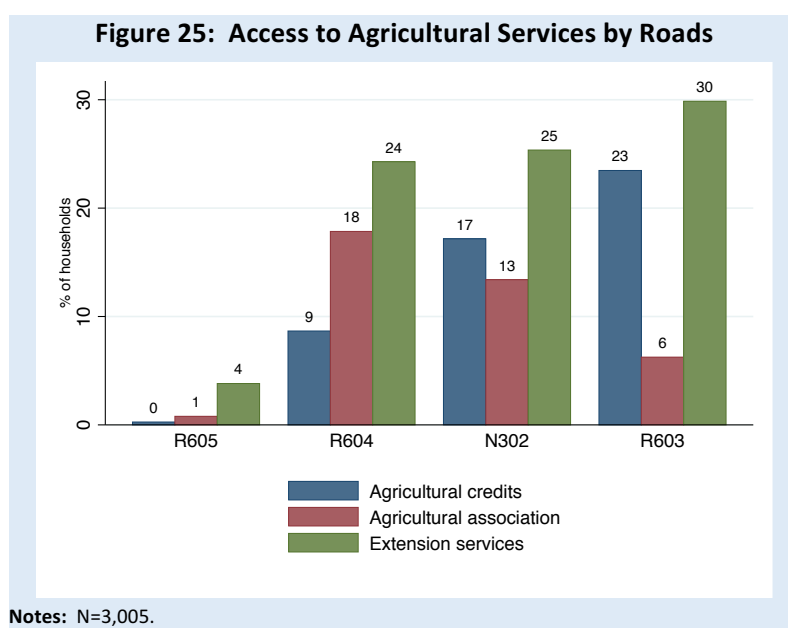
4.2. Economic activities

As we can see in Panel C of Table 16 and 17, individuals living in communities along R603 and N302 on average worked more both in paid activities and in self-employment activities compared with individuals along R604 and R605. This result holds for both men and women. 39% of men and 29% of

women living along R603 or N302 worked in any type of paid activities between February 2015 and January 2016, compared with 23% of men and 20% of women along roads R604 and R605. On self-employment activities, 36% of men and 21% of women living along R603 or N302 worked in any type of self-employed works between February 2015 and January 2016, compared with 30% of men and 14% of women along roads R604 and R605. In addition, individuals along R603 and N302 participated more in agricultural trainings for at least 3 months.

4.3. Access to agricultural credits and services

In Table 26, we notice an important difference between communities along treatment roads, where 20% of the households signed a credit, and communities along control roads, where only 5% of households signed a credit (see also Figure 25). Looking at statistics by roads, 25% of households on road R603 contracted an agricultural credit, 19% on road N302, 10% on road R604 and none on road R605. The difference between control and treatment roads is also striking when looking at who signed the credits: women were the signatories (alone or with her husband) in 26% of the cases in communities along control roads, against 10% only for communities along treatment roads. Finally, and in similarity with the access to agricultural credits, we notice a strong concentration of extension services along roads R603 and very poor access along road R605 (Figure 25 and Table 27 and 28).



PART III. CHARACTERISTICS OF THE FARMS

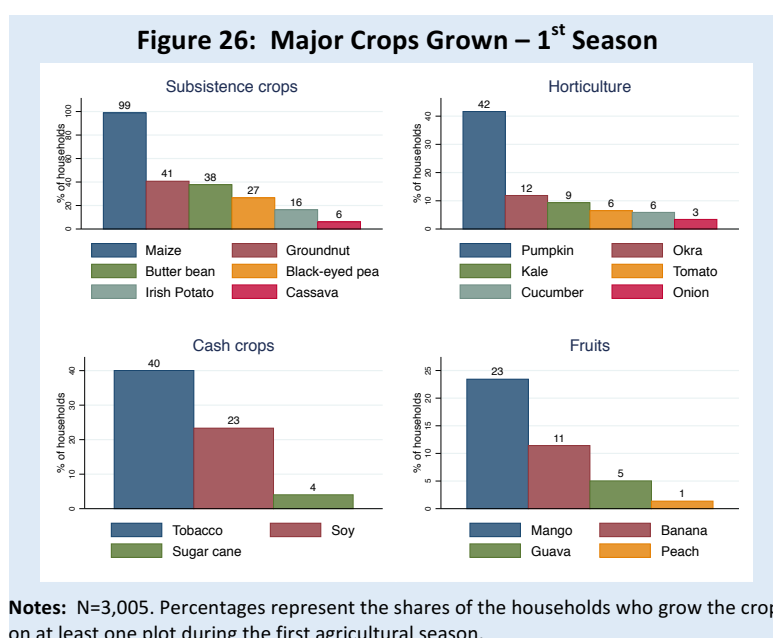
Part III discusses the characteristics of the farms. It is divided into three sections. Section 1 describes the main findings on the agricultural activities at the level of farms, plots and then crops. Section 2 provides relevant elements of comparison between the farms of male-headed households and those of female-headed households. Finally, Section 3 compares farm characteristics along roads that will be rehabilitated and along roads that will not be rehabilitated.

Section 1. Main findings

1.1. Characteristics of the farms

1.1.1. Crops grown

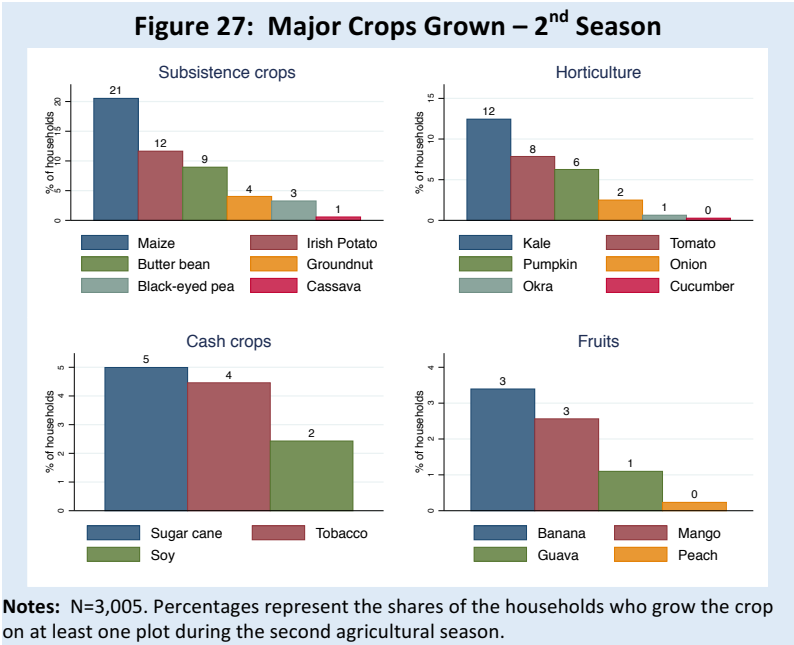
We start by providing an overview of the crops cultivated by the sampled households. Crops are classified into four distinct categories: subsistence crops, cash crops, horticultural crops and fruit crops. In the baseline survey, three crops defined as cash crops are cultivated in the region: tobacco, soy and sugar cane. Table 32A and 32B provide the percentages of households who cultivated the crops during the first agricultural season (September 2014 to February 2015) and second season (March 2015 to August 2015) respectively. Crops are ordered from the most cultivated to the least cultivated. The statistics are graphed separately for the first season and second season in Figure 26 and 27 respectively. Overall, subsistence crops make up for a large share of the agriculture in the sample. We first focus on the percentage of households growing crops during the main season, namely the first season.



The most common crop grown is maize: about 99% of the households cultivate maize during the first season. Pumpkin is the second most cultivated crop, with about 42% of the households who cultivate it. Then follows groundnut (41%) and tobacco (40%). Tobacco is the most important cash crop in the region. We notice that apart from tobacco, a few cash crops are grown in the region: soy is cultivated

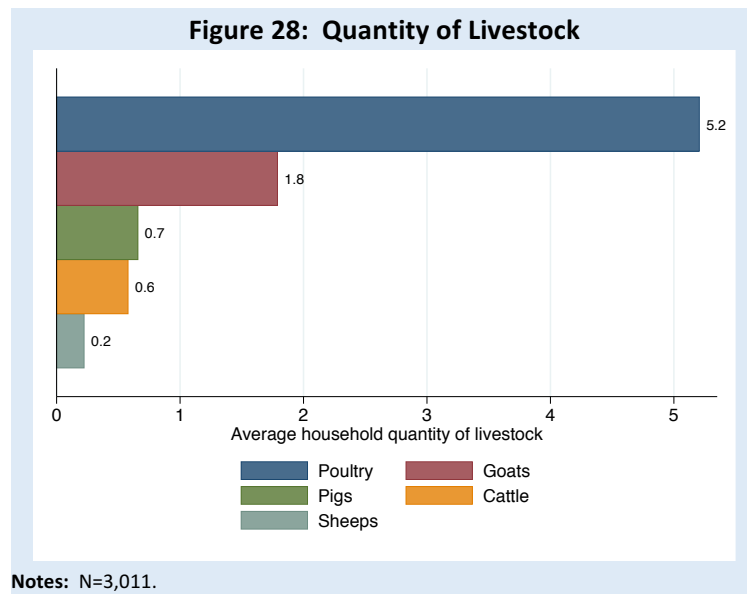
by about 23% of the households during the first season and sugar cane by 4%. Fruits are not commonly grown in the region either. Mango is the most common fruit grown and seventh most common crop grown overall (23% of the households). Banana is another fruit grown in the region (11%). Guava and peach are far less common with respectively 5% and 1% of the households cultivating them.

With respect to the second season, we notice overall low percentages of households cultivating crops in Table 32B and Figure 27. This illustrates that the second season is far less intensive than the first one. Indeed, only about 35% of the households cultivated during the second season compared with almost 100% of the households during the first season (Table 36). During the second season, maize remains the most cultivated crop, followed by kale, Irish potato and butter bean. Tobacco is very rarely grown during the second agricultural season: only 5% of the households compared with 40% during the first season grow tobacco. This is also true for other cash crops and fruits in general, which are marginally cultivated during the second season.



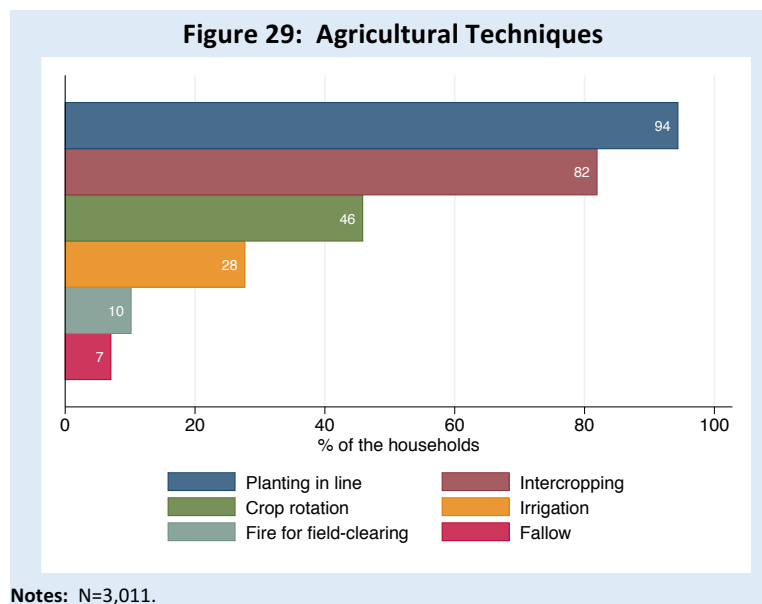
1.1.2. Livestock and agricultural tools

Table 33 shows the average quantity of livestock and agricultural tools that the households possess. On average, the household’s livestock is composed of 8.5 animals in total. As we can see in Figure 28, Poultry and goats are the most common livestock owned, followed by sheep and cattle. Regarding agricultural tools, households own on average 3 hoes and one machete, and the average total number of agricultural tools owned is 5.1. Other tools such as cart, tractor and plough are far less common.



1.1.3. Agricultural techniques

Figure 29 provides the percentage of households who practiced the following agricultural techniques: line cropping, inter cropping, crop rotation, irrigation, fire for field-clearing and fallow between September 2014 and August 2015. Planting in line and intercropping are common practices with respectively 94% and 81% of the households who applied these techniques. Crop rotation is performed by about half of the sample (46%). Although droughts are common in the region, irrigation is practiced by only 28% of the households. Fallowing is not a widespread practice with only 7% of the households who made land fallow during the 2014/2015 agricultural season. The use of fire for field clearing is still used by 10% of the households.



We further look at the percentage breakdown of the different types of irrigation systems used by the households: manual, mechanical or gravity fed irrigation system. As we can see in Figure 30, we find

that the most common type of irrigation system is manual (22%), followed by gravity fed systems (5%) and mechanical systems (1%).

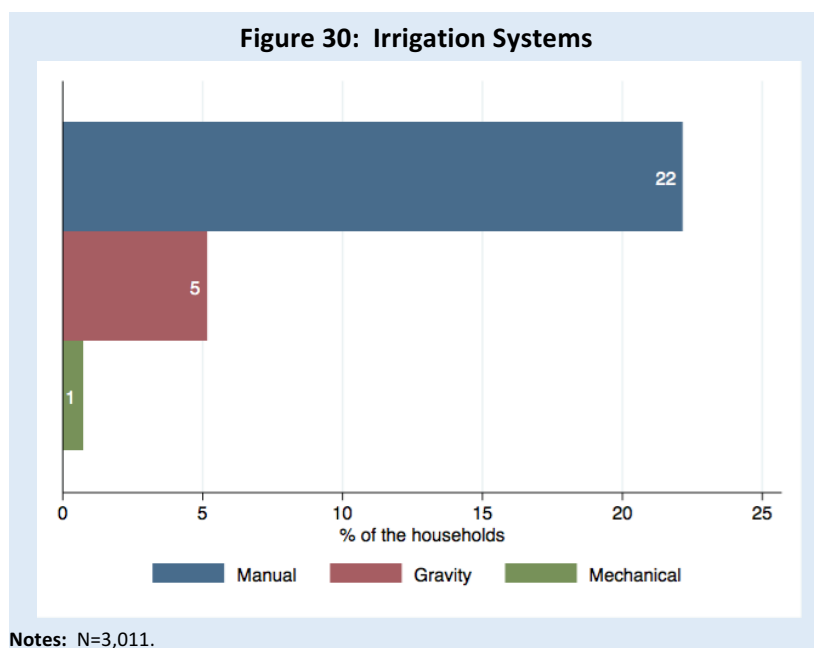


Table 34 and 35 provide statistics on the different agricultural techniques used by the women and men separately as well as on their sources of information for these techniques. These sources can be extension agents, NGOs, companies, neighbors, relatives or others. About 90% of the men and women learnt the techniques through their relatives. Neighbors are the second source of information: depending on the techniques, from 30 to 60% of the individuals learnt from their neighbors. Therefore, in the case of an agricultural extension, the techniques taught during the training could rapidly spread to households who did not benefit from the extension program.

1.1.4. Agricultural yields and sales

Table 36 provides statistics at the farm level on the size of land cultivated, the yields and the sales of the agricultural outputs by season, by roads status (control or treatment roads) and by distance to roads. A first feature to highlight is the very high proportion of households who cultivate during the first and the second season. Indeed, 99% of the households cultivate during the first season running from September to February. The second season, between March and August, is far less intensive, with about 35% of the households who cultivate.

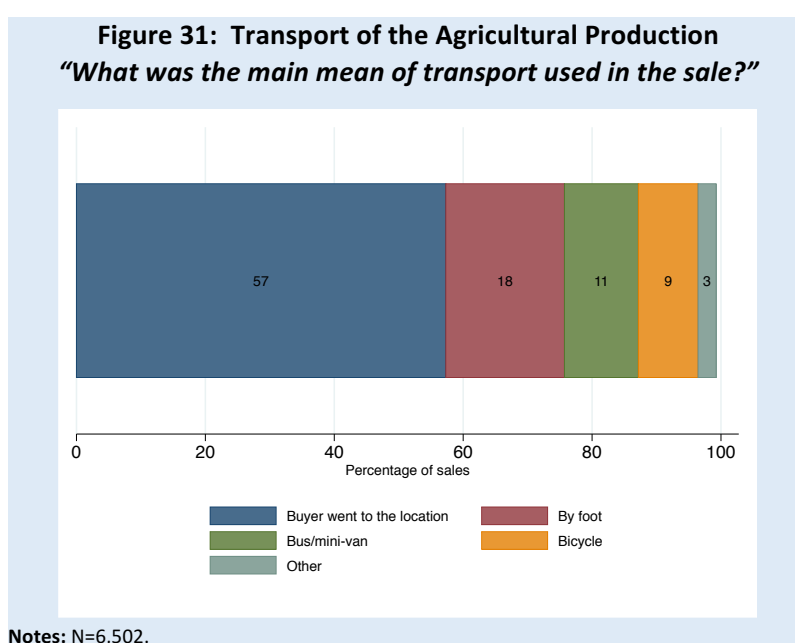
The average size of cultivated land varies also across season: about 3.26 hectares of land are cultivated on average per household during the first season compared with 1.9 hectares during the second season.

Yields are calculated by dividing the total value of the harvested production by the total cultivated surface in hectare. Although more households cultivate during the first season, yields are higher for those who cultivate during the second season: 12,700 MZN/ha for the second season compared with 11,500 MZN/ha for the first season. However, the proportion of households who sell part of their production is much higher during the first season (85%). 18% of the households cultivating during the second season sell at least part of their production. On average, the households who sell part of their

production sell about 40% of their production during the first season and 43% during the second season.

1.1.5. Transport of the agricultural production

Transport costs constitute a large part of the total farm-to-market value chain, thus being a key competitiveness driver for smallholders. Stronger and shorter linkages between smallholders and clients would bring more efficiency to the production scheme, and increase profits thanks to a reduction in the transport costs. In addition, proximity to markets reduces the post-harvest loss. Figure 31 shows that about 57% of the sales are done without the farmer commuting: the buyer goes to the sellers' location. The farmers transport the production to the buyer by foot in 18% of the cases, by bus in 11% of the cases and by bicycle in 9% of the cases. The differences between communities that are far or close to the roads are not significant.



1.1.6. Agricultural losses

Crop losses before and after the harvest are often not negligible and should be one challenge to address in order to increase agricultural output. Unfortunately, the data do not provide information that could help quantifying the cost of crop losses. However, we have data on the incidence of losses on households and on their crop portfolio.

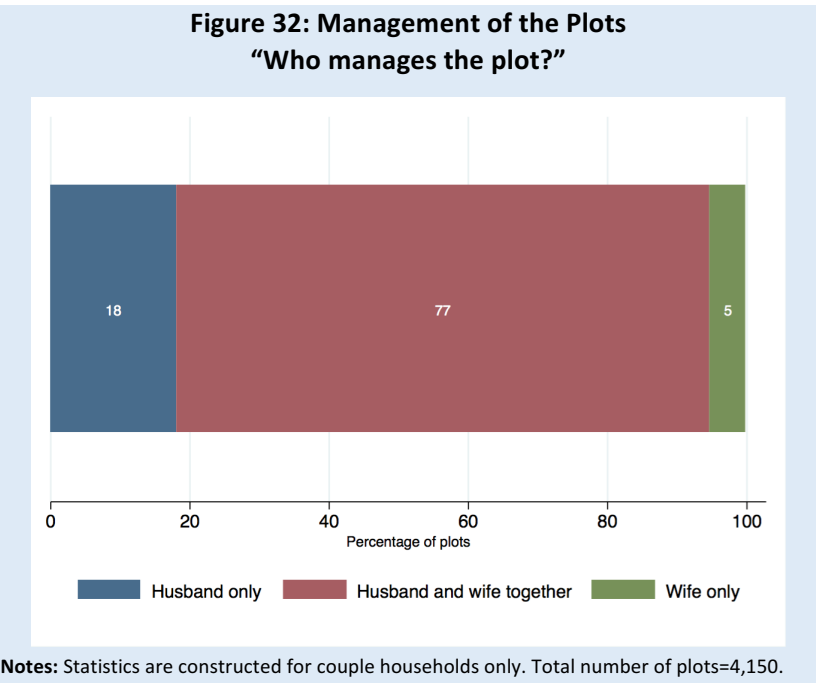
Table 37 and 38 contain statistics on the pre-harvest and post-harvest loss for the first and second season respectively. We observe in Table 37 that on average 55% of the households are concerned by pre-harvest losses during the first agricultural season and that 34% of the crop portfolio (i.e. different type of crops grown) is affected. The pre-harvest losses of the first season are in 58% of the cases due to the lack of rain, 15% due to the excess of rain and 9% due to pests. Households who cultivate during the second season are on average less affected by crop losses (Table 38). 38% of them lost part of their production and about 24% of the different crops they cultivate is affected. Overall, the causes of pre-harvest losses during the second season compared with the first season are less related to rainfalls and more related to pests and crop diseases.

Regarding post-harvest losses, 14% and 7% of the households lost part of their harvest of the first and second season respectively. Fires (47%) and floods (34%) are responsible for the major part of the post-harvest losses of the first season while fires alone account for 78% of the post-harvest losses of the second season.

1.2. Characteristics of the plots

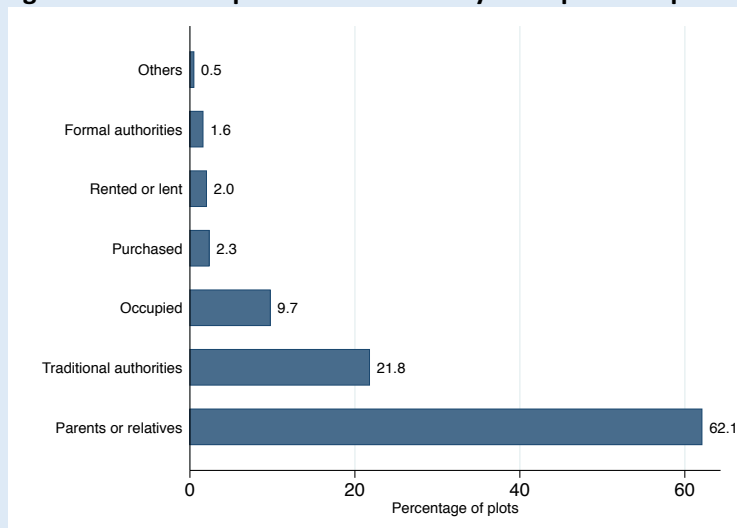
1.2.1. Farm tenure, farm size and farm management

Table 39 provides statistics on management structure, plot size, and land ownership for the total number of plots owned and/or cultivated by the households. To the question « Who decides about the choice of crop, the use of inputs, the labor force and the season to grow? », we observe that more than three quarters of the couple households answered that husband and wife jointly manage the farms (Figure 32). However, 18% of the couple households are managed by the husband only compared with 5% of the wife only. The management structure within households and across plots varies little: only 13% of the couple households who possess more than one plot have a different management structure across plots.



Regarding land tenure, very few farms (1.6%) have an official document to state on their ownership. Figure 33 shows the prevalence of each way of acquiring plots. The land acquisition mostly goes through family heritage (62%) and traditional authorities (22%). As previously seen in Part I, formal authorities or monetary transactions are not common ways to acquire land.

Figure 33: Land Acquisition - “How did you acquire the plot?”

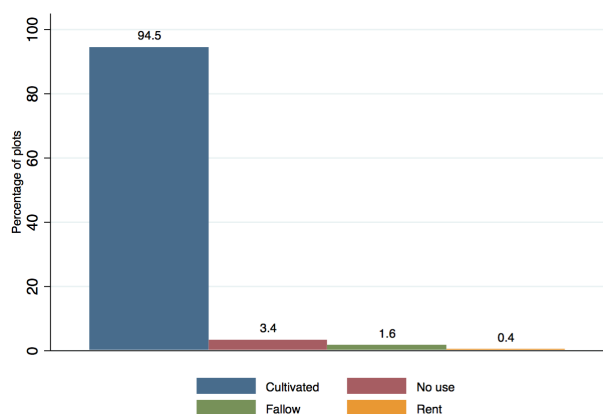


Notes: N=4,979.

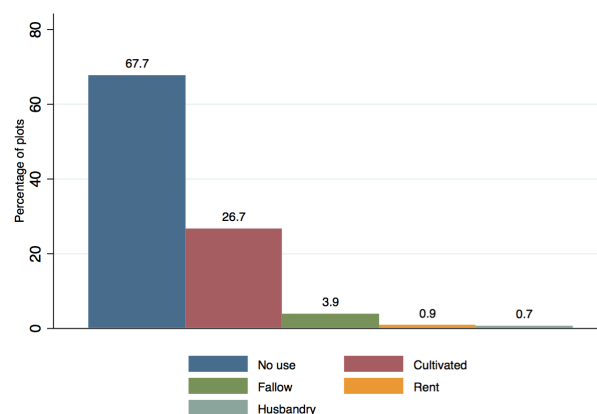
Panel A of Table 40 and 41 show the different land uses of the plots during the first agricultural season and the second season respectively (see also Figure 34). In large majority, the land is farmed during the first agricultural season (95% of the plots). However, only 27% of the land is farmed during the second season, 68% are unused and 4% are made fallow. Therefore, the first season appears to be far more intensive compared with the second one.

Figure 34: Use of Plots

1st season



2nd season



Note: N=4,979.

1.2.2. Labor inputs

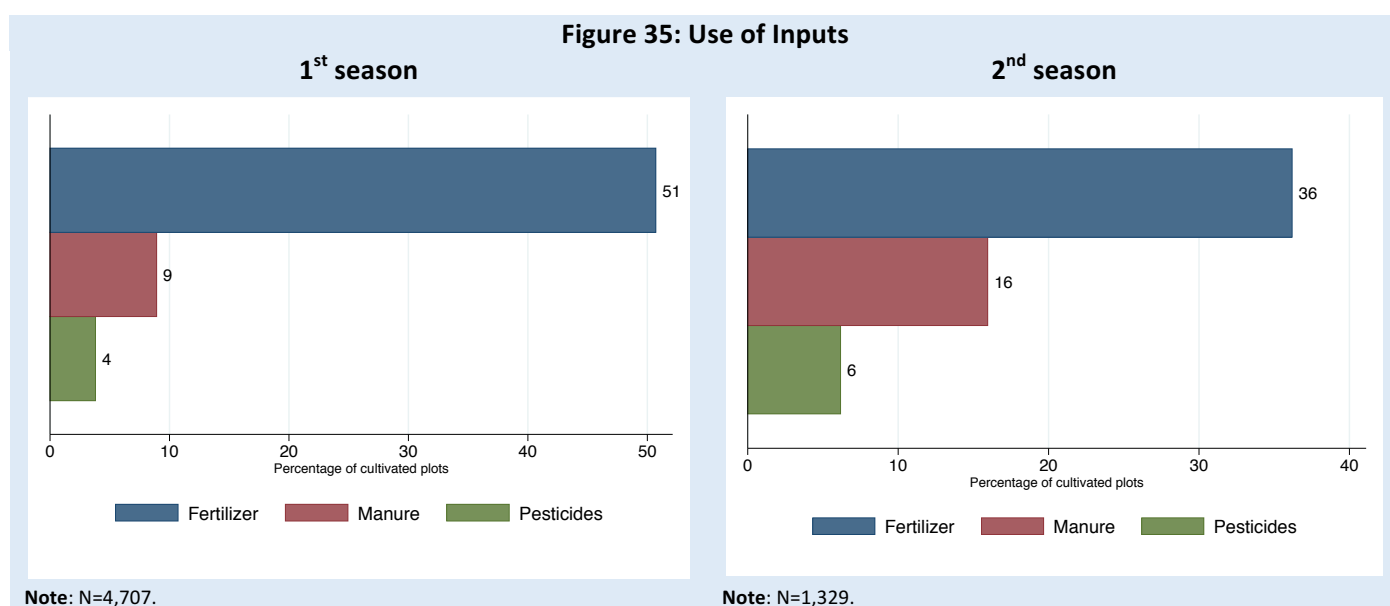
Table 40 and 41 provide statistics on the use of inputs – both labor and non-labor inputs – at the level of plots for the first season and the second season respectively. In couple households (Panel B), the statistics show that the husband and the wife work about the same amount of days on average on each plot with respectively 101 and 103 days during the first season and 98.3 and 100 days during the

second season. Less help is required from the other household members during the second season (75.5 days) compared with the first season (131 days).

Single women (Panel C) work relatively more than women in couple, with 114 days worked per parcels on average during the first season, against 101 days for women in couple. Concerning hired labor force from outside the households (Panel D), men are the most requested: men outside the household are hired during the first season on 22% of the plots, compared with 10% of the plots with female labor force from outside the household. Children labor force is very marginally requested: less than 1% of the plots employ children.

1.2.3. Non-Labor inputs

Panel D of Table 40 and 41 provide statistics on the use of fertilizer, pesticide and manure at the level of plots for the first and second season respectively (see also Figure 35). As a general comment, manure and pesticide are not commonly used among the sampled households whereas fertilizer is more common. Households use manure and pesticides in respectively 9% and 4% of the cultivated plots during the first season. Fertilizer is used in 50% of the cultivated plots during the first season and 36% of the plots during the second. On the contrary to fertilizer, almost twice more pesticides and manure are used during the second season compared with the first season.



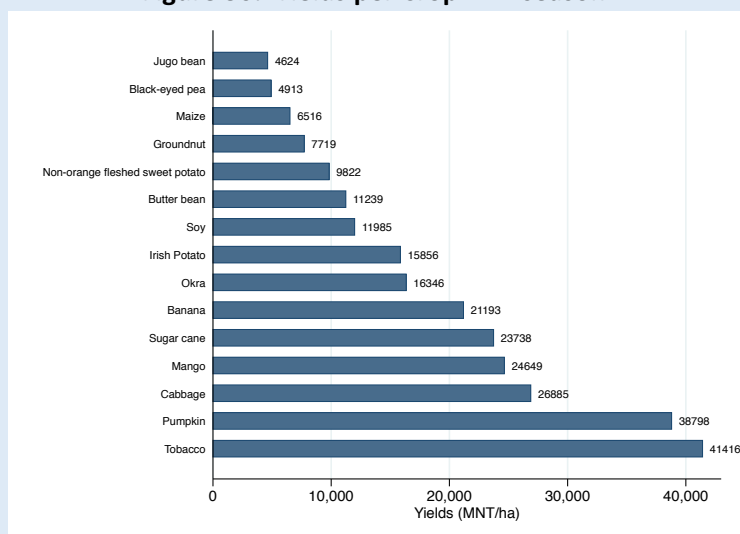
1.3. Characteristics of the crops

1.3.1. Yields by crop

Figure 36 and 37 graph the level of yields per crop per agricultural season for the 15 most cultivated crops in the sample. Yields are calculated by dividing the value produced during one season in Metical (MZN) with the surface of land used to cultivate the crop in hectare. It appears that tobacco has the largest yields, with more than 41,000 MZN per hectare during the first season. Then, pumpkin which is the second most cultivated crop in the region after maize, also has the second largest yield with almost 39,000 MZN per hectare during the first season. Follow cabbage, mango and sugar cane. The

level of yield of maize and other subsistence crops remain low (only 6,500 MZN per hectare for maize during the first season).

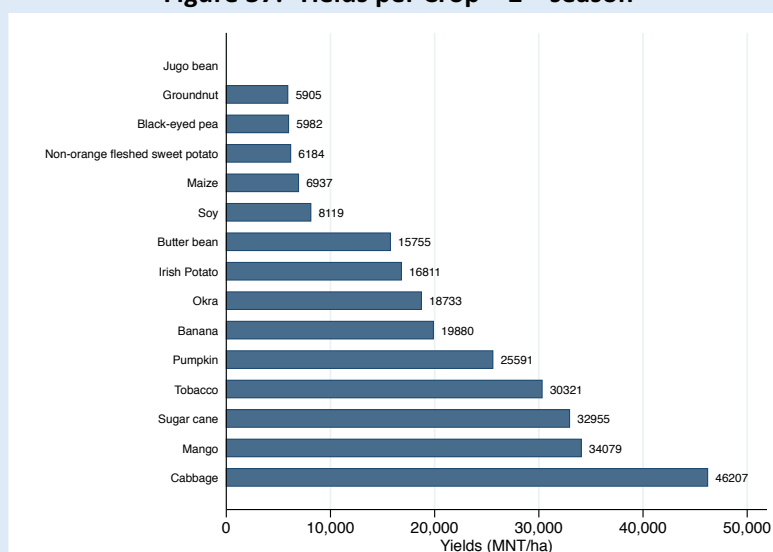
Figure 36: Yields per Crop – 1st season



Notes: N=10,865. Yields are the ratios of the value of quantity produced per crop to the surface of land used to cultivated the crop. Value, quantity and surface are winsorized at the top 5% of the distributions.

