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Does Organic Farming Jeopardize Food and Nutrition Security?

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Abstract

The prevalence of organic farming and other sustainability standards is increasing around the globe. While effects of organic farming on productivity, income, and poverty alleviation have been analyzed in numerous empirical studies, its effects on food and nutrition security are not yet understood. Using data from smallholder cotton farmers in Benin, we empirically investigate how adopting organic farming affects their food and nutrition security. Our results indicate that adopting organic farming substantially reduces their food security, while it tends to slightly reduce the nutritional quality of their diets. Evaluating pathways, we find that the decreased food and nutrition security is likely caused by lower household income due to lower income from cotton farming given a smaller land area cultivated with cotton, while a larger land area cultivated with food crops cannot fully compensate for the reduced income from cotton farming. This alarming result illustrates the need for evaluating and eventually improving programs for organic farming in developing countries to ensure that good intentions for more sustainable production practices do not jeopardize the livelihoods of vulnerable smallholder farmers.

Key words: organic farming, food security, dietary diversity, farm households, treatment effects.

JEL codes: O13, Q12, Q18.

1 Introduction

Although substantial interventions aimed at supporting food security and nutrition in sub-Saharan Africa (SSA) have been introduced over the past decades, food insecurity and malnutrition are still highly prevalent in the region. Particularly, the prevalence of undernourishment rose from 18.3% in 2015 to 23.2% in 2021 in SSA (FAO, IFAD, UNICEF, WFP and WHO, 2022), suggesting urgent action is needed to revert this trend. Given that many of the undernourished people in SSA and worldwide are smallholder farmers who rely on agriculture for their livelihoods, changes to agricultural production systems that enable smallholder subsistence farmers to increase the quantity or nutritional quality of the produced food products or the profitability of their agricultural activities have the potential to improve the nutrition of many poor rural households.

Conventional farming practices are frequently unsustainable due to soil degradation and other environmental problems and they, thus, jeopardize food security at least in the longer run. Hence, the adoption of organic farming, which prescribes sustainable farming practices such as intercropping, crop rotation and diversification, legume cultivation, and the use of organic fertilizers (Meemken et al., 2017; Jouzi et al., 2017) could secure and possibly enhance the availability and diversity of food products in developing countries. On the other hand, organic farming often has lower crop yields than conventional farming (e.g., De Ponti et al., 2012; Jouzi et al., 2017; DeFries et al., 2017; Mitiku et al., 2017; Meemken and Qaim, 2018) and, thus, could compromise food security in developing countries. The negative effects of adopting organic farming on crop yields could potentially be counteracted by: (a) farmer's ability to purchase more food due to a potentially higher income given higher prices for organic products (see, e.g., Ramesh et al., 2010; De Ponti et al., 2012; Uematsu and Mishra, 2012; Delbridge et al., 2013; Chiputwa and Qaim, 2016; Qiao et al., 2016; Jouzi et al., 2017; Meemken and Qaim, 2018; Vanderhaegen et al., 2018), and (b) a more nutritious and diversified diet due to more diversified production of organic farms (Badgley et al., 2007; Gracia and De Magistris, 2008; Jones et al., 2014; Jouzi et al., 2017). However, Sibhatu and Qaim (2018) show that less than 20% of 45 studies that analyze the relationship between crop diversification and dietary diversity found a statistically significant positive relationship. Thus, it is unclear whether potentially greater crop diversity of organic farming actually results in greater dietary diversity and, thus, an improvement in the nutritional quality of the diets of organic households[1].

While the effects of organic farming on productivity, income, and poverty alleviation have been analyzed in numerous empirical studies (e.g., Bolwig et al., 2009; Jena et al., 2012; Uematsu and Mishra, 2012; Patil et al., 2014; Ayuya et al., 2015; Chiputwa and Qaim, 2016; Parvathi and Waibel, 2016; Jena et al., 2017; Mitiku et al., 2017; Froehlich et al., 2018), its effects on food and nutrition security are not yet understood. This is an important limitation because farmers in developing countries often derive their livelihoods—including satisfying their food needs—from their farming activities (e.g., Carletto et al., 2015; Chiputwa and Qaim, 2016; Fanzo, 2018; Fraval et al., 2019), and it would be very undesirable and ethically problematic if programs that encourage the adoption of organic farming in developing countries—often initiated by private or public actors in high-income countries—compromised the food and nutrition security of vulnerable smallholder farmers in low-income countries. Hence, assessing the effects of organic farming on food and nutrition security is highly relevant, not only scientifically but also for governments, donors, and NGOs that engage in organic farming in developing countries.

This study contributes to the existing literature by empirically investigating how organic farming affects farm households' food and nutrition security through various pathways. We develop and apply a theoretical microeconomic model that indicates how the adoption of organic farming could affect food and nutrition security and that guides the empirical specification as well as the interpretation of the empirical results. In the empirical analysis, we address the potential endogeneity of choosing between organic and conventional farming by using three different approaches. First, we use a variable as control variable that captures a household's marginal utility of adopting either organic or conventional farming practices. This approach to accounting for potential unobserved heterogeneity in a selection-on-observables design has been used in a number of studies (see, e.g., Verhofstadt and Maertens, 2014; Bellemare and Novak, 2017; Rajkhowa and

[1] In order to avoid long and potentially unclear sentences, we abbreviate households that practice organic farming as "organic households" and households that practice conventional farming as "conventional households."

Qaim, 2021; Ruml and Qaim, 2021). Second, we apply the approach suggested by Oster (2019) to check the sensitivity of our estimates regarding unobserved heterogeneity. Third, we use instrumental variable regression. We use six different outcome variables to measure different aspects of food and nutrition security. Food insecurity is measured by applying the FAO's household food insecurity experience scale (HFIES) as well as an extension of this scale that captures smaller variations in food insecurity. Furthermore, we use the FAO's dietary diversity score and the number of vitamin A-rich food groups consumed within 24 hours and within seven days to assess nutrition security. Our empirical analysis is based on a sample of 1247 households that produce organic or conventional cotton in Benin.

Our findings show that organic farming substantially decreases food security. Moreover, the adoption of organic farming tends to slightly reduce the dietary diversity and the number of vitamin A-rich food groups consumed within 24 hours, but it does not notably affect these measures when considering the consumption within a seven-day period. Hence, organic farming is expected to jeopardize food security and tends to slightly reduce the nutritional quality of the diets of the farm households who adopt organic farming, at least when circumstances are similar to those of the farmers in our empirical analysis. To further understand these effects, we investigate the mechanism of the effects of organic farming on food and nutrition security. We find that organic farming substantially reduces the land area cultivated with cotton, the income from cotton farming, and household income, while it substantially increases the land area cultivated with food crops. The decrease in income from cotton farming indicates that the higher price for organic cotton does not fully compensate for the lower cotton yield and the smaller land area cultivated with cotton. Furthermore, the increased land area cultivated with food crops does not fully compensate for the decrease in income from cotton farming and, thus, the capability to purchase food. This is an important result as organic farming is gaining importance in many developing countries and evidence is needed to ensure that this does not have undesirable side effects on the participating smallholder farmers.

The remainder of this paper is organized as follows. Section 2 presents the theoretical framework guiding the empirical strategy. Section 3 describes the study location, data and the empirical strategy. The results are presented in Section 4. Section 5 concludes and provides policy implications.

2 Theoretical framework

2.1 Agricultural household model

We use an agricultural household model (Singh et al., 1986) as a framework for theoretically investigating the effect of adopting organic farming on food and nutrition security. This framework assumes that the household uses its labor and its other resources to maximize its utility. Based on Key et al. (2000) and Henning and Henningsen (2007), we formalize the household's annual consumption, production and labor allocation decisions by the following non-separable agricultural household model:

$$\max_{c,x,q} U\left(c, z_h\right), \text{ s.t.} \tag{1}$$

$$G\left(x, q, D, z_f\right) = 0 \tag{2}$$

$$A_i - C_i - X_i + Q_i - M_i \geq 0 \, \forall \, i = 1, \ldots, N \tag{3}$$

$$T + \sum_{i=1}^{N} V_i\left(M_i, D, z_m\right) \geq 0 \tag{4}$$

$$c, x, q \geq 0, \tag{5}$$

where for each good $i = 1, \ldots, N$ (e.g., land, labor, other agricultural inputs, agricultural outputs, purchased consumption goods), A_i indicates the household's initial endowment, C_i indicates the consumed quantity, X_i indicates the quantity used as input, Q_i indicates the quantity produced, and M_i indicates the net marketed quantity with $M_i < 0$ indicating purchasing the good, $M_i = 0$ indicating not trading the good, and $M_i > 0$ indicating selling the good. To keep the notation simple, we define vectors $a = (A_1, \ldots, A_N)'$, $c = (C_1, \ldots, C_N)'$, $x = (X_1, \ldots, X_N)'$, and $q = (Q_1, \ldots, Q_N)'$. $U(\cdot)$ is the household's utility function and $G(\cdot)$ is a transformation function that indicates feasible combinations of input and output quantities. In the case of $M < 0$, $V_i(M_i, D, z_m) < 0$ indicates the (negative) cost of purchasing good i, while in the case of $M_i > 0$, $V_i(M_i, D, z_m) > 0$ indicates the revenue from selling good i. In the case of $M_i = 0$, $V_i(M_i, D, z_m) = 0$. Finally, D is a dummy variable that indicates whether the household is certified for organic production $(D = 1)$ or applies conventional production methods $(D = 0)$, T indicates exogenous net transfers (e.g., remittances), z_h is a vector of household characteristics (e.g., household size and composition), z_f is a vector of farm characteristics (e.g., land quality, climate), and z_m is a vector of market characteristics (e.g., local price levels, market accessibility, etc). Our household model specified in equations (1) to (5) treats the decision about organic or conventional production methods, i.e., variable D, as given because switching from conventional farming to certified organic production usually takes at least three years.[2]

If there are no transaction costs for purchasing or selling a good i and the market for this good is perfectly functioning, function $V_i(\cdot)$ is proportional to the traded quantity with $V_i(M_i, D, z_m) = P_i(D, z_m)\, M_i$, where $P_i(D, z_m)$ is the exogenous market price of good i, which may depend on whether the household applies organic or conventional production methods. If there are no transaction costs for any of the goods, and the markets for all goods are perfectly functioning, the household model becomes separable and, thus, preferences and household characteristics that are only related to consumption decisions (z_h) have no influence on production decisions, and production decisions only affect consumption decisions through the level of income . However, it is unrealistic to assume that all of the goods $i = 1, \ldots, N$, including land and labor, are traded without any transaction costs or other market imperfections. Hence, the input quantities x, output quantities q, and consumed quantities c that maximize the utility of a household depend on the household's initial endowments a, household characteristics z_h, farm characteristics z_f, net transfers T, and mar-

[2]The production method D is, of course, endogenous in the longer run, and our empirical analysis takes this endogeneity into account. However, our theoretical analysis takes variable D as given in order to compare certified organic farms and conventional farms while ignoring farms in transition, i.e., farms that apply organic production methods but are not yet certified and, thus, get the same prices as conventional farms.

ket characteristics z_m as well as the chosen production method D, i.e., $X_i = X_i\left(a, z_h, z_f, T, z_m, D\right)$, $Q_i = Q_i\left(a, z_h, z_f, T, z_m, D\right)$, and $C_i = C_i\left(a, z_h, z_f, T, z_m, D\right)$. As food and nutrition security depend on the consumption of food products, i.e., a subset of the consumed quantities c, food and nutrition security depends on the same variables as c:

$$y_k = y_k\left(a, z_h, z_f, T, z_m, D\right),$$

where y_k denotes the k-th indicator of food and nutrition security.

2.2 Pathways of the effect

Based on our theoretical model, Figure 1 illustrates the main pathways through which the adoption of organic farming could affect the food and nutrition security of small-scale cotton farmers in our study area.[3]

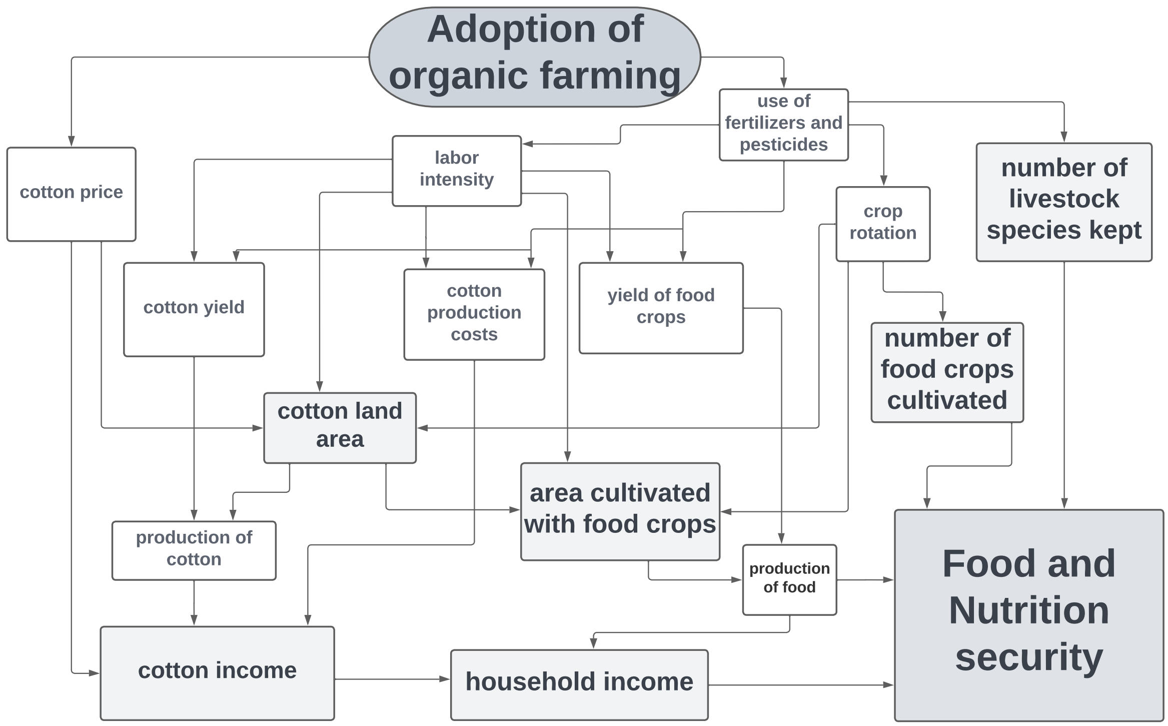
3 Methodology

3.1 Data collection

Our analysis uses cross-sectional data from a household survey in Benin. The survey locations cover three main cotton growing districts, namely Kandi, Pehunco and Glazoué, which were selected due to the high importance of cotton farming, agro-ecological diversity, and the presence of organic cotton farming in the areas. Cotton farming is the main livelihood for most rural households in these districts. Other crops—mostly maize, sorghum, soybean, and groundnut—are cultivated in rotation with cotton to provide food for the household and maintain soil fertility.

[3] In our study area, the vast majority of small-scale farmers produces cotton. Cotton is the only non-food crop that is produced in this area. Hence, our theoretical considerations distinguish two types of crops: cotton and food crops. Due to space limitations, the most important intermediate variables and the most important direct effects along these pathways are explained in Section A of the Appendix.

Figure 1: Illustration of the pathways



Note: The boxes with the light gray background and the bold font indicate the intermediate variables that are included in our empirical analysis. Given that household income is not available in our data set, we proxy this variable with household revenue in our empirical application.

We selected three groups of villages for our household survey. In order to obtain data from a sufficiently large number of organic cotton farmers, we selected all 25 villages that engage in organic cotton farming in the three districts. Furthermore, we selected 25 villages without organic cotton farming but with similar village-level characteristics as the 25 villages with organic cotton farming in order to obtain data from organic and conventional households that operate under similar production and market conditions. Finally, we selected a further 25 villages without organic cotton farming, which together with the two other groups of villages, provide a representative sample of all cotton growing villages in each of the three districts.

We collected data from 1,361 cotton growing households through face-to-face interviews using the KoBoCollect software from March to May 2018. Data from 1,247 of these households (223 organic and 1,024 conventional households) were used for the empirical analysis presented in this paper.[4] The gathered data include information on, e.g., household characteristics, crop farming (particularly cotton), and livestock keeping. The household head and/or his/her spouse were also asked questions about their food security and about different food groups consumed in the household (see details in the following section).

3.2 Measurement of food and nutrition security

Food security is defined as the situation, "when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 2009, p. 1). Acknowledging that this definition of food security is widely approved, measuring food security is a challenge because of its multiple dimensions (e.g., FAO, 2016). Some decades ago, the measures of food security that were most widely used by researchers and development agencies were household food consumption expenditures or dietary intake (Chung et al., 1997), anthropometric measures (Coates, 2013), and the household food insecurity access scale (Coates et al., 2007). Due to measurement challenges associated with these indicators (Smale et al., 2015; Smith et al., 2017), further indicators have been proposed.

One of the most widely used new measures of food security is the household food insecurity experience scale (HFIES) developed by the FAO (see FAO, 2016; Cafiero et al., 2018). It is the first survey instrument to measure people's direct experiences of food insecurity at the individual level to be applied on a global scale (Smith et al., 2017). Secondly, it provides an internal statistical validity of the data set using the Rasch model assumptions (Cafiero et al., 2018). The household head and/or his/her spouse were asked whether they had experienced the following situations during the last 12 months because of a lack of money or other resources:

1. You were worried you would not have enough food to eat.
2. You were unable to eat healthy and nutritious food.
3. You only ate a few different kinds of food.

[4] A more detailed description of our data collection and the selection of households for the empirical analysis can be found in Section B of the Appendix.

4. You had to skip a meal
5. You ate less than you thought you should.
6. Your household ran out of food.
7. You were hungry but did not eat.
8. You went without eating for a whole day.

Instead of asking the interviewees for a binary response ("Yes"/"No") for each of the eight potential situations (as done, e.g., by Smith et al., 2017; Cafiero et al., 2018), we extend the HFIES by providing four ordered answers: 0 = Never, 1 = Rarely, 2 = Sometimes, and 3 = Often. This allows us to obtain the original HFIES, which ranges from 0 to 8 (i.e., the number of answers that are not 0), and a more detailed HFIES that ranges from 0 to 24 by summing up the answers to the eight questions.

Additionally, we use the household dietary diversity score suggested by FAO (2011) for measuring nutrition security, i.e., having food of sufficient nutritional quality to eat. Several studies show that dietary diversity is a strong predictor of children's nutritional status (e.g., Moursi et al., 2008; Gebremedhin et al., 2017; M'Kaibi et al., 2017). The household dietary diversity score suggested by FAO (2011) is based on the consumption of the following 16 food groups (see FAO, 2011):

1. Cereals (bread, maize, sorghum, oats, etc.)
2. White tubers and roots (white potatoes, white yam, white cassava, or other roots)
3. Vitamin A-rich vegetables and tubers (carrots, sweet potatoes, sweet red peppers)
4. Dark green leafy vegetables
5. Other vegetables
6. Vitamin A-rich fruits (mango, papaya, dried peach), and 100% fruit juice made from these
7. Other fruits
8. Organ meat (liver, kidney, heart or other organs or blood-based foods)
9. Flesh meats
10. Eggs

11. Fish and seafood
12. Legumes, nuts and seeds (seed: all other seeds except cereals)
13. Milk and milk products
14. Oils and fats
15. Sweets
16. Spices, condiments, beverages (beverages: coffee, tea, alcoholic beverages).