Figure 37 presents the yields per crop during the second season. As we have seen above, only 35% of the plots are cultivated during this season. The yields of tobacco are on average lower by 10,000 MZN during the second season. However, sugar cane has a yield about 9,000 MZN higher during the second season compared with the first season. Also, the yield of cabbage and mango are high during the second season.

Figure 37: Yields per Crop – 2nd season



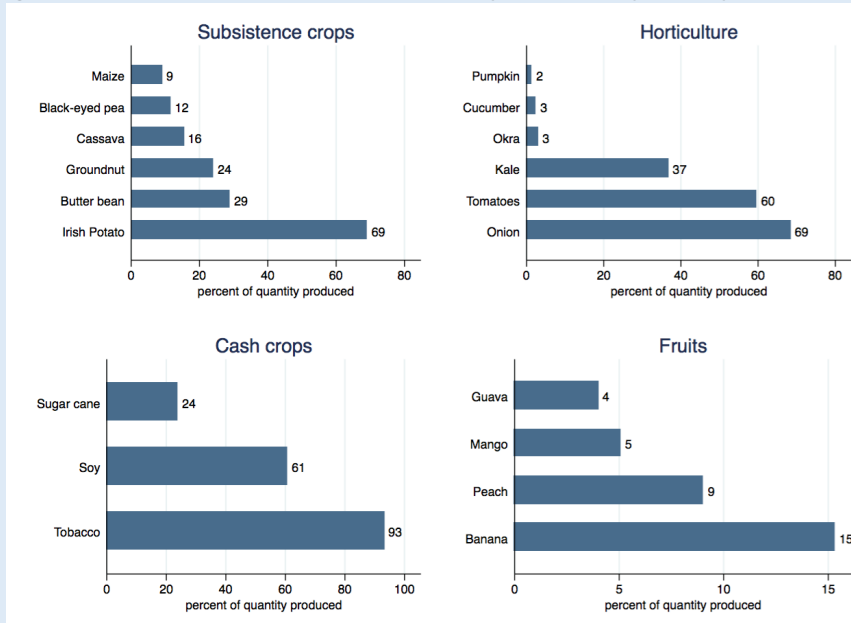
Notes: N=1,511. Yields are the ratios of the value of quantity produced per crop to the surface of land used to cultivated the crop. Value, quantity and surface are winsorized at the top 5% of the distributions.

1.3.2. Share of output sold by crop

The share of agricultural output sold on the market is a good indicator of the demand level in the area, and indicates whether the crop is market-driven. Figure 38 provides the share of output sold in total quantity produced for the first season and Figure 39 for the second season. Overall, fruits are a type of crop that is very little market-driven. Banana is the most sold fruit with only 15% of its quantity produced sold. Tobacco has the highest share of quantity sold: about 93% during the first season and 86% during the second season. Soy is also largely sold: about 60% of the total quantity produced is sold. However, only 24% of the total quantity produced of sugar cane is sold. Irish potato and onion, both almost exclusively produced on treatment roads (see Table 32), are sold in 69% of their total quantity produced during the first season. Butter bean, which is produced by 67% of the households along treatment roads and 8% along control roads, is sold in 29% of its total quantity produced during the first season and 24% for the second season.

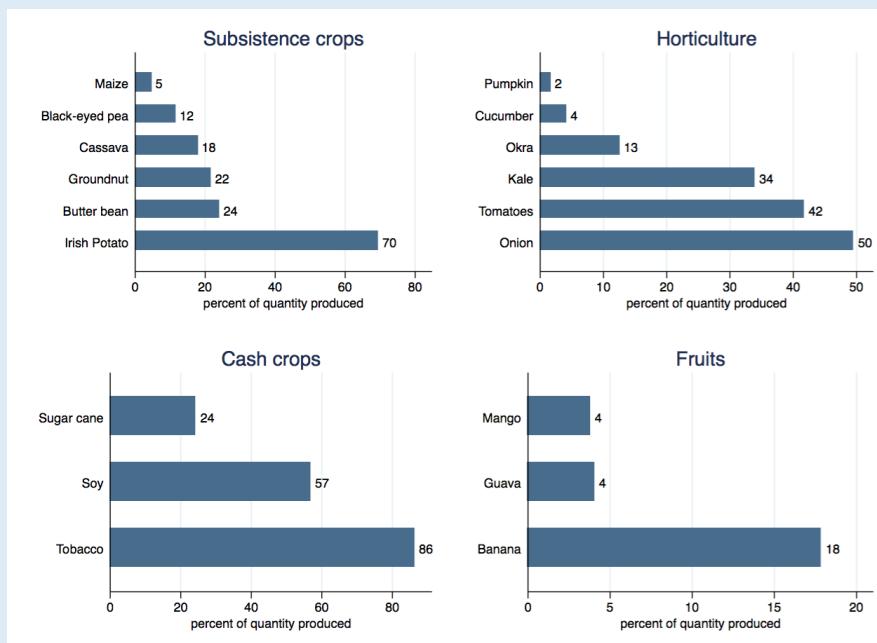
We notice that maize and pumpkin, which are the two most common crops grown in the region (90% and 42% of the households respectively), are in large majority consumed by the households and not sold: during the first season, only 9% of the quantity of maize is sold and 2% of the quantity of pumpkin.

Figure 38: Share of Sales in Total Quantity Produced per Crop – 1st season



Notes: Percentages correspond to the share of the quantity of crop sold in kilogram over the total quantity of crop produced. N=12,319.

Figure 39: Share of Sales in Total Quantity Produced per Crop – 2nd season



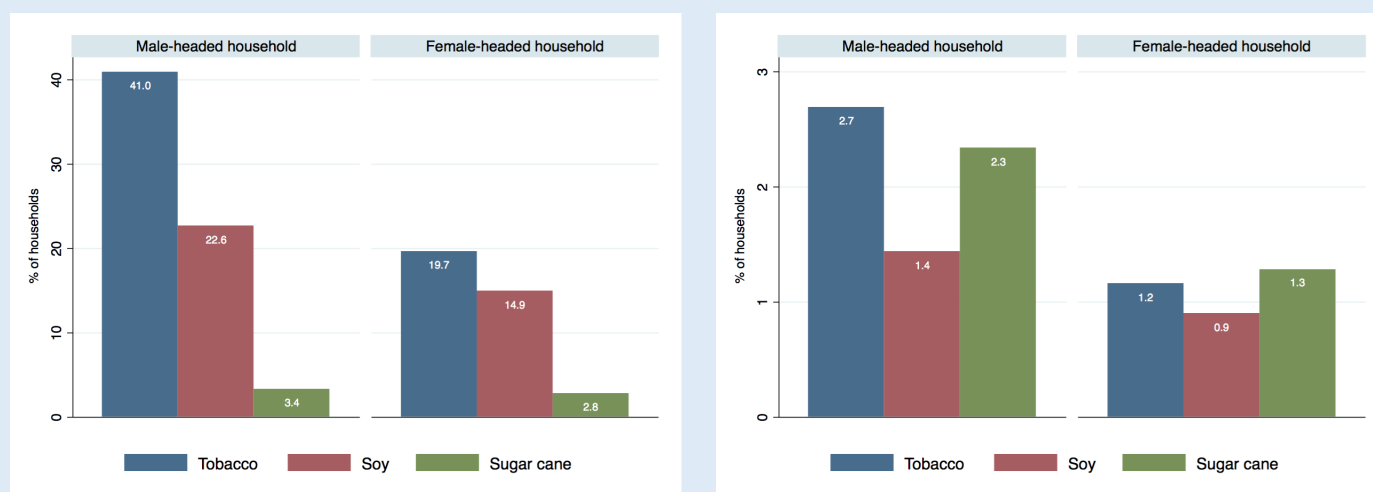
Notes: Percentages correspond to the share of the quantity of crop sold in kilograms over the total quantity of crop produced. N=2,933.

Section 2. Differences in the farm characteristics by gender of the household-head

2.1. Crops grown

Figure 40 shows the percentage of male-headed and female-headed households who produce the three different cash crops – tobacco, soybean and sugar cane – separately for the first and second season. We notice that there are twice as many male-headed households than female-headed households who produce tobacco: 41% against 20% for the first season for instance. Although the difference is less prominent for the culture of soy and sugar cane, more male-headed households produce these cash crops compared with female-headed households.

Figure 40: Cash Crop Production by Gender of the Household Head
1st season 2nd season

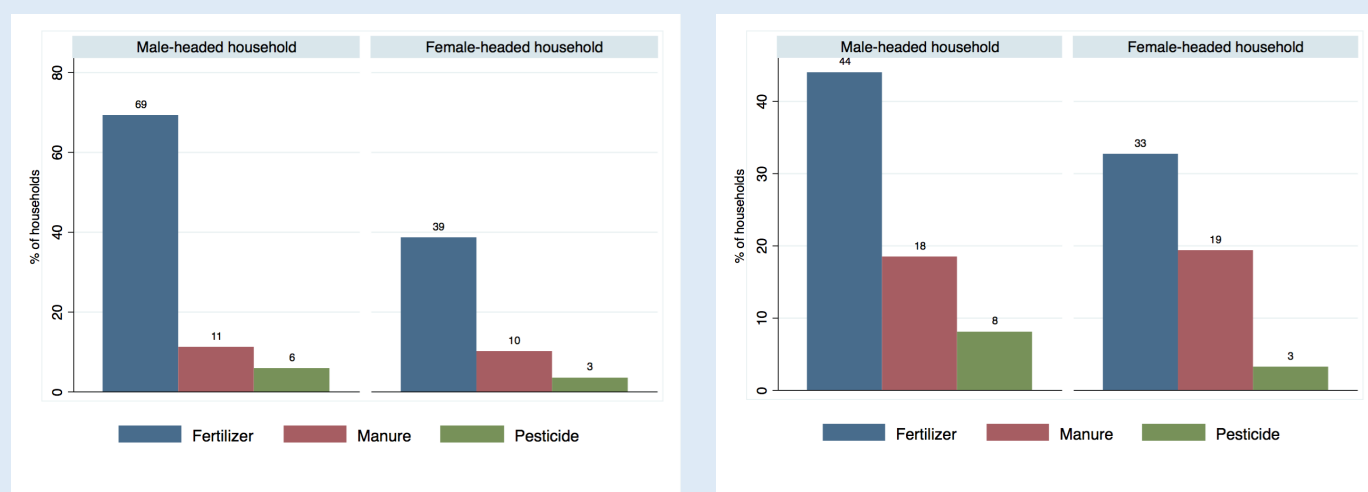


Note: N=3,005.

2.2. Agricultural input use

Figure 41 compares the use of inputs between female-headed households and male-headed households separately for the first and second season. It strikes that far less female-headed households use fertilizer and pesticides on their plots compared with male-headed households. For instance, during the first season, 69% of the male-headed households used at least once fertilizer on any plots compared with 39% of female-headed households. Also, twice less female-headed households used pesticide in comparison with male-headed households during the first season. The use of manure is however as common in female-headed households as in male-headed households

Figure 41: Agricultural Inputs Use by Gender of the Household Head
1st season 2nd season



Note: N=3,005.

2.3. Agricultural yields and sales

Table 42 provides an overview of the main agricultural variables (number of plots, plot size, yield, dummy for selling output and share of output sold) separately for male-headed households and female-headed households. On average, female-headed households own significantly less and smaller plots than male-headed households. Also, the median yield of female-headed households is about 6,609 MZN per hectare during the first season, whereas male-headed households' median yields is estimated at about 9,089 MZN per hectare. The difference between the yields of female-headed and male-headed households during the second season is small and not significant.

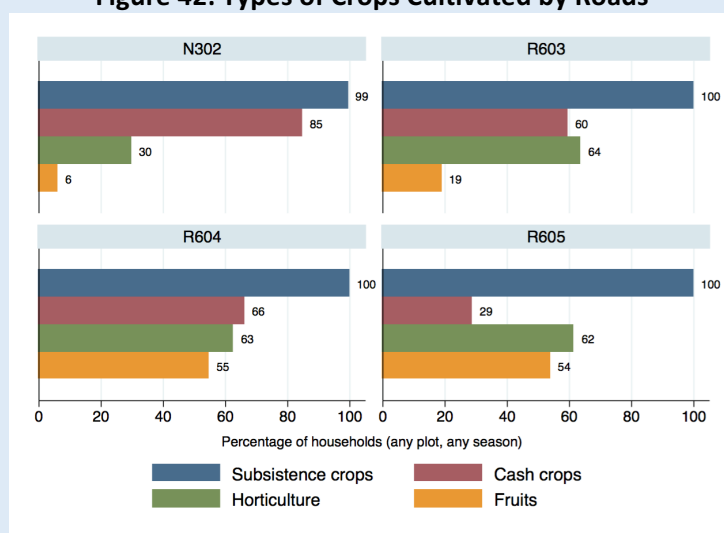
With respect to the market-orientation of the production, we notice that during the first season, a large majority of the male-headed households sell part of their production (90%), and that the share of the total quantity produced that is sold is about 45%. Statistics are significantly lower when looking at female-headed households: 74% sell part of their production during the first season and only 28% of their production of the first season is sold. We conclude that the farming activities of female headed-household is at lower production levels but also relatively less market-driven than male-headed households' production.

Section 3. Differences in the farm characteristics by roads

3.1. Crops grown

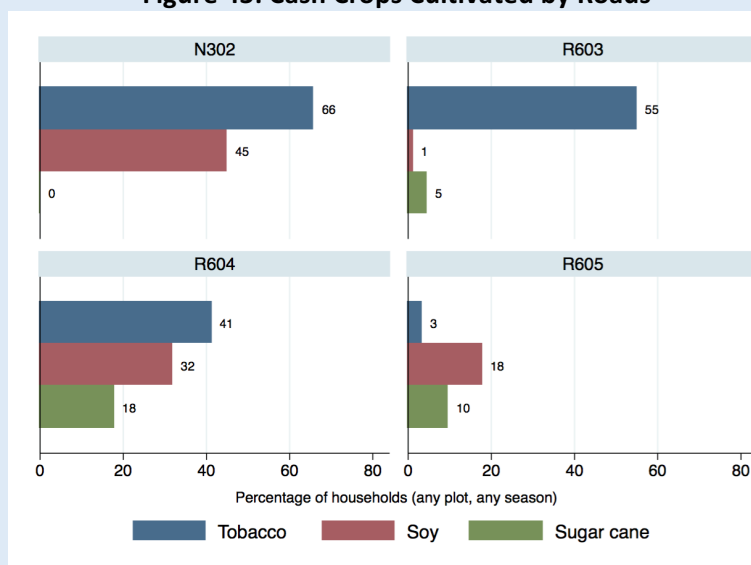
It is interesting to further analyze how the crop portfolio of the households differs across roads. Figure 42 displays the percentages of households cultivating each categories of crops (fruits, horticulture, staple and cash crops) per road. Figure 43 shows the percentages of households cultivating the three cash crops (tobacco, soy and sugar cane) per road. We notice that along the road N302, the agriculture is importantly cash-crop oriented (85% of the households cultivate cash crops) and very few households cultivate fruits (6%). Along this same road, 66% of the households cultivate tobacco and 45% cultivate soy. This differs importantly with the road R603 where only 1% of the households cultivate soy. Households along the road R605 cultivate on average much less cash crops than households along the other three roads: about 29% of these households cultivate cash crop, and only 3% cultivate tobacco. However, 54% and 55% of the households along R605 and R604 respectively cultivate fruits.

Figure 42: Types of Crops Cultivated by Roads



Notes: N=3,005.

Figure 43: Cash Crops Cultivated by Roads



Notes: N=3,005.

In Table 36, we also note the important difference between the control and treatment roads in the cultivation of butter bean, which the fourth most cultivated crop after maize, pumpkin and tobacco. Only 8% of the households along roads N302 and R603 grow butter bean, against 67% of the households along roads R604 and R605. The difference is also notable for mango: about 37% of the households along treatment roads cultivate mango compared with 10% of the households along roads N302 and R603.

3.2. Agricultural yields and sales

Columns 3 and 4 of Table 36 report statistics on the agricultural activities along the two control roads N302 and R603 and the two treatment roads R604 and R605 separately. We remark that the size of cultivated land is significantly higher along the roads N302 and R603 during the two agricultural seasons, with 3.5 hectares per households during the first season compared with 3 hectares for households along R604 and R605.

The average yield is significantly higher along N302 and R603: it equals to about 12,734 MZN/ha compared with 10,328 MZN/ha for the households along roads R604 and R605. One factor that could explain this difference is the production of tobacco, more common along roads N302 and R603 than along the two other roads as we have just seen above.

During the first season, although the percentage of households selling part of their output is slightly higher along treatment roads, households along control roads sell on average a larger share of their production: 47% against 34% for households along control roads. This could also be partly due to the production of tobacco, highly market-orientated.

While about 100% of the households along control and treatment roads cultivate during the first season, the households along control roads cultivate much less during the second season running from March to August: about 17% of them cultivate, compared with 53% of the households along treatment road

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APPENDIX

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Appendix A: Community characteristics

Table 1: Remoteness

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
What is the closest main locality around?								
Town office [yes=1]	150	.440 (.498)	.324 (.471)	.553 (.501)	[.005]	.473 (.503)	.408 (.495)	[.426]
Administrative capital [yes=1]	150	.360 (.482)	.459 (.502)	.263 (.443)	[.012]	.284 (.454)	.434 (.499)	[.056]
Town district [yes=1]	150	.167 (.374)	.149 (.358)	.184 (.390)	[.562]	.176 (.383)	.158 (.367)	[.772]
Other [yes=1]	150	.033 (.180)	.068 (.253)	0 (.000)	[.021]	.068 (.253)	0 (.000)	[.021]
Type of route that links the community to the closest main locality								
Unpaved road [yes=1]	150	.420 (.495)	.419 (.497)	.421 (.497)	[.979]	.405 (.494)	.434 (.499)	[.723]
Trail [yes=1]	150	.580 (.495)	.581 (.497)	.579 (.497)	[.979]	.595 (.494)	.566 (.499)	[.723]
Is this route operational throughout the entire year? [yes=1]								
	150	.680 (.468)	.797 (.405)	.566 (.499)	[.002]	.554 (.500)	.803 (.401)	[.0010]
Is there any public transport during the rainy season? [yes=1]								
	150	.267 (.444)	.392 (.492)	.145 (.354)	[.0005]	.135 (.344)	.395 (.492)	[.0003]
Is there any public transport aside of the rainy season? [yes=1]								
	150	.287 (.454)	.378 (.488)	.197 (.401)	[.014]	.149 (.358)	.421 (.497)	[.0002]
How do people usually commute to the closest town?								
Public transport [yes=1]	150	.100 (.301)	.108 (.313)	.092 (.291)	[.746]	.041 (.199)	.158 (.367)	[.016]
By foot [yes=1]	150	.793 (.406)	.757 (.432)	.829 (.379)	[.278]	.865 (.344)	.724 (.450)	[.033]
Bike [yes=1]	150	.100 (.301)	.135 (.344)	.066 (.250)	[.159]	.095 (.295)	.105 (.309)	[.829]
Vehicle [yes=1]	150	.007 (.082)	0 (.000)	.013 (.115)	[.325]	0 (.000)	.013 (.115)	[.325]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 2: Access to electricity and communication services

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
Are there any electricity poles in the village or within 100 meters? [yes=1]	150	.127	.108	.145	[.503]	.013	.240	[.00002]
		(.334)	(.313)	(.354)		(.115)	(.430)	
If yes, are there any households or shops with direct access to electricity?* [yes=1]	19	.632	.750	.545	[.390]	0	.667	[.199]
		(.496)	(.463)	(.522)		-	(.485)	
Are there any fix phone lines in the village? [yes=1]	150	.027	.014	.039	[.327]	.013	.040	[.314]
		(.162)	(.116)	(.196)		(.115)	(.197)	
If yes, are there any households or shops who possess fix phones?* [yes=1]	4	0	0	0	-	0	0	-
		(.000)	-	(.000)		-	(.000)	
If not, and if there is a public phone outside the village, how long does it take to reach it from the center of the village by foot?								
Less than 15mins [yes=1]	146	.014	.027	0	[.157]	0	.028	[.151]
		(.117)	(.164)	(.000)		(.000)	(.165)	
Between 15 and 30mins [yes=1]	146	.014	.014	.014	[1.00]	0	.028	[.151]
		(.117)	(.117)	(.117)		(.000)	(.165)	
Between 30mins and 1h [yes=1]	146	.082	.055	.110	[.231]	.027	.139	[.014]
		(.276)	(.229)	(.315)		(.163)	(.348)	
Between 1 and 2h [yes=1]	146	.212	.151	.274	[.069]	.189	.236	[.492]
		(.410)	(.360)	(.449)		(.394)	(.428)	
Between 2 and 5h [yes=1]	146	.253	.247	.260	[.850]	.378	.125	[.0004]
		(.436)	(.434)	(.442)		(.488)	(.333)	
More than 5h [yes=1]	146	.425	.507	.342	[.045]	.405	.444	[.636]
		(.496)	(.503)	(.478)		(.494)	(.500)	
Are there any mobile phone networks in the village? [yes=1]	150	.913	.905	.921	[.736]	.880	.947	[.149]
		(.282)	(.295)	(.271)		(.327)	(.226)	
If yes, are there any households or shops who possess mobile phones?* [yes=1]	137	.927	.925	.929	[.943]	.879	.972	[.037]
		(.261)	(.265)	(.259)		(.329)	(.167)	
If not, and if there is a place to catch mobile phone signal nearby, how long does it take to reach it from the center of the village by foot?								
Less than 15mins [yes=1]	23	.217	.167	.273	[.559]	.235	.167	[.740]
		(.422)	(.389)	(.467)		(.437)	(.408)	
Between 15 and 30mins [yes=1]	23	.391	.250	.545	[.161]	.294	.667	[.118]
		(.499)	(.452)	(.522)		(.470)	(.516)	
Between 30mins and 1h [yes=1]	23	.087	.083	.091	[.952]	.118	0	[.402]
		(.288)	(.289)	(.302)		(.332)	(.000)	
Between 1 and 2h [yes=1]	23	.130	.167	.091	[.610]	.118	.167	[.772]
		(.344)	(.389)	(.302)		(.332)	(.408)	
Between 2 and 5h [yes=1]	23	.174	.333	0	[.036]	.235	0	[.208]
		(.388)	(.492)	(.000)		(.437)	(.000)	
This village has access to Radio Mocambique [yes=1]	150	.800	.770	.829	[.372]	.680	.920	[.0002]
		(.401)	(.424)	(.379)		(.470)	(.273)	
This village has access to Radio Comunitaria [yes=1]	150	.913	.865	.961	[.038]	.933	.893	[.387]
		(.282)	(.344)	(.196)		(.251)	(.311)	

Notes: All statistics are constructed using baseline data. * Sample restricted to the communities where there is electricity or the specific communication service. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 3: Access to water

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
What is the principal source of water in the village?								
Private well [yes=1]	150	.047 (.212)	.014 (.116)	.079 (.271)	[.058]	.027 (.163)	.066 (.250)	[.263]
Public well [yes=1]	150	.193 (.396)	.149 (.358)	.237 (.428)	[.174]	.243 (.432)	.145 (.354)	[.128]
Public borehole [yes=1]	150	.460 (.500)	.365 (.485)	.553 (.501)	[.021]	.432 (.499)	.487 (.503)	[.507]
Rivers or lakes [yes=1]	150	.280 (.451)	.432 (.499)	.132 (.340)	[.00003]	.284 (.454)	.276 (.450)	[.920]
Tap water [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	0 (.000)	.013 (.115)	[.325]
Other [yes=1]	150	.013 (.115)	.027 (.163)	0 (.000)	[.151]	.014 (.116)	.013 (.115)	[.985]
Where is this principal source?								
In the village [yes=1]	150	.913 (.282)	.932 (.253)	.895 (.309)	[.415]	.892 (.313)	.934 (.250)	[.360]
Outside the village [yes=1]	150	.087 (.282)	.068 (.253)	.105 (.309)	[.415]	.108 (.313)	.066 (.250)	[.360]
How long does it take to reach the principal source from the center of the village by foot?								
Less than 15mins [yes=1]	150	.613 (.489)	.568 (.499)	.658 (.478)	[.259]	.662 (.476)	.566 (.499)	[.228]
Between 15 and 30mins [yes=1]	150	.213 (.411)	.230 (.424)	.197 (.401)	[.631]	.176 (.383)	.250 (.436)	[.270]
Between 30mins and 1h [yes=1]	150	.080 (.272)	.108 (.313)	.053 (.225)	[.213]	.068 (.253)	.092 (.291)	[.583]
Between 1 and 2h [yes=1]	150	.073 (.262)	.081 (.275)	.066 (.250)	[.722]	.081 (.275)	.066 (.250)	[.722]
Between 2 and 5h [yes=1]	150	.013 (.115)	0 (.000)	.026 (.161)	[.162]	0 (.000)	.026 (.161)	[.162]
More than 5h [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	.014 (.116)	0 (.000)	[.312]
What is the second source of water in the village?								
Private well [yes=1]	150	.087 (.282)	.095 (.295)	.079 (.271)	[.736]	.041 (.199)	.132 (.340)	[.048]
Public well [yes=1]	150	.340 (.475)	.324 (.471)	.355 (.482)	[.692]	.284 (.454)	.395 (.492)	[.154]
Public borehole [yes=1]	150	.093 (.292)	.095 (.295)	.092 (.291)	[.959]	.081 (.275)	.105 (.309)	[.614]
Rivers or lakes [yes=1]	150	.420 (.495)	.378 (.488)	.461 (.502)	[.311]	.527 (.503)	.316 (.468)	[.009]
Other [yes=1]	150	.060 (.238)	.108 (.313)	.013 (.115)	[.014]	.068 (.253)	.053 (.225)	[.702]
Where is this second source?								
In the village [yes=1]	150	.853 (.355)	.905 (.295)	.803 (.401)	[.076]	.865 (.344)	.842 (.367)	[.696]
Outside the village [yes=1]	150	.147 (.355)	.095 (.295)	.197 (.401)	[.076]	.135 (.344)	.158 (.367)	[.696]
How long does it take to reach this second source from the center of the village by foot?								
Less than 15mins [yes=1]	150	.447 (.499)	.365 (.485)	.526 (.503)	[.047]	.514 (.503)	.382 (.489)	[.106]
Between 15 and 30mins [yes=1]	150	.320 (.468)	.392 (.492)	.250 (.436)	[.063]	.230 (.424)	.408 (.495)	[.019]
Between 30mins and 1h [yes=1]	150	.100 (.301)	.149 (.358)	.053 (.225)	[.050]	.108 (.313)	.092 (.291)	[.746]
Between 1 and 2h [yes=1]	150	.087 (.282)	.068 (.253)	.105 (.309)	[.415]	.122 (.329)	.053 (.225)	[.135]
Between 2 and 5h [yes=1]	150	.027 (.162)	0 (.000)	.053 (.225)	[.046]	.014 (.116)	.039 (.196)	[.327]
More than 5h [yes=1]	150	.020 (.140)	.027 (.163)	.013 (.115)	[.547]	.014 (.116)	.026 (.161)	[.579]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 4A: Market access to agricultural inputs

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
During the last agricultural season, did people buy seeds?	150	.473 (.501)	.405 (.494)	.539 (.502)	[.101]	.392 (.492)	.553 (.501)	[.049]
Where? *								
In the village [yes=1]	71	.127 (.335)	.133 (.346)	.122 (.331)	[.889]	.069 (.258)	.167 (.377)	[.230]
In a village nearby [yes=1]	71	.296 (.460)	.200 (.407)	.366 (.488)	[.134]	.379 (.494)	.238 (.431)	[.205]
Town district [yes=1]	71	.070 (.258)	.100 (.305)	.049 (.218)	[.412]	.069 (.258)	.071 (.261)	[.969]
Other district [yes=1]	71	.014 (.119)	0 (.000)	.024 (.156)	[.396]	0 (.000)	.024 (.154)	[.410]
Other province [yes=1]	71	.014 (.119)	.033 (.183)	0 (.000)	[.245]	0 (.000)	.024 (.154)	[.410]
Outside Mozambique [yes=1]	71	.479 (.503)	.533 (.507)	.439 (.502)	[.439]	.483 (.509)	.476 (.505)	[.957]
In what kind of place? *								
Shop/Market [yes=1]	71	.718 (.453)	.900 (.305)	.585 (.499)	[.003]	.621 (.494)	.786 (.415)	[.132]
Inputs fair [yes=1]	71	.225 (.421)	0 (.000)	.390 (.494)	[.00005]	.276 (.455)	.190 (.397)	[.405]
Specialized companies [yes=1]	71	.028 (.167)	.067 (.254)	0 (.000)	[.096]	.069 (.258)	0 (.000)	[.087]
Other [yes=1]	71	.028 (.167)	.033 (.183)	.024 (.156)	[.825]	.034 (.186)	.024 (.154)	[.793]
Value of inputs (MT) *	71	.618 (1,349)	.933 (1,983)	.387 (455)	[.092]	.969 (2,015)	.375 (435)	[.068]
During the last agricultural season, did people buy fertilizer?	150	.860 (.348)	.811 (.394)	.908 (.291)	[.088]	.878 (.329)	.842 (.367)	[.525]
Where? *								
In the village [yes=1]	129	.062 (.242)	.050 (.220)	.072 (.261)	[.601]	.031 (.174)	.094 (.294)	[.140]
In a village nearby [yes=1]	129	.395 (.491)	.350 (.481)	.435 (.499)	[.330]	.508 (.504)	.281 (.453)	[.008]
Town district [yes=1]	129	.264 (.442)	.317 (.469)	.217 (.415)	[.205]	.308 (.465)	.219 (.417)	[.255]
Other district [yes=1]	129	.039 (.194)	0 (.000)	.072 (.261)	[.034]	.031 (.174)	.047 (.213)	[.639]
Outside Mozambique [yes=1]	129	.240 (.429)	.283 (.454)	.203 (.405)	[.290]	.123 (.331)	.359 (.484)	[.002]
In what kind of place? *								
Shop/Market [yes=1]	129	.364 (.483)	.350 (.481)	.377 (.488)	[.755]	.277 (.451)	.453 (.502)	[.038]
Inputs fair [yes=1]	129	.209 (.408)	0 (.000)	.391 (.492)	[.000]	.215 (.414)	.203 (.406)	[.865]
Specialized companies [yes=1]	129	.419 (.495)	.650 (.481)	.217 (.415)	[.000]	.492 (.504)	.344 (.479)	[.089]
Other [yes=1]	129	.008 (.088)	0 (.000)	.014 (.120)	[.353]	.015 (.124)	0 (.000)	[.323]
Value of inputs (MT) *	129	3,196 (9,189)	4,070 (12,723)	2,435 (4,151)	[.315]	3,520 (12,024)	2,867 (4,946)	[.688]