We use the household dietary diversity score for the periods 24 hours and 7 days in order to account for short-run and long-run diversity of food consumption, respectively. Based on this classification, a group of 'vegetables' was derived by combining vitamin A-rich vegetables and tubers (3), dark green leafy vegetables (4), and other vegetables (5). A group of 'fruit' was derived from combining vitamin A-rich fruits (6) and other fruits (7), and a group 'meat' was derived by combining organ meat (8) and flesh meat (9), leading to a total of 12 food groups. The household's dietary diversity score is obtained by summing up the number of affirmative responses and, thus, it ranges from 0 to 12. We also derive a second indicator for nutritional quality as the number of vitamin A-rich foods (see FAO, 2011), which is obtained by summing up the number of vitamin A-rich food groups consumed (i.e., groups 3, 4, 6, 8, 10, and 13) by the household in the past 24 hours and in the past seven days and, thus, it has a score that ranges from 0 to 6. Both the dietary diversity score and the number of vitamin A-rich food groups consumed are used for measuring nutrition security as they indicate the consumption of important nutrients for a healthy life.

3.3 Main regression model

In this section, we present the estimation strategy that we use to investigate the effects of organic farming on rural households' food and nutrition security.

Our core regression equation is specified as:

$$y_{ik} = \alpha_k + \beta_k D_i + \gamma_k' E_i + \varepsilon_{ik}, \tag{6}$$

where subscript i indicates the household, y_{ik} denotes our k-th outcome variable, D_i is a dummy variable that is equal to one if household i has adopted organic farming and zero otherwise, E_i is a vector of control variables, ε_{ik} is the error term for the regression with our k-th outcome variable, α_k and β_k are coefficients, and γ_k is a vector of coefficients to be estimated. Our six primary outcome variables ($y_{ik}; k = 1, \ldots 6$) are the original HFIES, the extended HFIES, the dietary diversity scores over 24 hours and 7 days as well as the number of vitamin A-rich food groups consumed over 24 hours and 7 days. Furthermore, we analyze the effects of organic farming on six mediating outcomes ($y_{ik}; k = 7, \ldots 12$): number of livestock species kept, number of food crops produced, land area cultivated with food crops, land area cultivated with cotton, income from cotton farming, and household revenue[5].

We are mainly interested in the coefficients β_k as they indicate the average treatment effects (ATE) of organic farming on the outcomes of interest, i.e., $\beta_k = E(y_{ik}|D_i = 1) - E(y_{ik}|D_i = 0)$. In order to obtain unbiased estimates of the ATEs with an Ordinary Least Squares (OLS), we need to control for all variables that are correlated both with the household's decision to farm organically D_i and the error term ε_{ik}. Based on our theoretical framework, our vector of control variables E_i includes household characteristics z_h (age, gender, education, literacy, household size, dependency ratio, distance to nearest health facility, and experience in agriculture)[6], farm characteristics z_f (total land owned), and market characteristics z_m (type of road and distance to closest market, which are proxies for prices of products as the price of farm products depends on the remoteness and the distance between the household and the nearest market). The vector E_i additionally includes

[5]Given that subsistence farmers' household income is difficult to observe due to, e.g., the difficulty in observing the value of self-produced and self-consumed agricultural products, our data set does not include a precise measure of household income. We approximate the total household income by total household revenue, which is obtained by dividing the revenue from cotton farming by its proportion of total household income. The proportion of household income that comes from selling cotton is available in the data set as the answer to the question, "What is the share of cotton income of total household income?". Each respondent received 10 identical stones, which together should represent total household income. The respondents were asked to divide these 10 stones into two groups: income from cotton farming and income from other (agricultural or non-agricultural) income-generating activities. The number of stones that indicated the income from cotton farming was multiplied by 10%.

[6]We use education, literacy, and distance to nearest health facility as proxies for knowledge about healthy diets and the effects of synthetic pesticides on health (and, thus, the probability of adopting organic farming).

the quadratic or cubic terms of some of the explanatory variables[7] as well as arrondissement-fixed effects to account for location-specific effects.

Given the design of our sampling strategy, standard errors are clustered at the village level using clustered sandwich estimators of type "HC1" in the terminology of MacKinnon and White (1985) (for details see, e.g., Zeileis et al., 2020). Although all of our six primary outcome variables and two of our mediating outcome variables are count variables, we use OLS regression rather than count-data regression because the distributions of most of these variables are rather symmetric (see Figures 2 and 3 in Sections 4.2 and 4.3, respectively), which means that OLS regression seems to be appropriate.

We transform variables with very right-skewed distributions with the log-transformation (if they only include strictly positive values) or by the inverse hyperbolic sine (IHS) function (if they also include zero and/or negative values) to obtain variables with more symmetric distributions and fewer extreme values because this often fulfills the assumptions required for OLS regressions to a higher degree and makes the results less sensitive to individual observations (see, e.g., Wooldridge, 2016, p. 172).[8]

3.4 Willingness to pay as an additional control variable

Borrowing from the theory of adoption, farmers choose whether to adopt organic farming depending on their expectations of its advantages and disadvantages. Hence, OLS estimates of β_k are biased due to omitted explanatory variables if unobserved variables that affect farmers' expectations of the advantages and disadvantages of organic farming and, thus, their participation in organic farming D_i also affect their food and nutrition security y_{ik} through pathways that are not blocked by the control variables E_i. To overcome this potential problem, we re-estimate equation (6) with an additional control variable that proxies farmers' expectations of the advantages and disadvantages of organic farming, i.e., we add an additional element to the vector E_i that captures

[7]Based on RESET tests, we added quadratic or cubic terms of some continuous explanatory variables to some of the regression models in order to account for non-linearities.

[8]For details see Section C in the Appendix.

the respondent's unobserved characteristics that influence participation in organic farming D_i. This approach to accounting for unobserved heterogeneity was inspired by Verhofstadt and Maertens (2014), Bellemare and Novak (2017), and Ruml and Qaim (2021), who used variables that proxy each respondent's marginal utility of participating in cooperatives or contract farming to control for potential unobserved characteristics that drive participation in cooperatives or contract farming.

We obtain this additional control variable in our survey by asking each respondent, "which type of cotton farming do you think gives you and your household, in general, a better life?". The respondents' responses were captured on a 7-point Likert scale (1 = organic much better, 2 = organic somewhat better, 3 = organic slightly better, 4 = about the same, 5 = conventional slightly better, 6 = conventional somewhat better, 7 = conventional much better). In order to avoid unnecessarily long phrases and sentences, we denote this variable that indicates the perceived overall net advantages and disadvantages of organic and conventional cotton farming as "WTP" given that it proxies willingness to pay (WTP) to adopt organic or conventional cotton farming (inspired by Bellemare and Novak, 2017).

If our WTP variable had been observed before the farmers decided to adopt organic farming or to remain conventional farmers, this variable would be an excellent variable for controlling for unobserved heterogeneity between organic and conventional households. As our WTP variable was observed after this decision, it is possible that positive or negative experiences with the chosen production method may have affected both the WTP variable and the food and nutrition security, i.e., creating a potential endogeneity problem of the WTP variable. However, as the decision to adopt organic farming, to a large extent, depends on ideology, which is not easily changed, and given that we are not interested in the coefficient of the WTP variable as we just use it as control variable, we are confident that this weakness does not have a major effect on our estimates of the effect of organic farming on food security.

3.5 Sensitivity to omitted-variable bias

As we cannot be sure that our selection-on-observables identification strategy—even if we use the WTP variable as an additional explanatory variable—does indeed remove all correlation between our treatment variable D_i and the error terms ε_{ik}, we use the approach suggested by Oster (2019) to assess the sensitivity of our analysis to omitted variables. We derive bias-adjusted estimates of the treatment effect $\hat{\beta}_k^h$ for four different values of the (assumed) R-squared value of a hypothetical regression model that gives unbiased estimates (R_k^h). We define the bounding sets as $\Delta_k = [\hat{\beta}_k^h, \hat{\beta}_k]$ and consider an estimate to be robust to potential omitted-variable biases if the bounding set excludes zero (i.e., $\hat{\beta}_k^h$ and $\hat{\beta}_k$ have the same sign).[9]

3.6 Instrumental variables

As an alternative to the approach suggested by Oster (2019), we use instrumental-variable (IV) regression to address potential endogeneity of our treatment variable. Specifically, we use the three-step IV approach suggested by Wooldridge (2010, p. 937–942) that takes into account the fact that the endogenous regressor, i.e., the dummy variable indicating organic farming (D_i), is a binary variable. The first step comprises a probit regression of the dummy variable indicating organic farming (D_i) on all exogenous explanatory variables E_i and on the instrument: exposure to organic farming ($\bar{D}_i$) defined as the proportion of all cotton farming households that are organic cotton farming households in each village. Similar instruments have been used in many other studies (e.g., Mason et al., 2013; Krishnan and Patnam, 2014; Smale and Mason, 2014; Magnan et al., 2015; Wuepper et al., 2018; Sellare et al., 2020; Tabe-Ojong et al., 2022) as these types of instrumental variables indicate the exposure of farmers to new opportunities and as the adoption of new opportunities is frequently influenced by social ties. More explicitly, the higher the proportion of organic farmers in the same village, the more likely other farmers learn about organic farming and its potential advantages (see, e.g., Sellare et al., 2020). The second and third step comprise a

[9] Section E of the Appendix describes this method in detail and presents the bounding sets for all four different values of R_k^h. For simplicity, the figures in Section 4.2 only display the bias-adjusted estimates of the treatment effect for two values of R_k^h.

classical 2SLS regression with the probability of participation in organic farming predicted by the first-stage probit model ($\hat{D}_i$) as the instrument. Based on this IV regression, β_k denotes the local average treatment effect.

In order to obtain unbiased estimates of the local average treatment effect, the instrumental variable has to be relevant and exogenous. We assess the relevance of the instrumental variable by using an F-test, which assesses the statistical significance of the predicted probability of participation in organic farming in the second step of our estimation strategy (i.e., the first step of a classical 2SLS regression). If the F-test rejects the irrelevance of the predicted instrumental variable at a very high significance level (usually an F-statistic of 10 is used as threshold, see Staiger and Stock, 1997), we conclude that our instrumental variable is not "weak" but relevant.

The second condition for the instrumental variable, exogeneity, is fulfilled if this variable is uncorrelated with the error term, i.e., the instrumental variable only affects the outcome variables through the treatment variable D_i and it is not correlated to omitted variables that affect the outcome variables through pathways that are not blocked by the control variables E_i. Indeed, the proportion of organic cotton farming households in a village is probably not randomly distributed between villages but may depend on local conditions (see Section F in the Appendix for details). However, we argue that potential channels from the instrumental variable to the outcome variables that might violate the exogeneity assumption are probably 'blocked' by the control variables E_i, particularly variables related to the location such as arrondissement fixed effects, distance to nearest health facility, type of road, and distance to the closest market as well as the WTP variable. These variables probably capture pre-existing differences regarding locations and the (perceived) advantages or disadvantages of organic farming, which may affect food and nutrition and, at the same time, may be correlated with our instrumental variable. Therefore, we argue that our instrumental variable is credibly exogenous. Furthermore, we estimate all regression models only with observations from the first two groups of villages (see Section 3.1), i.e., only villages with organic cotton farming and villages that are similar to those with organic cotton farming regarding a number of criteria, including criteria that are probably related to food and nutrition security. Finally, we assess the exogeneity of our instrument by applying the falsification test proposed by Di Falco et al. (2011).

3.7 What about null findings?

In our empirical analysis, finding that the adoption of organic farming does not affect and, thus, does not jeopardize food and nutrition security, would be a highly relevant result. However, P-values and statistical significance usually do not help to answer questions of interest like those addressed in this paper (Imbens, 2021) and obtaining statistically insignificant estimates does not imply that there is no effect (e.g., Brown et al., 2018; Abadie, 2020). One way to investigate whether statistical insignificance implies that there is no effect is to calculate the statistical power of the significance test. However, in many empirical applications with observational data in economics, one has too little information to conduct reasonable power calculations before the data are observed and analyzed, while ex-post power calculations are "fundamentally flawed" (Hoenig and Heisey, 2001).

On the other hand, in many cases, a point estimate and the degree of uncertainty associated with the point estimate may be the precursor to making a decision (Imbens, 2021). Given that the absence or presence of statistical significance should not be the basis to claim any relationship or effect, we investigate both the statistical and the economic significance of our estimates with confidence intervals (see, e.g., Hoenig and Heisey, 2001). Specifically, we display the 50% and 95% confidence intervals for the outcome of the estimated treatment effects of various OLS and IV regressions. If the confidence intervals of the estimated treatment effects do not usually encompass economically significant effect sizes, we can conclude that organic farming does not have an economically relevant effect on food and nutrition security, which would be an important finding.

4 Results[10]

4.1 Descriptive statistics

Table 1 reports mean characteristics of organic and conventional households in our sample along with balancing tests. The majority of the household heads is male but the share of female household heads is significantly higher in organic households (14%) than in conventional households (5%). The average educational attainment and literacy are very low with, on average, 1.38 years of education and only 19% of the households heads are able to read and write in their local language. While heads of organic households have a slightly higher level of education and literacy than heads of conventional households, these differences are not statistically significant at the 10% level. In contrast, conventional households are significantly wealthier than organic households in terms of land ownership and household assets. Furthermore, organic households are significantly less frequently located on a tarred road and are, on average, further from a health facility. Therefore, they are more remote than conventional households.

Regarding the variable denoting WTP, we find a large difference between organic and conventional farmers. While 82% of the organic farmers state that organic cotton provides, in general, a better life, only 9% of the conventional farmers state this. On the other hand, 88% of conventional farmers think that conventional cotton provides a better life, while only 3% of organic farmers report that conventional cotton is better for their life. Hence, most of the farmers seem to be satisfied with their decision about whether to produce organic or conventional cotton.

Organic households are significantly (at 10% significance level) less food secure than conventional households according to the FAO's food insecurity experience scale, but we do not observe any significant difference in terms of our extended HFIES. Moreover, organic households have a significantly (even at 0.1% significance level) lower dietary diversity score over 24 hours and consume significantly (at the 10% significance level) fewer vitamin A-rich foods over 24 hours than

[10] The empirical analyses were performed in the statistical software "R" (R Core Team, 2023) with the add-on packages "AER" (Kleiber and Zeileis, 2008), "sandwich" (Zeileis, 2004, 2006; Zeileis et al., 2020), "xtable" (Dahl et al., 2019), and "stargazer" (Hlavac, 2022).

Table 1: Descriptive statistics

	Missing	All	Convent.	Organic	Diff.	P-value
Household head						
Age (years)	0	42.41	42.04	44.13	-2.09	0.030
Sex (1=male)	0	0.93	0.95	0.86	0.09	<0.001
Education (years)	0	1.38	1.35	1.51	-0.16	0.482
Literacy (1=literate)	0	0.19	0.18	0.23	-0.05	0.109
Experience in cotton farming (years)	0	15.11	15.20	14.72	0.48	0.478
WTP variable	0	5.15	5.80	2.18	3.62	<0.001
Household						
Household size	0	7.31	7.39	6.97	0.41	0.126
Dependency ratio	0	0.41	0.41	0.42	-0.00	0.756
Total land owned (ha)	0	13.36	13.98	10.54	3.44	<0.001
Household assets (million FCFA)	0	2.31	2.43	1.74	0.69	0.005
Distance to closest market (km)	0	3.23	3.22	3.27	-0.05	0.905
Main road is tarred road (1=yes)	0	0.35	0.30	0.57	-0.27	<0.001
Distance to health facility (km)	0	4.06	3.88	4.88	-1.00	0.020
Food and nutrition security outcomes						
HFIES (original)	0	2.89	2.83	3.14	-0.31	0.064
HFIES (extended)	0	4.02	3.99	4.13	-0.14	0.562
Dietary diversity (24 h)	0	6.76	6.84	6.39	0.45	<0.001
Dietary diversity (7 days)	0	9.09	9.07	9.16	-0.09	0.457
Vitamin A-rich foods (24 h)	0	2.57	2.60	2.46	0.14	0.074
Vitamin A-rich foods (7 days)	0	3.94	3.92	4.03	-0.11	0.172
Mediating outcomes						
Number of livestock species kept	0	1.69	1.68	1.76	-0.08	0.215
Number of food crops produced	0	5.06	5.15	4.67	0.48	0.001
Food crop area (ha)	0	8.64	8.74	8.20	0.54	0.405
Cotton area (ha)	0	3.47	3.87	1.64	2.23	<0.001
Cotton income (million FCFA)	3	0.54	0.59	0.31	0.28	<0.001
Household revenue (million FCFA)	2	2.25	2.49	1.15	1.34	<0.001
District						<0.001
Kandi	0	0.56	0.53	0.74	-0.21	
Pehunco	0	0.24	0.28	0.03	0.26	
Glazoué	0	0.20	0.19	0.23	-0.04	
Observations		1247	1024	223		

Notes: HFIES = Household Food Insecurity Experienced Scale; P-values of continuous variables are obtained by two-sample t-tests for equality of mean values and P-values of binary variables are obtained by Pearson's χ^2-tests for equal proportions.

conventional households. However, there is no significant difference between organic households and conventional households with regards to dietary diversity or the number of vitamin A-rich food groups consumed over seven days. Moreover, on average, organic households produce significantly fewer food crops than conventional households. Finally, the average land area cultivated with cotton by organic households is less than half the average land area cultivated with cotton by conventional households; the average income from cotton farming of organic households is roughly half the average income from cotton farming of conventional households; and the average household revenue (as proxy for household income) of organic households is less than half of the average household revenue of conventional households. All three of these differences are highly statistically significant.

4.2 Impact estimates

Table 2 presents OLS and IV estimates of the effect of adopting organic farming on our six indicators of food and nutrition security based on two alternative specifications (with and without the inclusion of WTP) as well as results of diagnostic tests of these regression analyses.[11] As the F-statistics of the tests for irrelevant or weak instruments are much larger than ten, we conclude that our instrument is highly relevant. Furthermore, the falsification test proposed by Di Falco et al. (2011) does not find a statistically significant influence of the instrument on the outcome variable in any of our regression models, which indicates that there is no evidence of a correlation between the instrument and the error term in these regression models.[12] Hence, we conclude that our instrument is valid.

In four of the twelve regression analyses (original HFIES with WTP variable, extended HFIES with and without WTP variable, and consumption of vitamin A-rich foods over seven days without WTP variable), the Hausman test indicates that OLS estimates are biased, while this test does not provide evidence against the unbiasedness of the remaining eight OLS estimations.

None of the OLS or IV estimations without the WTP variable indicates a statistically significant effect at the 5% level on any of our six indicators of food and nutrition security. However, if we include the WTP variable for controlling for heterogeneity between organic and conventional households, which is not accounted for in traditional control variables, both the OLS and IV estimates indicate that adopting organic farming statistically significantly increases food insecurity (both original and extended HFIES) and reduces the dietary diversity score over 24 hours and the

[11] Complete results of these regression analyses are presented in Tables S13 to S18 in the Appendix.
[12] The complete regression results of the falsification tests are presented in Tables S6 and S7 in the Appendix.

Table 2: OLS and IV regression results of the effects of Organic certification on outcomes

	HFIES (orig.)	HFIES (ext.)	Diet. div. (24 h)	Diet. div. (7 days)	Vit. A (24 h)	Vit. A (7 days)
Estimations without WTP						
OLS estimate	0.31 (0.32)	0.17 (0.45)	-0.43* (0.24)	0.12 (0.21)	-0.15 (0.15)	0.14 (0.12)
IV estimate	-0.13 (0.49)	-0.74 (0.57)	-0.31 (0.33)	0.31 (0.24)	-0.08 (0.27)	-0.16 (0.24)
Weak instrument test	535.50***	535.50***	535.50***	537.56***	535.50***	535.50***
Wu-Hausman test	2.64	5.26**	0.24	0.96	0.18	4.72**
Di-Falco test	-1.08 (1.37)	-1.76 (1.79)	0.88 (1.56)	0.92 (1.30)	0.69 (1.04)	-1.11 (0.98)
Estimations with WTP						
OLS estimate	1.58*** (0.49)	1.79** (0.71)	-1.09*** (0.27)	0.18 (0.24)	-0.48*** (0.18)	0.20 (0.15)
IV estimate	2.15*** (0.46)	2.57*** (0.73)	-1.20*** (0.33)	0.30 (0.33)	-0.57** (0.22)	0.11 (0.20)
Weak instrument test	1868.31***	1897.03***	1897.03***	1863.15***	1897.03***	1897.03***
Wu-Hausman test	8.65***	7.63***	0.43	0.70	0.77	0.81
Di-Falco test	-0.78 (1.50)	-1.38 (1.85)	0.73 (1.53)	0.95 (1.30)	0.61 (1.06)	-1.10 (0.98)
Household controls	Yes	Yes	Yes	Yes	Yes	Yes
Arrondissement fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: 'HFIES (orig.)' abbreviates 'HFIES (original)'; 'HFIES (ext.)' abbreviates 'HFIES (extended)'; 'Diet. div.' abbreviates 'Dietary diversity'; 'Vit. A' abbreviates 'Vitamin A-rich foods'. Significance codes: *p<0.1; **p<0.05; ***p<0.01. Rows 'OLS estimate' and 'IV estimate' indicate the coefficients of Organic certification (D_i) on the respective outcome variable estimated by the OLS method and the IV method, respectively, where the numbers in parenthesis are cluster-robust standard errors. Rows 'Weak instrument test' present F-statistics indicating the statistical significance of the predicted probabilities of being an organic farmer in regression analyses of D_i on the predicted probabilities of being an organic farmer and the control variables E_i. Rows 'Wu-Hausman test' present test statistics of Wu-Hausman tests of the null hypothesis of exogneity of D_i, i.e., $\mathrm{COV}(D_i, \varepsilon_{ik}) = 0$; under the null hypothesis, both OLS and IV estimates are consistent, while OLS estimates are more efficient than IV estimates; under the alternative hypothesis, IV estimates are consistent, while OLS estimates are inconsistent. Rows 'Di-Falco test" present the estimated coefficients (and their cluster-robust standard errors in parenthesis) of the instrumental variable, i.e., the share of organic farmers in the village, in regression analyses with equation (6), where the explanatory variable D_i is replaced by the instrumental variable and where only observations from conventional farmers are included (both the coefficients and the standard errors are multiplied by 100 for better readability).

number of vitamin A-rich foods consumed over 24 hours. No statistically significant effect is found regarding the dietary diversity score over seven days or the number of vitamin A-rich foods consumed over seven days.

In order to assess the economic significance of the estimated effects, we visualize the estimated effects presented in Table 2 along with their confidence intervals and the variation of the observed values of the respective outcome variables in Figure 2. In addition, this figure assesses the robustness of the regression results by presenting the sensitivity to omitted variables for two different values of R_h as described in Section 3.5,[13] estimates excluding observations from the district Péhunco, which has a very low prevalence of organic farms,[14] and estimates excluding observations from villages that are dissimilar to villages with organic farming (i.e., only including observations from villages with organic farming and villages that are similar to these villages as explained in Section 3.1)[15].

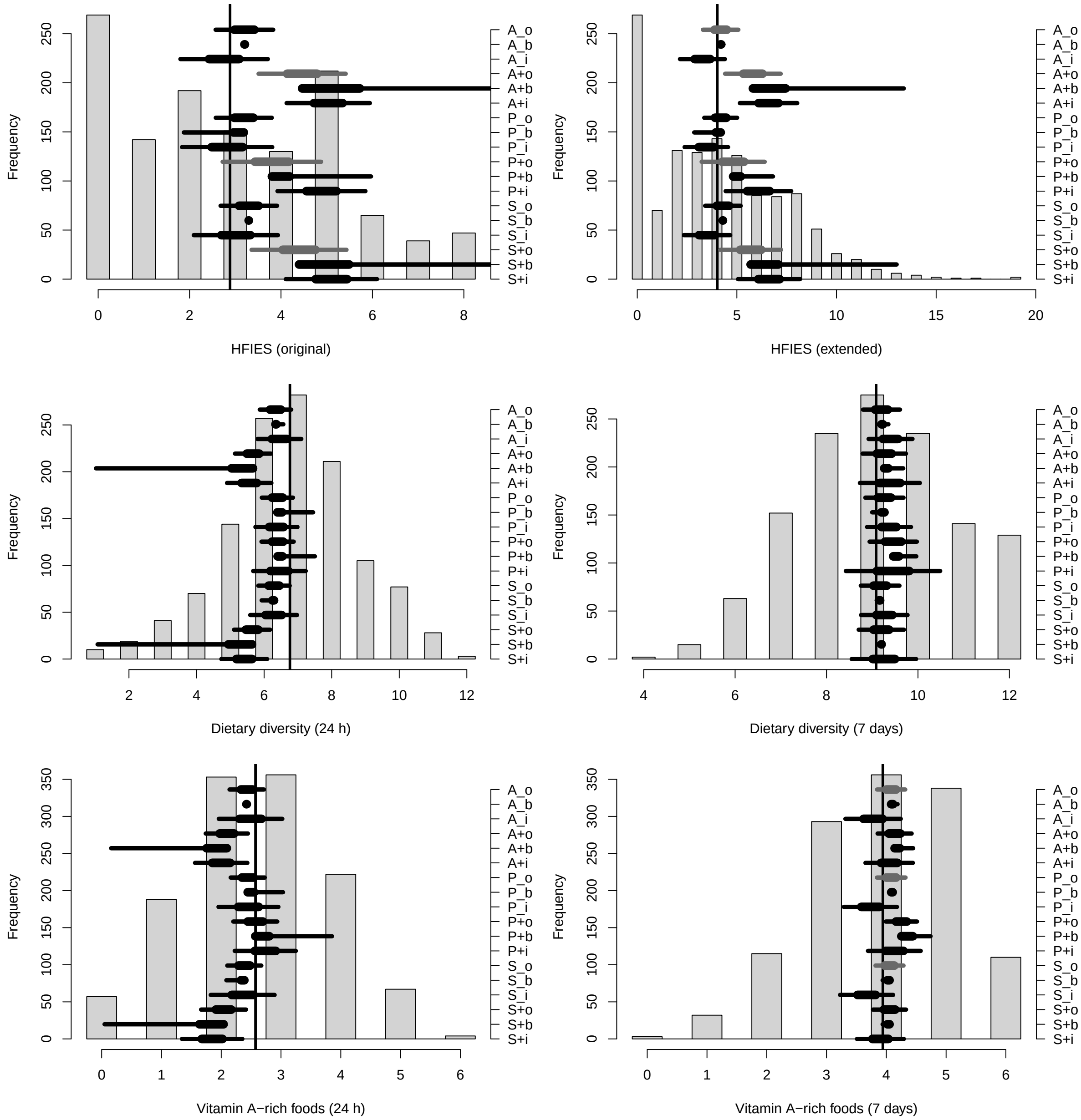
As already suggested by Table 2, Figure 2 confirms that regression models that use the WTP variable to account for heterogeneity indicate that adopting organic farming statistically and economically significantly increases food insecurity (both original HFIES and extended HFIES). While some model specifications indicate that adopting organic farming neither statistically nor economically significantly affects the dietary diversity score over 24 hours or the number of vitamin A-rich foods consumed over 24 hours, some other model specifications indicate that adopting organic farming has a small negative effect on these two indicators of nutrition security. Finally, all of our regression models indicate that the adoption of organic farming has neither a statistically nor a economically significant effect on the dietary diversity score over seven days or the number of vitamin A-rich foods consumed over seven days.

[13] These bounds and bounds for two additional values of R_h are also presented in Table S4 in the Appendix.

[14] Complete results of regression analyses without observations from the district Péhunco are presented in Tables S25 to S30 in the Appendix.

[15] Complete results of regression analyses excluding observations from villages that are dissimilar to villages with organic farming are presented in Tables S37 to S42 in the Appendix.

Figure 2: Estimated effects of organic farming on outcomes



Notes: The gray vertical bars indicate the distribution of the values of the respective outcome variable in our data set. The vertical black line indicates the mean value in the sample. The axis on the right-hand side indicates the estimation method, where a “A” indicates an estimation with all observations, a “P” indicates an estimation without observations from Pehunco district, an “S” indicates an estimation with only observations from similar organic and conventional cotton growing villages, a “_” indicates an estimation without WTP as a control variable, a “+” indicates an estimation with WTP as a control variable, an “o” indicates an OLS regression, a “b” indicates Oster bounds based on the OLS regression, and an “i” indicates an IV regression. For each OLS or IV regression, the thick part of the horizontal line indicates the 50% confidence interval and the thin part of the horizontal line indicates the 95% confidence interval for the outcome of an average farm that adopts organic farming. For each set of Oster bounds, the thick part of the horizontal line indicates the bounds for $R_h = R + (R - R_s)$ and the thin part of the horizontal line indicates the bounds for $R_h = 1$. Hence, horizontal lines on the left-hand side of the vertical black line indicate that adopting organic farming reduces the outcome variable, while horizontal lines on the right-hand side of the vertical black line indicate that adopting organic farming increases the outcome variable. When an OLS estimator is rejected by a Hausman test at the 5% significance level, the corresponding horizontal line is gray instead of black.

4.3 Pathways

We examine how organic farming might affect food and nutrition security by analyzing the effects on six mediating outcomes. Table 3 summarizes OLS and IV estimates of the effects of organic farming on our six mediating outcomes with two alternative specifications (with and without the inclusion of WTP) along with diagnostic tests of these regression analyses.[16] The F-statistics of the tests for weak instruments are much larger than ten, which indicates that our instrument is highly relevant. Moreover, the falsification test suggested by Di Falco et al. (2011) does not find a statistically significant influence of the instrument on the mediating outcomes in any of our regression models, suggesting the absence of correlation between the instrument and the error term.[17] Hence, we conclude that our instrument is valid.

Hausman tests indicate that OLS estimates are biased in four of the twelve regression analyses (food crop area without WTP, and number of livestock species, cotton income, and household revenue with WTP), while OLS estimates do not significantly differ (at the 5% level) from IV estimates in the remaining eight estimations.

While the IV estimation with the WTP variable indicates a positive and statistically significant (at the 5% level) effect of organic farming on the number of livestock species, no statistically significant effect can be found on the number of food crops produced in any of the OLS or IV estimations. In contrast, all OLS and IV estimations with and without WTP find a positive and statistically significant (at the 1% level) effect of organic farming on the land area cultivated with food crops and negative and statistically significant (at the 10% level for the IV estimation with WTP for household revenue and at the 1% level for the remaining eleven estimations) for the land area cultivated with cotton, income from cotton farming, and household revenue.

Analogously to Figure 2, Figure 3 visualizes the confidence intervals of the estimated effects along with the variation of the observed values for assessing the economic significance of the

[16]Complete regression results are presented in tables S19 to S24 in the Appendix.
[17]Complete regression results of the falsification tests are presented in Tables S8 to S11 in the Appendix.

Table 3: OLS and IV regression results of the effects of Organic certification on mediating outcomes

	Livestock species	Food crops	Food crop area	Cotton area	Cotton income	Household revenue
Estimations without WTP						
OLS estimate	0.04 (0.10)	0.22 (0.20)	0.27^{***} (0.04)	-0.48^{***} (0.07)	-0.48^{***} (0.06)	-0.51^{***} (0.07)
IV estimate	-0.01 (0.21)	0.19 (0.44)	0.42^{***} (0.04)	-0.53^{***} (0.07)	-0.60^{***} (0.07)	-0.51^{***} (0.09)
Weak instrument test	535.50^{***}	502.28^{***}	525.46^{***}	535.50^{***}	538.54^{***}	518.71^{***}
Wu-Hausman test	0.17	0.02	10.81^{***}	1.80	3.20^{*}	0.00
Di-Falco test	0.07 (0.82)	-1.04 (1.22)	0.16 (0.13)	-0.37 (0.29)	-0.44 (0.67)	-0.29 (0.64)
Estimations with WTP						
OLS estimate	0.18 (0.11)	0.23 (0.26)	0.31^{***} (0.04)	-0.44^{***} (0.08)	-0.62^{***} (0.05)	-0.40^{***} (0.10)
IV estimate	0.43^{**} (0.18)	0.22 (0.34)	0.33^{***} (0.05)	-0.39^{***} (0.11)	-0.71^{***} (0.05)	-0.24^{*} (0.14)
Weak instrument test	1897.03^{***}	1842.30^{***}	1854.75^{***}	1897.03^{***}	1858.35^{***}	1818.19^{***}
Wu-Hausman test	9.76^{***}	0.01	0.60	3.76^{*}	6.04^{**}	13.54^{***}
Di-Falco test	0.11 (0.82)	-1.03 (1.22)	0.16 (0.13)	-0.33 (0.27)	-0.48 (0.66)	-0.22 (0.60)
Household controls	Yes	Yes	Yes	Yes	Yes	Yes
Arrondissement fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: 'Livestock species' abbreviates 'Number of livestock species kept'; 'Food crops' abbreviates 'Number of food crops produced'; 'Food crop area' is the IHS of the food crop area measured in 10 ha; 'Cotton area' is the logarithm of the cotton area measured in ha; 'Cotton income' is the IHS of the cotton income measured in million FCFA; 'Household revenue' is the logarithm of the household revenue measured in FCFA. For log-transformed and IHS-transformed outcome variables, rows 'OLS estimate' and 'IV estimate' indicate the semi-elasticities instead of the coefficients of organic farming. For log-transformed dependent variables, we calculate the semi-elasticity by equation (S14) in Section D of the Supplementary Material, while for IHS-transformed dependent variables, we calculate the semi-elasticity with equation (S8) in Section C of the Supplementary Material. We calculate the standard errors of the semi-elasticities with the delta method as described in Section D of the Supplementary Material. See further notes below Table 2.

estimated effects as well as their sensitivity to omitted variables[18] and their robustness to using two different sub-samples[19].

Figure 2 confirms results in Table 3 that adopting organic farming has no or a slightly positive effect on the number of livestock species, no economically significant effect on the number of crops produced but a clearly positive effect on the land area cultivated with food crops, and substantially negative effects on the land area cultivated with cotton, income from cotton farming, and household income.

5 Conclusion and policy implication

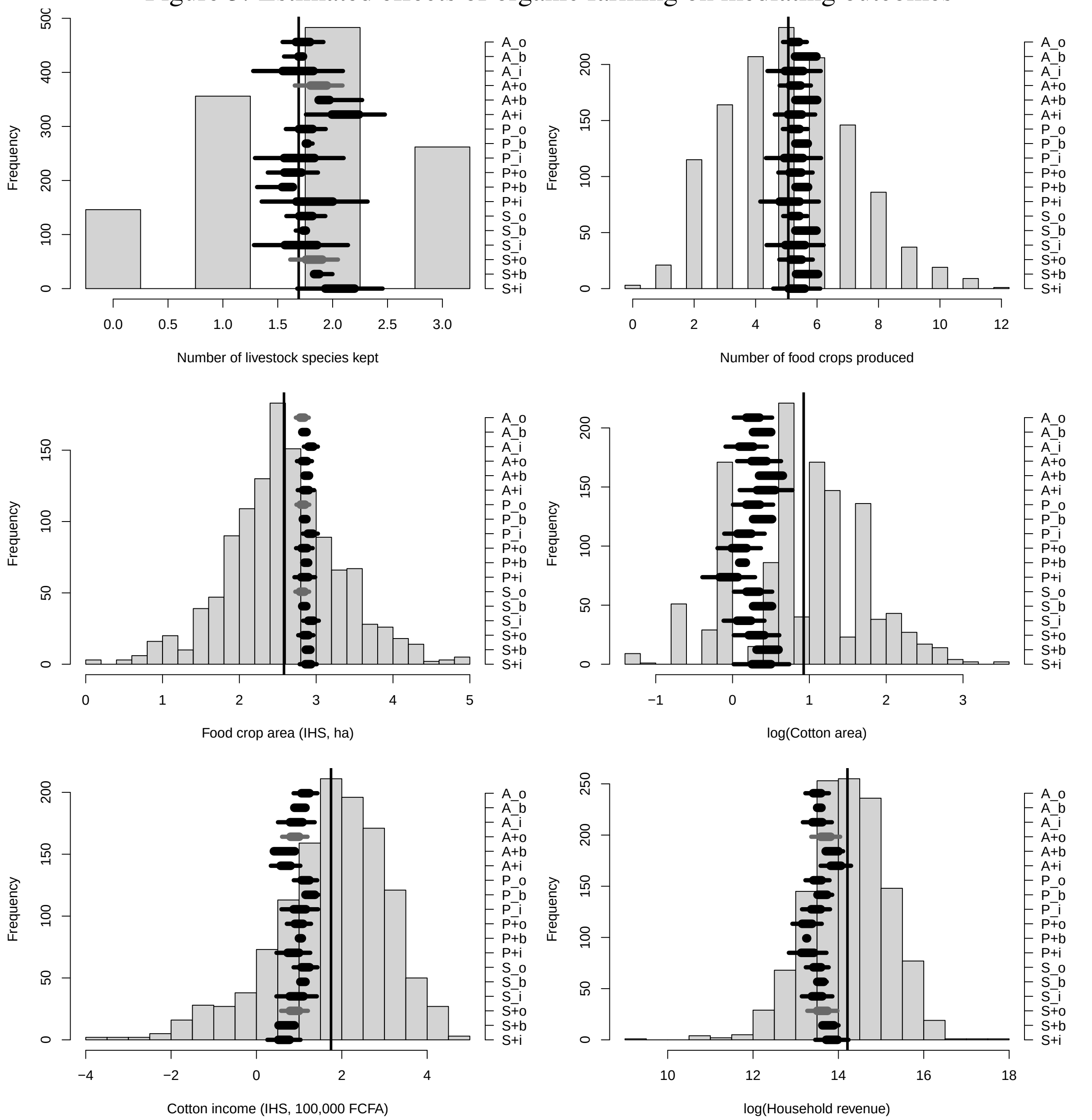
The prevalence of organic farming and other sustainability standards is becoming increasingly important around the globe. While a plethora of studies investigates the effects of organic farming on agronomic and economic aspects of smallholder farming in developing countries, only very limited and descriptive evidence exists on its implications for food and nutrition security. In this study, we have analyzed the effects of organic farming on farm households' food and nutrition security. As failure to properly deal with unobserved characteristics may lead to biased estimates, we use the following three distinct approaches to addressing potential omitted variable biases: (i) using a control variable that captures a household's marginal utility of (or willingness to pay for) the adoption of either organic or conventional farming practices (see Verhofstadt and Maertens, 2014; Bellemare and Novak, 2017; Ruml and Qaim, 2021), (ii) the approach suggested by Oster (2019) for checking the sensitivity of our estimates to unobserved heterogeneity, and (iii) instrumental variable regression.