Notes: All statistics are constructed using baseline data. * Sample restricted to the communities where people buy the agricultural input. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 4B: Market access to agricultural inputs (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
During the last agricultural season, did people buy pesticide?	150	.373 (.485)	.284 (.454)	.461 (.502)	[.025]	.446 (.500)	.303 (.462)	[.070]
Where?*								
In the village [yes=1]	56	.089 (.288)	.095 (.301)	.086 (.284)	[.906]	.030 (.174)	.174 (.388)	[.066]
In a village nearby [yes=1]	56	.321 (.471)	.143 (.359)	.429 (.502)	[.027]	.455 (.506)	.130 (.344)	[.010]
Town district [yes=1]	56	.268 (.447)	.429 (.507)	.171 (.382)	[.036]	.364 (.489)	.130 (.344)	[.054]
Outside Mozambique [yes=1]	56	.321 (.471)	.333 (.483)	.314 (.471)	[.885]	.152 (.364)	.565 (.507)	[.0008]
In what kind of place?*								
Shop/Market [yes=1]	56	.375 (.489)	.333 (.483)	.400 (.497)	[.625]	.364 (.489)	.391 (.499)	[.837]
Inputs fair [yes=1]	56	.339 (.478)	0 (.000)	.543 (.505)	[.00001]	.242 (.435)	.478 (.511)	[.069]
Specialized companies [yes=1]	56	.268 (.447)	.667 (.483)	.029 (.169)	[.000]	.364 (.489)	.130 (.344)	[.054]
Other [yes=1]	56	.018 (.134)	0 (.000)	.029 (.169)	[.444]	.030 (.174)	0 (.000)	[.409]
Value of inputs (MT)*	56	1,170 (4,645)	2,753 (7,421)	220 (180)	[.047]	1,686 (6,020)	429 (503)	[.324]
During the last agricultural season, did people buy machete?	150	.953 (.212)	.932 (.253)	.974 (.161)	[.234]	.959 (.199)	.947 (.225)	[.728]
Where?*								
In the village [yes=1]	143	.077 (.267)	.058 (.235)	.095 (.295)	[.415]	.042 (.203)	.111 (.316)	[.124]
In a village nearby [yes=1]	143	.455 (.500)	.391 (.492)	.514 (.503)	[.145]	.563 (.499)	.347 (.479)	[.009]
Town district [yes=1]	143	.238 (.427)	.333 (.475)	.149 (.358)	[.009]	.254 (.438)	.222 (.419)	[.663]
Other district [yes=1]	143	.014 (.118)	0 (.000)	.027 (.163)	[.171]	0 (.000)	.028 (.165)	[.159]
Outside Mozambique [yes=1]	143	.217 (.414)	.217 (.415)	.216 (.414)	[.987]	.141 (.350)	.292 (.458)	[.029]
In what kind of place?*								
Shop/Market [yes=1]	143	.734 (.443)	.986 (.120)	.500 (.503)	[.000]	.732 (.446)	.736 (.444)	[.960]
Itinerant salesman [yes=1]	143	.007 (.084)	.014 (.120)	0 (.000)	[.302]	0 (.000)	.014 (.118)	[.322]
Inputs fair [yes=1]	143	.259 (.439)	0 (.000)	.500 (.503)	[.000]	.268 (.446)	.250 (.436)	[.812]
Value of inputs (MT)*	143	140 (183)	151 (236)	130 (113)	[.497]	151 (234)	129 (114)	[.460]

Notes: All statistics are constructed using baseline data. * Sample restricted to the communities where people buy the agricultural input. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 4C: Market access to agricultural inputs (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

		Roads				Distance to roads		
		(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away
During the last agricultural season, did people buy hoe?	150	1.00 (.000)	1.00 (.000)	1.00 (.000)		1.00 (.000)	1.00 (.000)	
Where? *								
In the village [yes=1]	150	.080 (.272)	.081 (.275)	.079 (.271)	[.962]	.041 (.199)	.118 (.325)	[.080]
In a village nearby [yes=1]	150	.460 (.500)	.351 (.481)	.566 (.499)	[.008]	.581 (.497)	.342 (.478)	[.003]
Town district [yes=1]	150	.227 (.420)	.338 (.476)	.118 (.325)	[.001]	.243 (.432)	.211 (.410)	[.635]
Other district [yes=1]	150	.013 (.115)	0 (.000)	.026 (.161)	[.162]	0 (.000)	.026 (.161)	[.162]
Outside Mozambique [yes=1]	150	.220 (.416)	.230 (.424)	.211 (.410)	[.778]	.135 (.344)	.303 (.462)	[.013]
In what kind of place?*								
Shop/Market [yes=1]	150	.740 (.440)	.973 (.163)	.513 (.503)	[.000]	.743 (.440)	.737 (.443)	[.929]
Inputs fair [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	0 (.000)	.013 (.115)	[.325]
Specialized companies [yes=1]	150	.247 (.433)	0 (.000)	.487 (.503)	[.000]	.257 (.440)	.237 (.428)	[.779]
Other [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	0 (.000)	.013 (.115)	[.325]
Value of inputs (MT)*	150	.184 (.193)	.175 (.209)	.193 (.177)	[.575]	.199 (.251)	.170 (.111)	[.356]
During the last agricultural season, did people buy sickle?	150	.720 (.451)	.703 (.460)	.737 (.443)	[.644]	.716 (.454)	.724 (.450)	[.920]
Where?*								
In the village [yes=1]	108	.083 (.278)	.096 (.298)	.071 (.260)	[.646]	.038 (.192)	.127 (.336)	[.094]
In a village nearby [yes=1]	108	.546 (.500)	.462 (.503)	.625 (.489)	[.090]	.660 (.478)	.436 (.501)	[.019]
Town district [yes=1]	108	.157 (.366)	.135 (.345)	.179 (.386)	[.535]	.170 (.379)	.145 (.356)	[.731]
Other district [yes=1]	108	.009 (.096)	0 (.000)	.018 (.134)	[.338]	0 (.000)	.018 (.135)	[.329]
Outside Mozambique [yes=1]	108	.204 (.405)	.308 (.466)	.107 (.312)	[.009]	.132 (.342)	.273 (.449)	[.071]
In what kind of place?*								
Shop/Market [yes=1]	108	.824 (.383)	1.00 (.000)	.661 (.478)	[.000]	.830 (.379)	.818 (.389)	[.871]
Inputs fair [yes=1]	108	.176 (.383)	0 (.000)	.339 (.478)	[.000]	.170 (.379)	.182 (.389)	[.871]
Value of inputs (MT)*	108	74.4 (65.5)	79.4 (86.1)	69.9 (37.9)	[.453]	74.1 (79.3)	74.7 (49.6)	[.962]
During the last agricultural season, did people buy axe?	150	.827 (.380)	.784 (.414)	.868 (.340)	[.173]	.851 (.358)	.803 (.401)	[.434]
Where?*								
In the village [yes=1]	124	.097 (.297)	.103 (.307)	.091 (.290)	[.816]	.079 (.272)	.115 (.321)	[.509]
In a village nearby [yes=1]	124	.508 (.502)	.431 (.500)	.576 (.498)	[.109]	.603 (.493)	.410 (.496)	[.031]
Town district [yes=1]	124	.226 (.420)	.310 (.467)	.152 (.361)	[.035]	.222 (.419)	.230 (.424)	[.923]
Other district [yes=1]	124	.016 (.126)	0 (.000)	.030 (.173)	[.184]	0 (.000)	.033 (.180)	[.150]
Outside Mozambique [yes=1]	124	.153 (.362)	.155 (.365)	.152 (.361)	[.955]	.095 (.296)	.213 (.413)	[.069]
In what kind of place?*								
Shop/Market [yes=1]	124	.734 (.444)	.948 (.223)	.545 (.502)	[.000]	.730 (.447)	.738 (.444)	[.925]
Itinerant salesman [yes=1]	124	.016 (.126)	.034 (.184)	0 (.000)	[.130]	0 (.000)	.033 (.180)	[.150]
Inputs fair [yes=1]	124	.234 (.425)	0 (.000)	.439 (.500)	[.000]	.238 (.429)	.230 (.424)	[.911]
Other [yes=1]	124	.016 (.126)	.017 (.131)	.015 (.123)	[.927]	.032 (.177)	0 (.000)	[.163]
Value of inputs (MT)*	124	.169 (80.0)	.178 (78.5)	.162 (81.2)	[.282]	.163 (78.5)	.176 (81.6)	[.353]

Notes: All statistics are constructed using baseline data. * Sample restricted to the communities where people buy the agricultural input. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 5A: Agricultural, trade and industry infrastructures

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observation s	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
1. Formal market								
This infrastructure exists in the village [yes=1]	150	.040 (.197)	.027 (.163)	.053 (.225)	[.427]	.013 (.115)	.067 (.251)	[.097]
How many of them?*	6	1.00 (.000)	1.00 (.000)	1.00 (.000)		1.00 (.000)	1.00 (.000)	
How far is it from the village center? (km)	150	17.9 (22.2)	24.5 (27.3)	11.6 (13.0)	[.0003]	16.8 (21.3)	19.1 (23.0)	[.525]
Where is situated the closest one?								
Village nearby [yes=1]	144	.507 (.502)	.431 (.499)	.583 (.496)	[.068]	.622 (.488)	.386 (.490)	[.004]
Town district [yes=1]	144	.340 (.475)	.417 (.496)	.264 (.444)	[.054]	.311 (.466)	.371 (.487)	[.446]
Other district [yes=1]	144	.021 (.143)	.042 (.201)	0 (.000)	[.081]	0 (.000)	.043 (.204)	[.073]
Provincial capital [yes=1]	144	.014 (.117)	.028 (.165)	0 (.000)	[.157]	0 (.000)	.029 (.168)	[.145]
Outside Mozambique [yes=1]	144	.118 (.324)	.083 (.278)	.153 (.362)	[.199]	.068 (.253)	.171 (.380)	[.054]
What transport mean is usually used to reach the infrastructure?								
Chapa [yes=1]	150	.193 (.396)	.284 (.454)	.105 (.309)	[.005]	.133 (.342)	.253 (.438)	[.063]
By foot [yes=1]	150	.667 (.473)	.541 (.502)	.789 (.410)	[.001]	.733 (.445)	.600 (.493)	[.084]
Bike [yes=1]	150	.120 (.326)	.149 (.358)	.092 (.291)	[.290]	.120 (.327)	.120 (.327)	[1.00]
Carousel, animal traction [yes=1]	150	.007 (.082)	0 (.000)	.013 (.115)	[.325]	.013 (.115)	0 (.000)	[.319]
Motorized vehicle [yes=1]	150	.013 (.115)	.027 (.163)	0 (.000)	[.151]	0 (.000)	.027 (.162)	[.157]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.720 (.451)	.730 (.447)	.711 (.457)	[.795]	.667 (.475)	.773 (.421)	[.148]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	124 (97.9)	120 (87.4)	128 (108)	[.617]	137 (95.2)	112 (99.6)	[.113]
2. Informal market								
This infrastructure exists in the village [yes=1]	150	.113 (.318)	.122 (.329)	.105 (.309)	[.754]	.040 (.197)	.187 (.392)	[.004]
How many of them?*	17	1.00 (.000)	1.00 (.000)	1.00 (.000)		1.00 (.000)	1.00 (.000)	
How far is it from the village center? (km)	150	11.7 (17.1)	14.7 (21.6)	8.77 (10.4)	[.035]	11.2 (11.5)	12.2 (21.4)	[.712]
Where is situated the closest one?								
In the village [yes=1]	133	.008 (.087)	0 (.000)	.015 (.121)	[.330]	.014 (.118)	0 (.000)	[.359]
Village nearby [yes=1]	133	.669 (.472)	.631 (.486)	.706 (.459)	[.361]	.722 (.451)	.607 (.493)	[.160]
Town district [yes=1]	133	.218 (.414)	.262 (.443)	.176 (.384)	[.238]	.208 (.409)	.230 (.424)	[.770]
Other district [yes=1]	133	.023 (.149)	.046 (.211)	0 (.000)	[.074]	0 (.000)	.049 (.218)	[.058]
Outside Mozambique [yes=1]	133	.075 (.265)	.046 (.211)	.103 (.306)	[.217]	.042 (.201)	.115 (.321)	[.113]
Don't know [yes=1]	133	.008 (.087)	.015 (.124)	0 (.000)	[.308]	.014 (.118)	0 (.000)	[.359]
What transport mean is usually used to reach the infrastructure?								
Chapa [yes=1]	150	.087 (.282)	.135 (.344)	.039 (.196)	[.038]	.053 (.226)	.120 (.327)	[.149]
By foot [yes=1]	150	.800 (.401)	.743 (.440)	.855 (.354)	[.087]	.827 (.381)	.773 (.421)	[.418]
Bike [yes=1]	150	.093 (.292)	.095 (.295)	.092 (.291)	[.959]	.107 (.311)	.080 (.273)	[.578]
Carousel, animal traction [yes=1]	150	.007 (.082)	0 (.000)	.013 (.115)	[.325]	.013 (.115)	0 (.000)	[.319]
Motorized vehicle [yes=1]	150	.013 (.115)	.027 (.163)	0 (.000)	[.151]	0 (.000)	.027 (.162)	[.157]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.733 (.444)	.770 (.424)	.697 (.462)	[.316]	.720 (.452)	.747 (.438)	[.714]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	113 (102)	102 (91.2)	123 (111)	[.204]	134 (99.1)	92.1 (102)	[.012]

Notes: All statistics are constructed using baseline data. *Sample restricted to communities where the infrastructure exists in the village. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 5B: Processing, trade and industry infrastructures

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
5. Bakery	150	.247 (.433)	.270 (.447)	.224 (.419)	[.511]	.267 (.445)	.227 (.421)	[.573]
This infrastructure exists in the village [yes=1]	37	3.22 (4.79)	3.00 (1.75)	3.47 (6.92)	[.771]	2.15 (1.46)	4.47 (6.78)	[.144]
How many of them?*	150	8.15 (14.8)	6.16 (13.2)	10.1 (16.1)	[.106]	8.47 (12.5)	7.82 (17.0)	[.790]
How far is it from the village center? (km)								
Where is situated the closest one?	113	.027 (.161)	.019 (.136)	.034 (.183)	[.615]	.018 (.135)	.034 (.184)	[.594]
In the village [yes=1]	113	.522 (.502)	.630 (.487)	.424 (.498)	[.029]	.545 (.503)	.500 (.504)	[.632]
Village nearby [yes=1]	113	.239 (.428)	.111 (.317)	.356 (.483)	[.002]	.273 (.449)	.207 (.409)	[.417]
Town district [yes=1]	113	.009 (.094)	.019 (.136)	.000 (.000)	[.298]	.000 (.000)	.017 (.131)	[.332]
Other district [yes=1]	113	.097 (.298)	.056 (.231)	.136 (.345)	[.154]	.073 (.262)	.121 (.329)	[.394]
Outside Mozambique [yes=1]	113	.106 (.309)	.167 (.376)	.051 (.222)	[.046]	.091 (.290)	.121 (.329)	[.611]
Don't know [yes=1]								
What transport mean is usually used to reach the infrastructure?	150	.133 (.341)	.081 (.275)	.184 (.390)	[.064]	.093 (.293)	.173 (.381)	[.152]
Chapa [yes=1]	150	.780 (.416)	.824 (.383)	.737 (.443)	[.198]	.840 (.369)	.720 (.452)	[.077]
By foot [yes=1]	150	.067 (.250)	.068 (.253)	.066 (.250)	[.965]	.053 (.226)	.080 (.273)	[.516]
Bike [yes=1]	150	.007 (.082)	.000 (.000)	.013 (.115)	[.325]	.013 (.115)	.000 (.000)	[.319]
Carousel, animal traction [yes=1]	150	.013 (.115)	.027 (.163)	.000 (.000)	[.151]	.000 (.000)	.027 (.162)	[.157]
Other [yes=1]	150	.760 (.429)	.797 (.405)	.724 (.450)	[.294]	.760 (.430)	.760 (.430)	[.999]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	78.4 (94.3)	69.7 (91.8)	86.9 (96.5)	[.266]	88.1 (102)	68.7 (85.1)	[.208]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?								
6. Agricultural fair	150	.053 (.225)	.027 (.163)	.079 (.271)	[.159]	.040 (.197)	.067 (.251)	[.471]
This infrastructure exists in the village [yes=1]	8	1.38 (1.06)	2.50 (2.12)	1.00 (.000)	[.078]	2.00 (1.73)	1.00 (.000)	[.220]
How many of them?*	150	20.1 (26.9)	29.9 (33.1)	10.6 (13.7)	[.00001]	24.7 (30.6)	15.6 (21.9)	[.038]
How far is it from the village center? (km)								
Where is situated the closest one?	142	.007 (.084)	.014 (.118)	.000 (.000)	[.326]	.014 (.118)	.000 (.000)	[.326]
In the village [yes=1]	142	.387 (.489)	.250 (.436)	.529 (.503)	[.0006]	.431 (.499)	.343 (.478)	[.287]
Village nearby [yes=1]	142	.282 (.451)	.306 (.464)	.257 (.440)	[.525]	.264 (.444)	.300 (.462)	[.635]
Town district [yes=1]	142	.092 (.289)	.181 (.387)	.000 (.000)	[.0001]	.069 (.256)	.114 (.320)	[.358]
Other district [yes=1]	142	.021 (.144)	.042 (.201)	.000 (.000)	[.085]	.028 (.165)	.014 (.120)	[.579]
Provincial capital [yes=1]	142	.141 (.349)	.097 (.298)	.186 (.392)	[.131]	.125 (.333)	.157 (.367)	[.585]
Outside Mozambique [yes=1]	142	.070 (.257)	.111 (.316)	.029 (.168)	[.055]	.069 (.256)	.071 (.259)	[.963]
Don't know [yes=1]								
What transport mean is usually used to reach the infrastructure?	150	.280 (.451)	.446 (.500)	.118 (.325)	[.000]	.253 (.438)	.307 (.464)	[.470]
Chapa [yes=1]	150	.593 (.493)	.378 (.488)	.803 (.401)	[.000]	.600 (.493)	.587 (.496)	[.869]
By foot [yes=1]	150	.100 (.301)	.135 (.344)	.066 (.250)	[.159]	.120 (.327)	.080 (.273)	[.418]
Bike [yes=1]	150	.007 (.082)	.000 (.000)	.013 (.115)	[.325]	.013 (.115)	.000 (.000)	[.319]
Carousel, animal traction [yes=1]	150	.007 (.082)	.000 (.000)	.013 (.115)	[.325]	.013 (.115)	.000 (.000)	[.319]
Motorized vehicle [yes=1]	150	.013 (.115)	.027 (.163)	.000 (.000)	[.151]	.013 (.115)	.013 (.115)	[.999]
Other [yes=1]								
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.687 (.465)	.689 (.466)	.684 (.468)	[.948]	.667 (.475)	.707 (.458)	[.600]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	133 (106)	151 (108)	116 (102)	[.043]	157 (104)	110 (104)	[.007]

Notes: All statistics are constructed using baseline data. *Sample restricted to communities where the infrastructure exists in the village. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households em communities along the control roads, and Column 4 reports characteristics for the sample of households em communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 5C: Agricultural, trade and industry infrastructures (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<u>7. Funcional mill</u>								
This infrastructure exists in the village [yes=1]	150	.613 (.489)	.649 (.481)	.579 (.497)	[.384]	.587 (.496)	.640 (.483)	[.506]
How many of them?*	92	1.72 (.953)	1.79 (1.07)	1.64 (.810)	[.438]	1.64 (1.01)	1.79 (.898)	[.438]
How far is it from the village center? (km)	150	2.55 (8.35)	3.25 (11.6)	1.86 (2.45)	[.312]	3.57 (11.6)	1.52 (2.02)	[.134]
Where is situated the closest one?								
Village nearby [yes=1]	58	.862 (.348)	.808 (.402)	.906 (.296)	[.287]	.839 (.374)	.889 (.320)	[.588]
Town district [yes=1]	58	.052 (.223)	.115 (.326)	0 (.000)	[.050]	.065 (.250)	.037 (.192)	[.644]
Outside Mozambique [yes=1]	58	.069 (.256)	.038 (.196)	.094 (.296)	[.417]	.065 (.250)	.074 (.267)	[.889]
Don't know [yes=1]	58	.017 (.131)	.038 (.196)	0 (.000)	[.271]	.032 (.180)	0 (.000)	[.355]
What transport mean is usually used to reach the infrastructure?								
Chapa [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	0 (.000)	.013 (.115)	[.319]
By foot [yes=1]	150	.973 (.162)	.959 (.199)	.987 (.115)	[.301]	.987 (.115)	.960 (.197)	[.314]
Bike [yes=1]	150	.020 (.140)	.027 (.163)	.013 (.115)	[.547]	.013 (.115)	.027 (.162)	[.563]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.913 (.282)	.932 (.253)	.895 (.309)	[.415]	.867 (.342)	.960 (.197)	[.043]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	38.9 (55.0)	30.6 (38.2)	46.9 (66.8)	[.070]	43.2 (57.5)	34.5 (52.4)	[.331]
<u>8. Nut shelling factory</u>								
This infrastructure exists in the village [yes=1]	150	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
How far is it from the village center? (km)	150	55.2 (45.6)	41.2 (43.5)	68.9 (43.6)	[.0002]	64.1 (44.0)	46.3 (45.6)	[.016]
Where is situated the closest one?								
Other district [yes=1]	150	.047 (.212)	.054 (.228)	.039 (.196)	[.675]	.040 (.197)	.053 (.226)	[.701]
Provincial capital [yes=1]	150	.027 (.162)	.054 (.228)	0 (.000)	[.040]	.013 (.115)	.040 (.197)	[.314]
Other province [yes=1]	150	.153 (.362)	.122 (.329)	.184 (.390)	[.291]	.147 (.356)	.160 (.369)	[.822]
Outside Mozambique [yes=1]	150	.260 (.440)	.257 (.440)	.263 (.443)	[.929]	.280 (.452)	.240 (.430)	[.580]
Don't know [yes=1]	150	.513 (.501)	.514 (.503)	.513 (.503)	[.997]	.520 (.503)	.507 (.503)	[.871]
What transport mean is usually used to reach the infrastructure?								
Chapa [yes=1]	150	.307 (.463)	.324 (.471)	.289 (.457)	[.646]	.227 (.421)	.387 (.490)	[.034]
By foot [yes=1]	150	.173 (.380)	.095 (.295)	.250 (.436)	[.012]	.213 (.412)	.133 (.342)	[.198]
Bike [yes=1]	150	.213 (.411)	.216 (.414)	.211 (.410)	[.933]	.240 (.430)	.187 (.392)	[.429]
Other [yes=1]	150	.307 (.463)	.365 (.485)	.250 (.436)	[.129]	.320 (.470)	.293 (.458)	[.725]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.400 (.492)	.378 (.488)	.421 (.497)	[.597]	.413 (.496)	.387 (.490)	[.741]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	180 (172)	148 (153)	211 (185)	[.024]	188 (176)	172 (169)	[.560]

Notes: All statistics are constructed using baseline data. *Sample restricted to communities where the infrastructure exists in the village. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 5D: Agricultural, trade and industry infrastructures (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
9. Rice shelling factory								
This infrastructure exists in the village [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	.013 (.115)	0 (.000)	[.319]
How many of them?*	1	15.0 -	15.0 -	- -	-	15.0 -	- -	-
How far is it from the village center? (km)	150	56.2 (43.3)	46.9 (41.4)	65.2 (43.4)	[.009]	62.8 (42.8)	49.5 (43.0)	[.059]
Where is situated the closest one?								
Other district [yes=1]	149	.128 (.335)	.151 (.360)	.105 (.309)	[.409]	.108 (.313)	.147 (.356)	[.484]
Provincial capital [yes=1]	149	.020 (.141)	.041 (.200)	0 (.000)	[.075]	0 (.000)	.040 (.197)	[.083]
Other province [yes=1]	149	.107 (.311)	.096 (.296)	.118 (.325)	[.660]	.108 (.313)	.107 (.311)	[.978]
Outside Mozambique [yes=1]	149	.295 (.458)	.274 (.449)	.316 (.468)	[.579]	.324 (.471)	.267 (.445)	[.444]
Don't know [yes=1]	149	.450 (.499)	.438 (.500)	.461 (.502)	[.787]	.459 (.502)	.440 (.500)	[.813]
What transport mean is usually used to reach the infrastructure?								
Chapa [yes=1]	150	.360 (.482)	.365 (.485)	.355 (.482)	[.903]	.280 (.452)	.440 (.500)	[.042]
By foot [yes=1]	150	.173 (.380)	.095 (.295)	.250 (.436)	[.012]	.200 (.403)	.147 (.356)	[.392]
Bike [yes=1]	150	.213 (.411)	.230 (.424)	.197 (.401)	[.631]	.253 (.438)	.173 (.381)	[.235]
Motorized vehicle [yes=1]	150	.007 (.082)	0 (.000)	.013 (.115)	[.325]	.013 (.115)	0 (.000)	[.319]
Other [yes=1]	150	.247 (.433)	.311 (.466)	.184 (.390)	[.073]	.253 (.438)	.240 (.430)	[.851]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.460 (.500)	.432 (.499)	.487 (.503)	[.507]	.427 (.498)	.493 (.503)	[.416]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	183 (164)	169 (149)	198 (177)	[.285]	193 (171)	173 (157)	[.458]
10. Cotton ginning factory								
This infrastructure exists in the village [yes=1]	150	0 (.000)	0 (.000)	0 (.000)	-	0 (.000)	0 (.000)	-
How far is it from the village center? (km)	150	55.6 (45.2)	43.4 (43.2)	67.4 (44.2)	[.0010]	63.1 (44.7)	48.1 (44.7)	[.042]
Where is situated the closest one?								
Other district [yes=1]	150	.140 (.348)	.108 (.313)	.171 (.379)	[.270]	.120 (.327)	.160 (.369)	[.484]
Provincial capital [yes=1]	150	.033 (.180)	.068 (.253)	0 (.000)	[.021]	.013 (.115)	.053 (.226)	[.175]
Other province [yes=1]	150	.040 (.197)	.054 (.228)	.026 (.161)	[.389]	.040 (.197)	.040 (.197)	[.999]
Outside Mozambique [yes=1]	150	.273 (.447)	.257 (.440)	.289 (.457)	[.656]	.293 (.458)	.253 (.438)	[.586]
Don't know [yes=1]	150	.513 (.501)	.514 (.503)	.513 (.503)	[.997]	.533 (.502)	.493 (.503)	[.627]
What transport mean is usually used to reach the infrastructure?								
Chapa [yes=1]	150	.307 (.463)	.324 (.471)	.289 (.457)	[.646]	.227 (.421)	.387 (.490)	[.034]
By foot [yes=1]	150	.180 (.385)	.122 (.329)	.237 (.428)	[.067]	.213 (.412)	.147 (.356)	[.291]
Bike [yes=1]	150	.200 (.401)	.189 (.394)	.211 (.410)	[.746]	.213 (.412)	.187 (.392)	[.686]
Motorized vehicle [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	.013 (.115)	0 (.000)	[.319]
Other [yes=1]	150	.307 (.463)	.351 (.481)	.263 (.443)	[.244]	.333 (.475)	.280 (.452)	[.482]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.413 (.494)	.351 (.481)	.474 (.503)	[.130]	.427 (.498)	.400 (.493)	[.742]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	163 (154)	154 (149)	172 (159)	[.466]	179 (164)	147 (142)	[.205]

Notes: All statistics are constructed using baseline data. *Sample restricted to communities where the infrastructure exists in the village. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 5E: Agricultural, trade and industry infrastructures (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<i>11.Oilseeds processing machines</i>								
This infrastructure exists in the village [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	.013 (.115)	0 (.000)	[.319]
How many of them?*	1	0 (.000)	0 (.000)	- (.000)	-	0 (.000)	- (.000)	-
How far is it from the village center? (km)	150	52.3 (42.1)	47.5 (41.1)	56.9 (42.7)	[.168]	58.6 (42.1)	46.0 (41.3)	[.066]
Where is situated the closest one?								
Other district [yes=1]	149	.101 (.302)	.082 (.277)	.118 (.325)	[.466]	.081 (.275)	.120 (.327)	[.433]
Provincial capital [yes=1]	149	.040 (.197)	.068 (.254)	.013 (.115)	[.087]	.014 (.116)	.067 (.251)	[.100]
Other province [yes=1]	149	.067 (.251)	.082 (.277)	.053 (.225)	[.474]	.041 (.199)	.093 (.293)	[.200]
Outside Mozambique [yes=1]	149	.423 (.496)	.356 (.482)	.487 (.503)	[.108]	.473 (.503)	.373 (.487)	[.221]
Don't know [yes=1]	149	.369 (.484)	.411 (.495)	.329 (.473)	[.303]	.392 (.492)	.347 (.479)	[.570]
What transport mean is usually used to reach the infrastructure?								
Chapa [yes=1]	150	.447 (.499)	.419 (.497)	.474 (.503)	[.503]	.360 (.483)	.533 (.502)	[.033]
By foot [yes=1]	150	.167 (.374)	.095 (.295)	.237 (.428)	[.019]	.200 (.403)	.133 (.342)	[.276]
Bike [yes=1]	150	.213 (.411)	.216 (.414)	.211 (.410)	[.933]	.240 (.430)	.187 (.392)	[.429]
Motorized vehicle [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	.013 (.115)	0 (.000)	[.319]
Other [yes=1]	150	.167 (.374)	.257 (.440)	.079 (.271)	[.003]	.187 (.392)	.147 (.356)	[.514]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.473 (.501)	.419 (.497)	.526 (.503)	[.190]	.427 (.498)	.520 (.503)	[.255]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	185 (151)	177 (145)	193 (157)	[.503]	188 (158)	182 (145)	[.793]
<i>12.Cassava processing machines</i>								
This infrastructure exists in the village [yes=1]	150	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
How far is it from the village center? (km)	150	55.2 (44.1)	46.1 (43.0)	64.1 (43.7)	[.012]	61.3 (43.6)	49.1 (44.1)	[.092]
Where is situated the closest one?								
Town district [yes=1]	150	.013 (.115)	.027 (.163)	0 (.000)	[.151]	0 (.000)	.027 (.162)	[.157]
Other district [yes=1]	150	.120 (.326)	.108 (.313)	.132 (.340)	[.661]	.107 (.311)	.133 (.342)	[.618]
Provincial capital [yes=1]	150	.040 (.197)	.068 (.253)	.013 (.115)	[.090]	.027 (.162)	.053 (.226)	[.408]
Other province [yes=1]	150	.047 (.212)	.068 (.253)	.026 (.161)	[.234]	.013 (.115)	.080 (.273)	[.053]
Outside Mozambique [yes=1]	150	.293 (.457)	.243 (.432)	.342 (.478)	[.186]	.333 (.475)	.253 (.438)	[.285]
Don't know [yes=1]	150	.487 (.501)	.486 (.503)	.487 (.503)	[.997]	.520 (.503)	.453 (.501)	[.417]
What transport mean is usually used to reach the infrastructure?								
Chapa [yes=1]	150	.333 (.473)	.338 (.476)	.329 (.473)	[.909]	.253 (.438)	.413 (.496)	[.038]
By foot [yes=1]	150	.167 (.374)	.108 (.313)	.224 (.419)	[.058]	.200 (.403)	.133 (.342)	[.276]
Bike [yes=1]	150	.213 (.411)	.203 (.405)	.224 (.419)	[.756]	.227 (.421)	.200 (.403)	[.693]
Motorized vehicle [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	.013 (.115)	0 (.000)	[.319]
Other [yes=1]	150	.280 (.451)	.338 (.476)	.224 (.419)	[.121]	.307 (.464)	.253 (.438)	[.470]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.440 (.498)	.378 (.488)	.500 (.503)	[.135]	.427 (.498)	.453 (.501)	[.744]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	167 (150)	167 (155)	168 (147)	[.992]	158 (146)	177 (155)	[.458]