Our findings suggest that the adoption of organic farming increases food insecurity by a statistically and economically significant magnitude. Hence, the adoption of organic farming is expected to jeopardize the food security of the respective farm households, at least when circumstances are

[18] The bounds for two additional values of R_h are presented in Table S5 in the Appendix.

[19] Complete results of regression analyses without observations from the district Péhunco are presented in Tables S31 to S36, while complete results of regression analyses excluding observations from villages that are dissimilar to villages with organic farming are presented in Tables S43 to S48 in the Appendix.

Figure 3: Estimated effects of organic farming on mediating outcomes



Notes: See notes below Table 2.

similar to those of the farmers in our empirical analysis. While we do not find a statistically or economically significant effect on dietary diversity or the number of vitamin A-rich foods consumed within seven days, the adoption of organic farming tends to decrease dietary diversity and the number of vitamin A-rich foods consumed over 24 hours. This indicates that the adoption of organic farming tends to decrease the frequency of the consumption of some food categories, including vitamin A-rich foods, from daily consumption to less frequent (e.g., weekly) consumption. In spite of the intention of sustainability standards to generate positive welfare impacts, we find that adopting organic farming practices jeopardizes food security and tends to reduce the nutritional quality of the diets of the involved farm households. These results corroborate those of Meemken and Qaim (2018), who point out that organic farming is not a panacea for sustainable agriculture and food security and emphasize the need for smart combinations of organic and conventional farming practices to achieve sustainable agriculture.

Our analysis of how organic farming effects food and nutrition security indicates that the adoption of organic farming reduces household income due to reduced income derived from cotton farming caused by less land cultivated with cotton. On the other hand, adopting organic cotton farming increases the land area cultivated with food crops, but this is not sufficient to counteract the lower income derived from cotton farming, perhaps due to lower crop yields from organic farming compared to conventional farming. Finally, we do not find a noteworthy effect of adopting organic farming on the diversity of crop or livestock production, which rejects the hypothesis that organic farming improves dietary diversity due to more diverse production.

While the adoption of organic farming probably has several positive effects on welfare as a result of, e.g., improved environmental and water quality, increased biodiversity, reduced contamination of food by pesticides, and improved occupational safety, our results suggest that the many policies and programs that promote organic farming in developing countries may well have unintended undesirable side effects on the participating smallholder farmers. We recommend that governments, NGOs, donors, international corporations, etc. that promote organic farming or implement schemes for organic farming in developing countries analyze how their policies and programs affect the participating households' food and nutrition security (e.g., with RCTs) so that these stakeholders as well as farmers and consumers (e.g., in rich countries) can make informed decisions. Furthermore, the results of these analyses may indicate how policies and programs can be designed to avoid unintended and undesirable effects on the participating farmers' food and nutrition security.

Although each of the three strategies that we used to address omitted-variable biases has some potential weaknesses, together they indicate that our results are robust to various potential misspecifications. To obtain even more reliable estimates of the effects of adopting organic farming on food and nutrition security as well as on other livelihood indicators, future studies could use panel data sets that allow for estimation methods that take unobserved heterogeneity into account. Alternatively, future studies could use randomized controlled trials (RCTs).

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Appendix

A Pathways

As visualized in Figure 1 in the main part of the paper, the most important intermediate variables and the most important direct effects along these pathways are:

- Cotton price: Certified organic farmers receive a price premium for their cotton, while there is usually no price premium for other organically produced crops in our study area. Hence, assuming that transaction costs do not differ between organic and conventional farmers, we expect that adopting organic farming increases the price received for cotton, i.e., $V_{(\text{cotton})}\left(M_{(\text{cotton})}, 1, z_m\right) > V_{(\text{cotton})}\left(M_{(\text{cotton})}, 0, z_m\right) \,\forall\, M_{(\text{cotton})} > 0$, while it has no effect on the price of other crops, i.e., $V_i\left(M_i, 1, z_m\right) = V_i\left(M_i, 0, z_m\right) \,\forall\, M_i$ with $i \neq$ (cotton).

- Use of fertilizers and pesticides: The application of inorganic fertilizers and synthetic pesticides is usually highly profitable for conventional farmers, particularly in cotton production, but to a lesser extent in the production of food crops, while organic farmers are not allowed to apply these inputs, i.e., $X_{(\text{inorganic fertilizers})} = X_{(\text{synthetic pesticides})} = 0$ for all organic farmers, while $X_{(\text{inorganic fertilizers})} > 0$ and $X_{(\text{synthetic pesticides})} > 0$ for most conventional farms.

- Labor intensity: As organic farmers are not allowed to apply synthetic pesticides, they need to manually weed their fields and use alternative crop protection measures, which are much more labor-intensive than spraying herbicides and other pesticides, we expect that adopting organic farming substantially increases the optimal labor intensity $X_{(\text{labor})}/X_{(\text{land})}$. Given that conventional farmers use much more pesticide on cotton fields than on fields cultivated with other cash crops and food crops, the increase in the optimal labor intensity is expected to be much greater for cotton, i.e., $X_{(\text{labor}\,|\,\text{cotton})}/X_{(\text{land}\,|\,\text{cotton})}$, than for food crops, $X_{(\text{labour}\,|\,\text{food crops})}/X_{(\text{land}\,|\,\text{food crops})}$, where $X_{(j\,|\,i)}$ indicates the quantity of good j that is used as input to produce good i.

- Crop rotation: As organic farmers are not allowed to apply inorganic fertilizers and synthetic pesticides, i.e., $X_{(\text{inorganic fertilizers})} = X_{(\text{synthetic pesticides})} = 0$ for all organic farmers, they often have a wider crop rotation to reduce pest pressure and they cultivate leguminous crops for nitrogen fixation.

- Number of food crops cultivated: As organic farms often have a wider crop rotation than conventional farms, we expect that adopting organic farming increases the number of different crops produced, i.e., $\sum_{i \in \{(\text{crops})\}} I(Q_i > 0)$, where $I(\cdot)$ is an indicator function that returns 1 if its argument is true and zero otherwise.

- Number of livestock species kept: As organic farmers are not allowed to apply inorganic fertilizers, i.e., $X_{(\text{inorganic fertilizers})} = 0$, they often keep a variety of livestock species in order to obtain manure to fertilize their fields. Hence, we expect that adopting organic farming increases the number of different livestock species kept, i.e., $\sum_{i \in \{(\text{livestock})\}} I(Q_i > 0)$, where $I(\cdot)$ is an indicator function as defined above.

- Yield of cotton and food crops: As organic farmers are not allowed to apply inorganic fertilizers and synthetic pesticides, i.e., $X_{(\text{inorganic fertilizers})} = X_{(\text{synthetic pesticides})} = 0$ for all organic farmers, they usually obtain lower yields than conventional farmers (e.g., De Ponti et al., 2012; Jouzi et al., 2017) even with a higher labor intensity, i.e., we expect that adopting organic farming decreases the yields $Q_i / X_{(\text{land} \mid i)}$ of cotton and food crops, i.e., all goods i with $Q_i > 0$. As conventional farmers use much more inorganic fertilizer and pesticide on cotton than on food crops, the decrease in the cotton yield is expected to be greater than the decrease in the yield of food crops.

- Cotton land area: The higher price of organic cotton compared to conventional cotton may encourage farmers who adopt organic production to increase the area that they cultivate with cotton. However, given that the adoption of organic farming substantially increases the labor intensity of cotton farming and that organic farming requires a wider crop rotation, we expect that the adoption of organic farming decreases the optimal land area cultivated with cotton $x_{(\text{land} \mid \text{cotton})}$, particularly as the labor and land markets (not only in our study area) are plagued by various types of market imperfections.

- Area cultivated with food crops: Given that the adoption of organic farming increases, to some extent, the labor intensity of the production of food crops, one may expect that adopting organic farming also reduces the area cultivated with food crops by some extent. However, given that adopting organic farming is expected to decrease the land area cultivated with cotton and to widen the crop rotation, and that the effect of adopting organic farming on the labor intensity is much less for food crops than for cotton, the adoption of organic farming may also increase the area cultivated with food crops, particularly as the land market in our study area is plagued by market imperfections. Hence, the adoption of organic farming may decrease or increase the area cultivated with food crops.

- Production of cotton: Given that adopting organic farming decreases cotton yields and reduces the optimal land area cultivated with cotton, we expect that adopting organic farming decreases the production of cotton $Q_{(\text{cotton})}$.

- Cotton production costs: the adoption of organic farming reduces the costs of inorganic fertilizers and synthetic pesticides to zero, but organic farmers sometimes purchase organic fertilizers and/or bio-pesticides. Given the smaller cotton area but higher labor intensity, the costs of hiring laborers may decrease, increase or remain unchanged, e.g., at zero if only family labor is used. Hence, the total costs of cotton production (not including opportunity costs of land and family labor) may decrease or increase.

- Cotton income: Given that adopting organic farming is expected to decrease the production of cotton but to increase the price received for the produced cotton, the revenue from selling cotton $V_{(\text{cotton})}(M_{(\text{cotton})}, D, z_m)$ may decrease or increase. As the costs of producing cotton may also decrease or increase, the income from cotton farming may also decrease or increase.

- Production of food: Given that the adoption of organic farming decreases yields of food crops and may either decrease or increase the optimal land area cultivated with food crops, adopting organic farming will often decrease food production but may, in some cases, increase (the value of) total food production, e.g., measured as the market value of the produced foods if they are all sold, i.e. $\sum_{i\in\{(\text{food crops})\}} V_i\left(Q_i, D, z_m\right)$. (We expect that the adoption of organic farming will affect the production of different food crops in various ways because we expect that organic households cultivate crops that corresponding conventional households do not cultivate, i.e., for these crops the production will increase from $Q_i = 0$ to $Q_i > 0$.)

- Household income: Given that the income from cotton farming cotton may increase or decrease, and the income from selling surplus food crops may also increase or decrease, adopting organic production may also increase or decrease household income.

Finally, food and nutrition security probably depends on the amount of food produced, the number of different food crops cultivated, the number of different livestock species kept, and household income.

B Data collection

We collected village-level characteristics (e.g., type of road, total number of households, number of conventional cotton farmers, number of organic cotton farmers, importance of cotton production, access to water sources, etc.) in all villages in the three selected districts. We used these village-level characteristics to select three groups of villages. First, we selected all 25 villages in the three districts that have organic cotton farming in order to select a sufficiently large number of organic cotton farmers for our survey. Second, we used genetic matching to select a group of 25 villages with only conventional cotton farming that have similar village-level characteristics to the 25 villages that produce organic cotton. Finally, we used a search algorithm to select a third group of 25 villages that produce only conventional cotton and that, together with the two other groups of villages, provide a representative sample of all cotton growing villages in each of the three districts based on the collected village-level characteristics. The advantage of this sampling strategy is that it allows us to: (i) select a sufficiently large number of organic cotton growing households, (ii) select conventional cotton growing households in our survey who live in villages without organic cotton production that are comparable to villages with organic cotton production, and (iii) ensure that our survey is conducted in a representative sample of villages in each of the three districts. In each of the 75 selected villages, we conducted a census in order to obtain lists of all households that are engaged in organic cotton production and conventional cotton production, respectively, including the location and mobile phone number of each household.

Our aim was to select approximately 1,400 households for the survey and to distribute this number among the three selected districts in proportion to the total number of cotton growing households in each of the respective districts. In order to obtain a sufficiently large number of organic cotton growing households in our sample, we aimed to have 30% organic cotton growing households and 70% conventional cotton growing households in our sample from each district. However, this was not possible in Pehunco due to the very small number of organic cotton growing households in this district. Based on the total number of organic and conventional cotton growing households in each district, this procedure resulted in sampling intensities of 75%, 100%, and 55% for organic cotton growing households and around 8%, 11%, and 8% for conventional cotton growing households in Kandi, Pehunco, and Glazoué, respectively. We used these sampling intensities and the lists of conventional and organic cotton cultivating households obtained in our census to randomly select households for the survey in each of the selected villages.

We collected data in 73 villages instead of 75 villages. Two selected villages in Glazoué district, one in the second group and one in the third group, had so few cotton farmers that the number of cotton growing households that should be surveyed, based on our sampling design, rounded to zero. One selected village in Kandi district was inaccessible at the time of the survey, so that the six cotton growing households in this village that should have been interviewed, could not be reached. Given that in Pehunco district, a hamlet in the first group of villages became an independent village when the household survey was being conducted, we sampled the households as planned in the entire original village but in our data set, we consider the households in the hamlet that became an independent village to be in a newly established village.

Given that we had the location and mobile phone number of each household and that we had explained the importance of our project to the households, we were able to interview almost all households that were selected for the survey. The few households that could not be reached or that did not want to participate in the survey, were replaced by other randomly selected households from the same strata. We interviewed 1,361 cotton growing households, of which we use 1,247 for the empirical analysis presented in this paper, including 223 organic and 1,024 conventional households.

We excluded 17 households that produced both organic and conventional cotton, 11 households with missing values in key variables such as household composition, type of cotton production and productive assets, 78 organic cotton growing households that were not certified organic producers (i.e., organic cotton growing households that had adopted organic production less than three years previously or had been excluded because they had violated the requirements for organic certification), seven landless households (in order to obtain a homogeneous sample of land-owning households and to allow us to log-transform the land-ownership variable), and one household with an extreme value (almost four times greater than the second largest value in the data set) of the total land area owned (in order to obtain a more homogeneous sample of small-scale and medium-scale cotton farmers and to avoid a potentially influential observation from a different type of farmer).

C IHS transformation of variables

We transformed variables with very right-skewed distributions that also included zero and/or negative values (so that the log-transformation cannot be applied) by the inverse hyperbolic sine (IHS) function, i.e., $\tilde{y}_i = \operatorname{arcsinh}(y_i) = \log\left(y_i + \sqrt{y_i^2 + 1}\right)$ (see, e.g., Johnson, 1949; Burbidge et al., 1988) to obtain variables with more symmetrical distributions and fewer extreme values because this often fulfills the assumptions required for OLS regressions to a higher degree and makes the results less sensitive to individual observations (see, e.g., Wooldridge, 2016, p. 172). However, given that regression results are not invariant to the units of measurement for IHS-transformed variables, we chose the unit of measurement for IHS transformed variables (i.e., food crop area, cotton income, and distance to the nearest market) by the method suggested by Aïhounton and Henningsen (2021). Using several diagnostic criteria, we decided to measure the food crop area in 10 ha, cotton income in ten thousand FCFA, and the distance to the nearest market in km (see Appendix Section G.9). We used the method suggested by Bellemare and Wichman (2020) to calculate the semi-elasticities of IHS-transformed outcome variable with respect to organic cotton farming by:

$$\tilde{\varepsilon}_{(y_{ik}/D_i)} = \frac{\sinh\left(\hat{\alpha}_k + \hat{\beta}_k + \hat{\gamma}_k' E_i + \varepsilon_{ik}\right)}{\sinh\left(\hat{\alpha}_k + \hat{\gamma}_k' E_i + \varepsilon_{ik}\right)} - 1 \tag{S7}$$

$$= \frac{\sinh\left(\tilde{y}_{ik} + \hat{\beta}_k \left(1 - D_i\right)\right)}{\sinh\left(\tilde{y}_{ik} - \hat{\beta}_k D_i\right)} - 1, \tag{S8}$$

where $\tilde{y}_{ik}$ is the mean value of the IHS-transformed variable.

D Standard errors of semi-elasticities of adopting organic farming

We applied the Delta method to calculate approximate standard errors of the semi-elasticity of organic farming. The formulas used in this section are adjusted from Aïhounton et al. (2021).

D.1 IHS-transformed dependent variables

For IHS-transformed dependent variables, we calculated approximate standard errors of the semi-elasticities of organic farming (as defined in equation (S8)) by:

$$se\left(\tilde{\varepsilon}_{(y_i/D_i)}\right) = \sqrt{\frac{\partial \tilde{\varepsilon}_{(y_i/D_i)}}{\partial\left(\hat{\beta}_k\right)} \text{VAR}\left(\hat{\beta}_k\right) \frac{\partial \tilde{\varepsilon}_{(y_i/D_i)}}{\partial\left(\hat{\beta}_k\right)}} \tag{S9}$$

with:

$$\frac{\partial \tilde{\varepsilon}_{(y_i/D_i)}}{\partial\left(\hat{\beta}_k\right)} = \frac{(1-D_i)\cosh(\zeta_1)\sinh(\zeta_2) - D_i \sinh(\zeta_1)\cosh(\zeta_2)}{\sinh(\zeta_2)^2} \tag{S10}$$

and

$$\zeta_1 = \tilde{y}_i + \hat{\beta}_k(1-D_i) \tag{S11}$$

$$\zeta_2 = \tilde{y}_i - \hat{\beta}_k D_i \tag{S12}$$

so that $\tilde{\varepsilon}_{(y_i/D_i)} = \sinh(\zeta_1)/\sinh(\zeta_2) - 1$ and we get:

$$se\left(\tilde{\varepsilon}_{(y_i/D_i)}\right) = \left(\frac{(1-D_i)\cosh(\zeta_1)\sinh(\zeta_2) - D_i \sinh(\zeta_1)\cosh(\zeta_2)}{\sinh(\zeta_2)^2} \right) se\left(\hat{\beta}_k\right) \tag{S13}$$

D.2 Log-transformed dependent variables

For log-transformed dependent variable, $\tilde{y}_i = \ln(y_i)$, we calculate the semi-elasticities of adopting organic farming by:

$$\tilde{\varepsilon}_{(y_i/D_i)} = \exp(\beta_k) - 1 \tag{S14}$$

and we apply the Delta method to calculate the approximate standard errors of these semi-elasticities:

$$se\left(\tilde{\varepsilon}_{(y_i/D_i)}\right) = \sqrt{\frac{\partial \tilde{\varepsilon}_{(y_i/D_i)}}{\partial\left(\beta_k\right)} \mathrm{VAR}\left(\beta_k\right) \frac{\partial \tilde{\varepsilon}_{(y_i/D_i)}}{\partial\left(\beta_k\right)}} \tag{S15}$$

with:

$$\frac{\partial \tilde{\varepsilon}_{(y_i/D_i)}}{\partial\left(\beta_k\right)} = \exp\left(\beta_k\right) \tag{S16}$$

so that we get:

$$se\left(\tilde{\varepsilon}_{(y_i/D_i)}\right) = \exp\left(\beta_k\right) se\left(\beta_k\right), \tag{S17}$$

where $se\left(\beta_k\right) = \sqrt{\mathrm{VAR}\left(\beta_k\right)}$ is the estimated standard error of β.

E Bounds of coefficient stability

We use the approach suggested by Oster (2019) to assess whether our estimates are robust to omitted variables. The first step of this approach is a so-called "short regression" without any control variables:

$$y_{ik} = \alpha_k^s + \beta_k^s D_i + \varepsilon_{ik}^s, \tag{S18}$$

where the superscript s indicates that the parameters and the error term are part of this "short" regression model. As a second step, we formulate a hypothetical regression model based on our equation (6), which additionally includes a set of unobserved explanatory variables T_i which are correlated both with our outcome variables y_{ik} and the treatment variable D_i such that:

$$y_{ik} = \alpha_k^h + \gamma_k^{h\prime} E_i + \beta_k^h D_i + \psi_k^h T_i + \varepsilon_{ik}^h, \tag{S19}$$

where ψ_k^h is a vector of parameters and the superscript h indicates that the parameters and the error term are part of this hypothetical regression model. If the unobserved variables T_i could be observed and were used as additional explanatory variables, the hypothetical regression model (S19) would give unbiased estimates of the average treatment effect (β_k^h). Under some assumptions specified by Oster (2019), the bias-adjusted estimate of the effect of organic farming on food and nutrition security indicators can be obtained by:

$$\hat{\beta}_k^h = \hat{\beta}_k - \delta_k \left[\hat{\beta}_k^s - \hat{\beta}_k\right] \frac{R_k^h - R_k}{R_k - R_k^s}, \tag{S20}$$

where—as in Oster (2019)—R_k^s denotes the R-squared value of the short regression model (S18), R_k denotes the R-squared value of the main regression model (6), R_k^h denotes the (assumed) R-squared value of the hypothetical regression model (S19), and δ_k is the (assumed) value of the coefficient of proportionality of observable and unobservable characteristics. We derive bias-adjusted estimates of the treatment effect $\hat{\beta}_k^h$ based on the assumption of equal selection on observable and unobservable characteristics ($\delta_k = 1$) for four different values of R_k^h: $R_k^h = 1.25R_k$, $R_k^h = 1.50R_k$, and $R_k^h = R_k + \left(R_k - R_k^s\right)$ as suggested by Bellows and Miguel (2009) as well as $R_k^h = 1$, i.e., assuming no omitted variables in the hypothetical regression model (S19). We define the bounding sets as $\Delta_k = [\hat{\beta}_k^h, \hat{\beta}_k]$ and consider an estimate to be robust to potential omitted-variable biases if the bounding set excludes zero (i.e., $\hat{\beta}_k^h$ and $\hat{\beta}_k$ have the same sign).

Table S4 presents the bounding sets for four different values of the assumed R^2-value of the hypothetical regression model (S19), i.e., R_k^h, as well as 99.5% confidence intervals of the coefficients of organic farming for all six outcome variables and for specifications both with and without WTP. Irrespective of whether we include WTP, all bounding sets of the coefficients of organic farming for all outcomes exclude zero (Table S4). As suggested by Oster (2019), we additionally check whether the bounding sets calculated with $R_k^h = 1.25R_k$ lie within the 99.5% confidence intervals of the estimated coefficients. As this is the case for all coefficients, we conclude that our model specifications are robust to potential omitted variable biases. These results substantiate our other results that indicate that organic farming increases both the original and the extended household food insecurity experience scale (HFIES) and reduces the household dietary diversity score and the number of vitamin A-rich food groups consumed over 24 hours.

Table S4: Sensitivity to omitted variables: bounds of coefficients of effects of Organic certification on outcomes

	HFIES (orig.)	HFIES (ext.)	Diet. div. (24 h)	Diet. div. (7 days)	Vit. A (24 h)	Vit. A (7 days)
Bounds without WTP						
$R_h = 1.25R$	[0.31; 0.31]	[0.17; 0.17]	[-0.43; -0.42]	[0.12; 0.12]	[-0.15; -0.15]	[0.14; 0.15]
$R_h = 1.50R$	[0.31; 0.31]	[0.17; 0.18]	[-0.43; -0.41]	[0.12; 0.13]	[-0.15; -0.15]	[0.14; 0.15]
$R_h = R + (R - R_s)$	[0.31; 0.31]	[0.17; 0.19]	[-0.43; -0.40]	[0.12; 0.15]	[-0.15; -0.15]	[0.14; 0.17]
$R_h = 1$	[0.31; 0.31]	[0.17; 0.31]	[-0.43; -0.19]	[0.12; 0.27]	[-0.18; -0.15]	[0.14; 0.25]
$conf.int.$	[-0.19; 0.82]	[-0.57; 0.91]	[-0.87; 0.02]	[-0.26; 0.49]	[-0.42; 0.13]	[-0.12; 0.40]
Bounds with WTP						
$R_h = 1.25R$	[1.58; 1.90]	[1.79; 2.20]	[-1.26; -1.09]	[0.18; 0.20]	[-0.57; -0.48]	[0.20; 0.22]
$R_h = 1.50R$	[1.58; 2.22]	[1.79; 2.61]	[-1.43; -1.09]	[0.18; 0.22]	[-0.65; -0.48]	[0.20; 0.24]
$R_h = R + (R - R_s)$	[1.58; 2.84]	[1.79; 3.43]	[-1.73; -1.09]	[0.18; 0.27]	[-0.82; -0.48]	[0.20; 0.29]
$R_h = 1$	[1.58; 6.63]	[1.79; 9.36]	[-5.74; -1.09]	[0.18; 0.59]	[-2.41; -0.48]	[0.20; 0.51]
$conf.int.$	[0.90; 2.26]	[0.79; 2.79]	[-1.69; -0.49]	[-0.34; 0.69]	[-0.86; -0.10]	[-0.16; 0.55]

Notes: ‘HFIES (orig.)’ abbreviates ‘HFIES (original)’; ‘HFIES (ext.)’ abbreviates ‘HFIES (extended)’; ‘Diet. div.’ abbreviates ‘Dietary diversity’; ‘Vit. A’ abbreviates ‘Vitamin A-rich foods’. Row ‘Conf. Int.’ indicates the 99.5% confidence intervals.

Table S5: Sensitivity to omitted variables: bounds of coefficients of effects of Organic certification on mediating outcomes

	Livestock species	Food crops	Food crop area	Cotton area	Cotton income	Household revenue
Bounds without WTP						
$R_h = 1.25R$	[0.03; 0.04]	[0.22; 0.39]	[0.24; 0.29]	[-0.66; -0.57]	[-0.67; -0.60]	[-0.71; -0.68]
$R_h = 1.50R$	[0.02; 0.04]	[0.22; 0.57]	[0.24; 0.29]	[-0.66; -0.48]	[-0.74; -0.60]	[-0.71; -0.64]
$R_h = R + (R - R_s)$	[-0.00; 0.04]	[0.22; 0.91]	[0.24; 0.29]	[-0.66; -0.42]	[-0.86; -0.60]	[-0.71; -0.61]
$R_h = 1$	[-0.13; 0.04]	[0.22; 0.97]	[0.24; 0.29]	[-0.66; -0.42]	[-0.86; -0.60]	[-0.71; -0.56]
$conf.int.$	[-0.16; 0.24]	[-0.15; 0.58]	[0.18; 0.30]	[-0.78; -0.54]	[-0.82; -0.37]	[-0.88; -0.54]
Bounds with WTP						
$R_h = 1.25R$	[0.18; 0.21]	[0.23; 0.41]	[0.27; 0.33]	[-0.58; -0.46]	[-0.98; -0.85]	[-0.51; -0.41]
$R_h = 1.50R$	[0.18; 0.23]	[0.23; 0.59]	[0.27; 0.33]	[-0.58; -0.34]	[-1.11; -0.85]	[-0.51; -0.31]
$R_h = R + (R - R_s)$	[0.18; 0.28]	[0.23; 0.94]	[0.27; 0.33]	[-0.58; -0.27]	[-1.34; -0.85]	[-0.51; -0.21]
$R_h = 1$	[0.18; 0.58]	[0.23; 0.99]	[0.27; 0.33]	[-0.58; -0.27]	[-1.34; -0.85]	[-0.51; -0.10]
$conf.int.$	[-0.09; 0.46]	[-0.27; 0.72]	[0.18; 0.35]	[-0.75; -0.41]	[-1.15; -0.54]	[-0.73; -0.29]

Notes: 'Livestock species' abbreviates 'Number of livestock species kept'; 'Food crops' abbreviates 'Number of food crops produced'; 'Food crop area' is the IHS of the food crop area measured in 10 ha; 'Cotton area' is the logarithm of the cotton area measured in ha; 'Cotton income' is the IHS of the cotton income measured in million FCFA; 'Household revenue' is the logarithm of the household revenue measured in FCFA. In some cases, applying the approach suggested by Oster (2019) yields R_k^h-values larger than one. We set these R_k^h-values that are larger than one to be equal to one. See further notes below Table S4.

Table S5 presents the bounding sets and 99.5% confidence intervals for the mediating outcome variables that correspond to those for the outcome variables presented in Table S4. Almost all bounding sets for mediating outcome variables exclude zero. The only two exceptions are the bounding sets for the coefficient of organic farming on the number of livestock species estimated without WTP and calculated with $R_k^h = R_k + \left(R_k - R_k^s\right)$ and $R_k^h = 1$, respectively. Moreover, the bounding sets calculated with $R_k^h = 1.25R_k$ lie within the 99.5% confidence interval of the estimated coefficients for all mediating outcomes. Overall, we conclude that our estimates are robust to omitted variable biases, i.e., organic farming increases the area cultivated with food crops, while it reduces the area cultivated with cotton, cotton income and household revenue.

F Exogeneity of the instrumental variable

In this section, we discuss whether our instrumental variable, i.e., the proportion of organic cotton farming households in a village could be correlated with omitted variables that affect the outcome variables through pathways that are not blocked by the control variables E_i. For instance, the proportion of organic cotton farming households in a village may depend on, e.g., the suitability of agro-ecological conditions in the village for organic farming, employment opportunities in the village[20], and infrastructure such as access to markets, health facilities, and main roads. NGOs promoting organic farming may prefer to introduce organic farming in villages with previous experience with the adoption of sustainable farming practices (e.g., organic fertilizers and biopesticides, etc.), which may have affected land productivity and, thus, food security, given that evidence exists about the productivity gains associated with, for instance, the adoption of organic fertilizers (e.g., Hörner and Wollni, 2022). These NGOs may also promote organic farming in locations with stronger leadership in order to accelerate the adoption and diffusion of this production method. However, villages with stronger leadership may have high food security because farmers may be

[20]In villages with fewer employment opportunities, organic cotton farming may be an attractive income-generating activity, particularly for resource-poor households and people (e.g., women) as organic farming is labor-intensive and, thus, requires relatively few resources (e.g., land) per labor unit.

better informed about innovative farming technologies and may adopt them in order to improve household food security. It is also worth noting that organic farming could be promoted especially in villages with abundant labor, fertile land, or fallow land because organic farming requires more labor and is more dependent on good soil fertility than conventional farming and because land that has not been exposed to chemical inputs over the past three years can be used to produce certified organic cotton without a two-year transition period. The availability of labor, fertile land, and fallow land may also be related to food production and, thus, food security in the village, which may violate the exogeneity assumption of our instrumental variable. However, we argue that all the above-mentioned potential channels from the instrumental variable to the outcome variables that might violate the exogeneity assumption are probably 'blocked' by the control variables E_i (see Section 3.6 in the main part of the paper for details).

G Additional tables

Additional tables are presented on the following pages.

G.1 Falsification tests proposed by Di Falco et al. (2011)

Table S6: OLS regression results for Di Falco falsification tests without WTP as control variable

	Dependent variable:					
	HFIES (orig.)	HFIES (ext.)	Diet. div. (24 h)	Diet. div. (7 days)	Vit. A (24 h)	Vit. A (7 days)
	(1)	(2)	(3)	(4)	(5)	(6)
Share of Organic households	−0.01 (0.01)	−0.02 (0.02)	0.01 (0.02)	0.01 (0.01)	0.01 (0.01)	−0.01 (0.01)
Sex of household head (1=male)	0.36 (0.29)	0.54 (0.37)	−0.06 (0.28)	−0.06 (0.22)	0.14 (0.16)	0.09 (0.16)
Age of household head (years)	−0.02** (0.01)	−0.04** (0.02)	0.01 (0.01)	0.002 (0.01)	0.01 (0.01)	0.01 (0.01)
Education of household head (years)	−0.04 (0.03)	−0.06 (0.04)	0.06* (0.03)	0.07*** (0.02)	0.03** (0.02)	0.03** (0.01)
Literacy (1=literate)	0.21 (0.21)	0.34 (0.31)	0.32* (0.17)	0.28* (0.15)	0.08 (0.09)	0.15 (0.10)
Experience in agriculture (years)	0.03** (0.01)	0.04* (0.02)	−0.02* (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Household size	0.04 (0.03)	0.06 (0.05)	0.03 (0.03)	0.04* (0.02)	−0.003 (0.01)	0.001 (0.01)
Dependency ratio	0.29 (0.40)	0.41 (0.57)	−0.13 (0.37)	−0.27 (0.27)	0.07 (0.18)	−0.18 (0.16)
log(total land owned (ha))	−0.79*** (0.14)	−1.10*** (0.20)	0.24* (0.14)	0.06 (0.11)	0.16* (0.09)	0.14* (0.07)
Distance to closest market (IHS, km)	−0.33*** (0.12)	−0.49*** (0.17)	0.41*** (0.11)	0.14 (0.11)	0.18*** (0.06)	0.04 (0.06)
Main road is tarred road (1=yes)	0.08 (0.33)	0.20 (0.44)	−0.11 (0.21)	−0.47*** (0.16)	−0.14 (0.21)	−0.17 (0.21)
log(Distance to health facility (km))	0.24** (0.10)	0.38*** (0.15)	−0.22*** (0.08)	−0.02 (0.06)	−0.23*** (0.04)	−0.08** (0.03)
log(Household assets (million FCFA))	−0.003 (0.10)	−0.001 (0.14)	−0.003 (0.07)	2.16*** (0.82)	0.09 (0.06)	0.12** (0.05)
Square of log(Household assets (million FCFA))				−0.07** (0.03)		
Constant	4.72*** (1.32)	6.27*** (1.90)	5.52*** (1.08)	−6.59 (5.80)	0.82 (0.77)	2.55*** (0.65)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1024	1024	1024	1024	1024	1024
R squared	0.14	0.15	0.12	0.17	0.15	0.23

Notes: ‘HFIES (orig.)’ abbreviates ‘HFIES (original)’; ‘HFIES (ext.)’ abbreviates ‘HFIES (extended)’; ‘Diet. div.’ abbreviates ‘Dietary diversity’; ‘Vit. A’ abbreviates ‘Vitamin A-rich foods’. *p<0.1; **p<0.05; ***p<0.01

Table S7: OLS regression results for Di Falco falsification tests with WTP as control variable

	Dependent variable:					
	HFIES (orig.)	HFIES (ext.)	Diet. div. (24 h)	Diet. div. (7 days)	Vit. A (24 h)	Vit. A (7 days)
	(1)	(2)	(3)	(4)	(5)	(6)
Share of Organic households	−0.01 (0.02)	−0.01 (0.02)	0.01 (0.02)	0.01 (0.01)	0.01 (0.01)	−0.01 (0.01)
Sex of household head (1=male)	0.26 (0.30)	0.43 (0.38)	−0.02 (0.27)	−0.06 (0.22)	0.17 (0.15)	0.09 (0.15)
Age of household head (years)	−0.02** (0.01)	−0.04** (0.02)	0.01 (0.01)	0.002 (0.01)	0.01 (0.01)	0.01 (0.01)
Education of household head (years)	−0.05* (0.03)	−0.06 (0.04)	0.06** (0.03)	0.07*** (0.02)	0.03** (0.01)	0.03** (0.01)
Literacy (1=literate)	0.21 (0.21)	0.38 (0.30)	0.31* (0.18)	0.27* (0.14)	0.07 (0.09)	0.15 (0.10)
Experience in agriculture (years)	0.03** (0.01)	0.04* (0.02)	−0.02* (0.01)	−0.01* (0.01)	−0.01 (0.01)	−0.01 (0.01)
Household size	0.05* (0.03)	0.07 (0.04)	0.03 (0.03)	0.04* (0.02)	−0.01 (0.01)	0.001 (0.01)
Dependency ratio	0.29 (0.39)	0.35 (0.55)	−0.11 (0.36)	−0.24 (0.27)	0.08 (0.17)	−0.18 (0.16)
log(total land owned (ha))	−0.63*** (0.14)	−1.03*** (0.18)	0.21 (0.14)	0.10 (0.10)	0.14 (0.09)	0.15** (0.07)
Distance to closest market (IHS, km)	−0.32*** (0.12)	−0.45*** (0.17)	0.39*** (0.11)	0.14 (0.10)	0.17*** (0.06)	0.04 (0.06)
Main road is tarred road (1=yes)	0.01 (0.35)	0.14 (0.46)	−0.09 (0.22)	−0.47*** (0.16)	−0.13 (0.22)	−0.17 (0.21)
log(Distance to health facility (km))	0.15* (0.09)	0.31*** (0.12)	−0.19*** (0.07)	−0.04 (0.06)	−0.21*** (0.04)	−0.08** (0.04)
log(Household assets (million FCFA))	−0.11 (0.10)	−0.13 (0.13)	0.05 (0.07)	1.88** (0.80)	0.12** (0.05)	0.11** (0.05)
WTP variable	1.57*** (0.30)	0.44*** (0.09)	−0.18*** (0.04)	0.54** (0.27)	−0.09*** (0.03)	0.01 (0.03)
Square of log(Household assets (million FCFA))				−0.06** (0.03)		
Square of WTP variable	−0.15*** (0.04)			−0.06** (0.03)		
Constant	2.16* (1.28)	5.02*** (1.87)	6.02*** (1.07)	−5.35 (5.59)	1.09 (0.75)	2.52*** (0.67)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1024	1024	1024	1024	1024	1024
R squared	0.21	0.19	0.13	0.18	0.16	0.23

Notes: ‘HFIES (orig.)’ abbreviates ‘HFIES (original)’; ‘HFIES (ext.)’ abbreviates ‘HFIES (extended)’; ‘Diet. div.’ abbreviates ‘Dietary diversity’; ‘Vit. A’ abbreviates ‘Vitamin A-rich foods’. *p<0.1; **p<0.05; ***p<0.01

Table S8: OLS regression results for Di Falco falsification tests without WTP as control variable

	Dependent variable:		
	Livestock species	Food crops	Food crop area
	(1)	(2)	(3)
Share of Organic households	0.001 (0.01)	−0.01 (0.01)	0.002 (0.001)
Sex of household head (1=male)	−0.07 (0.17)	−0.36 (0.22)	−0.02 (0.06)
Age of household head (years)	−0.001 (0.005)	−0.02*** (0.01)	−0.001 (0.001)
Education of household head (years)	−0.02 (0.01)	−0.02 (0.02)	−0.01** (0.004)
Literacy (1=literate)	0.21*** (0.07)	0.26 (0.17)	0.04** (0.02)
Experience in agriculture (years)	−0.002 (0.004)	0.01 (0.01)	0.001 (0.001)
Household size	−0.01 (0.01)	0.004 (0.02)	0.001 (0.004)
Dependency ratio	0.48*** (0.13)	0.21 (0.29)	0.36** (0.16)
log(total land owned (ha))	0.01 (0.06)	2.32*** (0.34)	0.88*** (0.16)
Distance to closest market (IHS, km)	0.02 (0.04)	−0.31 (0.24)	−0.005 (0.01)
Main road is tarred road (1=yes)	−0.21 (0.17)	0.10 (0.24)	−0.08*** (0.02)
log(Distance to health facility (km))	0.02 (0.03)	−0.01 (0.07)	0.002 (0.01)
log(Household assets (million FCFA))	0.29*** (0.03)	−0.04 (0.06)	0.02** (0.01)
Square of log(Total land owned (ha))		−0.19*** (0.07)	0.01 (0.07)
Square of distance to closest market (IHS, km)		0.14* (0.07)	
Cube of log(total land owned (ha))			−0.0003 (0.01)
Square of dependency ratio			−0.44** (0.20)
Constant	−2.66*** (0.45)	3.48*** (1.06)	0.35** (0.17)
Arrondissement-fixed effects	Yes	Yes	Yes
Observations	1024	1024	1024
R squared	0.20	0.48	0.87