Notes: All statistics are constructed using baseline data. *Sample restricted to communities where the infrastructure exists in the village. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 5F: Agricultural, trade and industry infrastructures (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
13. Functional acaricide dip-tank								
This infrastructure exists in the village [yes=1]	150	.033 (.180)	0 (.000)	.066 (.250)	[.025]	.040 (.197)	.027 (.162)	[.652]
How many of them?*	5	3.80 (6.26)	-	3.80 (6.26)		5.67 (8.08)	1.00 -	[.495]
How far is it from the village center? (km)	150	41.1 (42.3)	42.3 (41.4)	40.0 (43.3)	[.740]	48.4 (44.6)	33.8 (38.8)	[.035]
Where is situated the closest one?								
Village nearby [yes=1]	145	.179 (.385)	.014 (.116)	.352 (.481)	[.000]	.208 (.409)	.151 (.360)	[.369]
Town district [yes=1]	145	.021 (.143)	.027 (.163)	.014 (.119)	[.587]	.028 (.165)	.014 (.117)	[.555]
Other district [yes=1]	145	.159 (.367)	.149 (.358)	.169 (.377)	[.739]	.083 (.278)	.233 (.426)	[.014]
Provincial capital [yes=1]	145	.166 (.373)	.122 (.329)	.211 (.411)	[.149]	.181 (.387)	.151 (.360)	[.631]
Other province [yes=1]	145	.021 (.143)	.027 (.163)	.014 (.119)	[.587]	.028 (.165)	.014 (.117)	[.555]
Outside Mozambique [yes=1]	145	.166 (.373)	.243 (.432)	.085 (.280)	[.010]	.194 (.399)	.137 (.346)	[.355]
Don't know [yes=1]	145	.290 (.455)	.419 (.497)	.155 (.364)	[.0004]	.278 (.451)	.301 (.462)	[.756]
What transport mean is usually used to reach the infrastructure?								
Chapa [yes=1]	150	.380 (.487)	.432 (.499)	.329 (.473)	[.194]	.253 (.438)	.507 (.503)	[.001]
By foot [yes=1]	150	.340 (.475)	.149 (.358)	.526 (.503)	[.000]	.427 (.498)	.253 (.438)	[.025]
Bike [yes=1]	150	.153 (.362)	.189 (.394)	.118 (.325)	[.232]	.173 (.381)	.133 (.342)	[.500]
Other [yes=1]	150	.127 (.334)	.230 (.424)	.026 (.161)	[.0001]	.147 (.356)	.107 (.311)	[.465]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.527 (.501)	.459 (.502)	.592 (.495)	[.105]	.547 (.501)	.507 (.503)	[.626]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	157 (130)	162 (139)	152 (123)	[.636]	167 (140)	147 (120)	[.358]
14. Functional tub/alley for bovines								
This infrastructure exists in the village [yes=1]	150	.047 (.212)	0 (.000)	.092 (.291)	[.007]	.027 (.162)	.067 (.251)	[.248]
How many of them?*	7	1.00 (.000)	-	1.00 (.000)	-	1.00 (.000)	1.00 (.000)	-
How far is it from the village center? (km)	150	33.4 (37.8)	42.8 (40.5)	24.3 (32.7)	[.002]	43.6 (42.3)	23.2 (29.5)	[.0008]
Where is situated the closest one?								
Village nearby [yes=1]	143	.238 (.427)	.014 (.116)	.478 (.503)	[.000]	.274 (.449)	.200 (.403)	[.302]
Town district [yes=1]	143	.126 (.333)	.068 (.253)	.188 (.394)	[.030]	.123 (.331)	.129 (.337)	[.925]
Other district [yes=1]	143	.168 (.375)	.189 (.394)	.145 (.355)	[.483]	.096 (.296)	.243 (.432)	[.019]
Provincial capital [yes=1]	143	.077 (.267)	.108 (.313)	.043 (.205)	[.149]	.096 (.296)	.057 (.234)	[.388]
Outside Mozambique [yes=1]	143	.182 (.387)	.257 (.440)	.101 (.304)	[.016]	.205 (.407)	.157 (.367)	[.457]
Don't know [yes=1]	143	.210 (.409)	.365 (.485)	.043 (.205)	[.000]	.205 (.407)	.214 (.413)	[.898]
What transport mean is usually used to reach the infrastructure?								
Chapa [yes=1]	150	.273 (.447)	.419 (.497)	.132 (.340)	[.00006]	.200 (.403)	.347 (.479)	[.044]
By foot [yes=1]	150	.413 (.494)	.122 (.329)	.697 (.462)	[.000]	.453 (.501)	.373 (.487)	[.323]
Bike [yes=1]	150	.187 (.391)	.230 (.424)	.145 (.354)	[.184]	.213 (.412)	.160 (.369)	[.405]
Other [yes=1]	150	.127 (.334)	.230 (.424)	.026 (.161)	[.0001]	.133 (.342)	.120 (.327)	[.808]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.587 (.494)	.486 (.503)	.684 (.468)	[.014]	.587 (.496)	.587 (.496)	[.999]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	154 (122)	150 (130)	158 (115)	[.717]	178 (134)	130 (104)	[.017]

Notes: All statistics are constructed using baseline data. *Sample restricted to communities where the infrastructure exists in the village. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 5G : Agricultural, trade and industry infrastructures (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

		(1) Number of observations	(2) Full sample	Roads			Distance to roads		
				(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
15. Functional abattoir									
This infrastructure exists in the village [yes=1]	150	0 (.000)	0 (.000)	0 (.000)	-	0 (.000)	0 (.000)	-	
How far is it from the village center? (km)	150	41.9 (40.8)	44.6 (40.7)	39.3 (41.0)	[.428]	53.0 (42.3)	30.8 (36.3)	[.0007]	
Where is situated the closest one?									
Village nearby [yes=1]	150	.067 (.250)	.027 (.163)	.105 (.309)	[.055]	.027 (.162)	.107 (.311)	[.050]	
Town district [yes=1]	150	.053 (.225)	.041 (.199)	.066 (.250)	[.495]	.053 (.226)	.053 (.226)	[.999]	
Other district [yes=1]	150	.027 (.162)	.014 (.116)	.039 (.196)	[.327]	.040 (.197)	.013 (.115)	[.314]	
Provincial capital [yes=1]	150	.353 (.480)	.365 (.485)	.342 (.478)	[.772]	.333 (.475)	.373 (.487)	[.611]	
Other province [yes=1]	150	.013 (.115)	.027 (.163)	0 (.000)	[.151]	.013 (.115)	.013 (.115)	[.999]	
Outside Mozambique [yes=1]	150	.193 (.396)	.243 (.432)	.145 (.354)	[.128]	.227 (.421)	.160 (.369)	[.304]	
Don't know [yes=1]	150	.293 (.457)	.284 (.454)	.303 (.462)	[.802]	.307 (.464)	.280 (.452)	[.722]	
What transport mean is usually used to reach the infrastructure?									
Chapa [yes=1]	150	.447 (.499)	.446 (.500)	.447 (.501)	[.986]	.413 (.496)	.480 (.503)	[.415]	
By foot [yes=1]	150	.273 (.447)	.149 (.358)	.395 (.492)	[.0006]	.267 (.445)	.280 (.452)	[.856]	
Bike [yes=1]	150	.180 (.385)	.243 (.432)	.118 (.325)	[.047]	.227 (.421)	.133 (.342)	[.139]	
Other [yes=1]	150	.100 (.301)	.162 (.371)	.039 (.196)	[.012]	.093 (.293)	.107 (.311)	[.787]	
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.573 (.496)	.568 (.499)	.579 (.497)	[.889]	.573 (.498)	.573 (.498)	[1.00]	
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	171 (134)	165 (134)	176 (134)	[.626]	203 (142)	139 (117)	[.003]	
16. Slaughterhouses									
This infrastructure exists in the village [yes=1]	150	.013 (.115)	.014 (.116)	.013 (.115)	[.985]	0 (.000)	.027 (.162)	[.157]	
How many of them?*	2	1.00 (.000)	1.00 (.000)	1.00 (.000)	-	- (.000)	1.00 (.000)	-	
How far is it from the village center? (km)	150	36.7 (38.3)	36.5 (35.2)	37.0 (41.4)	[.932]	42.8 (40.0)	30.7 (35.9)	[.054]	
Where is situated the closest one?									
Village nearby [yes=1]	148	.122 (.328)	.041 (.200)	.200 (.403)	[.003]	.133 (.342)	.110 (.315)	[.661]	
Town district [yes=1]	148	.189 (.393)	.274 (.449)	.107 (.311)	[.009]	.200 (.403)	.178 (.385)	[.736]	
Other district [yes=1]	148	.068 (.252)	0 (.000)	.133 (.342)	[.001]	.067 (.251)	.068 (.254)	[.965]	
Provincial capital [yes=1]	148	.182 (.388)	.192 (.396)	.173 (.381)	[.773]	.160 (.369)	.205 (.407)	[.477]	
Other province [yes=1]	148	.007 (.082)	0 (.000)	.013 (.115)	[.326]	.013 (.115)	0 (.000)	[.326]	
Outside Mozambique [yes=1]	148	.176 (.382)	.247 (.434)	.107 (.311)	[.025]	.213 (.412)	.137 (.346)	[.225]	
Don't know [yes=1]	148	.257 (.438)	.247 (.434)	.267 (.445)	[.781]	.213 (.412)	.301 (.462)	[.223]	
What transport mean is usually used to reach the infrastructure?									
Chapa [yes=1]	150	.373 (.485)	.405 (.494)	.342 (.478)	[.426]	.333 (.475)	.413 (.496)	[.314]	
By foot [yes=1]	150	.347 (.478)	.189 (.394)	.500 (.503)	[.00005]	.400 (.493)	.293 (.458)	[.172]	
Bike [yes=1]	150	.193 (.396)	.243 (.432)	.145 (.354)	[.128]	.213 (.412)	.173 (.381)	[.538]	
Motorized vehicle [yes=1]	150	.020 (.140)	.041 (.199)	0 (.000)	[.077]	.027 (.162)	.013 (.115)	[.563]	
Other [yes=1]	150	.067 (.250)	.122 (.329)	.013 (.115)	[.008]	.027 (.162)	.107 (.311)	[.050]	
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.587 (.494)	.608 (.492)	.566 (.499)	[.602]	.613 (.490)	.560 (.500)	[.510]	
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	148 (130)	157 (135)	140 (126)	[.429]	171 (139)	126 (117)	[.033]	

Notes: All statistics are constructed using baseline data. *Sample restricted to communities where the infrastructure exists in the village. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 5H: Agricultural, trade and industry infrastructures (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
			(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away
<u>17.Shop where to buy seeds</u>								
This infrastructure exists in the village [yes=1]	150	.020 (.140)	.027 (.163)	.013 (.115)	[.547]	.040 (.197)	0 (.000)	[.081]
How many of them?*	3	1.33 (.577)	1.50 (.707)	1.00 (.000)	[.667]	1.33 (.577)	-	-
How far is it from the village center? (km)	150	28.6 (27.2)	36.7 (27.2)	20.7 (24.9)	[.0002]	33.1 (32.6)	24.2 (19.7)	[.045]
Where is situated the closest one?								
Village nearby [yes=1]	147	.245 (.431)	.111 (.316)	.373 (.487)	[.0002]	.319 (.470)	.173 (.381)	[.040]
Town district [yes=1]	147	.361 (.482)	.361 (.484)	.360 (.483)	[.989]	.319 (.470)	.400 (.493)	[.313]
Other district [yes=1]	147	.020 (.142)	.014 (.118)	.027 (.162)	[.587]	.014 (.118)	.027 (.162)	[.587]
Provincial capital [yes=1]	147	.041 (.199)	.083 (.278)	0 (.000)	[.010]	.014 (.118)	.067 (.251)	[.107]
Outside Mozambique [yes=1]	147	.313 (.465)	.389 (.491)	.240 (.430)	[.052]	.319 (.470)	.307 (.464)	[.868]
Don't know [yes=1]	147	.020 (.142)	.042 (.201)	0 (.000)	[.075]	.014 (.118)	.027 (.162)	[.587]
What transport mean is usually used to reach the infrastructure?								
Chapa [yes=1]	150	.320 (.468)	.459 (.502)	.184 (.390)	[.0002]	.227 (.421)	.413 (.496)	[.014]
By foot [yes=1]	150	.420 (.495)	.189 (.394)	.645 (.482)	[.000]	.480 (.503)	.360 (.483)	[.138]
Bike [yes=1]	150	.233 (.424)	.297 (.460)	.171 (.379)	[.068]	.280 (.452)	.187 (.392)	[.179]
Motorized vehicle [yes=1]	150	.020 (.140)	.041 (.199)	0 (.000)	[.077]	.013 (.115)	.027 (.162)	[.563]
Other [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	0 (.000)	.013 (.115)	[.319]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.680 (.468)	.703 (.460)	.658 (.478)	[.559]	.667 (.475)	.693 (.464)	[.728]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	159 (118)	173 (114)	145 (121)	[.138]	185 (126)	132 (104)	[.006]
<u>18.Shop where to buy fertilizer and/or pesticides</u>								
This infrastructure exists in the village [yes=1]	150	.047 (.212)	.081 (.275)	.013 (.115)	[.049]	.053 (.226)	.040 (.197)	[.701]
How many of them?*	7	1.29 (.756)	1.33 (.816)	1.00 (.000)	[.721]	1.00 (.000)	1.67 (1.15)	[.286]
How far is it from the village center? (km)	150	22.5 (22.0)	29.3 (23.4)	15.9 (18.5)	[.0001]	23.6 (23.5)	21.5 (20.5)	[.559]
Where is situated the closest one?								
Village nearby [yes=1]	143	.308 (.463)	.206 (.407)	.400 (.493)	[.012]	.352 (.481)	.264 (.444)	[.256]
Town district [yes=1]	143	.357 (.481)	.456 (.502)	.267 (.445)	[.018]	.366 (.485)	.347 (.479)	[.814]
Other district [yes=1]	143	.028 (.165)	0 (.000)	.053 (.226)	[.054]	.042 (.203)	.014 (.118)	[.307]
Provincial capital [yes=1]	143	.007 (.084)	.015 (.121)	0 (.000)	[.295]	0 (.000)	.014 (.118)	[.322]
Outside Mozambique [yes=1]	143	.294 (.457)	.309 (.465)	.280 (.452)	[.708]	.225 (.421)	.361 (.484)	[.076]
Don't know [yes=1]	143	.007 (.084)	.015 (.121)	0 (.000)	[.295]	.014 (.119)	0 (.000)	[.316]
What transport mean is usually used to reach the infrastructure?								
Chapa [yes=1]	150	.307 (.463)	.459 (.502)	.158 (.367)	[.00004]	.253 (.438)	.360 (.483)	[.159]
By foot [yes=1]	150	.480 (.501)	.311 (.466)	.645 (.482)	[.00003]	.507 (.503)	.453 (.501)	[.517]
Bike [yes=1]	150	.193 (.396)	.189 (.394)	.197 (.401)	[.900]	.227 (.421)	.160 (.369)	[.304]
Motorized vehicle [yes=1]	150	.013 (.115)	.027 (.163)	0 (.000)	[.151]	0 (.000)	.027 (.162)	[.157]
Other [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	.013 (.115)	0 (.000)	[.319]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.687 (.465)	.716 (.454)	.658 (.478)	[.445]	.680 (.470)	.693 (.464)	[.861]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	143 (107)	142 (92.9)	145 (120)	[.865]	164 (117)	122 (91.4)	[.016]

Notes: All statistics are constructed using baseline data. *Sample restricted to communities where the infrastructure exists in the village. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 51: Agricultural, trade and industry infrastructures (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2- 10km away	(7) 0-2km away	(8) Difference [p-value]
<u>19. Shop where to buy agricultural tools</u>								
This infrastructure exists in the village [yes=1]	150	.067	.068	.066	[.965]	.067	.067	[1.00]
How many of them?*	10	(.250) 8.20	(.253) 11.2	(.250) 5.20	[.481]	(.251) 3.80	(.251) 12.6	[.291]
How far is it from the village center? (km)	150	(12.5) 17.1	(17.3) 23.7	(5.36) 10.7	[.00004]	(3.83) 16.0	(17.0) 18.2	[.494]
Where is situated the closest one?		(19.9)	(23.1)	(13.5)		(17.5)	(22.1)	
Village nearby [yes=1]	140	.479 (.501)	.377 (.488)	.577 (.497)	[.017]	.586 (.496)	.371 (.487)	[.011]
Town district [yes=1]	140	.307 (.463)	.420 (.497)	.197 (.401)	[.004]	.300 (.462)	.314 (.468)	[.856]
Other district [yes=1]	140	.029 (.167)	.014 (.120)	.042 (.203)	[.328]	.014 (.120)	.043 (.204)	[.314]
Outside Mozambique [yes=1]	140	.179 (.384)	.174 (.382)	.183 (.390)	[.888]	.086 (.282)	.271 (.448)	[.004]
Don't know [yes=1]	140	.007 (.085)	.014 (.120)	0 (.000)	[.312]	.014 (.120)	0 (.000)	[.319]
What transport mean is usually used to reach the infrastructure?								
Chapa [yes=1]	150	.200 (.401)	.338 (.476)	.066 (.250)	[.00002]	.160 (.369)	.240 (.430)	[.223]
By foot [yes=1]	150	.627 (.485)	.459 (.502)	.789 (.410)	[.00002]	.720 (.452)	.533 (.502)	[.018]
Bike [yes=1]	150	.167 (.374)	.189 (.394)	.145 (.354)	[.469]	.120 (.327)	.213 (.412)	[.127]
Motorized vehicle [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	0 (.000)	.013 (.115)	[.319]
Does the infrastructure remain accessible during the rainy season? [yes=1]	150	.720 (.451)	.757 (.432)	.684 (.468)	[.326]	.707 (.458)	.733 (.445)	[.718]
Using this transport mean, how long does it take to reach the infrastructure (minutes)?	150	127 (98.2)	131 (87.1)	123 (108)	[.612]	148 (101)	105 (90.9)	[.007]

Notes: All statistics are constructed using baseline data. *Sample restricted to communities where the infrastructure exists in the village. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 6: Agricultural output market

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
Is it common to find itinerant vendors in the community? [yes=1]	150	.393 (.490)	.446 (.500)	.342 (.478)	[.196]	.311 (.466)	.474 (.503)	[.041]
If yes, where does the itinerant vendors come from?*								
From the village [yes=1]	59	.136 (.345)	.182 (.392)	.077 (.272)	[.250]	.087 (.288)	.167 (.378)	[.392]
From other villages [yes=1]	59	.339 (.477)	.424 (.502)	.231 (.430)	[.123]	.478 (.511)	.250 (.439)	[.073]
From other places in the country [yes=1]	59	.068 (.254)	.091 (.292)	.038 (.196)	[.435]	0 (.000)	.111 (.319)	[.101]
From outside the country [yes=1]	59	.458 (.502)	.303 (.467)	.654 (.485)	[.007]	.435 (.507)	.472 (.506)	[.783]
What is the number of itinerant vendors present in the village during this agricultural season?*								
Less than 10 vendors [yes=1]	59	.305 (.464)	.424 (.502)	.154 (.368)	[.025]	.304 (.470)	.306 (.467)	[.992]
Between 10 and 50 vendors [yes=1]	59	.441 (.501)	.485 (.508)	.385 (.496)	[.450]	.478 (.511)	.417 (.500)	[.649]
Between 50 and 100 vendors [yes=1]	59	.203 (.406)	.061 (.242)	.385 (.496)	[.002]	.217 (.422)	.194 (.401)	[.834]
More than 100 vendors [yes=1]	59	.051 (.222)	.030 (.174)	.077 (.272)	[.427]	0 (.000)	.083 (.280)	[.161]
For the local agricultural producers, where do they sell their production in the first place?								
Markets or fairs [yes=1]	150	.273 (.447)	.149 (.358)	.395 (.492)	[.0006]	.257 (.440)	.289 (.457)	[.656]
Specialized companies [yes=1]	150	.340 (.475)	.365 (.485)	.316 (.468)	[.529]	.378 (.488)	.303 (.462)	[.331]
Neighboring countries [yes=1]	150	.120 (.326)	.189 (.394)	.053 (.225)	[.010]	.095 (.295)	.145 (.354)	[.348]
Along the road [yes=1]	150	.027 (.162)	.054 (.228)	0 (.000)	[.040]	.041 (.199)	.013 (.115)	[.301]
Itinerant vendors [yes=1]	150	.133 (.341)	.054 (.228)	.211 (.410)	[.005]	.108 (.313)	.158 (.367)	[.373]
Associations [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	.014 (.116)	0 (.000)	[.312]
Exchanges or sales among neighbors [yes=1]	150	.073 (.262)	.122 (.329)	.026 (.161)	[.025]	.081 (.275)	.066 (.250)	[.722]
Other [yes=1]	150	.027 (.162)	.054 (.228)	0 (.000)	[.040]	.027 (.163)	.026 (.161)	[.979]
For the local agricultural producers, where do they sell their production in a second place?								
Markets or fairs [yes=1]	150	.187 (.391)	.068 (.253)	.303 (.462)	[.0002]	.189 (.394)	.184 (.390)	[.938]
Specialized companies [yes=1]	150	.160 (.368)	.216 (.414)	.105 (.309)	[.065]	.135 (.344)	.184 (.390)	[.416]
Neighboring countries [yes=1]	150	.160 (.368)	.162 (.371)	.158 (.367)	[.944]	.176 (.383)	.145 (.354)	[.608]
Along the road [yes=1]	150	.053 (.225)	.081 (.275)	.026 (.161)	[.137]	.041 (.199)	.066 (.250)	[.495]
Itinerant vendors [yes=1]	150	.147 (.355)	.122 (.329)	.171 (.379)	[.396]	.135 (.344)	.158 (.367)	[.696]
Associations [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	0 (.000)	.013 (.115)	[.325]
Through network of associations [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	0 (.000)	.013 (.115)	[.325]
Exchanges or sales among neighbors [yes=1]	150	.247 (.433)	.257 (.440)	.237 (.428)	[.779]	.297 (.460)	.197 (.401)	[.158]
Other [yes=1]	150	.033 (.180)	.068 (.253)	0 (.000)	[.021]	.027 (.163)	.039 (.196)	[.674]

Notes: All statistics are constructed using baseline data. *Sample restricted to communities in which there are itinerant vendors. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 7A: Access to land

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
(1)	Number of observations	(2) Full sample						
Are there available lands for crop production in the community?	150	.567 (.497)	.797 (.405)	.342 (.478)	[.000]	.541 (.502)	.592 (.495)	[.527]
What type of lands is the most available?*								
Left-away croplands [yes=1]	85	.188 (.393)	.136 (.345)	.308 (.471)	[.063]	.175 (.385)	.200 (.405)	[.772]
Virgin non-occupied land [yes=1]	85	.753 (.434)	.814 (.393)	.615 (.496)	[.052]	.750 (.439)	.756 (.435)	[.953]
State reserves [yes=1]	85	.012 (.108)	.017 (.130)	0 (.000)	[.510]	.025 (.158)	0 (.000)	[.292]
Under exploited land [yes=1]	85	.035 (.186)	.017 (.130)	.077 (.272)	[.171]	.025 (.158)	.044 (.208)	[.633]
Other [yes=1]	85	.012 (.108)	.017 (.130)	0 (.000)	[.510]	.025 (.158)	0 (.000)	[.292]
What type of lands is the second most available?*								
Left-away croplands [yes=1]	54	.481 (.504)	.500 (.508)	.450 (.510)	[.729]	.522 (.511)	.452 (.506)	[.618]
Virgin non-occupied land [yes=1]	54	.315 (.469)	.324 (.475)	.300 (.470)	[.861]	.348 (.487)	.290 (.461)	[.660]
Under exploited land [yes=1]	54	.204 (.407)	.176 (.387)	.250 (.444)	[.526]	.130 (.344)	.258 (.445)	[.258]
What type of lands is the third most available?*								
Left-away croplands [yes=1]	37	.270 (.450)	.333 (.485)	.211 (.419)	[.415]	.222 (.428)	.316 (.478)	[.535]
Virgin non-occupied land [yes=1]	37	.108 (.315)	.056 (.236)	.158 (.375)	[.330]	.056 (.236)	.158 (.375)	[.330]
State reserves [yes=1]	37	.216 (.417)	.333 (.485)	.105 (.315)	[.097]	.278 (.461)	.158 (.375)	[.390]
Under exploited land [yes=1]	37	.405 (.498)	.278 (.461)	.526 (.513)	[.131]	.444 (.511)	.368 (.496)	[.649]
What type of lands is the forth most available?*								
Virgin non-occupied land [yes=1]	10	.100 (.316)	.143 (.378)	0 (.000)	[.545]	.143 (.378)	0 (.000)	[.545]
State reserves [yes=1]	10	.200 (.422)	.143 (.378)	.333 (.577)	[.545]	.286 (.488)	0 (.000)	[.356]
Under exploited land [yes=1]	10	.500 (.527)	.429 (.535)	.667 (.577)	[.545]	.429 (.535)	.667 (.577)	[.545]
Other [yes=1]	10	.200 (.422)	.286 (.488)	0 (.000)	[.356]	.143 (.378)	.333 (.577)	[.545]
What type of lands is the fifth most available?*								
Left-away croplands [yes=1]	4	.500 (.577)	1.00 (.000)	.333 (.577)	[.423]	1.00 (.000)	0 (.000)	-
State reserves [yes=1]	4	.500 (.577)	0 (.000)	.667 (.577)	[.423]	0 (.000)	1.00 (.000)	-

Notes: All statistics are constructed using baseline data. *Sample restricted to communities with available lands for crop expansion. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 7B: Access to land (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
For the non-native of the village, what is the most important mechanism used to acquire land?								
Granted by traditional authorities [yes=1]	150	.827 (.380)	.824 (.383)	.829 (.379)	[.941]	.824 (.383)	.829 (.379)	[.941]
Granted by official authorities [yes=1]	150	.140 (.348)	.122 (.329)	.158 (.367)	[.525]	.135 (.344)	.145 (.354)	[.867]
Granted by relatives [yes=1]	150	.027 (.162)	.041 (.199)	.013 (.115)	[.301]	.041 (.199)	.013 (.115)	[.301]
Other [yes=1]	150	.007 (.082)	.014 (.116)	0 (.000)	[.312]	0 (.000)	.013 (.115)	[.325]
For the non-native of the village, what is the <u>second</u> most important mechanism used to acquire land?*								
Granted by traditional authorities [yes=1]	142	.077 (.268)	.119 (.327)	.040 (.197)	[.078]	.101 (.304)	.055 (.229)	[.302]
Granted by official authorities [yes=1]	142	.465 (.501)	.463 (.502)	.467 (.502)	[.962]	.464 (.502)	.466 (.502)	[.981]
Granted by relatives [yes=1]	142	.324 (.470)	.284 (.454)	.360 (.483)	[.335]	.290 (.457)	.356 (.482)	[.402]
Rented land [yes=1]	142	.049 (.217)	.060 (.239)	.040 (.197)	[.591]	.058 (.235)	.041 (.200)	[.645]
Lent land [yes=1]	142	.077 (.268)	.060 (.239)	.093 (.293)	[.458]	.087 (.284)	.068 (.254)	[.683]
Other [yes=1]	142	.007 (.084)	.015 (.122)	0 (.000)	[.292]	0 (.000)	.014 (.117)	[.333]
For the residents of the village, what is the most important mechanism used to acquire land?								
Granted by traditional authorities [yes=1]	150	.327 (.471)	.378 (.488)	.276 (.450)	[.185]	.324 (.471)	.329 (.473)	[.952]
Granted by official authorities [yes=1]	150	.033 (.180)	.041 (.199)	.026 (.161)	[.630]	0 (.000)	.066 (.250)	[.025]
Granted by relatives [yes=1]	150	.280 (.451)	.270 (.447)	.289 (.457)	[.795]	.311 (.466)	.250 (.436)	[.410]
Rented land [yes=1]	150	.180 (.385)	.108 (.313)	.250 (.436)	[.024]	.176 (.383)	.184 (.390)	[.893]
Lent land [yes=1]	150	.160 (.368)	.176 (.383)	.145 (.354)	[.608]	.162 (.371)	.158 (.367)	[.944]
Occupied land [yes=1]	150	.007 (.082)	0 (.000)	.013 (.115)	[.325]	.014 (.116)	0 (.000)	[.312]
Other [yes=1]	150	.013 (.115)	.027 (.163)	0 (.000)	[.151]	.014 (.116)	.013 (.115)	[.985]
For the residents of the village, what is the <u>second</u> most important mechanism used to acquire land?*								
Granted by traditional authorities [yes=1]	114	.193 (.396)	.224 (.421)	.161 (.371)	[.395]	.228 (.423)	.158 (.368)	[.347]
Granted by official authorities [yes=1]	114	.070 (.257)	.086 (.283)	.054 (.227)	[.500]	.070 (.258)	.070 (.258)	[1.00]
Granted by relatives [yes=1]	114	.404 (.493)	.414 (.497)	.393 (.493)	[.822]	.386 (.491)	.421 (.498)	[.706]
Rented land [yes=1]	114	.140 (.349)	.103 (.307)	.179 (.386)	[.252]	.158 (.368)	.123 (.331)	[.594]
Lent land [yes=1]	114	.167 (.374)	.138 (.348)	.196 (.401)	[.407]	.123 (.331)	.211 (.411)	[.212]
Occupied land [yes=1]	114	.009 (.094)	.017 (.131)	0 (.000)	[.328]	.018 (.132)	0 (.000)	[.319]
Purchased [yes=1]	114	.018 (.132)	.017 (.131)	.018 (.134)	[.980]	.018 (.131)	.018 (.134)	[.999]

Notes: All statistics are constructed using baseline data. *Sample restricted to communities who answered on the second most important mechanisms of access to land. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 7C: Access to land (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
Are there available land for husbandry in the community? [yes=1]	148	.804 (.398)	.945 (.229)	.667 (.475)	[.00001]	.781 (.417)	.827 (.381)	[.486]
Is it easy to acquire land in the community? [yes=1]	150	.707 (.457)	.878 (.329)	.539 (.502)	[.000]	.757 (.432)	.658 (.478)	[.186]
If not, what is the principal reason?*								
No available land around the community [yes=1]	44	.955 (.211)	.778 (.441)	1.00 (.000)	[.004]	1.00 (.000)	.923 (.272)	[.238]
Other [yes=1]	44	.045 (.211)	.222 (.441)	0 (.000)	[.004]	0 (.000)	.077 (.272)	[.238]
If not, what is the second principal reason?*								
No available land around the community [yes=1]	12	.417 (.515)	.400 (.548)	.429 (.535)	[.930]	0 (.000)	.500 (.527)	[.226]
Do not have the right because not native of the village [yes=1]	12	.250 (.452)	.200 (.447)	.286 (.488)	[.763]	.500 (.707)	.200 (.422)	[.418]
Lack of money to rent land [yes=1]	12	.083 (.289)	0 (.000)	.143 (.378)	[.424]	0 (.000)	.100 (.316)	[.676]
Other [yes=1]	12	.250 (.452)	.400 (.548)	.143 (.378)	[.356]	.500 (.707)	.200 (.422)	[.418]
Are there formal transactions (purchase and sell) of land in the community? [yes=1]	150	.053 (.225)	.054 (.228)	.053 (.225)	[.969]	.068 (.253)	.039 (.196)	[.447]
Are members of the community organized in a natural resources management committee? [yes=1]	150	.373 (.485)	.324 (.471)	.421 (.497)	[.223]	.351 (.481)	.395 (.492)	[.586]
Does the community is aware of land rights? [yes=1]	150	.567 (.497)	.541 (.502)	.592 (.495)	[.527]	.486 (.503)	.645 (.482)	[.051]

Notes: All statistics are constructed using baseline data. *Sample restricted to communities where land is not easily accessible. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 8A: Prevalence of natural shocks

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<u>1. Floods</u>								
During the agricultural season 2014/2015, were there any floods? [yes=1]	150	.080 (.272)	.095 (.295)	.066 (.250)	[.519]	.108 (.313)	.053 (.225)	[.213]
How many households suffered from this shock?*								
All [yes=1]	12	.083 (.289)	0 (.000)	.200 (.447)	[.255]	.125 (.354)	0 (.000)	[.506]
More than half [yes=1]	12	.083 (.289)	.143 (.378)	0 (.000)	[.424]	.125 (.354)	0 (.000)	[.506]
Half [yes=1]	12	.333 (.492)	.286 (.488)	.400 (.548)	[.711]	.250 (.463)	.500 (.577)	[.433]
Less than half [yes=1]	12	.500 (.522)	.571 (.535)	.400 (.548)	[.599]	.500 (.535)	.500 (.577)	[1.00]
The affected households received from governments or organization:*								
tools [yes=1]	12	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
seeds [yes=1]	12	.083 (.289)	0 (.000)	.200 (.447)	[.255]	.125 (.354)	0 (.000)	[.506]
other goods or money [yes=1]	12	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
rehabilitation of infrastructure [yes=1]	12	.083 (.289)	.143 (.378)	0 (.000)	[.424]	.125 (.354)	0 (.000)	[.506]
<u>2.Droughts</u>								
During the agricultural season 2014/2015, were there any droughts? [yes=1]	150	.540 (.500)	.568 (.499)	.513 (.503)	[.507]	.568 (.499)	.513 (.503)	[.507]
How many households suffered from this shock?*								
All [yes=1]	81	.247 (.434)	.238 (.431)	.256 (.442)	[.851]	.214 (.415)	.282 (.456)	[.486]
More than half [yes=1]	81	.210 (.410)	.262 (.445)	.154 (.366)	[.238]	.333 (.477)	.077 (.270)	[.004]
Half [yes=1]	81	.370 (.486)	.381 (.492)	.359 (.486)	[.840]	.310 (.468)	.436 (.502)	[.245]
Less than half [yes=1]	81	.173 (.380)	.119 (.328)	.231 (.427)	[.188]	.143 (.354)	.205 (.409)	[.465]
The affected households received from governments or organization:*								
tools [yes=1]	81	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
seeds [yes=1]	81	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
other goods or money [yes=1]	81	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
rehabilitation of infrastructure [yes=1]	81	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	

Notes: All statistics are constructed using baseline data. *Sample restricted to the communities who suffered from the shock. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 8B: Prevalence of natural shocks (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
3. Cyclone								
During the agricultural season 2014/2015, were there any cyclones [yes=1]	150	.273 (.447)	.351 (.481)	.197 (.401)	[.035]	.270 (.447)	.276 (.450)	[.934]
How many households suffered from this shock?*								
All [yes=1]	41	.098 (.300)	.077 (.272)	.133 (.352)	[.569]	.050 (.224)	.143 (.359)	[.329]
More than half [yes=1]	41	.098 (.300)	.115 (.326)	.067 (.258)	[.623]	.100 (.308)	.095 (.301)	[.960]
Half [yes=1]	41	.268 (.449)	.308 (.471)	.200 (.414)	[.466]	.200 (.410)	.333 (.483)	[.348]
Less than half [yes=1]	41	.537 (.505)	.500 (.510)	.600 (.507)	[.548]	.650 (.489)	.429 (.507)	[.163]
The affected households received from governments or organization:*								
tools [yes=1]	41	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
seeds [yes=1]	41	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
other goods or money [yes=1]	41	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
rehabilitation of infrastructure [yes=1]	41	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
4. Severe crop pests and diseases								
During the agricultural season 2014/2015, were there any crop pests and diseases? [yes=1]	150	.480 (.501)	.500 (.503)	.461 (.502)	[.631]	.419 (.497)	.539 (.502)	[.141]
How many households suffered from this shock?*								
All [yes=1]	72	.139 (.348)	.135 (.347)	.143 (.355)	[.926]	.065 (.250)	.195 (.401)	[.116]
More than half [yes=1]	72	.125 (.333)	.189 (.397)	.057 (.236)	[.093]	.129 (.341)	.122 (.331)	[.930]
Half [yes=1]	72	.375 (.488)	.486 (.507)	.257 (.443)	[.045]	.355 (.486)	.390 (.494)	[.763]
Less than half [yes=1]	72	.361 (.484)	.189 (.397)	.543 (.505)	[.001]	.452 (.506)	.293 (.461)	[.169]
The affected households received from governments or organization:*								
tools [yes=1]	72	.014 (.118)	.027 (.164)	0 (.000)	[.334]	.032 (.180)	0 (.000)	[.253]
seeds [yes=1]	72	.014 (.118)	.027 (.164)	0 (.000)	[.334]	.032 (.180)	0 (.000)	[.253]
other goods or money [yes=1]	72	.014 (.118)	.027 (.164)	0 (.000)	[.334]	.032 (.180)	0 (.000)	[.253]
rehabilitation of infrastructure [yes=1]	72	.028 (.165)	.027 (.164)	.029 (.169)	[.969]	.065 (.250)	0 (.000)	[.102]

Notes: All statistics are constructed using baseline data. * Sample restricted to the communities affected by the shock. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 8C: Prevalence of natural shocks (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

Means, standard deviations reported in parentheses, p values reported in brackets								
	Roads					Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
5. Epidemics in livestock								
During the agricultural season 2014/2015, were there any epidemics in livestock? [yes=1]	150	.740 (.440)	.784 (.414)	.697 (.462)	[.230]	.716 (.454)	.763 (.428)	[.516]
How many households suffered from this shock?*								
All [yes=1]	111	.270 (.446)	.293 (.459)	.245 (.434)	[.575]	.264 (.445)	.276 (.451)	[.891]
More than half [yes=1]	111	.288 (.455)	.328 (.473)	.245 (.434)	[.343]	.302 (.463)	.276 (.451)	[.765]
Half [yes=1]	111	.261 (.441)	.293 (.459)	.226 (.423)	[.429]	.226 (.423)	.293 (.459)	[.429]
Less than half [yes=1]	111	.180 (.386)	.086 (.283)	.283 (.455)	[.007]	.208 (.409)	.155 (.365)	[.478]
The affected households received from governments or organization:*								
tools [yes=1]	111	.009 (.095)	.017 (.131)	0 (.000)	[.341]	.019 (.137)	0 (.000)	[.298]
seeds [yes=1]	111	.018 (.134)	.034 (.184)	0 (.000)	[.176]	.038 (.192)	0 (.000)	[.138]
other goods or money [yes=1]	111	.009 (.095)	.017 (.131)	0 (.000)	[.341]	.019 (.137)	0 (.000)	[.298]
rehabilitation of infrastructure [yes=1]	111	.009 (.095)	.017 (.131)	0 (.000)	[.341]	.019 (.137)	0 (.000)	[.298]

Notes: All statistics are constructed using baseline data. * Sample restricted to the communities affected by the shock. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 9: Agricultural calendar for subsistence crops, cash crops and fruits grown

Crop type	Crop	% of communities growing the crop	Activity	Agricultural Calendar											
				September	October	November	December	January	February	March	April	May	June	July	August
Subsistence crop	Groundnut (large)	90%	Planting	S	N	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Groundnut (small)	71%	Planting	S	N	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Sweet potato	90%	Planting	S	O	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Irish potato	61%	Planting	S	O	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Pigeon Pea	15%	Planting	S	N	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Jugo Bean	30%	Planting	S	O	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Butter Bean	69%	Planting	S	O	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Black Eyed Pea	83%	Planting	S	N	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Cassava	55%	Planting	S	N	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Sorghum	1%	Planting	S	O	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Maize	99%	Planting	S	N	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Wheat	5%	Planting	S	O	N	D	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
Cash crop	Cotton	1%	Planting	S	O	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Sun flower	10%	Planting	S	O	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Paprika	3%	Planting	S	O	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
	Tobacco	74%	Planting	S	O	N	N	J	F	M	A	M	J	J	A
			Harvest	S	O	N	D	J	F	M	A	M	J	J	A
Fruit	Avocado	5%		S	O	N	D	J	F	M	A	M	J	J	A
	Pineapple	3%		S	O	N	D	J	F	M	A	M	J	J	A
	Banana	69%		S	O	N	D	J	F	M	A	M	J	J	A
	Guava	46%		S	O	N	D	J	F	M	A	M	J	J	A
	Orange	11%		S	O	N	D	J	F	M	A	M	J	J	A
	Lemon	35%		S	O	N	D	J	F	M	A	M	J	J	A
	Malambe	1%		S	O	N	D	J	F	M	A	M	J	J	A
	Mango	85%		S	O	N	D	J	F	M	A	M	J	J	A
	Chinese	1%		S	O	N	D	J	F	M	A	M	J	J	A
	Tangerine	15%		S	O	N	D	J	F	M	A	M	J	J	A

Notes: The planting and harvest periods of each crop are estimated using baseline data and correspond to the months during which at least 20% of the communities plant or harvest the crop respectively (N=150).

Table 10: Food security indicators

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
1. Cassava								
In case of drought, do households cultivate cassava as an alternative? [yes=1]	150	.533 (.501)	.378 (.488)	.684 (.468)	[.0001]	.533 (.502)	.533 (.502)	[1.00]
During the last agricultural season 2014/2015, what proportion of households in the community cultivate this crop?*								
All [yes=1]	80	.300 (.461)	.357 (.488)	.269 (.448)	[.420]	.200 (.405)	.400 (.496)	[.052]
More than half [yes=1]	80	.125 (.333)	.071 (.262)	.154 (.364)	[.294]	.125 (.335)	.125 (.335)	[1.00]
Half [yes=1]	80	.250 (.436)	.286 (.460)	.231 (.425)	[.594]	.250 (.439)	.250 (.439)	[1.00]
Less than half [yes=1]	80	.325 (.471)	.286 (.460)	.346 (.480)	[.588]	.425 (.501)	.225 (.423)	[.057]
2. Sweet potato								
In case of drought, do households cultivate sweet potato as an alternative? [yes=1]	150	.807 (.396)	.730 (.447)	.882 (.325)	[.018]	.800 (.403)	.813 (.392)	[.838]
During the last agricultural season 2014/2015, what proportion of households in the community cultivate this crop?*								
All [yes=1]	121	.331 (.472)	.278 (.452)	.373 (.487)	[.271]	.217 (.415)	.443 (.501)	[.008]
More than half [yes=1]	121	.248 (.434)	.130 (.339)	.343 (.478)	[.007]	.350 (.481)	.148 (.358)	[.010]
Half [yes=1]	121	.264 (.443)	.370 (.487)	.179 (.386)	[.018]	.283 (.454)	.246 (.434)	[.644]
Less than half [yes=1]	121	.157 (.365)	.222 (.420)	.104 (.308)	[.078]	.150 (.360)	.164 (.373)	[.835]
3. Irish potato								
In case of drought, do households cultivate sweet potato as an alternative? [yes=1]	150	.080 (.272)	0 (.000)	.158 (.367)	[.0003]	.093 (.293)	.067 (.251)	[.550]
During the last agricultural season 2014/2015, what proportion of households in the community cultivate this crop?*								
All [yes=1]	12	.917 (.289)		.917 (.289)		1.00 (.000)	.800 (.447)	[.255]
Half [yes=1]	12	.083 (.289)		.083 (.289)		0 (.000)	.200 (.447)	[.255]

Notes: All statistics are constructed using baseline data. *Sample restricted to communities in which households grow the crop in case of drought. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 11: Social traditions

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
In this community, who normally decides over the inheritance and the family name to give to the children?								
Father (patrilineal society) [yes=1]	150	.653 (.478)	.622 (.488)	.684 (.468)	[.424]	.608 (.492)	.697 (.462)	[.254]
Mother (matrilineal society) [yes=1]	150	.113 (.318)	.041 (.199)	.184 (.390)	[.005]	.135 (.344)	.092 (.291)	[.409]
Father and Mother [yes=1]	150	.067 (.250)	.027 (.163)	.105 (.309)	[.055]	.068 (.253)	.066 (.250)	[.965]
Maternal uncle or mother's brother (matrilineal society) [yes=1]	150	.060 (.238)	.122 (.329)	0 (.000)	[.002]	.054 (.228)	.066 (.250)	[.764]
Paternal uncle or father's brother (patrilineal society) [yes=1]	150	.020 (.140)	.014 (.116)	.026 (.161)	[.579]	.014 (.116)	.026 (.161)	[.579]
Other [yes=1]	150	.087 (.282)	.176 (.383)	0 (.000)	[.0001]	.122 (.329)	.053 (.225)	[.135]
What is the most common marriage type in this community?								
The wife moves in with the husband's family (patrilocal) [yes=1]	150	.373 (.485)	.689 (.466)	.066 (.250)	[.000]	.405 (.494)	.342 (.478)	[.426]
The husband moves in with the wife's family (matrilocal) [yes=1]	150	.600 (.492)	.257 (.440)	.934 (.250)	[.000]	.541 (.502)	.658 (.478)	[.144]
Other [yes=1]	150	.027 (.162)	.054 (.228)	0 (.000)	[.040]	.054 (.228)	0 (.000)	[.040]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Appendix B: Household characteristics

Table 12 : Household demographic characteristics

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
			(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away
<u>Panel A: Household structure</u>								
Male-headed household	3,014	.741 (.438)	.763 (.426)	.720 (.449)	[.081]	.741 (.438)	.741 (.438)	[.978]
Female-headed household	3,014	.065 (.246)	.053 (.224)	.076 (.265)	[.142]	.065 (.246)	.065 (.246)	[.992]
Married women without spouse at home	3,014	.028 (.166)	.027 (.162)	.029 (.169)	[.743]	.025 (.156)	.031 (.174)	[.417]
Single woman	3,014	.166 (.372)	.157 (.364)	.175 (.380)	[.319]	.169 (.375)	.164 (.370)	[.754]
<u>Panel B: Household composition</u>								
Number of household members	3,014	4.70 (1.99)	4.69 (2.02)	4.71 (1.96)	[.788]	4.61 (1.96)	4.78 (2.01)	[.046]
Number of male adults in the household	3,014	1.05 (.700)	1.06 (.728)	1.04 (.671)	[.687]	1.03 (.686)	1.06 (.713)	[.324]
Number of female adults in the household	3,014	1.16 (.436)	1.15 (.423)	1.18 (.448)	[.105]	1.14 (.414)	1.18 (.456)	[.033]
Number of boys (<=15 years old)	3,014	1.25 (1.17)	1.24 (1.18)	1.25 (1.16)	[.819]	1.23 (1.17)	1.27 (1.18)	[.345]
Number of girls (<=15 years old)	3,014	1.24 (1.17)	1.24 (1.19)	1.23 (1.15)	[.886]	1.21 (1.15)	1.27 (1.19)	[.252]
Total number of children	3,014	2.49 (1.69)	2.48 (1.73)	2.49 (1.66)	[.959]	2.44 (1.67)	2.54 (1.71)	[.160]
Number of sons (<=15 years old) in the household	3,014	1.15 (1.17)	1.16 (1.18)	1.15 (1.17)	[.776]	1.13 (1.16)	1.17 (1.18)	[.405]
Number of daughters (<=15 years old) in the household	3,014	1.14 (1.16)	1.15 (1.18)	1.12 (1.15)	[.500]	1.12 (1.15)	1.15 (1.17)	[.525]
Total number of sons/daughters in the household	3,014	2.29 (1.74)	2.32 (1.76)	2.27 (1.72)	[.531]	2.26 (1.72)	2.33 (1.76)	[.338]
Number of grand sons (<=15 years old) in the household	3,014	.068 (.339)	.056 (.315)	.079 (.361)	[.092]	.064 (.335)	.071 (.342)	[.593]
Number of grand daughters (<=15 years old) in the household	3,014	.070 (.341)	.056 (.316)	.083 (.364)	[.045]	.061 (.293)	.078 (.382)	[.233]
Total number of grand children in the household	3,014	.137 (.564)	.112 (.528)	.162 (.595)	[.033]	.125 (.517)	.149 (.604)	[.317]
Number of boys neither sons nor grand sons (<=15 years old) in the household	3,014	.026 (.189)	.025 (.172)	.027 (.205)	[.771]	.027 (.203)	.025 (.175)	[.748]
Number of girls neither daughters nor grand daughters (<=15 years old) in the household	3,014	.030 (.207)	.031 (.221)	.029 (.193)	[.817]	.026 (.196)	.035 (.218)	[.323]
Total number of children not from the head's bloodline	3,014	.056 (.306)	.056 (.312)	.056 (.301)	[.991]	.053 (.312)	.059 (.302)	[.627]
Household equivalent size	3,014	2.35 (.703)	2.35 (.715)	2.36 (.692)	[.730]	2.32 (.690)	2.38 (.714)	[.035]
Share of women in the household	3,014	.533 (.202)	.533 (.200)	.533 (.204)	[.998]	.534 (.201)	.532 (.203)	[.728]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 13: Household Ownership

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
Quantity of latrine	3,017	.898 (.477)	.846 (.545)	.950 (.393)	[.0002]	.888 (.514)	.908 (.438)	[.481]
Quantity of oil lamp	3,017	.328 (.552)	.384 (.610)	.274 (.483)	[.0008]	.302 (.521)	.354 (.579)	[.122]
Quantity of furniture	3,017	1.64 (2.57)	1.46 (2.35)	1.83 (2.76)	[.045]	1.39 (2.26)	1.89 (2.82)	[.007]
Quantity of radio	3,017	.598 (.709)	.594 (.718)	.601 (.700)	[.850]	.601 (.725)	.594 (.693)	[.830]
Quantity of TV	3,017	.062 (.333)	.056 (.311)	.067 (.353)	[.562]	.028 (.189)	.094 (.426)	[.0010]
Quantity of mobile phone	3,017	.542 (.832)	.602 (.910)	.484 (.744)	[.034]	.441 (.771)	.640 (.876)	[.0002]
Quantity of bicycle	3,017	.592 (.647)	.604 (.609)	.581 (.681)	[.493]	.585 (.669)	.598 (.624)	[.697]
Quantity of motorbike	3,017	.119 (.365)	.125 (.356)	.113 (.374)	[.535]	.109 (.375)	.128 (.355)	[.294]
Owens a lantern [yes=1]	3,017	.011 (.102)	.011 (.106)	.010 (.099)	[.720]	.013 (.113)	.008 (.092)	[.323]
Owens a solar panel [yes=1]	3,017	.007 (.081)	.001 (.037)	.012 (.108)	[.015]	.008 (.090)	.005 (.072)	[.514]
Total number of household assets owned	3,017	4.78 (4.11)	4.67 (3.99)	4.90 (4.23)	[.440]	4.37 (3.69)	5.22 (4.47)	[.004]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road. The number of household assets owned is the sum of the quantities of the following items owned by the households: latrine, oil lamp, furniture, radio, TV, mobile phone, bike, motorized vehicle, flashlight and solar panel.

Table 14: Household welfare

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<i>Panel A: Household consumption</i>								
Annual household consumption (MZN)	3,005	24,617 (24,445)	29,060 (27,769)	20,273 (19,729)	[.00001]	21,263 (21,093)	27,961 (26,961)	[.0007]
Annual consumption per capita (MZN)	3,005	5,726 (6,183)	6,906 (7,405)	4,576 (4,391)	[.000]	5,027 (5,511)	6,427 (6,713)	[.001]
<i>Panel B: Housing quality</i>								
Owns an improved ceiling [yes=1]	3,017	.231 (.422)	.176 (.381)	.284 (.451)	[.000]	.256 (.436)	.207 (.406)	[.049]
Owns an improved roof [yes=1]	3,017	.218 (.413)	.146 (.353)	.289 (.453)	[.000]	.167 (.373)	.268 (.443)	[.0007]
Owns an improved walls [yes=1]	3,017	.169 (.375)	.119 (.324)	.218 (.413)	[.0002]	.142 (.349)	.196 (.397)	[.040]
<i>Panel C: Subjective welfare</i>								
In better economic situation than 2 years ago [yes=1]	3,017	.359 (.480)	.384 (.487)	.334 (.472)	[.157]	.327 (.469)	.389 (.488)	[.082]
<i>Panel D: Food Security</i>								
Did the household went through a starvation period during the 2014/2015 season? [yes=1]	3,017	.382 (.486)	.447 (.497)	.319 (.466)	[.0001]	.394 (.489)	.371 (.483)	[.494]
How many meals the members of the households have during starvation period?	1,154	1.53 (.532)	1.51 (.552)	1.55 (.502)	[.338]	1.50 (.524)	1.55 (.539)	[.320]
Months of food security	3,017	10.8 (2.00)	10.5 (2.23)	11.1 (1.70)	[.00008]	10.8 (1.98)	10.8 (2.01)	[.736]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road. The regressions allow the error term to be clustered by community. The household owns an improved ceiling if it is made of materials other than hay or straw, such as zinc and tiles. The household owns improved walls if they are made of concrete blocks or bricks. Months of food security measures the number of months per year the household has stocks of food available for consumption.

Table 15: Household welfare and consumption

	(1) Full sample	Household type		(4) Difference
		(2) Male-headed households	(3) Female-headed households	
Annual household consumption (MZN)	24,617 (24,445)	28,739 (25,712)	12,833 (15,128)	***
Annual consumption per capita (MZN)	5,726 (6,183)	6,336 (6,393)	3,983 (5,159)	***
Household asset index¹	4.8 (4.1)	5.5 (4.2)	2.9 (3.01)	***
Household housing index²	0.6 (0.9)	0.7 (0.9)	0.5 (0.7)	***
Number of months the household went hungry in 2015	1.2 (2.0)	1.0 (1.9)	1.7 (2.2)	***

Notes: Standard deviations reported in parentheses. ¹The household asset index is the sum of the following items owned by the household: latrine, oil lamp, furniture, radio, TV, mobile phone, bike, motorized vehicle, flashlight and solar panel. ²The household housing index is the sum of three dummy variables: a dummy for having an improved ceiling made of materials other than hay or straw, such as zinc and tiles, a dummy variable for having improved walls made of concrete blocks or bricks and a dummy for having improved barns. The column Difference shows the significance level of the test of equality from an OLS regression of corresponding variable against a dummy for female-headed household. The regressions allow the error term to be clustered by community. *** p<0.01 ** p<0.05 *p<0.1.

Appendix C: Individual characteristics

Table 16: Women's characteristics

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<u>Panel A: Women's characteristics</u>								
Head [yes=1]	3,014	.259 (.438)	.237 (.426)	.280 (.449)	[.081]	.259 (.438)	.259 (.438)	[.978]
Age	3,014	35.8 (15.0)	35.0 (14.8)	36.6 (15.1)	[.008]	35.9 (15.3)	35.7 (14.6)	[.738]
Marital status								
Single [yes=1]	3,014	.006 (.079)	.012 (.109)	.0007 (.026)	[.00005]	.005 (.069)	.008 (.088)	[.276]
Married [yes=1]	3,014	.333 (.471)	.419 (.494)	.250 (.433)	[.000]	.313 (.464)	.352 (.478)	[.245]
Non-marital partnership [yes=1]	3,014	.489 (.500)	.409 (.492)	.567 (.496)	[.000]	.505 (.500)	.473 (.499)	[.314]
Poligamous [yes=1]	3,014	.012 (.107)	.015 (.121)	.009 (.092)	[.150]	.012 (.110)	.012 (.108)	[.930]
Divorced [yes=1]	3,014	.042 (.202)	.026 (.160)	.058 (.234)	[.0003]	.047 (.212)	.038 (.191)	[.306]
Separated [yes=1]	3,014	.027 (.161)	.034 (.180)	.020 (.139)	[.054]	.027 (.162)	.026 (.159)	[.904]
Widow(er) [yes=1]	3,014	.091 (.288)	.085 (.280)	.096 (.295)	[.353]	.090 (.287)	.092 (.289)	[.890]
<u>Panel B: Women's education</u>								
Do you know how to read and write?	3,013	.235 (.424)	.223 (.416)	.248 (.432)	[.273]	.201 (.401)	.269 (.444)	[.002]
Education Level								
No schooling	3,013	.521 (.500)	.536 (.499)	.508 (.500)	[.235]	.533 (.499)	.509 (.500)	[.320]
Primary	3,013	.440 (.496)	.425 (.494)	.454 (.498)	[.188]	.447 (.497)	.434 (.496)	[.568]
Secondary or higher	3,013	.039 (.193)	.040 (.195)	.038 (.191)	[.880]	.020 (.141)	.057 (.231)	[.0010]
<u>Panel C: Women's activity</u>								
Do you have agricultural training for at least 3 continuous months? [yes=1]								
continuous ?	3,013	.020 (.139)	.028 (.164)	.012 (.108)	[.023]	.020 (.138)	.020 (.141)	[.922]
Did you do any paid work between February of 2015 and January of 2016? [yes=1]	3,013	.245 (.430)	.288 (.453)	.203 (.402)	[.0010]	.264 (.441)	.226 (.419)	[.148]
Did you do any self-employed work between February of 2015 and January of 2016? [yes=1]	3,013	.174 (.379)	.207 (.405)	.141 (.348)	[.004]	.136 (.343)	.210 (.407)	[.001]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 17: Men's characteristics

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<i>Panel A: Men's characteristics</i>								
Head [yes=1]	2,428	.920 (.272)	.935 (.247)	.905 (.294)	[.117]	.920 (.272)	.920 (.272)	[.996]
Age	2,428	38.9 (14.4)	38.6 (14.5)	39.2 (14.4)	[.335]	38.7 (14.7)	39.1 (14.2)	[.562]
Marital status								
Single [yes=1]	2,428	0	0	0		0	0	
Married [yes=1]	2,428	.396 (.489)	.495 (.500)	.296 (.457)	[.000]	.375 (.484)	.416 (.493)	[.274]
Non-marital partnership [yes=1]	2,428	.569 (.495)	.464 (.499)	.673 (.469)	[.000]	.588 (.492)	.550 (.498)	[.317]
Poligamous [yes=1]	2,428	.035 (.185)	.040 (.197)	.030 (.172)	[.296]	.038 (.190)	.034 (.181)	[.712]
Divorced [yes=1]	2,428	0	0	0		0	0	
Separated [yes=1]	2,428	0	0	0		0	0	
Widow(er) [yes=1]	2,428	0	0	0		0	0	
<i>Panel B: Men's education</i>								
Do you know how to read and write?	2,428	.629 (.483)	.628 (.483)	.629 (.483)	[.981]	.603 (.490)	.655 (.476)	[.045]
Education Level								
No schooling	2,428	.257 (.437)	.254 (.435)	.259 (.438)	[.803]	.263 (.440)	.249 (.433)	[.537]
Primary	2,428	.641 (.480)	.639 (.481)	.644 (.479)	[.836]	.656 (.475)	.629 (.483)	[.239]
Secondary or higher	2,428	.102 (.303)	.107 (.309)	.097 (.296)	[.589]	.082 (.274)	.121 (.327)	[.031]
<i>Panel C: Men's activity</i>								
Do you have agricultural training for at least 3 continuous months? [yes=1]	2,428	.039 (.194)	.050 (.219)	.028 (.165)	[.023]	.040 (.196)	.039 (.193)	[.899]
Did you do any paid work between February of 2015 and January of 2016? [yes=1]	2,428	.308 (.462)	.388 (.488)	.227 (.419)	[.000]	.304 (.460)	.311 (.463)	[.825]
Did you do any self-employed work between February of 2015 and January of 2016? [yes=1]	2,428	.331 (.471)	.364 (.481)	.298 (.458)	[.015]	.305 (.461)	.357 (.479)	[.058]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 18: Education and cognitive skills

Means, standard deviations reported in parentheses

	(1) Married men	(2) Married women	(3) Non-married women	(4) Difference (1) and (2)	(5) Difference (1) and (3)
Age	39 (14.42)	33 (12.94)	49 (17.41)	***	***
Literacy rate	63% (0.48)	26% (0.44)	14% (0.35)	***	***
Years of schooling	3.6 (3.01)	2.0 (2.67)	1.2 (1.99)	***	***
<i>Cognitive skills</i>					
Mathematical test score	3.67 (1.76)	2.39 (1.68)	2.22 (1.69)	***	***
Digit span recall test score	4.60 (0.99)	4.55 (0.99)	4.67 (0.96)	**	not sign
Raven's test score	4.49 (3.22)	4.25 (2.99)	4.25 (2.99)	***	not sign

Notes: The columns Difference show the significance level of the test of equality from an OLS regression of corresponding variable against a dummy for married women or for non-married women. The regressions allow the error term to be clustered by community. *** p<0.01
** p<0.05 *p<0.1.

Table 19: Non cognitive skills - Women
Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
Panel A: Grit								
I am a hard worker.	3,011	5.37 (.729)	5.29 (.754)	5.44 (.697)	[.002]	5.34 (.730)	5.39 (.728)	[.366]
Setbacks don't discourage me.	3,011	4.38 (1.04)	4.27 (1.09)	4.49 (.975)	[.000]	4.41 (1.03)	4.36 (1.05)	[.292]
I finish whatever I begin.	3,011	4.21 (1.04)	4.09 (1.07)	4.34 (.985)	[.000]	4.23 (1.01)	4.20 (1.06)	[.483]
I am diligent.	3,011	4.37 (1.08)	4.24 (1.10)	4.50 (1.04)	[.0002]	4.38 (1.07)	4.36 (1.08)	[.802]
Grit score [Low: 4 ; High: 24]	3,011	18.3 (2.62)	17.9 (2.67)	18.8 (2.49)	[.000]	18.4 (2.59)	18.3 (2.64)	[.711]
Panel B: Generalized self-efficacy								
I am strong enough to overcome life's struggles.	3,011	4.59 (1.00)	4.49 (1.06)	4.69 (.933)	[.00001]	4.58 (1.00)	4.60 (1.00)	[.698]
I can handle the situations that life brings.	3,011	4.39 (1.01)	4.31 (1.05)	4.47 (.965)	[.0008]	4.39 (1.02)	4.39 (1.00)	[.969]
I usually feel I can handle the typical problems that come up in life.	3,011	4.57 (.946)	4.48 (.967)	4.66 (.917)	[.00006]	4.60 (.904)	4.54 (.985)	[.148]
I feel competent to deal effectively with the real world.	3,011	4.53 (.996)	4.48 (1.01)	4.59 (.974)	[.014]	4.57 (.969)	4.50 (1.02)	[.143]
Generalized self-efficacy score [Low: 4 ; High: 24]	3,011	18.1 (2.75)	17.8 (2.80)	18.4 (2.67)	[.000]	18.1 (2.76)	18.0 (2.75)	[.440]
Panel C: Entrepreneurial Identity								
Entrepreneurship is an important part of who I am.	3,011	4.63 (.960)	4.57 (1.00)	4.68 (.914)	[.041]	4.63 (.973)	4.62 (.946)	[.752]
I think of myself as someone who generally thinks about Entrepreneurship.	3,011	4.56 (.992)	4.49 (1.05)	4.64 (.930)	[.003]	4.63 (.966)	4.49 (1.01)	[.005]
Entrepreneurial identity score [Low: 2 ; High: 12]	3,011	9.19 (1.57)	9.06 (1.64)	9.31 (1.48)	[.005]	9.27 (1.54)	9.11 (1.59)	[.082]
Panel D: Personal initiative								
Whenever I get the opportunity to be actively involved in a project, I seize it.	3,011	4.67 (.947)	4.58 (.986)	4.76 (.898)	[.00009]	4.68 (.953)	4.66 (.941)	[.643]
I seek to enjoy as many opportunities to reach my goals.	3,011	4.55 (.985)	4.43 (1.02)	4.67 (.930)	[.000]	4.57 (.982)	4.53 (.988)	[.407]
I usually perform beyond what is expected of me.	3,011	4.46 (1.03)	4.30 (1.06)	4.61 (.977)	[.000]	4.50 (1.02)	4.42 (1.05)	[.188]
I'm gifted at coming up with new ideas and materializing them.	3,011	4.25 (1.06)	4.16 (1.09)	4.34 (1.02)	[.0003]	4.25 (1.06)	4.25 (1.05)	[.875]
I tackle issues first hand.	3,011	4.43 (1.02)	4.31 (1.06)	4.55 (.959)	[.000]	4.47 (.992)	4.40 (1.04)	[.217]
I always lead the way in taking initiatives regardless of the reluctance of others.	3,011	4.44 (.985)	4.34 (1.05)	4.53 (.908)	[.000]	4.47 (.961)	4.41 (1.01)	[.143]
Whenever a problem appears, I try my best to remedy it as rapidly as possible.	3,011	4.61 (.946)	4.56 (.983)	4.66 (.906)	[.019]	4.63 (.904)	4.59 (.987)	[.320]
Personal initiative score [Low: 7 ; High: 42]	3,011	31.4 (4.50)	30.7 (4.59)	32.1 (4.30)	[.000]	31.6 (4.45)	31.3 (4.55)	[.230]
Panel E: Idea Generation								
I collect ideas for my economic activities.	3,011	4.65 (.953)	4.57 (.980)	4.73 (.920)	[.001]	4.68 (.928)	4.62 (.977)	[.198]
I discuss what a solution should look like for issues in my economic activities.	3,011	4.73 (1.00)	4.60 (1.07)	4.85 (.905)	[.000]	4.75 (.967)	4.70 (1.03)	[.367]
I come up with new ideas or problem solutions for my economic activities.	3,011	4.47 (1.00)	4.35 (1.05)	4.59 (.945)	[.000]	4.51 (.976)	4.43 (1.03)	[.108]
I combine and integrate different ideas for my economic activities.	3,011	4.54 (.999)	4.41 (1.05)	4.67 (.923)	[.000]	4.54 (1.01)	4.55 (.985)	[.808]
I revise older ideas and modify them.	3,011	4.36 (1.08)	4.29 (1.08)	4.43 (1.08)	[.002]	4.36 (1.10)	4.36 (1.07)	[.967]
Idea Generation score [Low: 5 ; High: 30]	3,011	22.8 (3.48)	22.2 (3.60)	23.3 (3.29)	[.000]	22.8 (3.49)	22.7 (3.47)	[.365]
Panel F: Goal orientation towards learning								
I often look for opportunities to develop new skills and knowledge.	3,011	4.61 (.992)	4.51 (1.00)	4.69 (.972)	[.00009]	4.61 (.985)	4.60 (.999)	[.801]
I enjoy challenging and difficult tasks where I'll learn new skills.	3,011	4.58 (.934)	4.48 (.981)	4.68 (.874)	[.000]	4.60 (.935)	4.57 (.932)	[.395]
I am willing to select a challenging work assignment that I can learn a lot from.	3,011	4.67 (.945)	4.60 (.986)	4.75 (.897)	[.00006]	4.68 (.939)	4.66 (.950)	[.744]
For me, development of my skills is important enough to take risks.	3,011	4.80 (1.06)	4.72 (1.07)	4.87 (1.05)	[.008]	4.79 (1.08)	4.80 (1.04)	[.958]
Goal orientation towards learning score [Low:4 ; High: 24]	3,011	18.7 (2.73)	18.3 (2.79)	19.0 (2.63)	[.000]	18.7 (2.74)	18.6 (2.72)	[.678]
Panel G: Need for autonomy								
I disregard rules and regulations that hamper my personal freedom.	3,011	4.47 (1.05)	4.43 (1.06)	4.51 (1.04)	[.073]	4.49 (1.03)	4.46 (1.07)	[.533]
I consider myself a "team player" in work environments.	3,011	4.57 (1.03)	4.44 (1.08)	4.70 (.975)	[.000]	4.59 (1.01)	4.54 (1.05)	[.386]
In my work assignments, I try to be my own boss.	3,011	4.25 (1.11)	4.19 (1.12)	4.30 (1.09)	[.021]	4.26 (1.09)	4.23 (1.12)	[.547]
I try my best to work alone on a job.	3,011	4.10 (1.12)	3.96 (1.13)	4.24 (1.09)	[.000]	4.14 (1.09)	4.07 (1.15)	[.217]
I go my own way at work, regardless of the opinions of others.	3,011	4.40 (1.05)	4.35 (1.05)	4.45 (1.04)	[.031]	4.40 (1.05)	4.40 (1.05)	[.980]
Need for autonomy score [Low: 5 ; High: 30]	3,011	21.8 (3.46)	21.4 (3.48)	22.2 (3.40)	[.000]	21.9 (3.44)	21.7 (3.49)	[.288]
Panel H: Locus of control								
Believe that my success depends on ability rather than luck.	3,011	4.67 (.980)	4.54 (1.02)	4.79 (.928)	[.000]	4.71 (.980)	4.63 (.980)	[.106]