Notes: 'Livestock species' abbreviates 'Number of livestock species kept'; 'Food crops' abbreviates 'Number of food crops produced'; 'Food crop area' is the IHS of the food crop area measured in 10 ha. $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table S9: OLS regression results for Di Falco falsification tests without WTP as control variable

	Dependent variable:		
	Cotton area	Cotton income	Household revenue
	(1)	(2)	(3)
Share of Organic households	−0.004 (0.003)	−0.004 (0.01)	−0.003 (0.01)
Sex of household head (1=male)	0.13 (0.09)	0.29^{**} (0.13)	0.07 (0.08)
Age of household head (years)	-0.004^{*} (0.002)	0.001 (0.01)	−0.003 (0.003)
Education of household head (years)	0.004 (0.01)	0.01 (0.01)	0.01 (0.01)
Literacy (1=literate)	−0.03 (0.04)	−0.12 (0.08)	-0.10^{*} (0.06)
Experience in agriculture (years)	0.002 (0.002)	−0.01 (0.01)	0.001 (0.003)
Household size	0.02^{***} (0.01)	0.03^{**} (0.01)	0.02^{**} (0.01)
Dependency ratio	−0.07 (0.10)	−0.005 (0.15)	0.04 (0.13)
log(total land owned (ha))	0.71^{***} (0.05)	0.63^{***} (0.08)	0.26 (0.17)
Distance to closest market (IHS, km)	0.02 (0.02)	0.03 (0.04)	−0.01 (0.02)
Main road is tarred road (1=yes)	0.17^{***} (0.05)	0.31^{***} (0.08)	0.21^{***} (0.08)
log(Distance to health facility (km))	−0.02 (0.02)	0.03 (0.04)	0.01 (0.03)
log(Household assets (million FCFA))	0.04^{**} (0.02)	0.04 (0.03)	0.12^{***} (0.03)
Square of log(Total land owned (ha))			0.07^{*} (0.04)
Square of log(distance to health facility (km))			-0.02^{**} (0.01)
Constant	-1.75^{***} (0.25)	−0.86 (0.58)	11.16^{***} (0.45)
Arrondissement-fixed effects	Yes	Yes	Yes
Observations	1024	1023	1022
R squared	0.57	0.54	0.45

Notes: 'Cotton area' is the logarithm of the cotton area measured in ha; 'Cotton income' is the IHS of the cotton income measured in million FCFA; 'Household revenue' is the logarithm of the household revenue measured in FCFA. *p<0.1; **p<0.05; ***p<0.01

Table S10: OLS regression results for Di Falco falsification tests with WTP as control variable

	Dependent variable:		
	Livestock species	Food crops	Food crop area
	(1)	(2)	(3)
Share of Organic households	0.001 (0.01)	−0.01 (0.01)	0.002 (0.001)
Sex of household head (1=male)	−0.08 (0.16)	−0.37 (0.22)	−0.02 (0.06)
Age of household head (years)	−0.001 (0.005)	-0.02^{***} (0.01)	−0.001 (0.001)
Education of household head (years)	−0.02 (0.01)	−0.02 (0.02)	-0.01^{**} (0.004)
Literacy (1=literate)	0.22^{***} (0.07)	0.26 (0.17)	0.04^{**} (0.02)
Experience in agriculture (years)	−0.002 (0.004)	0.01 (0.01)	0.001 (0.002)
Household size	−0.01 (0.01)	0.005 (0.02)	0.001 (0.004)
Dependency ratio	0.47^{***} (0.13)	0.21 (0.29)	0.36^{**} (0.16)
log(total land owned (ha))	0.02 (0.06)	2.32^{***} (0.34)	0.87^{***} (0.17)
Distance to closest market (IHS, km)	0.03 (0.04)	−0.31 (0.24)	−0.004 (0.01)
Main road is tarred road (1=yes)	−0.21 (0.17)	0.10 (0.24)	-0.08^{***} (0.02)
log(Distance to health facility (km))	0.02 (0.03)	−0.01 (0.07)	0.001 (0.01)
log(Household assets (million FCFA))	0.28^{***} (0.03)	−0.05 (0.06)	0.02^{*} (0.01)
WTP variable	0.04^{**} (0.02)	0.02 (0.04)	0.003 (0.01)
Square of log(Total land owned (ha))		-0.19^{***} (0.07)	0.01 (0.08)
Square of distance to closest market (IHS, km)		0.14^{*} (0.07)	
Cube of log(total land owned (ha))			−0.001 (0.01)
Square of dependency ratio			-0.43^{**} (0.20)
Constant	-2.79^{***} (0.45)	3.43^{***} (1.07)	0.35^{**} (0.17)
Arrondissement-fixed effects	Yes	Yes	Yes
Observations	1024	1024	1024
R squared	0.20	0.48	0.87

Notes: 'Livestock species' abbreviates 'Number of livestock species kept'; 'Food crops' abbreviates 'Number of food crops produced'; 'Food crop area' is the IHS of the food crop area measured in 10 ha. $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table S11: OLS regression results for Di Falco falsification tests with WTP as control variable

	Dependent variable:		
	Cotton area	Cotton income	Household revenue
	(1)	(2)	(3)
Share of Organic households	−0.003 (0.003)	−0.005 (0.01)	−0.002 (0.01)
Sex of household head (1=male)	0.12 (0.09)	0.30^{**} (0.13)	0.05 (0.08)
Age of household head (years)	-0.004^{*} (0.002)	0.001 (0.01)	−0.003 (0.003)
Education of household head (years)	0.003 (0.01)	0.01 (0.01)	0.01 (0.01)
Literacy (1=literate)	−0.03 (0.04)	−0.12 (0.08)	-0.09^{*} (0.05)
Experience in agriculture (years)	0.001 (0.002)	−0.01 (0.01)	0.001 (0.003)
Household size	0.02^{***} (0.01)	0.03^{**} (0.01)	0.02^{***} (0.01)
Dependency ratio	−0.08 (0.10)	−0.004 (0.15)	0.02 (0.12)
log(total land owned (ha))	0.72^{***} (0.05)	0.61^{***} (0.08)	0.26 (0.16)
Distance to closest market (IHS, km)	0.02 (0.02)	0.03 (0.04)	−0.001 (0.03)
Main road is tarred road (1=yes)	0.16^{***} (0.05)	0.32^{***} (0.08)	0.21^{***} (0.08)
log(Distance to health facility (km))	−0.03 (0.02)	0.04 (0.04)	−0.001 (0.02)
log(Household assets (million FCFA))	0.03 (0.02)	0.05 (0.04)	0.10^{***} (0.03)
WTP variable	0.05^{***} (0.01)	-0.22^{**} (0.11)	−0.07 (0.08)
Square of log(Total land owned (ha))			0.07^{**} (0.04)
Square of log(distance to health facility (km))			-0.02^{**} (0.01)
Square of WTP variable		0.02 (0.01)	0.02^{*} (0.01)
Constant	-1.90^{***} (0.25)	−0.51 (0.55)	11.13^{***} (0.46)
Arrondissement-fixed effects	Yes	Yes	Yes
Observations	1024	1023	1022
R squared	0.58	0.54	0.48

Notes: 'Cotton area' is the logarithm of the cotton area measured in ha; 'Cotton income' is the IHS of the cotton income measured in million FCFA; 'Household revenue' is the logarithm of the household revenue measured in FCFA. $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

G.2 Results of Probit estimations for adopting organic farming

Table S12: Probit regression results for adoption of organic farming

	Organic Organic Farming (Yes/No)
Sex of household head (1=male)	-0.44^{**} (0.21)
Age of household head (years)	0.01 (0.01)
Education of household head (years)	0.0001 (0.02)
Literacy (1=literate)	0.19 (0.16)
Experience in agriculture (years)	0.01 (0.01)
Household size	0.01 (0.02)
Dependency ratio	0.07 (0.30)
log(total land owned (ha))	-0.52^{***} (0.11)
Distance to closest market (IHS, km)	-0.02 (0.08)
Main road is tarred road (1=yes)	-0.13 (0.19)
log(Distance to health facility (km))	0.003 (0.06)
log(Household assets (million FCFA))	0.07 (0.07)
Arrondissement-fixed effects	Yes
Share of Organic households	0.12^{***} (0.01)
Observations	1,247
Log Likelihood	-306.99
Akaike Inf. Crit.	667.99
Note:	*p<0.1; **p<0.05; ***p<0.01

G.3 Results of main regression models for outcome variables (with and without WTP variable)

Table S13: OLS and IV regression results for HFIES (original)

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.31 (0.32)	−0.13 (0.49)	1.58*** (0.49)	2.15*** (0.46)
Sex of household head (1=male)	0.29 (0.23)	0.22 (0.24)	0.20 (0.23)	0.23 (0.22)
Age of household head (years)	−0.03*** (0.01)	−0.03*** (0.01)	−0.03*** (0.01)	−0.03*** (0.01)
Education of household head (years)	−0.03 (0.02)	−0.03 (0.03)	−0.04 (0.02)	−0.04 (0.02)
Literacy (1=literate)	0.22 (0.18)	0.22 (0.18)	0.19 (0.19)	0.19 (0.19)
Experience in agriculture (years)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)
Household size	0.05** (0.02)	0.05** (0.03)	0.06** (0.02)	0.06** (0.02)
Dependency ratio	0.43 (0.34)	0.43 (0.33)	0.41 (0.34)	0.41 (0.34)
log(total land owned (ha))	−0.83*** (0.13)	−0.86*** (0.14)	−0.68*** (0.13)	−0.64*** (0.13)
Distance to closest market (IHS, km)	−0.24** (0.11)	−0.25** (0.11)	−0.23** (0.11)	−0.22** (0.11)
Main road is tarred road (1=yes)	−0.15 (0.42)	−0.10 (0.45)	−0.36 (0.44)	−0.42 (0.39)
log(Distance to health facility (km))	0.11 (0.08)	0.13 (0.08)	0.03 (0.07)	0.01 (0.06)
log(Household assets (million FCFA))	0.06 (0.09)	0.04 (0.09)	−0.002 (0.09)	−0.005 (0.09)
WTP variable			1.22*** (0.29)	1.33*** (0.28)
Square of WTP variable			−0.11*** (0.03)	−0.12*** (0.03)
Constant	3.61*** (1.15)	4.01*** (1.16)	1.31 (1.14)	0.75 (1.32)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1247	1247	1247	1247
R squared	0.15	0.14	0.20	0.20
RESET	0.672	0.672	0.564	0.564
Weak instruments		535.50***		1868.31***
Wu-Hausman test		2.64		8.65***

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S14: OLS and IV regression results for HFIES (extended)

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.17 (0.45)	−0.74 (0.57)	1.79** (0.71)	2.57*** (0.73)
Sex of household head (1=male)	0.41 (0.30)	0.28 (0.32)	0.32 (0.30)	0.36 (0.29)
Age of household head (years)	−0.04*** (0.01)	−0.04*** (0.01)	−0.04*** (0.01)	−0.04*** (0.01)
Education of household head (years)	−0.04 (0.04)	−0.03 (0.04)	−0.04 (0.03)	−0.05 (0.04)
Literacy (1=literate)	0.27 (0.27)	0.28 (0.26)	0.29 (0.26)	0.29 (0.26)
Experience in agriculture (years)	0.04*** (0.02)	0.05*** (0.02)	0.04*** (0.02)	0.04*** (0.01)
Household size	0.07* (0.04)	0.07* (0.04)	0.08* (0.04)	0.08** (0.04)
Dependency ratio	0.58 (0.54)	0.57 (0.51)	0.54 (0.53)	0.53 (0.54)
log(total land owned (ha))	−1.13*** (0.18)	−1.19*** (0.18)	−1.04*** (0.17)	−0.99*** (0.17)
Distance to closest market (IHS, km)	−0.39*** (0.15)	−0.42*** (0.15)	−0.36** (0.15)	−0.34** (0.15)
Main road is tarred road (1=yes)	−0.25 (0.57)	−0.15 (0.63)	−0.37 (0.61)	−0.44 (0.54)
log(Distance to health facility (km))	0.18 (0.12)	0.22* (0.12)	0.12 (0.10)	0.09 (0.09)
log(Household assets (million FCFA))	0.08 (0.13)	0.05 (0.13)	−0.002 (0.13)	−0.01 (0.12)
WTP variable			0.40*** (0.11)	0.48*** (0.09)
Constant	4.75*** (1.74)	5.58*** (1.74)	3.35** (1.64)	2.66 (1.97)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1247	1247	1247	1247
R squared	0.15	0.14	0.18	0.18
RESET	0.970	0.970	0.666	0.666
Weak instruments		535.50***		1897.03***
Wu-Hausman test		5.26**		7.63***

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S15: OLS and IV regression results for dietary diversity (24 h)

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	−0.43* (0.24)	−0.31 (0.33)	−1.09*** (0.27)	−1.20*** (0.33)
Sex of household head (1=male)	−0.27 (0.23)	−0.25 (0.21)	−0.23 (0.22)	−0.24 (0.22)
Age of household head (years)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Education of household head (years)	0.05** (0.03)	0.05** (0.03)	0.06** (0.02)	0.06** (0.02)
Literacy (1=literate)	0.27* (0.14)	0.27* (0.14)	0.26* (0.14)	0.26* (0.14)
Experience in agriculture (years)	−0.02** (0.01)	−0.02** (0.01)	−0.02** (0.01)	−0.02** (0.01)
Household size	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)
Dependency ratio	−0.18 (0.30)	−0.18 (0.29)	−0.16 (0.29)	−0.16 (0.29)
log(total land owned (ha))	0.25** (0.11)	0.26** (0.11)	0.21* (0.12)	0.20 (0.12)
Distance to closest market (IHS, km)	0.31*** (0.10)	0.31*** (0.10)	0.30*** (0.10)	0.30*** (0.10)
Main road is tarred road (1=yes)	−0.18 (0.16)	−0.19 (0.17)	−0.13 (0.17)	−0.12 (0.17)
log(Distance to health facility (km))	−0.23*** (0.07)	−0.24*** (0.07)	−0.21*** (0.06)	−0.21*** (0.06)
log(Household assets (million FCFA))	0.03 (0.06)	0.04 (0.06)	0.07 (0.06)	0.07 (0.06)
WTP variable			−0.16*** (0.04)	−0.18*** (0.04)
Constant	5.48*** (0.94)	5.37*** (0.95)	6.05*** (0.92)	6.15*** (0.92)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1247	1247	1247	1247
R squared	0.11	0.11	0.13	0.13
RESET	0.105	0.105	0.097	0.097
Weak instruments		535.50***		1897.03***
Wu-Hausman test		0.24		0.43

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S16: OLS and IV regression results for dietary diversity (7 days)

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.12 (0.21)	0.31 (0.24)	0.18 (0.24)	0.30 (0.33)
Sex of household head (1=male)	−0.20 (0.18)	−0.17 (0.17)	−0.20 (0.18)	−0.19 (0.18)
Age of household head (years)	0.003 (0.01)	0.003 (0.01)	0.003 (0.01)	0.003 (0.01)
Education of household head (years)	0.05** (0.02)	0.05** (0.02)	0.05** (0.02)	0.05** (0.02)
Literacy (1=literate)	0.31** (0.13)	0.31** (0.12)	0.29** (0.12)	0.29** (0.12)
Experience in agriculture (years)	−0.02*** (0.01)	−0.02*** (0.01)	−0.02*** (0.01)	−0.02*** (0.01)
Household size	0.04** (0.02)	0.04** (0.02)	0.04** (0.02)	0.04** (0.02)
Dependency ratio	−0.25 (0.24)	−0.25 (0.24)	−0.24 (0.24)	−0.24 (0.23)
log(total land owned (ha))	0.10 (0.09)	0.12 (0.09)	0.15* (0.09)	0.15* (0.08)
Distance to closest market (IHS, km)	0.09 (0.09)	0.09 (0.09)	0.08 (0.09)	0.08 (0.09)
Main road is tarred road (1=yes)	−0.47*** (0.16)	−0.49*** (0.16)	−0.53*** (0.15)	−0.54*** (0.14)
log(Distance to health facility (km))	0.01 (0.06)	0.005 (0.05)	−0.01 (0.06)	−0.02 (0.06)
log(Household assets (million FCFA))	2.72*** (0.76)	2.75*** (0.76)	2.44*** (0.71)	2.41*** (0.70)
WTP variable			0.49** (0.23)	0.51** (0.22)
Square of log(Household assets (million FCFA))	−0.09*** (0.03)	−0.09*** (0.03)	−0.08*** (0.02)	−0.08*** (0.02)
Square of WTP variable			−0.06** (0.03)	−0.06** (0.02)
Constant	−10.32* (5.31)	−10.63** (5.34)	−9.01* (5.00)	−8.97* (4.94)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1247	1247	1247	1247
R squared	0.17	0.16	0.18	0.18
RESET	0.467	0.467	0.170	0.170
Weak instruments		537.56***		1863.15***
Wu-Hausman test		0.96		0.70

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S17: OLS and IV regression results for vitamin A-rich foods (24 h)

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	−0.15 (0.15)	−0.08 (0.27)	-0.48^{***} (0.18)	-0.57^{**} (0.22)
Sex of household head (1=male)	0.08 (0.11)	0.09 (0.11)	0.10 (0.10)	0.09 (0.10)
Age of household head (years)	0.004 (0.004)	0.004 (0.004)	0.004 (0.004)	0.004 (0.004)
Education of household head (years)	0.03^{***} (0.01)	0.03^{***} (0.01)	0.03^{***} (0.01)	0.03^{***} (0.01)
Literacy (1=literate)	0.06 (0.07)	0.06 (0.07)	0.05 (0.07)	0.05 (0.07)
Experience in agriculture (years)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Household size	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Dependency ratio	−0.05 (0.13)	−0.05 (0.13)	−0.04 (0.13)	−0.04 (0.13)
log(total land owned (ha))	0.14^{*} (0.07)	0.14^{*} (0.08)	0.12 (0.08)	0.12 (0.08)
Distance to closest market (IHS, km)	0.13^{**} (0.06)	0.13^{**} (0.06)	0.12^{**} (0.06)	0.12^{**} (0.06)
Main road is tarred road (1=yes)	−0.08 (0.15)	−0.08 (0.16)	−0.05 (0.16)	−0.04 (0.16)
log(Distance to health facility (km))	-0.22^{***} (0.04)	-0.22^{***} (0.04)	-0.21^{***} (0.04)	-0.20^{***} (0.04)
log(Household assets (million FCFA))	0.10^{**} (0.05)	0.10^{**} (0.05)	0.11^{**} (0.05)	0.11^{**} (0.04)
WTP variable			-0.08^{***} (0.03)	-0.09^{***} (0.03)
Constant	0.95 (0.61)	0.89 (0.65)	1.24^{**} (0.59)	1.32^{**} (0.60)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1247	1247	1247	1247
R squared	0.14	0.14	0.15	0.15
RESET	0.441	0.441	0.228	0.228
Weak instruments		535.50^{***}		1897.03^{***}
Wu-Hausman test		0.18		0.77

Notes: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table S18: OLS and IV regression results for vitamin A-rich foods (7 days)