Notes: The scale for each answer is : 6=Strongly agree, 5=Agree, 4=Partly agree 3=Partly disagree 2=Disagree 1=Strongly disagree. All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 20: Non cognitive skills - Men

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
			(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away
<i>Panel A: Grit</i>								
I am a hard worker.	2,289	5.46 (.688)	5.39 (.709)	5.54 (.657)	[.001]	5.43 (.693)	5.49 (.682)	[.187]
Setbacks don't discourage me.	2,289	4.43 (.991)	4.35 (1.05)	4.52 (.914)	[.0009]	4.45 (.949)	4.41 (1.03)	[.412]
I finish whatever I begin.	2,289	4.26 (1.03)	4.17 (1.06)	4.35 (.998)	[.0001]	4.29 (1.01)	4.24 (1.06)	[.338]
I am diligent.	2,289	4.48 (1.00)	4.37 (1.03)	4.60 (.959)	[.0005]	4.48 (.962)	4.49 (1.05)	[.915]
Grit score [Low: 4 ; High: 24]	2,289	18.6 (2.48)	18.3 (2.63)	19.0 (2.24)	[.000]	18.6 (2.38)	18.6 (2.57)	[.891]
<i>Panel B: Generalized self-efficacy</i>								
I am strong enough to overcome life's struggles.	2,289	4.73 (.973)	4.69 (1.05)	4.78 (.890)	[.066]	4.72 (.969)	4.75 (.977)	[.482]
I can handle the situations that life brings.	2,289	4.44 (.986)	4.41 (1.00)	4.48 (.965)	[.119]	4.44 (.949)	4.45 (1.02)	[.805]
I usually feel I can handle the typical problems that come up in life.	2,289	4.62 (.932)	4.52 (.965)	4.73 (.883)	[.00003]	4.67 (.900)	4.57 (.961)	[.069]
I feel competent to deal effectively with the real world.	2,289	4.60 (.960)	4.55 (.968)	4.65 (.949)	[.041]	4.61 (.932)	4.59 (.988)	[.709]
Generalized self-efficacy score [Low: 4 ; High: 24]	2,289	18.4 (2.62)	18.2 (2.71)	18.6 (2.50)	[.001]	18.4 (2.61)	18.4 (2.63)	[.665]
<i>Panel C: Entrepreneurial Identity</i>								
Entrepreneurship is an important part of who I am.	2,289	4.76 (.921)	4.73 (.940)	4.78 (.900)	[.375]	4.78 (.901)	4.74 (.940)	[.430]
I think of myself as someone who generally thinks about Entrepreneurship.	2,289	4.65 (.980)	4.57 (1.02)	4.72 (.926)	[.007]	4.70 (.924)	4.59 (1.03)	[.034]
Entrepreneurial identity score [Low: 2 ; High: 12]	2,289	9.40 (1.52)	9.31 (1.56)	9.50 (1.48)	[.045]	9.48 (1.47)	9.33 (1.57)	[.104]
<i>Panel D: Personal initiative</i>								
Whenever I get the opportunity to be actively involved in a project, I seize it.	2,289	4.77 (.914)	4.72 (.945)	4.82 (.879)	[.050]	4.80 (.876)	4.73 (.949)	[.136]
I seek to enjoy as many opportunities to reach my goals.	2,289	4.60 (.985)	4.48 (1.03)	4.73 (.916)	[.00001]	4.62 (.935)	4.58 (1.03)	[.464]
I usually perform beyond what is expected of me.	2,289	4.52 (1.01)	4.37 (1.05)	4.67 (.928)	[.000]	4.56 (.952)	4.48 (1.05)	[.208]
I'm gifted at coming up with new ideas and materializing them.	2,289	4.32 (1.03)	4.23 (1.08)	4.41 (.958)	[.0005]	4.35 (.984)	4.29 (1.07)	[.215]
I tackle issues first hand.	2,289	4.47 (.974)	4.36 (1.03)	4.58 (.905)	[.00002]	4.51 (.941)	4.43 (1.00)	[.092]
I always lead the way in taking initiatives regardless of the reluctance of others.	2,289	4.50 (.975)	4.41 (1.03)	4.59 (.901)	[.0005]	4.56 (.929)	4.44 (1.02)	[.026]
Whenever a problem appears, I try my best to remedy it as rapidly as possible.	2,289	4.68 (.937)	4.67 (.948)	4.69 (.926)	[.593]	4.72 (.892)	4.63 (.978)	[.045]
Personal initiative score [Low: 7 ; High: 42]	2,289	31.9 (4.43)	31.2 (4.61)	32.5 (4.14)	[.00001]	32.1 (4.18)	31.6 (4.65)	[.049]
<i>Panel E: Idea Generation</i>								
I collect ideas for my economic activities.	2,289	4.72 (.992)	4.67 (.997)	4.77 (.984)	[.056]	4.72 (.982)	4.71 (1.00)	[.897]
I discuss what a solution should look like for issues in my economic activities.	2,289	4.83 (.943)	4.72 (.983)	4.94 (.886)	[.00002]	4.85 (.882)	4.80 (.999)	[.413]
I come up with new ideas or problem solutions for my economic activities.	2,289	4.55 (.976)	4.46 (1.02)	4.64 (.920)	[.0006]	4.57 (.947)	4.53 (1.00)	[.460]
I combine and integrate different ideas for my economic activities.	2,289	4.62 (.984)	4.55 (1.01)	4.70 (.948)	[.006]	4.67 (.949)	4.58 (1.02)	[.090]
I revise older ideas and modify them.	2,289	4.45 (1.05)	4.40 (1.05)	4.51 (1.06)	[.027]	4.47 (1.03)	4.43 (1.08)	[.472]
Idea Generation score [Low: 5 ; High: 30]	2,289	23.2 (3.39)	22.8 (3.44)	23.6 (3.29)	[.0002]	23.3 (3.33)	23.1 (3.44)	[.284]
<i>Panel F: Goal orientation towards learning</i>								
I often look for opportunities to develop new skills and knowledge.	2,289	4.70 (.970)	4.67 (.957)	4.73 (.982)	[.241]	4.71 (.943)	4.70 (.996)	[.808]
I enjoy challenging and difficult tasks where I'll learn new skills.	2,289	4.65 (.910)	4.58 (.958)	4.73 (.850)	[.002]	4.70 (.875)	4.61 (.942)	[.095]
I am willing to select a challenging work assignment that I can learn a lot from.	2,289	4.74 (.894)	4.66 (.963)	4.83 (.809)	[.0002]	4.77 (.865)	4.72 (.922)	[.288]
For me, development of my skills is important enough to take risks.	2,289	4.91 (1.02)	4.85 (1.05)	4.96 (.992)	[.071]	4.92 (.999)	4.89 (1.05)	[.692]
Goal orientation towards learning score [Low: 4 ; High: 24]	2,289	19.0 (2.59)	18.8 (2.68)	19.3 (2.47)	[.002]	19.1 (2.57)	18.9 (2.61)	[.291]
<i>Panel G: Need for autonomy</i>								
I disregard rules and regulations that hamper my personal freedom.	2,289	4.62 (1.01)	4.59 (1.03)	4.65 (.974)	[.162]	4.64 (.963)	4.60 (1.05)	[.461]
I consider myself a "team player" in work environments.	2,289	4.66 (.986)	4.54 (1.03)	4.78 (.920)	[.000]	4.70 (.959)	4.61 (1.01)	[.103]
In my work assignments, I try to be my own boss.	2,289	4.40 (1.06)	4.31 (1.08)	4.49 (1.03)	[.0009]	4.44 (1.03)	4.37 (1.08)	[.198]
I try my best to work alone on a job.	2,289	4.17 (1.11)	4.09 (1.12)	4.26 (1.09)	[.0009]	4.20 (1.08)	4.14 (1.14)	[.231]
I go my own way at work, regardless of the opinions of others.	2,289	4.47 (1.02)	4.44 (1.02)	4.51 (1.01)	[.182]	4.48 (.999)	4.47 (1.03)	[.839]
Need for autonomy score [Low: 5 ; High: 30]	2,289	22.3 (3.31)	22.0 (3.41)	22.7 (3.17)	[.00004]	22.5 (3.23)	22.2 (3.39)	[.144]
<i>Panel H: Locus of control</i>								
Believe that my success depends on ability rather than luck.	2,289	4.74 (.945)	4.66 (.991)	4.82 (.886)	[.0008]	4.79 (.888)	4.68 (.996)	[.028]

Notes: The scale for each answer is : 6=Strongly agree, 5=Agree, 4=Partly agree 3=Partly disagree 2=Disagree 1=Strongly disagree. All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 21: Non cognitive skills by personality traits

Means, standard deviations reported in parentheses

	(1) Married men	(2) Married women	(3) Non-married women	(4) Difference (1) and (2)	(5) Difference (1) and (3)
Need for autonomy [Low= 5 ; High=30]	22.32 (3.31)	21.74 (3.47)	22.04 (3.40)	***	not sign
Locus of control [Low= 1 ; High=6]	4.74 (0.94)	4.65 (0.99)	4.74 (0.94)	***	not sign
Generalized self-efficacy [Low= 4 ; High=24]	18.40 (2.62)	18.06 (2.76)	18.22 (2.72)	***	not sign
Entrepreneurial Identity [Low=2 ; High=12]	9.40 (1.52)	9.20 (1.57)	9.14 (1.58)	***	***
Grit [Low= 4 ; High=24]	18.64 (2.48)	18.31 (2.59)	18.42 (2.74)	***	not sign
Idea Generation [Low= 5 ; High=30]	23.16 (9.40)	22.75 (3.48)	22.74 (3.49)	***	**
Personal initiative [Low: 7 ; High: 42]	31.85 (18.64)	31.37 (4.49)	31.67 (4.56)	***	not sign
Goal orientation towards learning [Low= 4 ; High=24]	19.01 (23.16)	18.69 (2.69)	18.46 (2.90)	***	***

Notes: Each attitude score is constructed by summing the answers to positive statments related to the attitude. Answers are coded as follows: 6=Strongly agree, 5=Agree, 4=Partly agree, 3=Partly disagree, 2=Disagree, 1=Strongly disagree. The columns Difference show the significance level of the test of equality from an OLS regression of corresponding variable against a dummy for married women or for non-married women. The regressions allow the error term to be clustered by community. *** p<0.01 ** p<0.05 *p<0.1.

Table 22: Paid works - Women

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
During the last 12 months, did you engage in any paid work ? [yes=1]	3,018	.247 (.431)	.291 (.454)	.204 (.403)	[.0007]	.263 (.441)	.230 (.421)	[.201]
If yes, in which area?								
Agricultural work including casual work (win-win agreements)	745	.960 (.197)	.963 (.189)	.955 (.208)	[.759]	.977 (.149)	.939 (.239)	[.142]
Work abroad	745	.007 (.082)	.009 (.096)	.003 (.057)	[.286]	.005 (.071)	.009 (.093)	[.553]
Civil servant	745	.016 (.126)	.005 (.068)	.032 (.177)	[.232]	.008 (.087)	.026 (.159)	[.375]
Construction worker or mechanic	745	.004 (.063)	.007 (.083)	0 (.000)	[.081]	0 (.000)	.009 (.093)	[.077]
Manager, accountant, secretary	745	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
Domestic worker (cook, gardener, etc.)	745	.008 (.089)	.012 (.107)	.003 (.057)	[.169]	.005 (.071)	.012 (.107)	[.331]
Faunestic/Forestry work	745	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
Miner	745	.001 (.037)	.002 (.048)	0 (.000)	[.320]	.003 (.050)	0 (.000)	[.320]
Driver	745	.001 (.037)	.002 (.048)	0 (.000)	[.322]	0 (.000)	.003 (.054)	[.321]
Other specialized labor	745	.004 (.063)	.005 (.068)	.003 (.057)	[.760]	0 (.000)	.009 (.093)	[.078]
Other type of paid work	745	.028 (.166)	.044 (.205)	.006 (.080)	[.016]	.010 (.100)	.049 (.216)	[.035]
Between February 2015 and January 2016, what was the total amount received (in cash/kind) for working in these activities?*	759	1,382 (2,042)	1,030 (1,526)	1,890 (2,530)	[.003]	1,245 (1,588)	1,459 (2,412)	[.423]
Remuneration received in Metical [yes=1]	763	.700 (.459)	.783 (.413)	.579 (.495)	[.002]	.676 (.469)	.727 (.446)	[.442]
Total number of hours worked in these activities between February 2015 and January 2016*	762	243 (392)	147 (266)	383 (491)	[.000]	253 (407)	233 (377)	[.652]

Notes: *Variables winsorized at the top 5%. All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 23: Paid works - Men

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
During the last 12 months, did you engage in any paid work? [yes=1]	2,431	.311 (.463)	.390 (.488)	.232 (.422)	[.000]	.304 (.460)	.318 (.466)	[.644]
If yes, in which area?								
Agricultural work including casual work (win-win agreements)	756	.825 (.380)	.831 (.375)	.816 (.388)	[.666]	.878 (.328)	.775 (.418)	[.002]
Work abroad	756	.013 (.114)	.017 (.129)	.007 (.084)	[.202]	.008 (.090)	.018 (.134)	[.221]
Civil servant	756	.038 (.192)	.023 (.151)	.064 (.245)	[.106]	.019 (.137)	.057 (.232)	[.058]
Construction worker or mechanic	756	.056 (.229)	.063 (.244)	.043 (.202)	[.235]	.033 (.178)	.078 (.268)	[.010]
Manager, accountant, secretary	756	.001 (.036)	.002 (.046)	0 (.000)	[.311]	0 (.000)	.003 (.051)	[.309]
Domestic worker (cook, gardener, etc.)	756	.011 (.102)	.002 (.046)	.025 (.156)	[.046]	.005 (.074)	.016 (.124)	[.261]
Faunistic/Forestry work	756	.005 (.073)	.008 (.092)	0 (.000)	[.040]	.005 (.074)	.005 (.072)	[.961]
Miner	756	.011 (.102)	.015 (.121)	.004 (.060)	[.081]	.003 (.052)	.018 (.134)	[.028]
Driver	756	.007 (.081)	.008 (.092)	.004 (.060)	[.371]	.003 (.052)	.010 (.101)	[.185]
Other specialized labor	756	.026 (.161)	.027 (.163)	.025 (.156)	[.825]	.019 (.137)	.034 (.181)	[.207]
Other type of paid work	756	.070 (.255)	.093 (.290)	.032 (.176)	[.001]	.057 (.232)	.083 (.276)	[.220]
Between February 2015 and January 2016, what was the total amount received (in cash/kind) for working in these activities?*	770	2,894 (3,497)	2,611 (3,385)	3,382 (3,637)	[.033]	2,463 (2,953)	3,231 (3,900)	[.019]
Remuneration received in Metical [yes=1]	778	.731 (.444)	.760 (.428)	.682 (.467)	[.152]	.706 (.456)	.756 (.430)	[.364]
Total number of hours worked in these activities between February 2015 and January 2016*	778	320 (450)	252 (389)	439 (520)	[.00007]	291 (425)	349 (473)	[.161]

Notes: *Variables winsorized at the top 5%. All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 24: Self-employed activities - Women

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<i>Panel A: Self-employment (fauna and forest-based products and fishing)</i>								
During the last 12 months, were you self-employed in fauna and forest-based products and fishing? [yes=1]	3,018	.061 (.240)	.098 (.297)	.026 (.158)	[.000]	.053 (.224)	.070 (.255)	[.293]
If yes, in which area?								
Cutting firewood for sale	185	.481 (.501)	.514 (.502)	.359 (.486)	[.177]	.525 (.503)	.448 (.500)	[.449]
Producing coal for sale	185	.130 (.337)	.130 (.338)	.128 (.339)	[.983]	.062 (.244)	.181 (.387)	[.185]
Cutting reedgrass, palm/coconut leaves for sale	185	.368 (.483)	.356 (.481)	.410 (.498)	[.579]	.438 (.499)	.314 (.466)	[.144]
Cutting wooden sticks of laca-laca	185	.027 (.163)	.027 (.164)	.026 (.160)	[.954]	.013 (.112)	.038 (.192)	[.321]
Hunting for sale	185	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
Fishing for sale	185	.005 (.074)	.007 (.083)	0 (.000)	[.323]	.013 (.112)	0 (.000)	[.322]
Manufacturing straw mats, sieves, baskets and hats for sale	185	.038 (.191)	.021 (.142)	.103 (.307)	[.103]	.038 (.191)	.038 (.192)	[.984]
Collecting honey, plants and berries for sales	185	.059 (.237)	.075 (.265)	0 (.000)	[.002]	.075 (.265)	.048 (.214)	[.459]
Producing timber for sale	185	.005 (.074)	0 (.000)	.026 (.160)	[.287]	0 (.000)	.010 (.098)	[.315]
Capturing birds, reptiles, eggs of wild animals for sale	185	.016 (.127)	.014 (.117)	.026 (.160)	[.667]	.025 (.157)	.010 (.098)	[.425]
Between February 2015 and January 2016, what was the total amount received (in cash/kind) for working in these activities? *	187	934 (1,308)	853 (1,229)	1,243 (1,552)	[.196]	868 (1,062)	968 (1,459)	[.674]
Remuneration received in Metical [yes=1]	187	.877 (.329)	.905 (.294)	.769 (.427)	[.106]	.887 (.318)	.869 (.339)	[.773]
Total number of hours worked in these activities between February 2015 and January 2016*	186	224 (384)	202 (378)	307 (398)	[.185]	221 (398)	227 (374)	[.930]
<i>Panel B: Self-employment (others)</i>								
During the last 12 months, were you self-employed (others) ? [yes=1]	3,018	.127 (.333)	.125 (.331)	.129 (.335)	[.837]	.096 (.294)	.159 (.366)	[.0002]
If yes, in which area?								
Producing homemade beverages for sale	384	.453 (.498)	.540 (.500)	.371 (.484)	[.011]	.528 (.501)	.410 (.493)	[.090]
Purchase and sale of beverages	384	.052 (.222)	.059 (.236)	.046 (.209)	[.606]	.056 (.230)	.050 (.219)	[.842]
Purchase and sale of food products	384	.310 (.463)	.289 (.454)	.330 (.471)	[.432]	.278 (.449)	.326 (.470)	[.338]
Purchase and sale of non-food products	384	.055 (.228)	.064 (.246)	.046 (.209)	[.416]	.069 (.255)	.046 (.210)	[.378]
Purchase and sale of fish	384	.031 (.174)	.016 (.126)	.046 (.209)	[.097]	.035 (.184)	.029 (.169)	[.771]
Purchase and sale of large-sized animals and by-products	384	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
Purchase and sale of medium-sized animals and by-products	384	.005 (.072)	.011 (.103)	0 (.000)	[.145]	0 (.000)	.008 (.091)	[.149]
Purchase and sale of small-sized animals and by-products	384	.016 (.124)	.032 (.177)	0 (.000)	[.025]	.014 (.117)	.017 (.129)	[.837]
Handicraft/goldsmith/carpentry	384	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
Tailoring/dressmaking	384	.008 (.088)	.005 (.073)	.010 (.101)	[.591]	.014 (.117)	.004 (.065)	[.358]
Repairing radios/bicycles	384	.003 (.051)	.005 (.073)	0 (.000)	[.320]	.007 (.083)	0 (.000)	[.318]
production of blocks, bricks, mason	384	.010 (.102)	.021 (.145)	0 (.000)	[.084]	0 (.000)	.017 (.129)	[.090]
Milling operation or agroprocessing activity	384	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
Other activity	384	.174 (.380)	.128 (.335)	.218 (.414)	[.063]	.111 (.315)	.213 (.411)	[.040]
Between February 2015 and January 2016, what was the total amount received (in cash/kind) for working in these activities? *	387	3,372 (4,852)	3,755 (5,996)	3,011 (3,416)	[.205]	2,967 (3,407)	3,534 (5,521)	[.268]
Remuneration received in Metical [yes=1]	388	.747 (.435)	.831 (.376)	.668 (.472)	[.014]	.759 (.429)	.740 (.440)	[.782]
Total number of hours worked in these activities between February 2015 and January 2016*	388	509 (660)	496 (659)	521 (661)	[.715]	479 (616)	528 (686)	[.472]

Notes: *Variables winsorized at the top 5%. All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 25: Self-employed works - Men

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<u>Panel A: Self-employment (fauna and forest-based products and fishing)</u>								
During the last 12 months, were you self-employed in fauna and forest-based products and fishing? [yes=1]	2,431	.130 (.337)	.156 (.363)	.105 (.306)	[.013]	.128 (.334)	.133 (.340)	[.804]
If yes, in which area?								
Cutting firewood for sale	317	.136 (.343)	.200 (.401)	.039 (.195)	[.0002]	.084 (.278)	.185 (.390)	[.033]
Producing coal for sale	317	.224 (.418)	.289 (.455)	.126 (.333)	[.023]	.161 (.369)	.284 (.452)	[.103]
Cutting reedgrass, palm/coconut leaves for sale	317	.243 (.430)	.284 (.452)	.181 (.387)	[.096]	.284 (.452)	.204 (.404)	[.206]
Cutting wooden sticks of laca-laca	317	.076 (.265)	.111 (.314)	.024 (.152)	[.002]	.058 (.235)	.093 (.291)	[.274]
Hunting for sale	317	.120 (.325)	.137 (.345)	.094 (.294)	[.301]	.116 (.321)	.123 (.330)	[.863]
Fishing for sale	317	.038 (.191)	.042 (.201)	.031 (.175)	[.662]	.039 (.194)	.037 (.189)	[.945]
Manufacturing straw mats, sieves, baskets and hats for sale	317	.461 (.499)	.289 (.455)	.717 (.452)	[.000]	.548 (.499)	.377 (.486)	[.028]
Collecting honey, plants and berries for sales	317	.063 (.244)	.084 (.278)	.031 (.175)	[.064]	.065 (.246)	.062 (.241)	[.925]
Producing timber for sale	317	.047 (.213)	.058 (.234)	.031 (.175)	[.246]	.058 (.235)	.037 (.189)	[.385]
Capturing birds, reptiles, eggs of wild animals for sale	317	.025 (.157)	.016 (.125)	.039 (.195)	[.272]	.026 (.159)	.025 (.156)	[.954]
Between February 2015 and January 2016, what was the total amount received (in cash/kind) for working in these activities?*	318	1,882 (1,923)	1,929 (1,948)	1,810 (1,889)	[.613]	1,840 (1,865)	1,879 (1,958)	[.865]
Remuneration received in Metical [yes=1]	320	.778 (.416)	.865 (.343)	.648 (.479)	[.003]	.795 (.405)	.762 (.427)	[.652]
Total number of hours worked in these activities between February 2015 and January 2016*	320	322 (464)	287 (456)	375 (472)	[.155]	362 (505)	285 (419)	[.209]
<u>Panel B: Self-employment (others)</u>								
During the last 12 months, were you self-employed (others) ? [yes=1]	2,431	.231 (.421)	.245 (.430)	.216 (.412)	[.231]	.204 (.403)	.259 (.438)	[.022]
If yes, in which area?								
Producing homemade beverages for sale	561	.055 (.229)	.084 (.278)	.023 (.150)	[.0008]	.061 (.239)	.051 (.220)	[.633]
Purchase and sale of beverages	561	.100 (.300)	.124 (.330)	.072 (.259)	[.085]	.117 (.323)	.086 (.281)	[.319]
Purchase and sale of food products	561	.396 (.489)	.383 (.487)	.411 (.493)	[.535]	.385 (.487)	.404 (.492)	[.656]
Purchase and sale of non-food products	561	.234 (.423)	.258 (.438)	.205 (.405)	[.155]	.219 (.414)	.245 (.431)	[.473]
Purchase and sale of fish	561	.062 (.242)	.067 (.251)	.057 (.232)	[.649]	.065 (.247)	.061 (.239)	[.849]
Purchase and sale of large-sized animals and by-products	561	.012 (.111)	.017 (.129)	.008 (.087)	[.298]	.020 (.141)	.006 (.080)	[.142]
Purchase and sale of medium-sized animals and by-products	561	.057 (.232)	.057 (.232)	.057 (.232)	[.999]	.069 (.254)	.048 (.214)	[.361]
Purchase and sale of small-sized animals and by-products	561	.032 (.176)	.037 (.189)	.027 (.161)	[.481]	.036 (.188)	.029 (.167)	[.606]
Handicraft/goldsmith/carpentry	561	.041 (.198)	.050 (.219)	.030 (.172)	[.243]	.024 (.154)	.054 (.227)	[.077]
Tailoring/dressmaking	561	.007 (.084)	.003 (.058)	.011 (.106)	[.274]	.008 (.090)	.006 (.080)	[.811]
Repairing radios/bicycles	561	.057 (.232)	.067 (.251)	.046 (.209)	[.287]	.045 (.207)	.067 (.250)	[.263]
production of blocks, bricks, mason	561	.052 (.222)	.081 (.273)	.019 (.137)	[.0003]	.049 (.215)	.054 (.227)	[.764]
Milling operation or agroprocessing activity	561	.039 (.194)	.050 (.219)	.027 (.161)	[.159]	.045 (.207)	.035 (.184)	[.576]
Other activity	561	.175 (.380)	.144 (.352)	.209 (.407)	[.068]	.146 (.354)	.197 (.399)	[.138]
Between February 2015 and January 2016, what was the total amount received (in cash/kind) for working in these activities?*	556	9,383 (9,854)	8,414 (9,338)	10,456 (10,306)	[.048]	7,943 (8,660)	10,327 (10,551)	[.015]
Remuneration received in Metical [yes=1]	559	.760 (.427)	.793 (.406)	.723 (.448)	[.202]	.787 (.410)	.740 (.440)	[.367]
Total number of hours worked in these activities between February 2015 and January 2016*	559	827 (897)	768 (892)	894 (899)	[.191]	768 (874)	873 (913)	[.255]

Notes: *Variables winsorized at the top 5%. All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 26: Access to agricultural credits

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<i>Panel A: Household's access to agricultural credit</i>								
Did any member of the household receive credit for agricultural purposes during the 2014/2015 season? [yes=1]	3,018	.122 (.327)	.201 (.401)	.045 (.206)	[.000]	.129 (.335)	.136 (.343)	[.757]
Total number of credits received in MT	354	1.10 (.340)	1.12 (.374)	1.00 (.000)	[.00001]	1.05 (.224)	1.11 (.329)	[.118]
Total number of credits received in Kwacha (Malawi)	11	1.18 (.603)	1.18 (.603)	- -	-	1.00 (.000)	1.33 (.816)	[.294]
Total amount of credits in MT*	320	8,952 (8,341)	9,978 (8,330)	4,594 (6,901)	[.00008]	9,670 (8,419)	8,285 (8,237)	[.314]
What were the sources of the credits?								
Government	328	.040 (.195)	.046 (.210)	.015 (.121)	[.162]	.017 (.128)	.055 (.228)	[.093]
Bank	328	.003 (.055)	.004 (.062)	0 (.000)	[.318]	0 (.000)	.006 (.078)	[.313]
Associations	328	.027 (.181)	.031 (.194)	.015 (.121)	[.458]	.008 (.091)	.049 (.243)	[.107]
Specialized companies	328	.466 (.552)	.542 (.565)	.176 (.384)	[.00005]	.438 (.561)	.463 (.536)	[.779]
NGOs	328	.378 (.598)	.288 (.600)	.721 (.452)	[.00003]	.438 (.531)	.305 (.547)	[.183]
Traders	328	.006 (.078)	.008 (.088)	0 (.000)	-	0 (.000)	.012 (.110)	-
Relatives	328	.015 (.123)	.019 (.138)	0 (.000)	[.052]	0 (.000)	.012 (.110)	[.154]
Friends	328	.015 (.123)	.019 (.138)	0 (.000)	[.023]	0 (.000)	.030 (.172)	[.022]
Others	328	.155 (.403)	.177 (.430)	.074 (.263)	[.085]	.157 (.387)	.183 (.447)	[.743]
<i>Panel B: Men's access to agricultural credit</i>								
Did you sign any of the credits received by the household? [yes=1]	324	.957 (.204)	.958 (.201)	.952 (.215)	[.849]	.994 (.081)	.924 (.267)	[.002]
Did you benefit from any of the credits received by the household? [yes=1]	324	.963 (.189)	.973 (.162)	.921 (.272)	[.103]	.974 (.160)	.953 (.212)	[.341]
<i>Panel C: Women's access to agricultural credit</i>								
Did you sign any of the credits received by the household? [yes=1]	370	.230 (.421)	.260 (.439)	.100 (.302)	[.0002]	.159 (.367)	.290 (.455)	[.009]
Did you benefit from any of the credits received by the household? [yes=1]	370	.846 (.361)	.840 (.367)	.871 (.337)	[.530]	.818 (.387)	.870 (.337)	[.298]

Notes: *Variables winsorized at the top 5%. All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 27: Access to agricultural extension services and association - Women

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
Did you receive any information/advice through an agricultural extension?	3,018	.117 (.321)	.160 (.367)	.074 (.262)	[.000]	.106 (.309)	.126 (.332)	[.301]
If yes, information was about:								
Agriculture	352	.972 (.166)	.975 (.157)	.965 (.186)	[.587]	.981 (.137)	.964 (.187)	[.301]
Livestock breeding	352	.111 (.314)	.059 (.235)	.221 (.417)	[.002]	.095 (.294)	.124 (.330)	[.494]
Forestry	352	.182 (.386)	.105 (.307)	.345 (.478)	[.0004]	.253 (.436)	.124 (.330)	[.030]
Fish farming	352	.017 (.130)	.017 (.129)	.018 (.132)	[.951]	.025 (.158)	.010 (.101)	[.368]
Product processing	352	.278 (.449)	.251 (.435)	.336 (.475)	[.148]	.291 (.456)	.268 (.444)	[.717]
Market and trading	352	.401 (.491)	.335 (.473)	.540 (.501)	[.003]	.411 (.494)	.392 (.489)	[.787]
Vegetables	352	.156 (.364)	.096 (.296)	.283 (.453)	[.0005]	.184 (.388)	.134 (.342)	[.316]
Did you receive any information about agricultural products?	3,018	.205 (.404)	.199 (.400)	.210 (.408)	[.566]	.191 (.394)	.218 (.413)	[.171]
If yes, the sources of information were:								
Radio	618	.587 (.493)	.559 (.497)	.614 (.488)	[.347]	.581 (.494)	.593 (.492)	[.842]
Associations	618	.092 (.290)	.051 (.219)	.131 (.338)	[.015]	.099 (.299)	.087 (.282)	[.734]
Rural extension	618	.225 (.418)	.259 (.439)	.193 (.395)	[.165]	.229 (.421)	.222 (.416)	[.882]
Publications	618	.134 (.341)	.091 (.288)	.174 (.380)	[.061]	.123 (.329)	.144 (.351)	[.655]
NGOs	618	.053 (.225)	.101 (.302)	.009 (.096)	[.00007]	.039 (.193)	.066 (.248)	[.228]
Mobile	618	.016 (.126)	.003 (.058)	.028 (.165)	[.043]	.011 (.102)	.021 (.143)	[.391]
Neighbor/ relative	618	.820 (.384)	.710 (.454)	.922 (.268)	[.000]	.852 (.356)	.793 (.405)	[.194]
Belong to any agricultural association [yes=1]	3,018	.052 (.221)	.060 (.238)	.043 (.203)	[.148]	.051 (.219)	.053 (.224)	[.848]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 28: Access to agricultural extension services and association - Men