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.14 (0.12)	−0.16 (0.24)	0.20 (0.15)	0.11 (0.20)
Sex of household head (1=male)	0.07 (0.15)	0.03 (0.15)	0.07 (0.15)	0.07 (0.15)
Age of household head (years)	0.01 (0.004)	0.01 (0.004)	0.01 (0.004)	0.01 (0.004)
Education of household head (years)	0.03** (0.01)	0.03** (0.01)	0.03* (0.01)	0.03** (0.01)
Literacy (1=literate)	0.11 (0.08)	0.11 (0.08)	0.11 (0.08)	0.11 (0.08)
Experience in agriculture (years)	−0.01*** (0.005)	−0.01** (0.01)	−0.01*** (0.005)	−0.01*** (0.005)
Household size	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Dependency ratio	−0.18 (0.12)	−0.18 (0.12)	−0.18 (0.12)	−0.18 (0.11)
log(total land owned (ha))	0.11* (0.06)	0.09 (0.07)	0.11* (0.06)	0.11* (0.06)
Distance to closest market (IHS, km)	0.01 (0.05)	0.001 (0.06)	0.01 (0.06)	0.01 (0.06)
Main road is tarred road (1=yes)	−0.13 (0.16)	−0.10 (0.16)	−0.14 (0.16)	−0.13 (0.16)
log(Distance to health facility (km))	−0.07** (0.03)	−0.06 (0.04)	−0.07** (0.03)	−0.07** (0.03)
log(Household assets (million FCFA))	0.14*** (0.04)	0.13*** (0.04)	0.14*** (0.04)	0.14*** (0.04)
WTP variable			0.01 (0.02)	0.004 (0.03)
Constant	2.39*** (0.53)	2.66*** (0.54)	2.34*** (0.55)	2.42*** (0.56)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1247	1247	1247	1247
R squared	0.22	0.21	0.22	0.22
RESET	0.175	0.175	0.180	0.180
Weak instruments		535.50***		1897.03***
Wu-Hausman test		4.72**		0.81

Notes: *p<0.1; **p<0.05; ***p<0.01

G.4 Results of main regression models for mediating outcome variables (with and without WTP variable)

Table S19: OLS and IV regression results for number of livestock species kept

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.04 (0.10)	−0.01 (0.21)	0.18 (0.11)	0.43^{**} (0.18)
Sex of household head (1=male)	−0.13 (0.13)	−0.14 (0.14)	−0.14 (0.13)	−0.13 (0.13)
Age of household head (years)	−0.004 (0.004)	−0.004 (0.004)	−0.004 (0.004)	−0.004 (0.004)
Education of household head (years)	-0.03^{***} (0.01)	-0.03^{***} (0.01)	-0.03^{***} (0.01)	-0.03^{***} (0.01)
Literacy (1=literate)	0.19^{***} (0.06)	0.19^{***} (0.05)	0.20^{***} (0.06)	0.20^{***} (0.06)
Experience in agriculture (years)	−0.001 (0.004)	−0.001 (0.004)	−0.001 (0.004)	−0.001 (0.004)
Household size	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Dependency ratio	0.43^{***} (0.13)	0.43^{***} (0.13)	0.43^{***} (0.13)	0.43^{***} (0.13)
log(total land owned (ha))	0.03 (0.06)	0.02 (0.05)	0.04 (0.05)	0.05 (0.05)
Distance to closest market (IHS, km)	0.04 (0.04)	0.04 (0.04)	0.04 (0.04)	0.05 (0.04)
Main road is tarred road (1=yes)	−0.10 (0.16)	−0.09 (0.16)	−0.11 (0.16)	−0.13 (0.16)
log(Distance to health facility (km))	0.01 (0.03)	0.01 (0.03)	0.003 (0.03)	−0.01 (0.03)
log(Household assets (million FCFA))	0.29^{***} (0.03)	0.28^{***} (0.03)	0.28^{***} (0.03)	0.28^{***} (0.03)
WTP variable			0.03^{*} (0.02)	0.06^{***} (0.02)
Constant	-2.48^{***} (0.37)	-2.44^{***} (0.40)	-2.61^{***} (0.37)	-2.82^{***} (0.37)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1247	1247	1247	1247
R squared	0.20	0.20	0.20	0.20
RESET	0.159	0.159	0.160	0.160
Weak instruments		535.50^{***}		1897.03^{***}
Wu-Hausman test		0.17		9.76^{***}

Notes: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table S20: OLS and IV regression results for number of food crops produced

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.22 (0.20)	0.19 (0.44)	0.23 (0.26)	0.22 (0.34)
Sex of household head (1=male)	-0.32^{*} (0.17)	-0.32^{*} (0.18)	-0.32^{*} (0.17)	-0.32^{*} (0.17)
Age of household head (years)	-0.02^{***} (0.01)	-0.02^{***} (0.01)	-0.02^{***} (0.01)	-0.02^{***} (0.01)
Education of household head (years)	−0.01 (0.02)	−0.01 (0.02)	−0.01 (0.02)	−0.01 (0.02)
Literacy (1=literate)	0.11 (0.15)	0.11 (0.15)	0.11 (0.15)	0.11 (0.15)
Experience in agriculture (years)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Household size	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
Dependency ratio	0.20 (0.27)	0.20 (0.27)	0.20 (0.27)	0.20 (0.27)
log(total land owned (ha))	2.28^{***} (0.32)	2.27^{***} (0.33)	2.28^{***} (0.33)	2.28^{***} (0.33)
Distance to closest market (IHS, km)	-0.46^{*} (0.24)	-0.47^{*} (0.27)	-0.46^{*} (0.24)	-0.46^{*} (0.25)
Main road is tarred road (1=yes)	−0.26 (0.26)	−0.25 (0.26)	−0.26 (0.26)	−0.26 (0.25)
log(Distance to health facility (km))	−0.07 (0.06)	−0.07 (0.06)	−0.07 (0.06)	−0.07 (0.06)
log(Household assets (million FCFA))	−0.02 (0.05)	−0.02 (0.05)	−0.02 (0.05)	−0.02 (0.05)
WTP variable			0.003 (0.04)	0.002 (0.04)
Square of log(Total land owned (ha))	-0.20^{***} (0.06)	-0.20^{***} (0.06)	-0.20^{***} (0.06)	-0.20^{***} (0.06)
Square of distance to closest market (IHS, km)	0.18^{**} (0.07)	0.18^{**} (0.08)	0.18^{**} (0.07)	0.18^{**} (0.07)
Constant	3.33^{***} (0.91)	3.36^{***} (0.96)	3.32^{***} (0.94)	3.33^{***} (0.94)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1247	1247	1247	1247
R squared	0.49	0.49	0.49	0.49
RESET	0.028	0.028	0.023	0.023
Weak instruments		502.28^{***}		1842.30^{***}
Wu-Hausman test		0.02		0.01

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S21: OLS and IV regression results for food crop area (IHS, ha)

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.24*** (0.04)	0.35*** (0.05)	0.27*** (0.05)	0.29*** (0.05)
Sex of household head (1=male)	0.01 (0.04)	0.03 (0.04)	0.01 (0.04)	0.01 (0.04)
Age of household head (years)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
Education of household head (years)	−0.01*** (0.003)	−0.01*** (0.003)	−0.01*** (0.003)	−0.01*** (0.003)
Literacy (1=literate)	0.04* (0.02)	0.04** (0.02)	0.04* (0.02)	0.04** (0.02)
Experience in agriculture (years)	0.0005 (0.001)	0.0001 (0.001)	0.0005 (0.001)	0.0005 (0.001)
Household size	0.003 (0.003)	0.003 (0.003)	0.003 (0.003)	0.003 (0.003)
Dependency ratio	0.47*** (0.16)	0.47*** (0.16)	0.46*** (0.16)	0.45*** (0.16)
log(total land owned (ha))	0.99*** (0.12)	0.97*** (0.12)	0.98*** (0.12)	0.98*** (0.12)
Distance to closest market (IHS, km)	0.002 (0.01)	0.01 (0.01)	0.003 (0.01)	0.003 (0.01)
Main road is tarred road (1=yes)	−0.07*** (0.02)	−0.08*** (0.02)	−0.07*** (0.02)	−0.07*** (0.02)
log(Distance to health facility (km))	0.0005 (0.01)	−0.004 (0.01)	−0.001 (0.01)	−0.001 (0.01)
log(Household assets (million FCFA))	0.02* (0.01)	0.02* (0.01)	0.02 (0.01)	0.02 (0.01)
WTP variable			0.01 (0.01)	0.01 (0.01)
Square of log(Total land owned (ha))	−0.03 (0.06)	−0.02 (0.06)	−0.03 (0.06)	−0.02 (0.05)
Cube of log(total land owned (ha))	0.003 (0.01)	0.001 (0.01)	0.002 (0.01)	0.002 (0.01)
Square of dependency ratio	−0.59*** (0.19)	−0.59*** (0.18)	−0.58*** (0.19)	−0.57*** (0.18)
Constant	0.22 (0.17)	0.13 (0.17)	0.20 (0.17)	0.19 (0.17)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1247	1247	1247	1247
R squared	0.87	0.87	0.87	0.87
Semi-elasticity	0.27***(0.04)	0.42***(0.04)	0.31***(0.04)	0.33***(0.05)
RESET	0.277	0.277	0.283	0.283
Weak instruments		525.46***		1854.75***
Wu-Hausman test		10.81***		0.60

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S22: OLS and IV regression results for log(cotton area)

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	−0.66*** (0.13)	−0.75*** (0.14)	−0.58*** (0.15)	−0.49*** (0.18)
Sex of household head (1=male)	0.01 (0.08)	−0.004 (0.08)	0.004 (0.08)	0.01 (0.08)
Age of household head (years)	−0.001 (0.002)	−0.001 (0.002)	−0.001 (0.002)	−0.001 (0.002)
Education of household head (years)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Literacy (1=literate)	−0.06 (0.04)	−0.06 (0.04)	−0.06 (0.04)	−0.06 (0.04)
Experience in agriculture (years)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)
Household size	0.02*** (0.01)	0.02*** (0.01)	0.02*** (0.01)	0.02*** (0.01)
Dependency ratio	−0.11 (0.09)	−0.11 (0.09)	−0.11 (0.09)	−0.11 (0.09)
log(total land owned (ha))	0.70*** (0.04)	0.69*** (0.04)	0.70*** (0.04)	0.71*** (0.04)
Distance to closest market (IHS, km)	0.01 (0.02)	0.01 (0.02)	0.02 (0.02)	0.02 (0.02)
Main road is tarred road (1=yes)	0.15*** (0.06)	0.16*** (0.06)	0.15** (0.06)	0.14** (0.06)
log(Distance to health facility (km))	−0.01 (0.02)	−0.01 (0.02)	−0.02 (0.02)	−0.02 (0.02)
log(Household assets (million FCFA))	0.04** (0.02)	0.04** (0.02)	0.04** (0.02)	0.04** (0.02)
WTP variable			0.02 (0.02)	0.03* (0.02)
Constant	−1.57*** (0.24)	−1.49*** (0.26)	−1.64*** (0.26)	−1.72*** (0.26)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1247	1247	1247	1247
R squared	0.61	0.61	0.61	0.61
Semi-elasticity	−0.48*** (0.07)	−0.53*** (0.07)	−0.44*** (0.08)	−0.39*** (0.11)
RESET	0.014	0.014	0.010	0.010
Weak instruments		535.50***		1897.03***
Wu-Hausman test		1.80		3.76*

Notes: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table S23: OLS and IV regression results for cotton income (IHS, 100,000 FCFA)

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	-0.60^{***} (0.14)	-0.81^{***} (0.22)	-0.85^{***} (0.15)	-1.06^{***} (0.18)
Sex of household head (1=male)	0.18^{*} (0.10)	0.15 (0.11)	0.20^{*} (0.10)	0.19^{*} (0.10)
Age of household head (years)	0.001 (0.005)	0.001 (0.005)	0.001 (0.005)	0.001 (0.005)
Education of household head (years)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Literacy (1=literate)	-0.10^{*} (0.06)	−0.10 (0.06)	−0.10 (0.06)	−0.09 (0.06)
Experience in agriculture (years)	−0.004 (0.01)	−0.003 (0.01)	−0.004 (0.01)	−0.004 (0.01)
Household size	0.03^{***} (0.01)	0.03^{***} (0.01)	0.03^{***} (0.01)	0.03^{***} (0.01)
Dependency ratio	−0.09 (0.15)	−0.09 (0.15)	−0.09 (0.15)	−0.09 (0.15)
log(total land owned (ha))	0.62^{***} (0.07)	0.61^{***} (0.07)	0.59^{***} (0.07)	0.58^{***} (0.07)
Distance to closest market (IHS, km)	0.04 (0.04)	0.03 (0.04)	0.04 (0.04)	0.03 (0.04)
Main road is tarred road (1=yes)	0.29^{***} (0.08)	0.31^{***} (0.07)	0.34^{***} (0.08)	0.36^{***} (0.07)
log(Distance to health facility (km))	0.03 (0.03)	0.04 (0.03)	0.05 (0.04)	0.06 (0.04)
log(Household assets (million FCFA))	0.04 (0.03)	0.03 (0.03)	0.05 (0.03)	0.05 (0.03)
WTP variable			-0.26^{***} (0.09)	-0.30^{***} (0.09)
Square of WTP variable			0.02^{**} (0.01)	0.03^{**} (0.01)
Constant	−0.65 (0.48)	−0.47 (0.52)	−0.16 (0.47)	0.04 (0.47)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1244	1244	1244	1244
R squared	0.51	0.51	0.52	0.52
Semi-elasticity	-0.48^{***}(0.06)	-0.60^{***}(0.07)	-0.62^{***}(0.05)	-0.71^{***}(0.05)
RESET	< 0.001	< 0.001	< 0.001	< 0.001
Weak instruments		538.54^{***}		1858.35^{***}
Wu-Hausman test		3.20^{*}		6.04^{**}

Notes: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table S24: OLS and IV regression results for log(household revenue)

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	-0.71^{***} (0.14)	-0.71^{***} (0.17)	-0.51^{***} (0.17)	-0.27 (0.18)
Sex of household head (1=male)	0.03 (0.09)	0.03 (0.09)	0.02 (0.08)	0.03 (0.08)
Age of household head (years)	-0.002 (0.003)	-0.002 (0.003)	-0.003 (0.003)	-0.003 (0.003)
Education of household head (years)	0.003 (0.01)	0.003 (0.01)	0.003 (0.01)	0.001 (0.01)
Literacy (1=literate)	-0.03 (0.05)	-0.03 (0.05)	-0.02 (0.05)	-0.02 (0.05)
Experience in agriculture (years)	0.0001 (0.003)	0.0001 (0.003)	0.0001 (0.003)	-0.0003 (0.003)
Household size	0.02^{***} (0.01)	0.02^{***} (0.01)	0.02^{***} (0.01)	0.02^{***} (0.01)
Dependency ratio	-0.01 (0.11)	-0.01 (0.11)	-0.02 (0.11)	-0.02 (0.10)
log(total land owned (ha))	0.30^{*} (0.16)	0.30^{**} (0.15)	0.30^{*} (0.15)	0.34^{**} (0.16)
Distance to closest market (IHS, km)	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)	0.03 (0.02)
Main road is tarred road (1=yes)	0.26^{***} (0.09)	0.25^{***} (0.09)	0.27^{***} (0.09)	0.24^{***} (0.09)
log(Distance to health facility (km))	0.03 (0.03)	0.03 (0.03)	0.03 (0.03)	0.02 (0.03)
log(Household assets (million FCFA))	0.10^{***} (0.03)	0.10^{***} (0.03)	0.09^{***} (0.03)	0.09^{***} (0.03)
WTP variable			-0.16^{**} (0.07)	-0.12^{*} (0.07)
Square of log(Total land owned (ha))	0.06^{*} (0.04)	0.06^{*} (0.03)	0.06^{*} (0.03)	0.06^{*} (0.03)
Square of log(distance to health facility (km))	-0.03^{***} (0.01)	-0.03^{***} (0.01)	-0.03^{***} (0.01)	-0.04^{***} (0.01)
Square of WTP variable			0.03^{***} (0.01)	0.02^{***} (0.01)
Constant	11.49^{***} (0.42)	11.49^{***} (0.40)	11.60^{***} (0.42)	11.35^{***} (0.40)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1245	1245	1245	1245
R squared	0.47	0.47	0.49	0.49
Semi-elasticity	-0.51^{***}(0.07)	-0.51^{***}(0.09)	-0.40^{***}(0.10)	-0.24^{*}(0.14)
RESET	0.090	0.090	0.616	0.616
Weak instruments		518.71^{***}		1818.19^{***}
Wu-Hausman test		0.00		13.54^{***}

Notes: *p<0.1; **p<0.05; ***p<0.01

G.5 Results of regression models for outcome variables excluding data from the district of Pehunco (with and without WTP variable)

Table S25: OLS and IV regression results for HFIES (original), excluding the district of Pehunco

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.30 (0.31)	−0.06 (0.50)	0.92* (0.55)	2.00*** (0.49)
Sex of household head (1=male)	0.30 (0.26)	0.24 (0.27)	0.27 (0.26)	0.29 (0.25)
Age of household head (years)	−0.03*** (0.01)	−0.03*** (0.01)	−0.03*** (0.01)	−0.03*** (0.01)
Education of household head (years)	−0.03 (0.03)	−0.03 (0.03)	−0.03 (0.03)	−0.04 (0.03)
Literacy (1=literate)	0.29 (0.22)	0.30 (0.21)	0.30 (0.21)	0.30 (0.22)
Experience in agriculture (years)	0.03** (0.01)	0.03** (0.01)	0.03** (0.01)	0.03*** (0.01)
Household size	0.08*** (0.02)	0.08*** (0.02)	0.08*** (0.02)	0.08*** (0.02)
Dependency ratio	0.56 (0.42)	0.55 (0.40)	0.56 (0.42)	0.57 (0.42)
log(total land owned (ha))	−0.76*** (0.15)	−0.78*** (0.16)	−0.77*** (0.15)	−0.74*** (0.15)
Distance to closest market (IHS, km)	−0.34** (0.15)	−0.35** (0.15)	−0.35** (0.15)	−0.34** (0.15)
Main road is tarred road (1=yes)	−0.22 (0.44)	−0.19 (0.46)	−0.25 (0.47)	−0.34 (0.41)
log(Distance to health facility (km))	0.06 (0.07)	0.07 (0.07)	0.06 (0.07)	0.04 (0.07)
log(Household assets (million FCFA))	−0.02 (0.10)	−0.04 (0.10)	−0.02 (0.09)	−0.003 (0.10)
WTP variable			0.09 (0.25)	0.43* (0.24)
Square of WTP variable			0.01 (0.03)	−0.01 (0.03)
Constant	4.57*** (1.27)	4.93*** (1.27)	3.78*** (1.02)	2.14 (1.59)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	951	951	951	951
R squared	0.15	0.15	0.16	0.15
RESET	0.390	0.390	0.242	0.242
Weak instruments		410.53***		741.36***
Wu-Hausman test		1.78		9.67***

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S26: OLS and IV regression results for HFIES (extended), excluding the district of Pehunco