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
Did you receive any information/advice through an agricultural extension?	2,431	.220 (.414)	.280 (.449)	.160 (.366)	[.0004]	.221 (.415)	.219 (.413)	[.951]
If yes, information was about:								
Agriculture	534	.996 (.061)	.997 (.054)	.995 (.072)	[.715]	.996 (.062)	.996 (.061)	[.988]
Livestock breeding	534	.105 (.307)	.059 (.236)	.186 (.390)	[.002]	.102 (.304)	.107 (.310)	[.889]
Forestry	534	.182 (.386)	.118 (.323)	.294 (.457)	[.0001]	.212 (.410)	.152 (.360)	[.187]
Fish farming	534	.017 (.129)	.015 (.121)	.021 (.142)	[.617]	.023 (.149)	.011 (.105)	[.324]
Product processing	534	.219 (.414)	.185 (.389)	.278 (.449)	[.032]	.216 (.412)	.222 (.417)	[.895]
Market and trading	534	.395 (.489)	.347 (.477)	.479 (.501)	[.010]	.371 (.484)	.419 (.494)	[.397]
Vegetables	534	.125 (.332)	.065 (.246)	.232 (.423)	[.00004]	.117 (.323)	.133 (.341)	[.677]
Did you receive any information about agricultural products?	2,431	.237 (.426)	.239 (.427)	.235 (.424)	[.869]	.222 (.415)	.253 (.435)	[.191]
If yes, the sources of information were:								
Radio	577	.709 (.455)	.735 (.442)	.682 (.467)	[.259]	.717 (.451)	.702 (.458)	[.755]
Associations	577	.109 (.312)	.076 (.265)	.143 (.351)	[.043]	.106 (.308)	.112 (.316)	[.849]
Rural extension	577	.324 (.468)	.357 (.480)	.290 (.455)	[.297]	.340 (.474)	.311 (.464)	[.662]
Publications	577	.210 (.407)	.182 (.387)	.238 (.426)	[.335]	.234 (.424)	.189 (.392)	[.442]
NGOs	577	.069 (.254)	.120 (.326)	.017 (.131)	[.0002]	.049 (.216)	.087 (.282)	[.163]
Mobile	577	.113 (.316)	.062 (.241)	.164 (.371)	[.005]	.125 (.331)	.103 (.304)	[.559]
Neighbor/ relative	577	.785 (.411)	.670 (.471)	.902 (.298)	[.000]	.823 (.383)	.753 (.432)	[.164]
Belong to any agricultural association [yes=1]	2,431	0.103 (.304)	.103 (.304)	.104 (.305)	[.966]	.112 (.316)	.095 (.293)	[.413]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 29: Women financial dependency

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
Do you bring some money home? (including remittances, payments, etc.) [yes=1]	2,998	.453 (.498)	.465 (.499)	.442 (.497)	[.366]	.430 (.495)	.477 (.500)	[.075]
Would you say that the amount of money that you bring home is superior to the amount of money that your husband brings home, inferior or approximately the same? **								
Superior to her husband's [yes=1]	1,007	.083 (.277)	.082 (.275)	.085 (.278)	[.908]	.082 (.275)	.084 (.278)	[.909]
Inferior to her husband's [yes=1]	1,007	.791 (.406)	.793 (.405)	.790 (.408)	[.905]	.814 (.390)	.772 (.420)	[.155]
The same as her husband's [yes=1]	1,007	.043 (.202)	.031 (.173)	.056 (.230)	[.108]	.022 (.146)	.061 (.239)	[.009]
Her husband does not bring money home [yes=1]	1,007	.016 (.125)	.011 (.107)	.021 (.142)	[.261]	.015 (.122)	.017 (.128)	[.863]
Doesn't know [yes=1]	1,007	.067 (.249)	.082 (.275)	.049 (.217)	[.068]	.067 (.250)	.066 (.249)	[.955]
Do you give some of this money to your husband? [yes=1] **	1,001	.550 (.498)	.617 (.487)	.479 (.500)	[.0005]	.527 (.500)	.569 (.496)	[.307]
Do you keep some of this money for yourself (whether for savings or personal expenses)? [yes=1] **	1,025	.723 (.448)	.707 (.455)	.741 (.439)	[.301]	.695 (.461)	.746 (.435)	[.103]
During last month, did you lend money to your husband that he still has to give you back? [yes=1] **	1,001	.104 (.305)	.102 (.303)	.106 (.308)	[.872]	.085 (.279)	.122 (.327)	[.108]
if yes, how much?	103	.472 (.773)	.645 (1,002)	.288 (336)	[.012]	.367 (.798)	.528 (.754)	[.297]
During last month, did you give money to your husband that he does not have to give you back? [yes=1] **	1,002	.090 (.286)	.087 (.281)	.093 (.291)	[.726]	.065 (.247)	.110 (.314)	[.018]
if yes, how much?	90	.417 (.500)	.439 (.554)	.394 (.444)	[.656]	.281 (.388)	.484 (.537)	[.035]
During last month, did your husband take some of this money for himself without your permission? [yes=1] **	1,002	.046 (.209)	.035 (.183)	.058 (.234)	[.087]	.043 (.204)	.048 (.214)	[.751]
During last month, did your husband give you some money that you have to give him back? [yes=1] *	2,582	.045 (.208)	.059 (.235)	.032 (.176)	[.007]	.034 (.181)	.057 (.231)	[.025]
if yes, how much?	118	3,670 (15,224)	1,712 (4,346)	7,349 (24,915)	[.142]	2,127 (4,758)	4,617 (18,866)	[.292]

Notes: All statistics are constructed using baseline data. *Sample restricted to married women. ** Sample restricted to women who are married and who responded "Yes" to question 1. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 30A: Women's bargaining power

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
During last month, who contributed for food expenses or any other expense?								
Yourself [yes=1]	2,513	.043 (.204)	.046 (.210)	.040 (.197)	[.521]	.048 (.214)	.039 (.194)	[.331]
Your husband [yes=1]	2,513	.699 (.459)	.757 (.429)	.640 (.480)	[.00008]	.711 (.453)	.685 (.465)	[.395]
You and your husband [yes=1]	2,513	.255 (.436)	.196 (.397)	.313 (.464)	[.00001]	.237 (.425)	.273 (.446)	[.190]
Other members of the family [yes=1]	2,513	.003 (.056)	.0008 (.028)	.006 (.074)	[.030]	.004 (.064)	.002 (.048)	[.439]
In this family household, who makes the decisions concerning the purchase of durable goods for the household?								
Yourself [yes=1]	2,513	.044 (.206)	.042 (.200)	.047 (.211)	[.557]	.048 (.214)	.041 (.198)	[.428]
Your husband [yes=1]	2,513	.532 (.499)	.634 (.482)	.431 (.495)	[.000]	.519 (.500)	.544 (.498)	[.461]
You and your husband [yes=1]	2,513	.421 (.494)	.322 (.468)	.519 (.500)	[.000]	.431 (.495)	.414 (.493)	[.591]
Other members of the family [yes=1]	2,513	.002 (.049)	.002 (.040)	.003 (.056)	[.411]	.002 (.049)	.002 (.040)	[.621]
In this family household, who makes the decisions concerning what food should be produced for the family's own consumption?								
Yourself [yes=1]	2,513	.045 (.208)	.045 (.208)	.045 (.208)	[.980]	.056 (.231)	.034 (.181)	[.024]
Your husband [yes=1]	2,513	.324 (.468)	.433 (.496)	.215 (.411)	[.000]	.316 (.465)	.330 (.470)	[.673]
You and your husband [yes=1]	2,513	.614 (.487)	.515 (.500)	.713 (.452)	[.000]	.616 (.487)	.615 (.487)	[.966]
Other members of the family [yes=1]	2,513	.017 (.128)	.007 (.084)	.026 (.160)	[.001]	.011 (.106)	.022 (.147)	[.079]
In this family household, who makes the decisions concerning what food to buy?								
Yourself [yes=1]	2,513	.090 (.286)	.089 (.285)	.090 (.287)	[.938]	.086 (.280)	.094 (.292)	[.540]
Your husband [yes=1]	2,513	.312 (.464)	.392 (.488)	.233 (.423)	[.000]	.317 (.466)	.306 (.461)	[.658]
You and your husband [yes=1]	2,513	.596 (.491)	.517 (.500)	.675 (.469)	[.000]	.594 (.491)	.600 (.490)	[.812]
Other members of the family [yes=1]	2,513	.002 (.040)	.002 (.040)	.002 (.040)	[.996]	.003 (.057)	0 (.000)	[.042]
In this family household, who makes the decisions concerning what crops should be produced to sell in the market?								
Yourself [yes=1]	2,513	.034 (.181)	.028 (.165)	.040 (.195)	[.146]	.038 (.190)	.031 (.172)	[.399]
Your husband [yes=1]	2,513	.299 (.458)	.393 (.489)	.205 (.404)	[.000]	.299 (.458)	.297 (.457)	[.949]
You and your husband [yes=1]	2,513	.644 (.479)	.560 (.497)	.728 (.445)	[.000]	.643 (.479)	.646 (.478)	[.900]
Other members of the family [yes=1]	2,513	.023 (.150)	.018 (.134)	.028 (.164)	[.153]	.020 (.141)	.026 (.159)	[.406]

Notes: All statistics are constructed using baseline data on the sample of women living with her husband. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 30B: Women's bargaining power (cont.)

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
In this family household, who makes the decisions concerning his/her own health care?								
Yourself [yes=1]	2,513	.184 (.388)	.174 (.379)	.194 (.396)	[.365]	.201 (.401)	.171 (.377)	[.182]
Your husband [yes=1]	2,513	.176 (.381)	.247 (.432)	.105 (.306)	[.000]	.170 (.375)	.180 (.384)	[.649]
You and your husband [yes=1]	2,513	.633 (.482)	.572 (.495)	.693 (.461)	[.000]	.622 (.485)	.641 (.480)	[.393]
Other members of the family [yes=1]	2,513	.007 (.084)	.006 (.080)	.008 (.089)	[.662]	.007 (.081)	.008 (.088)	[.710]
If one of your children would be sick today (God forbid!), who in this family household decides to take him/her to the hospital/clinic/health center?								
Yourself [yes=1]	2,391	.118 (.323)	.108 (.310)	.128 (.334)	[.216]	.123 (.329)	.113 (.316)	[.529]
Your husband [yes=1]	2,391	.177 (.382)	.216 (.412)	.138 (.345)	[.0002]	.173 (.378)	.182 (.386)	[.656]
You and your husband [yes=1]	2,391	.698 (.459)	.672 (.470)	.724 (.447)	[.015]	.694 (.461)	.701 (.458)	[.756]
Other members of the family [yes=1]	2,391	.007 (.084)	.004 (.065)	.010 (.100)	[.089]	.010 (.101)	.004 (.064)	[.080]
In this family household, who paid for most of the educational expenses of your <u>sons</u> in the last 12 months? **								
Yourself [yes=1]	2,032	.052 (.222)	.048 (.215)	.056 (.230)	[.521]	.051 (.220)	.053 (.224)	[.860]
Your husband [yes=1]	2,032	.404 (.491)	.454 (.498)	.351 (.478)	[.0003]	.378 (.485)	.425 (.495)	[.094]
You and your husband [yes=1]	2,032	.538 (.499)	.496 (.500)	.582 (.494)	[.003]	.561 (.496)	.519 (.500)	[.144]
Other members of the family [yes=1]	2,032	.006 (.080)	.002 (.044)	.011 (.104)	[.015]	.010 (.099)	.003 (.054)	[.060]
In this family household, who paid for most of the educational expenses of your <u>daughters</u> in the last 12 months? ***								
Yourself [yes=1]	1,985	.064 (.246)	.071 (.257)	.058 (.233)	[.285]	.049 (.216)	.077 (.266)	[.027]
Your husband [yes=1]	1,985	.378 (.485)	.424 (.494)	.331 (.471)	[.0010]	.367 (.482)	.388 (.487)	[.477]
You and your husband [yes=1]	1,985	.552 (.497)	.502 (.500)	.603 (.489)	[.0003]	.578 (.494)	.531 (.499)	[.102]
Other members of the family [yes=1]	1,985	.006 (.074)	.003 (.054)	.008 (.090)	[.141]	.006 (.078)	.005 (.071)	[.761]

Notes: All statistics are constructed using baseline data. * Sample restricted to married women who have children. ** Sample restricted to married women who have son(s) going to school. *** Sample restricted to married women who have daughter(s) going to school. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the full sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 31: Intra-household bargaining power during childhood

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
Suppose that you have two children: a boy and a girl. Both have completed primary school but you only have money to send one of them to secondary school. Both have the same characteristics (grades at school, age, etc.) Which one would you send to school: the boy or the girl?								
Boy [yes=1]	2,998	.552 (.497)	.577 (.494)	.529 (.499)	[.062]	.575 (.495)	.530 (.499)	[.085]
Girl [yes=1]	2,998	.196 (.397)	.190 (.393)	.202 (.402)	[.432]	.187 (.390)	.206 (.404)	[.223]
Indifferent [yes=1]	2,998	.203 (.402)	.174 (.379)	.231 (.422)	[.020]	.198 (.399)	.208 (.406)	[.705]
Does not know [yes=1]	2,998	.048 (.214)	.059 (.236)	.037 (.190)	[.008]	.040 (.196)	.056 (.229)	[.052]
For married/widowed/divorced women: When you got married, or started living together with your partner, did you move to live with his family or did he move to live with yours?								
With the husband's family [yes=1]	2,770	.688 (.463)	.807 (.395)	.570 (.495)	[.000]	.657 (.475)	.718 (.450)	[.057]
With the wife's family [yes=1]	2,770	.312 (.463)	.193 (.395)	.430 (.495)	[.000]	.343 (.475)	.282 (.450)	[.057]
For single women: If you get married, do you think it is more likely that you move to live with your spouse/partner and his family or that he moves to live with you and your family?								
With the husband's family [yes=1]	648	.838 (.369)	.837 (.369)	1.00 (.000)	[.000]	.885 (.321)	.824 (.382)	[.050]
With the wife's family [yes=1]	648	.162 (.369)	.163 (.369)	0 (.000)	[.000]	.115 (.321)	.176 (.382)	[.050]
In your parents' family household, who made the decisions concerning the purchase of durable goods for the household, when you were still a child?								
Your mother [yes=1]	2,998	.055 (.229)	.052 (.221)	.059 (.236)	[.493]	.065 (.247)	.046 (.209)	[.076]
Your father [yes=1]	2,998	.453 (.498)	.495 (.500)	.412 (.492)	[.000]	.435 (.496)	.469 (.499)	[.063]
Your mother and your father [yes=1]	2,998	.488 (.500)	.448 (.497)	.528 (.499)	[.0001]	.495 (.500)	.483 (.500)	[.563]
Other individuals outside the family [yes=1]	2,998	.004 (.060)	.006 (.078)	.001 (.036)	[.025]	.005 (.069)	.003 (.051)	[.324]
In your parents' family household, who made the decisions concerning what food should be produced for the family's own consumption when you were still a child?								
Your mother [yes=1]	2,998	.043 (.204)	.052 (.221)	.035 (.185)	[.085]	.042 (.201)	.045 (.206)	[.782]
Your father [yes=1]	2,998	.354 (.478)	.408 (.492)	.301 (.459)	[.00001]	.349 (.477)	.357 (.479)	[.728]
Your mother and your father [yes=1]	2,998	.590 (.492)	.529 (.499)	.649 (.478)	[.00001]	.595 (.491)	.586 (.493)	[.732]
Other individuals outside the family [yes=1]	2,998	.013 (.115)	.012 (.110)	.014 (.119)	[.660]	.014 (.118)	.012 (.111)	[.725]
In your parents' family household, who made the decisions concerning what food should be purchased when you were still a child?								
Your mother [yes=1]	2,998	.054 (.226)	.069 (.254)	.039 (.194)	[.002]	.052 (.222)	.056 (.229)	[.716]
Your father [yes=1]	2,998	.312 (.463)	.368 (.482)	.258 (.437)	[.000]	.286 (.452)	.336 (.472)	[.041]
Your mother and your father [yes=1]	2,998	.630 (.483)	.558 (.497)	.701 (.458)	[.000]	.655 (.475)	.607 (.489)	[.084]
Other individuals outside the family [yes=1]	2,998	.004 (.063)	.005 (.074)	.003 (.051)	[.208]	.007 (.082)	.001 (.036)	[.014]
In your parents' family household, who made the decisions concerning what crops should be produced to be sold in the market when you were still a child?								
Your mother [yes=1]	2,998	.044 (.205)	.046 (.210)	.042 (.201)	[.625]	.045 (.207)	.043 (.204)	[.872]
Your father [yes=1]	2,998	.325 (.469)	.381 (.486)	.271 (.445)	[.000]	.317 (.465)	.332 (.471)	[.475]
Your mother and your father [yes=1]	2,998	.625 (.484)	.566 (.496)	.683 (.466)	[.000]	.632 (.483)	.620 (.485)	[.637]
Other individuals outside the family [yes=1]	2,998	.005 (.073)	.007 (.082)	.004 (.063)	[.291]	.007 (.082)	.004 (.063)	[.296]
In your parents' family household, who made the decisions concerning your mother and sisters' health care?								
Your mother [yes=1]	2,998	.111 (.314)	.097 (.296)	.125 (.330)	[.061]	.109 (.312)	.114 (.318)	[.730]
Your father [yes=1]	2,998	.243 (.429)	.315 (.465)	.174 (.380)	[.000]	.250 (.433)	.237 (.425)	[.564]
Your mother and your father [yes=1]	2,998	.639 (.480)	.581 (.494)	.695 (.461)	[.00001]	.634 (.482)	.643 (.479)	[.761]
Other individuals outside the family [yes=1]	2,998	.007 (.081)	.007 (.082)	.007 (.081)	[.938]	.007 (.082)	.007 (.081)	[.945]

Notes: All statistics are constructed using baseline data. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Appendix D: Farm characteristics

Table 32A: Crop grown - 1st season (% of households growing the crop)

Means, p-values reported in brackets

		Roads					Distance to roads		
		(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
Maize	subsistence crop	3,005	.988	.995	.982	[.005]	.988	.989	[.878]
Pumpkin	horticulture	3,005	.416	.415	.418	[.926]	.401	.432	[.339]
Groundnut	subsistence crop	3,005	.407	.507	.309	[.000]	.432	.382	[.154]
Tobacco	cash crop	3,005	.400	.592	.213	[.000]	.424	.377	[.353]
Butter bean	subsistence crop	3,005	.377	.081	.667	[.000]	.364	.391	[.623]
Black-eyed pea	subsistence crop	3,005	.265	.216	.313	[.0004]	.276	.255	[.449]
Mango	fruit	3,005	.234	.095	.370	[.000]	.260	.209	[.133]
Soy	cash crop	3,005	.233	.229	.237	[.834]	.227	.239	[.764]
Irish Potato	subsistence crop	3,005	.163	.011	.312	[.000]	.149	.178	[.469]
Non-orange fleshed sweet potato	subsistence crop	3,005	.122	.093	.151	[.018]	.132	.112	[.432]
Okra	horticulture	3,005	.119	.110	.127	[.391]	.119	.119	[.982]
Banana	fruit	3,005	.114	.028	.198	[.000]	.110	.118	[.751]
Kale	horticulture	3,005	.093	.034	.151	[.000]	.091	.095	[.836]
Tomatoes	horticulture	3,005	.065	.035	.094	[.00001]	.069	.061	[.593]
Cassava	subsistence crop	3,005	.061	.046	.075	[.068]	.079	.043	[.024]
Cucumber	horticulture	3,005	.059	.074	.044	[.059]	.064	.054	[.525]
Guava	fruit	3,005	.050	.010	.089	[.000]	.042	.059	[.212]
Orange fleshed sweet potato	subsistence crop	3,005	.046	.029	.063	[.011]	.056	.037	[.156]
Sugar cane	cash crop	3,005	.040	.016	.064	[.000]	.046	.035	[.261]
Onion	horticulture	3,005	.034	.007	.061	[.0003]	.046	.022	[.114]
Cabbage	horticulture	3,005	.027	.009	.045	[.000]	.026	.028	[.795]
Garlic	horticulture	3,005	.026	.002	.050	[.001]	.029	.023	[.687]
Sorghum	subsistence crop	3,005	.024	.003	.044	[.00001]	.030	.017	[.191]
Pigeon pea	subsistence crop	3,005	.022	.005	.038	[.023]	.035	.009	[.083]
Peach	fruit	3,005	.014	0	.027	[.0002]	.006	.021	[.040]
Jugo bean	subsistence crop	3,005	.011	.017	.006	[.024]	.013	.009	[.406]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located in a distance of 2-10km from the survey road, and Column 7 reports characteristics for the sample of communities located in a distance of 0-2km from the survey road. Column 8 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the community is located in a distance of 0-2km or 2-10km from the survey road. The regressions allow the error term to be clustered by community.

Table 32B: Crop grown - 2nd season (% of households growing the crop)

Means, p-values reported in brackets

		Roads					Distance to roads		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Number of observations	Full sample	N302 and R603	R604 and R605	Difference [p-value]	2-10km away	0-2km away	Difference [p-value]
Maize	subsistence crop	3,005	.205	.121	.287	[.000]	.195	.215	[.530]
Kale	horticulture	3,005	.124	.031	.216	[.000]	.119	.130	[.724]
Irish Potato	subsistence crop	3,005	.116	.003	.227	[.000]	.089	.144	[.103]
Butter bean	subsistence crop	3,005	.090	.003	.174	[.000]	.085	.094	[.719]
Tomatoes	horticulture	3,005	.079	.034	.122	[.000]	.073	.084	[.536]
Pumpkin	horticulture	3,005	.063	.022	.103	[.000]	.055	.070	[.416]
Sugar cane	cash crop	3,005	.050	.009	.089	[.000]	.051	.049	[.937]
Tobacco	cash crop	3,005	.045	.053	.037	[.150]	.050	.039	[.326]
Groundnut	subsistence crop	3,005	.040	.034	.047	[.179]	.041	.040	[.939]
Banana	fruit	3,005	.034	.001	.066	[.000]	.029	.039	[.428]
Cabbage	horticulture	3,005	.034	.007	.060	[.000]	.033	.035	[.785]
Black-eyed pea	subsistence crop	3,005	.033	.022	.043	[.009]	.026	.039	[.118]
Mango	fruit	3,005	.026	.004	.047	[.00002]	.023	.029	[.564]
Onion	horticulture	3,005	.025	.007	.042	[.00001]	.025	.025	[.939]
Soy	cash crop	3,005	.024	.027	.022	[.451]	.017	.031	[.042]
Non-orange fleshed sweet potato	subsistence crop	3,005	.023	.013	.032	[.028]	.019	.027	[.340]
Garlic	horticulture	3,005	.012	0	.023	[.0002]	.007	.016	[.170]
Guava	fruit	3,005	.011	.0007	.021	[.001]	.005	.017	[.076]
Orange fleshed sweet potato	subsistence crop	3,005	.007	.003	.010	[.089]	.003	.010	[.084]
Okra	horticulture	3,005	.006	.003	.009	[.040]	.003	.009	[.037]
Cassava	subsistence crop	3,005	.006	.003	.008	[.173]	.003	.008	[.164]
Cucumber	horticulture	3,005	.003	.001	.004	[.205]	.005	.0007	[.052]
Pigeon pea	subsistence crop	3,005	.002	0	.003	[.164]	.003	0	[.164]
Peach	fruit	3,005	.002	0	.005	[.006]	.001	.003	[.248]
Jugo bean	subsistence crop	3,005	.0007	.001	0	[.155]	.0007	.0007	[.999]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located in a distance of 2-10km from the survey road, and Column 7 reports characteristics for the sample of communities located in a distance of 0-2km from the survey road. Column 8 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the community is located in a distance of 0-2km or 2-10km from the survey road. The regressions allow the error term to be clustered by community.

Table 33: Livestock and agricultural tools (household level variables)

Means, standard deviations reported in parentheses, p-values reported in brackets

Means, standard deviations reported in parentheses, p-values reported in brackets								
			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<i>Panel A: Livestock</i>								
Quantity of bovines	3,016	.579 (2.05)	.403 (1.79)	.751 (2.27)	[.002]	.578 (2.02)	.580 (2.08)	[.986]
Quantity of caprines	3,016	1.79 (3.26)	1.85 (3.67)	1.74 (2.80)	[.514]	1.81 (3.36)	1.78 (3.16)	[.853]
Quantity of ovines	3,017	.223 (1.77)	.214 (1.45)	.231 (2.03)	[.839]	.276 (1.98)	.171 (1.53)	[.226]
Quantity of porcines	3,017	.658 (2.18)	.812 (2.56)	.507 (1.73)	[.004]	.717 (2.23)	.601 (2.13)	[.284]
Quantity of donkeys	3,017	.009 (.220)	.011 (.229)	.007 (.211)	[.613]	.001 (.052)	.016 (.304)	[.077]
Quantity of rabbits	3,017	.027 (.447)	.014 (.374)	.039 (.507)	[.229]	.016 (.409)	.037 (.481)	[.320]
Quantity of poultry	3,017	5.21 (7.87)	5.56 (8.74)	4.87 (6.89)	[.138]	5.06 (7.21)	5.36 (8.45)	[.508]
Total number of livestock owned	3,016	8.50 (10.8)	8.87 (12.0)	8.14 (9.50)	[.264]	8.46 (10.5)	8.54 (11.1)	[.893]
<i>Panel B: Agricultural Tools</i>								
Quantity of hoe	3,017	3.71 (2.50)	4.08 (2.89)	3.36 (1.99)	[.000]	3.65 (2.25)	3.77 (2.71)	[.421]
Quantity of machete	3,017	1.27 (1.39)	1.37 (1.72)	1.18 (.941)	[.010]	1.22 (1.19)	1.32 (1.55)	[.200]
Quantity of wheelbarrow	3,017	.025 (.280)	.030 (.314)	.020 (.242)	[.331]	.018 (.320)	.031 (.235)	[.175]
Quantity of animal-pulled cart	3,017	.070 (.368)	.038 (.341)	.101 (.390)	[.0001]	.065 (.386)	.074 (.350)	[.596]
Quantity of tractor	3,017	.003 (.147)	.006 (.209)	0 (.000)	[.264]	.005 (.208)	.0007 (.026)	[.383]
Quantity of plow	3,017	.030 (.327)	.009 (.223)	.050 (.403)	[.002]	.018 (.239)	.041 (.394)	[.089]
Total number of farm assets owned	3,017	5.12 (3.68)	5.54 (4.35)	4.71 (2.82)	[.00009]	4.98 (3.24)	5.24 (4.05)	[.232]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road. The number of livestock owned is the sum of the quantities of the following farmed animals owned by the household: cattle, goat, pig, sheep, donkey, rabbit and poultry. The number of farm assets owned is the sum of the quantities of the following farm assets owned by the household: hoe, machete, hand cart, animal traction cart, tractor and plow.

Table 34: Agricultural techniques - Women (individual level variables)

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
During the 2014/2015 season, did you practice crop rotation? [yes=1]	3,018	.447 (.497)	.415 (.493)	.478 (.500)	[.010]	.441 (.497)	.453 (.498)	[.615]
If yes, from who did you learn the technique?								
Extension agent	1,383	.129 (.335)	.181 (.386)	.082 (.275)	[.0006]	.151 (.358)	.107 (.310)	[.146]
NGOs	1,383	.021 (.143)	.014 (.117)	.027 (.163)	[.177]	.010 (.101)	.031 (.174)	[.040]
Specialized companies	1,383	.078 (.268)	.126 (.332)	.036 (.185)	[.00006]	.061 (.239)	.095 (.293)	[.138]
Neighbor	1,383	.586 (.493)	.601 (.490)	.574 (.495)	[.561]	.590 (.492)	.583 (.493)	[.892]
Relatives	1,383	.939 (.239)	.897 (.304)	.977 (.151)	[.000]	.945 (.228)	.934 (.249)	[.460]
Other	1,383	.050 (.218)	.012 (.110)	.083 (.277)	[.00006]	.052 (.222)	.048 (.214)	[.846]
During the 2014/2015 season, did you practice mixed cropping? [yes=1]	3,018	.800 (.400)	.778 (.416)	.822 (.383)	[.109]	.807 (.395)	.793 (.405)	[.612]
If yes, from who did you learn the technique?								
Extension agent	2,490	.093 (.291)	.134 (.341)	.053 (.223)	[.00002]	.087 (.282)	.099 (.299)	[.545]
NGOs	2,490	.018 (.133)	.022 (.146)	.014 (.119)	[.267]	.013 (.113)	.023 (.150)	[.129]
Specialized companies	2,490	.039 (.194)	.072 (.259)	.006 (.080)	[.000]	.025 (.156)	.053 (.224)	[.015]
Neighbor	2,490	.473 (.499)	.516 (.500)	.431 (.495)	[.049]	.420 (.494)	.526 (.500)	[.013]
Relatives	2,490	.914 (.281)	.901 (.298)	.926 (.262)	[.141]	.912 (.283)	.915 (.278)	[.841]
Other	2,490	.088 (.283)	.057 (.233)	.117 (.322)	[.0002]	.107 (.309)	.069 (.253)	[.020]
During the 2014/2015 season, did you practice fallowing? [yes=1]	3,018	.068 (.251)	.064 (.244)	.071 (.258)	[.583]	.069 (.253)	.066 (.249)	[.873]
If yes, from who did you learn the technique?								
Extension agent	212	.052 (.222)	.088 (.285)	.018 (.134)	[.059]	.066 (.250)	.038 (.191)	[.431]
NGOs	212	.014 (.118)	.020 (.139)	.009 (.095)	[.501]	0 (.000)	.028 (.167)	[.056]
Specialized companies	212	.014 (.118)	.020 (.139)	.009 (.095)	[.522]	.009 (.097)	.019 (.137)	[.561]
Neighbor	212	.321 (.468)	.490 (.502)	.164 (.372)	[.00006]	.160 (.369)	.481 (.502)	[.00005]
Relatives	212	.910 (.286)	.853 (.356)	.964 (.188)	[.014]	.925 (.265)	.896 (.306)	[.525]
Other	212	.033 (.179)	.069 (.254)	0 (.000)	[.003]	.047 (.213)	.019 (.137)	[.238]
During the 2014/2015 season, did you practice row cropping? [yes=1]	3,018	.929 (.257)	.896 (.305)	.961 (.193)	[.000]	.938 (.241)	.920 (.271)	[.201]
If yes, from who did you learn the technique? [yes=1]								
Extension agent	2,849	.121 (.327)	.182 (.386)	.065 (.247)	[.000]	.123 (.329)	.120 (.325)	[.864]
NGOs	2,849	.015 (.123)	.019 (.136)	.012 (.110)	[.237]	.010 (.099)	.021 (.143)	[.048]
Specialized companies	2,849	.072 (.258)	.123 (.329)	.024 (.154)	[.000]	.056 (.229)	.088 (.284)	[.062]
Neighbor	2,849	.529 (.499)	.574 (.495)	.486 (.500)	[.048]	.488 (.500)	.569 (.495)	[.073]
Relatives	2,849	.922 (.269)	.907 (.291)	.936 (.245)	[.063]	.921 (.270)	.922 (.268)	[.934]
Other	2,849	.074 (.262)	.050 (.217)	.097 (.296)	[.001]	.089 (.286)	.059 (.235)	[.045]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 shows p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 35: Agricultural techniques – Men (individual level variables)

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
During the 2014/2015 season, did you practice crop rotation? [yes=1]	2,431	.475 (.499)	.456 (.498)	.494 (.500)	[.153]	.475 (.500)	.475 (.500)	[.988]
If yes, from who did you learn the technique?								
Extension agent	1,164	.143 (.350)	.188 (.391)	.100 (.300)	[.006]	.161 (.368)	.125 (.331)	[.268]
NGOs	1,164	.022 (.148)	.016 (.126)	.028 (.166)	[.240]	.012 (.110)	.032 (.176)	[.059]
Specialized companies	1,164	.088 (.283)	.139 (.346)	.040 (.196)	[.0001]	.065 (.247)	.109 (.312)	[.087]
Neighbor	1,164	.596 (.491)	.611 (.488)	.582 (.494)	[.530]	.607 (.489)	.586 (.493)	[.643]
Relatives	1,164	.939 (.239)	.904 (.295)	.972 (.166)	[.00003]	.949 (.220)	.929 (.257)	[.229]
Other	1,164	.049 (.216)	.012 (.111)	.083 (.276)	[.0002]	.056 (.230)	.042 (.201)	[.490]
During the 2014/2015 season, did you practice mixed cropping? [yes=1]	2,431	.815 (.388)	.805 (.396)	.825 (.380)	[.508]	.819 (.385)	.811 (.392)	[.765]
If yes, from who did you learn the technique?								
Extension agent	2,011	.106 (.308)	.150 (.358)	.061 (.239)	[.00003]	.101 (.301)	.111 (.314)	[.632]
NGOs	2,011	.018 (.133)	.021 (.143)	.015 (.122)	[.392]	.012 (.109)	.024 (.152)	[.083]
Specialized companies	2,011	.046 (.210)	.084 (.278)	.008 (.089)	[.000]	.028 (.166)	.064 (.245)	[.007]
Neighbor	2,011	.488 (.500)	.529 (.499)	.446 (.497)	[.051]	.438 (.496)	.537 (.499)	[.018]
Relatives	2,011	.908 (.289)	.896 (.305)	.920 (.271)	[.198]	.908 (.289)	.908 (.290)	[.963]
Other	2,011	.089 (.284)	.055 (.229)	.122 (.327)	[.0002]	.113 (.316)	.065 (.246)	[.009]
During the 2014/2015 season, did you practice fallowing? [yes=1]	2,431	.070 (.255)	.063 (.244)	.077 (.266)	[.368]	.070 (.256)	.070 (.255)	[.968]
If yes, from who did you learn the technique?								
Extension agent	174	.057 (.233)	.100 (.302)	.021 (.145)	[.060]	.071 (.258)	.045 (.208)	[.513]
NGOs	174	.017 (.131)	.025 (.157)	.011 (.103)	[.454]	0 (.000)	.034 (.181)	[.055]
Specialized companies	174	.017 (.131)	.025 (.157)	.011 (.103)	[.481]	.012 (.108)	.022 (.149)	[.587]
Neighbor	174	.333 (.473)	.525 (.503)	.170 (.378)	[.00002]	.176 (.383)	.483 (.503)	[.0003]
Relatives	174	.914 (.281)	.863 (.347)	.957 (.203)	[.047]	.929 (.258)	.899 (.303)	[.502]
Other	174	.029 (.168)	.062 (.244)	0 (.000)	[.018]	.035 (.186)	.022 (.149)	[.615]
During the 2014/2015 season, did you practice row cropping? [yes=1]	2,431	.948 (.223)	.924 (.265)	.971 (.167)	[.0002]	.963 (.188)	.933 (.250)	[.015]
If yes, from who did you learn the technique? [yes=1]								
Extension agent	2,316	.136 (.343)	.198 (.399)	.077 (.267)	[.000]	.138 (.345)	.135 (.342)	[.913]
NGOs	2,316	.015 (.120)	.017 (.128)	.013 (.112)	[.456]	.009 (.093)	.021 (.142)	[.025]
Specialized companies	2,316	.082 (.275)	.140 (.347)	.027 (.162)	[.000]	.060 (.237)	.105 (.307)	[.025]
Neighbor	2,316	.549 (.498)	.596 (.491)	.505 (.500)	[.040]	.516 (.500)	.583 (.493)	[.135]
Relatives	2,316	.919 (.273)	.904 (.295)	.933 (.250)	[.089]	.919 (.274)	.919 (.273)	[.974]
Other	2,316	.075 (.264)	.048 (.215)	.101 (.301)	[.001]	.094 (.293)	.056 (.230)	[.020]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 36: Size of land cultivated, yields and sales of agricultural output (household level variables)

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<i>1st season - September 2014 to February 2015</i>								
Cultivated any plot? [yes=1]	3,005	.997 (.058)	.998 (.045)	.995 (.068)	[.247]	.997 (.052)	.996 (.063)	[.556]
Size of land cultivated (ha)*	2,995	3.26 (2.07)	3.49 (2.21)	3.03 (1.90)	[.006]	3.27 (2.10)	3.24 (2.05)	[.876]
Yields (MZN/ha)	2,990	11,551 (11,889)	12,752 (13,778)	10,374 (9,545)	[.003]	11,643 (11,120)	11,460 (12,613)	[.819]
Sold any output? [yes=1]	2,995	.855 (.352)	.829 (.377)	.881 (.324)	[.009]	.858 (.349)	.852 (.355)	[.747]
Share of output sold	2,990	.406 (.316)	.473 (.335)	.340 (.282)	[.000]	.422 (.318)	.389 (.314)	[.197]
<i>2nd season - March 2015 to August 2015</i>								
Cultivated any plot? [yes=1]	3,005	.352 (.478)	.172 (.377)	.528 (.499)	[.000]	.326 (.469)	.378 (.485)	[.242]
Size of land cultivated (ha)*	1,058	1.90 (1.84)	2.90 (2.14)	1.58 (1.61)	[.000]	1.80 (1.89)	1.98 (1.79)	[.348]
Yields (MZN/ha)	1,055	12,709 (18,535)	10,422 (13,258)	13,435 (19,871)	[.045]	13,591 (18,871)	11,954 (18,225)	[.331]
Sold any output? [yes=1]	1,058	.182 (.386)	.129 (.336)	.199 (.400)	[.036]	.162 (.368)	.200 (.401)	[.247]
Share of output sold	1,052	.435 (.371)	.422 (.369)	.440 (.371)	[.624]	.432 (.373)	.438 (.369)	[.863]

Notes: *Variables winsorized at the top 5%. All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. In Column 5, shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. The regressions allow the error term to be clustered by community. Column 6 reports characteristics for the sample of communities located 2-10km away from the road, Column 7 reports characteristics for the sample of communities located 0-2km away from the road. Column 8 show p-values of the tests of equality from an OLS regression of corresponding variable against a dummy for whether the community is located close or far to the road.

Table 37: Crop losses - 1st season (household level variables)
Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
			(1) Number of observations	(2) Full sample	(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away
<i>Panel A: Crop losses before harvest</i>								
Were there any crop losses before harvest?	2,998	.553 (.497)	.474 (.500)	.629 (.483)	[.0002]	.568 (.496)	.536 (.499)	[.453]
Share of different crop affected by losses over total crops grown	2,998	.350 (.378)	.316 (.386)	.384 (.366)	[.019]	.364 (.380)	.335 (.375)	[.309]
Main reason(s) for loss of crops before harvest								
Floods	1,660	.047 (.203)	.100 (.288)	.008 (.084)	[.000]	.030 (.160)	.067 (.243)	[.037]
Pests	1,660	.088 (.242)	.076 (.248)	.097 (.237)	[.286]	.096 (.249)	.079 (.232)	[.333]
Wild animals	1,660	.023 (.122)	.024 (.139)	.022 (.107)	[.776]	.017 (.102)	.029 (.141)	[.201]
Domestic animals	1,660	.005 (.059)	.007 (.074)	.004 (.044)	[.298]	.005 (.057)	.005 (.060)	[.870]
Fires	1,660	.001 (.035)	.003 (.053)	.0001 (.005)	[.174]	.0002 (.005)	.003 (.051)	[.179]
Diseases	1,660	.068 (.203)	.057 (.188)	.077 (.213)	[.078]	.063 (.187)	.074 (.220)	[.374]
Excess of rain	1,660	.147 (.338)	.266 (.427)	.058 (.215)	[.000]	.150 (.342)	.143 (.333)	[.830]
Lack of rain	1,660	.577 (.458)	.440 (.479)	.679 (.414)	[.000]	.597 (.447)	.554 (.469)	[.343]
Other	1,660	.044 (.185)	.027 (.155)	.056 (.204)	[.011]	.041 (.179)	.046 (.193)	[.678]
<i>Panel B: Crop losses after harvest</i>								
Were there any crop losses after harvest?	2,998	.139 (.346)	.108 (.311)	.170 (.376)	[.004]	.138 (.345)	.141 (.348)	[.887]
Share of different crop affected by losses over total crops grown	2,998	.054 (.165)	.046 (.160)	.062 (.169)	[.137]	.054 (.164)	.055 (.165)	[.911]
Main reason(s) for loss of crops after harvest								
Floods	419	.007 (.084)	.019 (.135)	0 (.000)	[.173]	0 (.000)	.015 (.122)	[.177]
Pests	419	.078 (.258)	.108 (.309)	.058 (.218)	[.090]	.083 (.263)	.072 (.252)	[.695]
Wild animals	419	.008 (.088)	.012 (.111)	.006 (.070)	[.508]	0 (.000)	.017 (.126)	[.057]
Domestic animals	419	.004 (.055)	.003 (.039)	.004 (.062)	[.872]	.005 (.068)	.002 (.035)	[.689]
Fires	419	.474 (.493)	.463 (.492)	.481 (.494)	[.759]	.485 (.498)	.462 (.488)	[.713]
Diseases	419	.061 (.229)	.109 (.301)	.032 (.162)	[.023]	.050 (.213)	.074 (.244)	[.426]
Excess of rain	419	.338 (.464)	.236 (.421)	.403 (.479)	[.004]	.364 (.476)	.311 (.451)	[.404]
Lack of rain	419	.029 (.163)	.051 (.209)	.016 (.214)	[.059]	.014 (.117)	.046 (.200)	[.052]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of communities, Column 3 reports characteristics for the sample of communities located along the control roads, and Column 4 reports characteristics for the sample of communities located along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the community is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located in a distance of 2-10km from the survey road, and Column 7 reports characteristics for the sample of communities located in a distance of 0-2km from the survey road. Column 8 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the community is located in a distance of 0-2km or 2-10km from the survey road. The regressions allow the error term to be clustered by community.

Table 38: Crop losses - 2nd season (household level variables)

Means, standard deviations reported in parentheses, p-values reported in brackets

			Roads			Distance to roads		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Number of observations	Full sample	N302 and R603	R604 and R605	Difference [p-value]	2-10km away	0-2km away	Difference [p-value]
<i>Panel A: Crop losses before harvest</i>								
Were there any crop losses before harvest?	1,060	.379 (.485)	.288 (.454)	.408 (.492)	[.007]	.378 (.485)	.380 (.486)	[.953]
Share of different crop affected by losses over total crops grown	1,060	.242 (.360)	.192 (.340)	.259 (.364)	[.044]	.244 (.359)	.241 (.360)	[.944]
Main reason(s) for loss of crops before harvest								
Floods	403	.015 (.121)	.054 (.228)	.006 (.078)	[.070]	.005 (.071)	.024 (.155)	[.101]
Pests	403	.172 (.347)	.059 (.214)	.197 (.366)	[.0002]	.223 (.378)	.122 (.307)	[.020]
Wild animals	403	.033 (.163)	.092 (.268)	.020 (.126)	[.086]	.026 (.140)	.040 (.183)	[.528]
Domestic animals	403	.019 (.129)	.027 (.163)	.017 (.120)	[.611]	.012 (.103)	.025 (.150)	[.290]
Fires	403	.001 (.025)	.007 (.058)	0 (.000)	[.305]	0 (.000)	.002 (.035)	[.321]
Diseases	403	.142 (.321)	.099 (.284)	.152 (.328)	[.262]	.126 (.296)	.157 (.342)	[.490]
Excess of rain	403	.040 (.188)	.135 (.344)	.018 (.121)	[.010]	.020 (.130)	.059 (.230)	[.078]
Lack of rain	403	.507 (.483)	.405 (.494)	.530 (.479)	[.179]	.541 (.478)	.474 (.488)	[.396]
Other	403	.072 (.248)	.122 (.329)	.060 (.224)	[.320]	.046 (.202)	.096 (.283)	[.178]
<i>Panel B: Crop losses after harvest</i>								
Were there any crop losses after harvest?	1,060	.075 (.264)	.066 (.249)	.078 (.269)	[.553]	.046 (.210)	.104 (.305)	[.006]
Share of different crop affected by losses over total crops grown	1,060	.044 (.175)	.042 (.177)	.045 (.174)	[.834]	.020 (.100)	.067 (.222)	[.0005]
Main reason(s) for loss of crops after harvest								
Floods	80	0 (.000)	0 (.000)	0 (.000)	-	0 (.000)	0 (.000)	-
Pests	80	.087 (.273)	.176 (.393)	.063 (.229)	[.364]	.167 (.351)	.054 (.227)	[.136]
Wild animals	80	.013 (.112)	0 (.000)	.016 (.126)	[.328]	0 (.000)	.018 (.134)	[.326]
Domestic animals	80	0 (.000)	0 (.000)	0 (.000)	-	0 (.000)	0 (.000)	-
Fires	80	.775 (.413)	.647 (.493)	.810 (.386)	[.275]	.708 (.440)	.804 (.401)	[.330]
Diseases	80	.038 (.191)	.118 (.332)	.016 (.126)	[.228]	0 (.000)	.054 (.227)	[.102]
Excess of rain	80	.050 (.219)	0 (.000)	.063 (.246)	[.045]	.042 (.204)	.054 (.227)	[.816]
Lack of rain	80	.038 (.191)	.059 (.243)	.032 (.177)	[.670]	.083 (.282)	.018 (.134)	[.294]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of communities, Column 3 reports characteristics for the sample of communities located along the control roads, and Column 4 reports characteristics for the sample of communities located along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the community is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located in a distance of 2-10km from the survey road, and Column 7 reports characteristics for the sample of communities located in a distance of 0-2km from the survey road. Column 8 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the community is located in a distance of 0-2km or 2-10km from the survey road. The regressions allow the error term to be clustered by community.

Table 39: Plot identification, management and ownership (plot level variables)

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<u>Panel A: Plot identification</u>								
Estimated size of the plot (hectares)	4,993	2.22 (2.00)	2.86 (2.26)	1.78 (1.66)	[.000]	2.20 (2.02)	2.24 (1.98)	[.810]
How long does it take to get to the machamba on foot? (minutes)	4,993	57.3 (43.1)	53.8 (45.8)	59.7 (41.0)	[.064]	57.0 (41.5)	57.6 (44.8)	[.869]
Total size of land put under cultivation per households over the agricultural season 2014/2015*	3,019	4.09 (54.6)	5.50 (77.7)	2.72 (2.68)	[.172]	5.03 (75.8)	3.08 (2.97)	[.316]
<u>Panel B: Who manages the parcel? (couples households)</u>								
Female only (spouse or head) [yes=1]	4,158	.052 (.222)	.054 (.227)	.051 (.219)	[.787]	.055 (.227)	.050 (.217)	[.704]
Male only (spouse or head) [yes=1]	4,158	.181 (.385)	.347 (.476)	.064 (.245)	[.000]	.157 (.364)	.204 (.403)	[.162]
Both male and female (spouse or head) [yes=1]	4,158	.766 (.423)	.598 (.491)	.884 (.320)	[.000]	.787 (.410)	.745 (.436)	[.235]
Only other household members [yes=1]	4,158	.0010 (.031)	.001 (.034)	.0008 (.029)	[.806]	.0009 (.031)	.0010 (.031)	[.976]
<u>Panel C: Who manages the parcel? (female households)</u>								
Female only (spouse or head) [yes=1]	830	.992 (.092)	.997 (.056)	.988 (.108)	[.242]	.993 (.083)	.990 (.100)	[.704]
Male only (spouse or head) [yes=1]	830	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
Both male and female (spouse or head) [yes=1]	830	0 (.000)	0 (.000)	0 (.000)		0 (.000)	0 (.000)	
Only other household members [yes=1]	830	.008 (.092)	.003 (.056)	.012 (.108)	[.242]	.007 (.083)	.010 (.100)	[.704]
<u>Panel D: Plot ownership</u>								
When did you acquire the plot?								
1990 and before [yes=1]	4,992	.067 (.251)	.039 (.194)	.087 (.281)	[.00009]	.077 (.267)	.057 (.231)	[.125]
1991-1995 [yes=1]	4,992	.069 (.253)	.044 (.206)	.086 (.280)	[.00009]	.073 (.261)	.064 (.244)	[.406]
1996-2000 [yes=1]	4,992	.163 (.370)	.131 (.337)	.186 (.389)	[.0010]	.159 (.366)	.168 (.374)	[.625]
2001-2005 [yes=1]	4,992	.166 (.372)	.163 (.370)	.168 (.374)	[.736]	.166 (.372)	.166 (.372)	[.995]
2006-2010 [yes=1]	4,992	.219 (.414)	.244 (.430)	.202 (.402)	[.012]	.210 (.407)	.230 (.421)	[.231]
2011 and after [yes=1]	4,992	.315 (.465)	.378 (.485)	.272 (.445)	[.000]	.314 (.464)	.316 (.465)	[.938]
How did you obtained this plot?								
Traditional authorities [yes=1]	4,993	.218 (.413)	.276 (.447)	.178 (.383)	[.007]	.219 (.414)	.217 (.413)	[.970]
Formal authorities [yes=1]	4,993	.016 (.125)	.027 (.161)	.008 (.092)	[.0008]	.011 (.106)	.021 (.142)	[.055]
Relatives [yes=1]	4,993	.490 (.500)	.404 (.491)	.548 (.498)	[.00006]	.458 (.498)	.523 (.500)	[.106]
Rented [yes=1]	4,993	.019 (.135)	.016 (.126)	.020 (.141)	[.470]	.013 (.111)	.025 (.156)	[.031]
Lent [yes=1]	4,993	.001 (.037)	.002 (.050)	.0007 (.026)	[.125]	.002 (.040)	.001 (.035)	[.751]
Occupied [yes=1]	4,993	.097 (.296)	.164 (.370)	.052 (.222)	[.000]	.112 (.315)	.082 (.275)	[.113]
Purchased [yes=1]	4,993	.023 (.151)	.024 (.152)	.023 (.150)	[.924]	.018 (.134)	.028 (.165)	[.149]
Herited [yes=1]	4,993	.131 (.337)	.083 (.275)	.164 (.371)	[.004]	.163 (.370)	.097 (.296)	[.034]
Others [yes=1]	4,993	.005 (.069)	.005 (.070)	.005 (.069)	[.938]	.004 (.065)	.005 (.073)	[.660]
Does this plot has a title? [yes=1]	4,993	.016 (.126)	.037 (.188)	.002 (.045)	[.000]	.014 (.116)	.019 (.136)	[.394]

Notes: All statistics are constructed using baseline data.*Variables winsorized at the top 5%. One observation corresponds to one plot. The plot manager (single female, married female, man or both) is determined from variable e104. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located in a distance of 2-10km from the survey road, and Column 7 reports characteristics for the sample of communities located in a distance of 0-2km from the survey road. Column 8 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the community is located in a distance of 0-2km or 2-10km from the survey road. The regressions allow the error term to be clustered by community.

Table 40: Plot use and inputs - 1st season (plot level variables)

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<i>Panel A: Plot use 1st season</i>								
Own-cultivated [yes=1]	4,993	.945 (.228)	.977 (.150)	.923 (.266)	[.000]	.945 (.229)	.946 (.227)	[.918]
Fallow [yes=1]	4,993	.016 (.127)	.007 (.083)	.023 (.150)	[.0006]	.015 (.121)	.018 (.133)	[.548]
Rented-out/Lent-out [yes=1]	4,993	.003 (.055)	.001 (.038)	.004 (.064)	[.087]	.003 (.052)	.003 (.057)	[.738]
Pasture [yes=1]	4,993	.0004 (.020)	0 (.000)	.0007 (.026)	[.154]	0 (.000)	.0008 (.029)	[.151]
No use/activity [yes=1]	4,993	.034 (.181)	.014 (.117)	.048 (.214)	[.000]	.038 (.191)	.030 (.171)	[.329]
Other [yes=1]	4,993	.001 (.032)	.0010 (.031)	.001 (.032)	[.975]	0 (.000)	.002 (.045)	[.055]
Size of cultivated land (hectares)	4,719	2.83 (43.7)	4.29 (67.3)	1.76 (1.78)	[.102]	3.43 (61.0)	2.19 (2.16)	[.334]
<i>Panel B: Labour input from inside the household 1st season - couples households</i>								
Nu of days worked on parcel per season of Male (head/spouse)	3,859	101 (53.7)	104 (52.2)	99.1 (54.7)	[.309]	101 (54.5)	101 (52.9)	[.951]
Nu of days worked on parcel per season of Female (head/spouse)	3,874	103 (52.7)	105 (51.0)	101 (53.8)	[.381]	103 (53.2)	102 (52.1)	[.816]
Nu of days worked on parcel per season of Other hh-members (avg)	1,642	75.6 (54.3)	72.7 (52.3)	77.2 (55.4)	[.290]	75.4 (54.3)	75.8 (54.4)	[.871]
Nu of days worked on parcel per season of Other hh-members (total)	1,642	131 (117)	124 (113)	134 (119)	[.270]	131 (116)	130 (118)	[.989]
Number of other hh members working on parcel	1,642	1.69 (.763)	1.68 (.794)	1.70 (.747)	[.679]	1.70 (.758)	1.69 (.770)	[.976]
<i>Panel C: Labour input from inside the household 1st season - single female households</i>								
Nu of days worked on parcel per season of Female (head/spouse)	773	114 (47.4)	115 (44.7)	113 (49.1)	[.799]	117 (46.2)	111 (48.5)	[.306]
Nu of days worked on parcel per season of Other hh-members (avg)	455	95.3 (54.0)	87.7 (52.2)	99.1 (54.6)	[.144]	97.7 (54.0)	92.7 (54.1)	[.633]
Nu of days worked on parcel per season of Other hh-members (total)	455	165 (127)	147 (112)	173 (133)	[.156]	165 (122)	164 (133)	[.954]
Number of other hh members working on parcel	455	1.70 (.816)	1.67 (.830)	1.71 (.809)	[.697]	1.68 (.781)	1.72 (.852)	[.715]
<i>Panel D: Labour input from outside the household 1st season</i>								
Number of days <i>men</i> from outside the households worked on the plot	1,057	18.8 (38.5)	16.6 (33.7)	20.5 (41.8)	[.456]	18.0 (38.7)	19.3 (38.3)	[.789]
Number of days <i>women</i> from outside the households worked on the plot	473	14.5 (35.8)	17.0 (44.8)	12.5 (26.2)	[.228]	18.1 (49.2)	12.6 (25.4)	[.201]
Number of days <i>children</i> from outside the households worked on the plot	45	36.7 (131)	64.3 (185)	10.3 (13.2)	[.166]	6.60 (7.06)	51.8 (159)	[.124]
<i>Panel E: Use of manure, pesticides and fertilizer 1st season</i>								
Did you use manure? [yes=1]	4,719	.089 (.285)	.046 (.210)	.120 (.326)	[.000]	.094 (.291)	.085 (.279)	[.580]
Did you use chemical fertilizer? [yes=1]	4,719	.506 (.500)	.557 (.497)	.469 (.499)	[.012]	.464 (.499)	.551 (.498)	[.014]
How did you obtain the chemical fertilizer? [yes=1]								
Purchased [yes=1]	2,390	.554 (.497)	.282 (.450)	.789 (.408)	[.000]	.475 (.500)	.625 (.484)	[.019]
Credit [yes=1]	2,390	.411 (.492)	.660 (.474)	.196 (.397)	[.000]	.488 (.500)	.342 (.474)	[.016]
Received as a gift [yes=1]	2,390	.035 (.183)	.058 (.233)	.015 (.121)	[.00005]	.037 (.188)	.033 (.179)	[.752]
Did you use chemical pesticides? [yes=1]	4,719	.038 (.191)	.036 (.187)	.039 (.194)	[.779]	.037 (.189)	.039 (.193)	[.898]
How did you obtain the chemical pesticides? [yes=1]								
Purchased [yes=1]	179	.598 (.492)	.153 (.362)	.897 (.305)	[.000]	.489 (.503)	.708 (.457)	[.132]
Credit [yes=1]	179	.179 (.384)	.389 (.491)	.037 (.191)	[.00008]	.222 (.418)	.135 (.343)	[.335]
Received as a gift [yes=1]	179	.223 (.418)	.458 (.502)	.065 (.248)	[.00002]	.289 (.456)	.157 (.366)	[.214]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located in a distance of 2-10km from the survey road, and Column 7 reports characteristics for the sample of communities located in a distance of 0-2km from the survey road. Column 8 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the community is located in a distance of 0-2km or 2-10km from the survey road. The regressions allow the error term to be clustered by community.

Table 41: Plot use and inputs - 2nd season (plot level variables)

Means, standard deviations reported in parentheses, p-values reported in brackets

	(1) Number of observations	(2) Full sample	Roads			Distance to roads		
			(3) N302 and R603	(4) R604 and R605	(5) Difference [p-value]	(6) 2-10km away	(7) 0-2km away	(8) Difference [p-value]
<u>Panel A: Plot use 2nd season</u>								
Own-cultivated [yes=1]	4,993	.267 (.442)	.153 (.360)	.345 (.476)	[.000]	.243 (.429)	.292 (.455)	[.135]
Fallow [yes=1]	4,993	.039 (.194)	.032 (.177)	.044 (.204)	[.225]	.036 (.187)	.042 (.200)	[.550]
Rented-out/Lent-out [yes=1]	4,993	.009 (.092)	.018 (.134)	.002 (.045)	[.0008]	.007 (.086)	.010 (.099)	[.557]
Pasture [yes=1]	4,993	.007 (.081)	.014 (.119)	.001 (.037)	[.0005]	.007 (.084)	.006 (.078)	[.785]
No use/activity [yes=1]	4,993	.677 (.468)	.780 (.414)	.606 (.489)	[.000]	.706 (.456)	.647 (.478)	[.122]
Other [yes=1]	4,993	.001 (.037)	.001 (.038)	.001 (.037)	[.942]	.0004 (.020)	.002 (.050)	[.185]
Size of cultivated land (hectares)	1,333	1.58 (1.70)	2.49 (2.09)	1.30 (1.45)	[.000]	1.56 (1.89)	1.60 (1.51)	[.798]
<u>Panel B: Labour input from inside the household 2nd season - couples households</u>								
Nu of days worked on parcel per season of Male (head/spouse)	1,102	98.3 (53.6)	104 (58.6)	96.8 (52.1)	[.295]	95.1 (55.2)	101 (52.1)	[.262]
Nu of days worked on parcel per season of Female (head/spouse)	1,121	100 (53.0)	107 (56.9)	98.4 (51.8)	[.223]	97.1 (54.5)	103 (51.6)	[.366]
Nu of days worked on parcel per season of Other hh-members (avg)	399	75.5 (53.2)	83.2 (59.0)	74.0 (52.0)	[.369]	71.3 (51.9)	78.9 (54.2)	[.298]
Nu of days worked on parcel per season of Other hh-members (total)	399	126 (112)	135 (120)	124 (110)	[.625]	121 (110)	129 (113)	[.621]
Number of other hh members working on parcel	399	1.65 (.744)	1.72 (.839)	1.64 (.725)	[.479]	1.65 (.723)	1.66 (.762)	[.965]
<u>Panel C: Labour input from inside the household 2nd season - single female households</u>								
Nu of days worked on parcel per season of Female (head/spouse)	185	109 (50.2)	101 (55.6)	112 (47.7)	[.348]	104 (52.7)	113 (47.6)	[.371]
Nu of days worked on parcel per season of Other hh-members (avg)	104	92.4 (54.6)	78.4 (56.8)	97.5 (53.3)	[.192]	86.1 (56.3)	99.7 (52.2)	[.379]
Nu of days worked on parcel per season of Other hh-members (total)	104	165 (128)	110 (79.7)	185 (136)	[.003]	157 (127)	174 (129)	[.576]
Number of other hh members working on parcel	104	1.77 (.827)	1.50 (.694)	1.87 (.854)	[.033]	1.80 (.818)	1.73 (.844)	[.685]
<u>Panel D: Labour input from outside the household 2nd season</u>								
Number of days men from outside the households worked on the plot	188	25.7 (44.5)	35.8 (40.4)	22.8 (45.3)	[.182]	24.7 (37.4)	26.4 (48.7)	[.852]
Number of days women from outside the households worked on the plot	86	25.1 (92.1)	26.2 (38.8)	24.9 (98.8)	[.937]	9.69 (22.6)	33.0 (112)	[.139]
Number of days children from outside the households worked on the plot	9	23.1 (48.5)	-	23.1 (48.5)	-	5.33 (4.93)	32.0 (58.9)	[.246]
<u>Panel E: Use of manure, pesticides and fertilizer 2nd season</u>								
Did you use manure? [yes=1]	1,333	.159 (.366)	.058 (.234)	.190 (.393)	[.000]	.154 (.362)	.163 (.370)	[.784]
Did you use chemical fertilizer? [yes=1]	1,333	.361 (.480)	.282 (.451)	.385 (.487)	[.031]	.301 (.459)	.414 (.493)	[.034]
How did you obtain the fertilizer? [yes=1]								
Purchased [yes=1]	482	.761 (.427)	.420 (.496)	.838 (.369)	[.000]	.702 (.459)	.799 (.401)	[.196]
Credit [yes=1]	482	.203 (.403)	.511 (.503)	.135 (.342)	[.000]	.282 (.451)	.153 (.361)	[.086]
Received as a gift [yes=1]	482	.035 (.185)	.068 (.254)	.028 (.165)	[.219]	.016 (.126)	.048 (.213)	[.058]
Did you use chemical pesticides? [yes=1]	1,333	.062 (.240)	.022 (.148)	.073 (.261)	[.007]	.042 (.200)	.079 (.270)	[.151]
How did you obtain the pesticides? [yes=1]								
Purchased [yes=1]	83	.976 (.154)	.857 (.378)	.987 (.115)	[.350]	.963 (.192)	.982 (.134)	[.667]
Credit [yes=1]	83	.024 (.154)	.143 (.378)	.013 (.115)	[.350]	.037 (.192)	.018 (.134)	[.667]

Notes: All statistics are constructed using baseline data. Column 1 reports the number of valid observations for each variable. Column 2 reports characteristics for the full sample of households, Column 3 reports characteristics for the sample of households in communities along the control roads, and Column 4 reports characteristics for the sample of households in communities along the treatment roads. Column 5 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the respondent is located along a treatment road or along a control road. Column 6 reports characteristics for the sample of communities located in a distance of 2-10km from the survey road, and Column 7 reports characteristics for the sample of communities located in a distance of 0-2km from the survey road. Column 8 shows p-values of the test of equality from an OLS regression of corresponding variable against a dummy for whether the community is located in a distance of 0-2km or 2-10km from the survey road. The regressions allow the error term to be clustered by community.

Table 42: Farm size, yields and agricultural sales by season and household type (household level variables)
Means, standard deviations reported in parentheses

	All sample	Household type		
		Male-headed household	Female-headed household	Difference
Number of parcels	1.65 (0.83)	1.73 (0.87)	1.43 (0.68)	***
Parcel size (ha) [†]	2.15 (1.76)	2.26 (1.83)	1.74 (1.38)	***
1st season - September 2014 to February 2015				
Yields (MZN/ha) [‡]	8,344 (11,889)	9,089 (11,928)	6,609 (12,100)	***
Sold any output? [yes=1]	0.86 (0.35)	0.90 (0.30)	0.74 (0.44)	***
Share of output sold	0.41 (0.32)	0.45 (0.31)	0.28 (0.30)	***
2nd season - March 2015 to August 2015				
Yields (MZN/ha) [‡]	7,281 (18,554)	7,324 (17,043)	7,233 (22,276)	not sign
Sold any output? [yes=1]	0.18 (.38)	0.20 (.39)	0.14 (.35)	*
Share of output sold	0.43 (.37)	0.46 (.37)	0.37 (.37)	***

Notes: [†] Winsorized top 5%. [‡] Median values (instead of means) reported. The column Difference shows the significance level of the test of equality from an OLS regression of corresponding variable against a dummy for female-headed household. The regressions allow the error term to be clustered by community. *** p<0.01 ** p<0.05 *p<0.1.