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.17 (0.42)	−0.55 (0.56)	0.80 (0.81)	2.06** (0.84)
Sex of household head (1=male)	0.45 (0.35)	0.33 (0.37)	0.42 (0.35)	0.45 (0.34)
Age of household head (years)	−0.04** (0.02)	−0.04** (0.02)	−0.04** (0.02)	−0.05** (0.02)
Education of household head (years)	−0.05 (0.04)	−0.04 (0.04)	−0.05 (0.04)	−0.06 (0.04)
Literacy (1=literate)	0.32 (0.31)	0.32 (0.30)	0.32 (0.30)	0.33 (0.30)
Experience in agriculture (years)	0.04** (0.02)	0.04** (0.02)	0.04** (0.02)	0.04** (0.02)
Household size	0.11*** (0.04)	0.11*** (0.04)	0.11*** (0.04)	0.11*** (0.04)
Dependency ratio	0.50 (0.66)	0.48 (0.63)	0.50 (0.66)	0.52 (0.67)
log(total land owned (ha))	−0.94*** (0.19)	−0.99*** (0.20)	−0.95*** (0.19)	−0.93*** (0.19)
Distance to closest market (IHS, km)	−0.54*** (0.19)	−0.56*** (0.20)	−0.55*** (0.20)	−0.54*** (0.19)
Main road is tarred road (1=yes)	−0.37 (0.61)	−0.30 (0.65)	−0.41 (0.64)	−0.50 (0.56)
log(Distance to health facility (km))	0.05 (0.09)	0.09 (0.09)	0.05 (0.09)	0.03 (0.09)
log(Household assets (million FCFA))	−0.05 (0.14)	−0.08 (0.14)	−0.05 (0.14)	−0.03 (0.14)
WTP variable			0.15 (0.16)	0.36*** (0.13)
Constant	6.53*** (1.92)	7.24*** (1.91)	5.63*** (1.73)	4.01 (2.44)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	951	951	951	951
R squared	0.16	0.15	0.16	0.15
RESET	0.689	0.689	0.359	0.359
Weak instruments		410.53***		842.69***
Wu-Hausman test		3.34*		7.56***

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S27: OLS and IV regression results for dietary diversity (24 h), excluding the district of Pehunco

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	−0.37 (0.24)	−0.40 (0.32)	−0.36 (0.24)	−0.31 (0.40)
Sex of household head (1=male)	−0.44* (0.23)	−0.45** (0.21)	−0.44* (0.23)	−0.44** (0.22)
Age of household head (years)	0.0001 (0.01)	0.0001 (0.01)	0.0000 (0.01)	−0.0001 (0.01)
Education of household head (years)	0.08*** (0.02)	0.08*** (0.02)	0.08*** (0.02)	0.08*** (0.02)
Literacy (1=literate)	0.01 (0.13)	0.01 (0.13)	0.01 (0.13)	0.01 (0.13)
Experience in agriculture (years)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Household size	0.004 (0.02)	0.004 (0.02)	0.004 (0.02)	0.004 (0.02)
Dependency ratio	0.07 (0.29)	0.07 (0.28)	0.07 (0.29)	0.07 (0.28)
log(total land owned (ha))	0.37*** (0.12)	0.37*** (0.11)	0.37*** (0.12)	0.37*** (0.11)
Distance to closest market (IHS, km)	0.18* (0.09)	0.18* (0.09)	0.18* (0.09)	0.18* (0.09)
Main road is tarred road (1=yes)	−0.24* (0.15)	−0.24 (0.15)	−0.24* (0.14)	−0.25* (0.14)
log(Distance to health facility (km))	−0.17** (0.07)	−0.16** (0.07)	−0.17** (0.07)	−0.17** (0.07)
log(Household assets (million FCFA))	0.05 (0.05)	0.05 (0.06)	0.05 (0.05)	0.05 (0.05)
WTP variable			0.001 (0.04)	0.01 (0.06)
Constant	5.24*** (0.80)	5.27*** (0.81)	5.23*** (0.77)	5.16*** (0.78)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	951	951	951	951
R squared	0.13	0.13	0.13	0.13
RESET	0.646	0.646	0.649	0.649
Weak instruments		410.53***		842.69***
Wu-Hausman test		0.02		0.05

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S28: OLS and IV regression results for dietary diversity (7 days), excluding the district of Pehunco

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.18 (0.21)	0.28 (0.24)	0.37 (0.26)	0.37 (0.53)
Sex of household head (1=male)	-0.35^{*} (0.19)	-0.34^{*} (0.17)	-0.36^{**} (0.18)	-0.36^{**} (0.18)
Age of household head (years)	−0.002 (0.01)	−0.002 (0.01)	−0.003 (0.01)	−0.003 (0.01)
Education of household head (years)	0.07^{**} (0.03)	0.07^{**} (0.03)	0.07^{**} (0.03)	0.07^{**} (0.03)
Literacy (1=literate)	0.14 (0.15)	0.14 (0.14)	0.13 (0.14)	0.13 (0.14)
Experience in agriculture (years)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Household size	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)
Dependency ratio	−0.13 (0.27)	−0.13 (0.27)	−0.13 (0.27)	−0.13 (0.26)
log(total land owned (ha))	0.22^{**} (0.10)	0.22^{**} (0.10)	0.23^{**} (0.09)	0.23^{**} (0.09)
Distance to closest market (IHS, km)	−0.02 (0.08)	−0.02 (0.08)	−0.03 (0.08)	−0.03 (0.08)
Main road is tarred road (1=yes)	-0.55^{***} (0.13)	-0.56^{***} (0.14)	-0.58^{***} (0.13)	-0.57^{***} (0.12)
log(Distance to health facility (km))	0.03 (0.06)	0.02 (0.06)	0.02 (0.06)	0.02 (0.06)
log(Household assets (million FCFA))	2.29^{**} (0.93)	2.30^{**} (0.92)	2.22^{**} (0.88)	2.22^{**} (0.86)
WTP variable			0.22 (0.26)	0.21 (0.29)
Square of log(Household assets (million FCFA))	-0.08^{**} (0.03)	-0.08^{**} (0.03)	-0.08^{**} (0.03)	-0.08^{**} (0.03)
Square of WTP variable			−0.02 (0.03)	−0.02 (0.03)
Constant	−7.15 (6.46)	−7.27 (6.41)	−7.14 (6.23)	−7.13 (6.27)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	951	951	951	951
R squared	0.20	0.20	0.20	0.20
RESET	0.656	0.656	0.372	0.372
Weak instruments		410.92^{***}		741.09^{***}
Wu-Hausman test		0.26		0.00

Notes: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table S29: OLS and IV regression results for vitamin A-rich foods (24 h), excluding the district of Pehunco

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	−0.13 (0.15)	−0.12 (0.26)	−0.003 (0.19)	0.16 (0.26)
Sex of household head (1=male)	0.08 (0.11)	0.08 (0.11)	0.07 (0.11)	0.08 (0.11)
Age of household head (years)	0.01 (0.01)	0.01^{*} (0.005)	0.01 (0.01)	0.01 (0.005)
Education of household head (years)	0.04^{***} (0.01)	0.04^{***} (0.01)	0.04^{***} (0.01)	0.04^{***} (0.01)
Literacy (1=literate)	−0.01 (0.07)	−0.01 (0.07)	−0.01 (0.07)	−0.01 (0.07)
Experience in agriculture (years)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Household size	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Dependency ratio	0.11 (0.13)	0.11 (0.13)	0.11 (0.13)	0.11 (0.13)
log(total land owned (ha))	0.21^{**} (0.08)	0.21^{**} (0.08)	0.21^{**} (0.08)	0.21^{***} (0.08)
Distance to closest market (IHS, km)	0.01 (0.05)	0.01 (0.05)	0.01 (0.05)	0.01 (0.05)
Main road is tarred road (1=yes)	−0.13 (0.14)	−0.13 (0.14)	−0.14 (0.13)	−0.15 (0.13)
log(Distance to health facility (km))	-0.17^{***} (0.05)	-0.17^{***} (0.04)	-0.17^{***} (0.05)	-0.18^{***} (0.04)
log(Household assets (million FCFA))	0.13^{**} (0.05)	0.13^{**} (0.05)	0.13^{**} (0.05)	0.13^{***} (0.05)
WTP variable			0.03 (0.03)	0.06 (0.04)
Constant	0.35 (0.62)	0.34 (0.67)	0.17 (0.64)	−0.05 (0.67)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	951	951	951	951
R squared	0.16	0.16	0.16	0.16
RESET	0.094	0.094	0.198	0.198
Weak instruments		410.53^{***}		842.69^{***}
Wu-Hausman test		0.01		1.04

Notes: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table S30: OLS and IV regression results for vitamin A-rich foods (7 days), excluding the district of Pehunco

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.14 (0.12)	−0.21 (0.23)	0.31^{**} (0.13)	0.19 (0.22)
Sex of household head (1=male)	−0.02 (0.17)	−0.07 (0.17)	−0.02 (0.16)	−0.03 (0.17)
Age of household head (years)	0.01 (0.01)	0.01 (0.01)	0.005 (0.01)	0.01 (0.01)
Education of household head (years)	0.04^{***} (0.01)	0.04^{***} (0.01)	0.04^{**} (0.01)	0.04^{***} (0.01)
Literacy (1=literate)	0.004 (0.08)	0.01 (0.09)	0.01 (0.08)	0.01 (0.08)
Experience in agriculture (years)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Household size	0.002 (0.01)	0.003 (0.01)	0.002 (0.01)	0.002 (0.01)
Dependency ratio	−0.19 (0.12)	−0.20 (0.13)	−0.19 (0.12)	−0.19 (0.12)
log(total land owned (ha))	0.17^{**} (0.07)	0.14^{*} (0.07)	0.16^{**} (0.07)	0.16^{**} (0.07)
Distance to closest market (IHS, km)	−0.06 (0.05)	−0.07 (0.05)	−0.06 (0.05)	−0.06 (0.05)
Main road is tarred road (1=yes)	−0.17 (0.15)	−0.14 (0.15)	−0.18 (0.15)	−0.17 (0.15)
log(Distance to health facility (km))	−0.05 (0.03)	−0.03 (0.04)	−0.05 (0.03)	−0.05 (0.03)
log(Household assets (million FCFA))	0.14^{***} (0.04)	0.13^{***} (0.04)	0.14^{***} (0.04)	0.14^{***} (0.04)
WTP variable			0.04^{*} (0.02)	0.02 (0.03)
Constant	2.39^{***} (0.54)	2.74^{***} (0.55)	2.15^{***} (0.54)	2.30^{***} (0.59)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	951	951	951	951
R squared	0.28	0.27	0.28	0.28
RESET	0.001	0.001	< 0.001	< 0.001
Weak instruments		410.53^{***}		842.69^{***}
Wu-Hausman test		6.56^{**}		0.54

Notes: *p<0.1; **p<0.05; ***p<0.01

G.6 Results of regression models for mediating outcome variables excluding data from the district of Pehunco (with and without WTP variable)

Table S31: OLS and IV regression results for number of livestock species kept, excluding the district of Pehunco

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.06 (0.09)	0.01 (0.21)	−0.05 (0.12)	0.15 (0.25)
Sex of household head (1=male)	−0.12 (0.13)	−0.13 (0.14)	−0.11 (0.13)	−0.11 (0.13)
Age of household head (years)	−0.005 (0.01)	−0.004 (0.005)	−0.004 (0.01)	−0.005 (0.005)
Education of household head (years)	−0.03** (0.01)	−0.03** (0.01)	−0.03** (0.01)	−0.03** (0.01)
Literacy (1=literate)	0.14*** (0.05)	0.14*** (0.05)	0.14*** (0.05)	0.14*** (0.05)
Experience in agriculture (years)	−0.001 (0.004)	−0.001 (0.004)	−0.001 (0.004)	−0.001 (0.004)
Household size	−0.02* (0.01)	−0.02* (0.01)	−0.02* (0.01)	−0.02* (0.01)
Dependency ratio	0.57*** (0.14)	0.57*** (0.14)	0.57*** (0.14)	0.58*** (0.14)
log(total land owned (ha))	0.08 (0.06)	0.08 (0.06)	0.08 (0.06)	0.08 (0.06)
Distance to closest market (IHS, km)	0.01 (0.04)	0.01 (0.05)	0.01 (0.05)	0.01 (0.04)
Main road is tarred road (1=yes)	−0.13 (0.17)	−0.13 (0.17)	−0.13 (0.17)	−0.14 (0.17)
log(Distance to health facility (km))	−0.004 (0.04)	−0.001 (0.03)	−0.004 (0.04)	−0.01 (0.04)
log(Household assets (million FCFA))	0.27*** (0.04)	0.27*** (0.04)	0.27*** (0.04)	0.27*** (0.04)
WTP variable			−0.03 (0.02)	0.003 (0.03)
Constant	−2.33*** (0.43)	−2.27*** (0.48)	−2.16*** (0.43)	−2.41*** (0.44)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	951	951	951	951
R squared	0.23	0.23	0.23	0.23
RESET	0.323	0.323	0.331	0.331
Weak instruments		410.53***		842.69***
Wu-Hausman test		0.32		2.68

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S32: OLS and IV regression results for number of food crops produced, excluding the district of Pehunco

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.23 (0.21)	0.17 (0.46)	0.23 (0.29)	0.04 (0.49)
Sex of household head (1=male)	−0.44** (0.17)	−0.45** (0.18)	−0.44** (0.17)	−0.44*** (0.17)
Age of household head (years)	−0.02*** (0.01)	−0.02*** (0.01)	−0.02*** (0.01)	−0.02*** (0.01)
Education of household head (years)	−0.003 (0.02)	−0.002 (0.02)	−0.003 (0.02)	−0.002 (0.02)
Literacy (1=literate)	0.04 (0.18)	0.04 (0.17)	0.04 (0.18)	0.04 (0.18)
Experience in agriculture (years)	0.01* (0.01)	0.01* (0.01)	0.01* (0.01)	0.01* (0.01)
Household size	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)
Dependency ratio	0.16 (0.31)	0.15 (0.30)	0.16 (0.31)	0.15 (0.30)
log(total land owned (ha))	2.18*** (0.34)	2.17*** (0.35)	2.18*** (0.35)	2.16*** (0.34)
Distance to closest market (IHS, km)	−0.52* (0.29)	−0.54 (0.34)	−0.52* (0.29)	−0.55* (0.31)
Main road is tarred road (1=yes)	−0.21 (0.26)	−0.21 (0.26)	−0.21 (0.26)	−0.20 (0.25)
log(Distance to health facility (km))	−0.07 (0.06)	−0.07 (0.07)	−0.07 (0.06)	−0.07 (0.06)
log(Household assets (million FCFA))	0.002 (0.06)	−0.0004 (0.06)	0.002 (0.06)	−0.001 (0.06)
WTP variable			0.001 (0.04)	−0.03 (0.07)
Square of log(Total land owned (ha))	−0.18*** (0.07)	−0.18*** (0.07)	−0.18*** (0.07)	−0.18*** (0.07)
Square of distance to closest market (IHS, km)	0.21** (0.09)	0.22** (0.10)	0.21** (0.09)	0.22** (0.09)
Constant	3.10*** (0.96)	3.17*** (1.01)	3.09*** (1.00)	3.35*** (1.11)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	951	951	951	951
R squared	0.51	0.51	0.51	0.51
RESET	0.003	0.003	0.003	0.003
Weak instruments		377.10***		791.97***
Wu-Hausman test		0.08		0.61

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S33: OLS and IV regression results for food crop area (IHS, ha), excluding the district of Pehunco

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.25*** (0.04)	0.34*** (0.05)	0.27*** (0.06)	0.27*** (0.07)
Sex of household head (1=male)	0.01 (0.05)	0.03 (0.05)	0.01 (0.05)	0.01 (0.05)
Age of household head (years)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
Education of household head (years)	−0.01*** (0.004)	−0.01*** (0.003)	−0.01** (0.004)	−0.01*** (0.004)
Literacy (1=literate)	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)
Experience in agriculture (years)	0.001 (0.002)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Household size	0.004 (0.003)	0.003 (0.004)	0.004 (0.003)	0.004 (0.003)
Dependency ratio	0.56*** (0.21)	0.56*** (0.20)	0.56*** (0.21)	0.56*** (0.20)
log(total land owned (ha))	0.88*** (0.13)	0.84*** (0.13)	0.87*** (0.13)	0.87*** (0.13)
Distance to closest market (IHS, km)	0.0002 (0.01)	0.003 (0.02)	−0.0000 (0.01)	−0.0000 (0.01)
Main road is tarred road (1=yes)	−0.07*** (0.03)	−0.08*** (0.02)	−0.07*** (0.03)	−0.07*** (0.03)
log(Distance to health facility (km))	0.01 (0.01)	0.003 (0.01)	0.01 (0.01)	0.01 (0.01)
log(Household assets (million FCFA))	0.02 (0.01)	0.02 (0.01)	0.02 (0.01)	0.02 (0.01)
WTP variable			0.005 (0.01)	0.01 (0.01)
Square of log(Total land owned (ha))	0.03 (0.06)	0.05 (0.06)	0.03 (0.06)	0.03 (0.06)
Cube of log(total land owned (ha))	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Square of dependency ratio	−0.66*** (0.23)	−0.66*** (0.23)	−0.66*** (0.23)	−0.65*** (0.23)
Constant	0.24 (0.19)	0.16 (0.20)	0.21 (0.20)	0.20 (0.21)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	951	951	951	951
R squared	0.88	0.88	0.88	0.88
Semi-elasticity	0.28***(0.04)	0.41***(0.05)	0.31***(0.05)	0.32***(0.06)
RESET	0.406	0.406	0.417	0.417
Weak instruments		402.68***		831.50***
Wu-Hausman test		7.60***		0.02

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S34: OLS and IV regression results for log(cotton area), excluding the district of Pehunco

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	−0.66*** (0.13)	−0.77*** (0.13)	−0.84*** (0.14)	−0.98*** (0.18)
Sex of household head (1=male)	0.02 (0.09)	0.003 (0.09)	0.03 (0.09)	0.03 (0.09)
Age of household head (years)	−0.002 (0.003)	−0.002 (0.003)	−0.002 (0.003)	−0.002 (0.003)
Education of household head (years)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Literacy (1=literate)	−0.09** (0.04)	−0.08** (0.04)	−0.09** (0.04)	−0.09** (0.04)
Experience in agriculture (years)	0.002 (0.003)	0.002 (0.003)	0.001 (0.003)	0.001 (0.003)
Household size	0.02*** (0.01)	0.02*** (0.01)	0.02*** (0.01)	0.02*** (0.01)
Dependency ratio	−0.11 (0.09)	−0.12 (0.09)	−0.11 (0.09)	−0.12 (0.09)
log(total land owned (ha))	0.69*** (0.04)	0.68*** (0.04)	0.69*** (0.04)	0.69*** (0.04)
Distance to closest market (IHS, km)	0.02 (0.03)	0.02 (0.03)	0.02 (0.03)	0.02 (0.03)
Main road is tarred road (1=yes)	0.15** (0.06)	0.16*** (0.05)	0.16*** (0.06)	0.17*** (0.06)
log(Distance to health facility (km))	−0.02 (0.02)	−0.02 (0.02)	−0.02 (0.02)	−0.02 (0.02)
log(Household assets (million FCFA))	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)
WTP variable			−0.04** (0.02)	−0.07*** (0.03)
Constant	−1.27*** (0.25)	−1.16*** (0.26)	−1.01*** (0.30)	−0.84** (0.33)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	951	951	951	951
R squared	0.64	0.63	0.64	0.64
Semi-elasticity	−0.48***(0.07)	−0.54***(0.06)	−0.57***(0.06)	−0.62***(0.07)
RESET	< 0.001	< 0.001	0.001	0.001
Weak instruments		410.53***		842.69***
Wu-Hausman test		2.90*		3.18*

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S35: OLS and IV regression results for cotton income (IHS, 100,000 FCFA), excluding the district of Pehunco

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	-0.60^{***} (0.14)	-0.73^{***} (0.22)	-0.75^{***} (0.14)	-0.88^{***} (0.20)
Sex of household head (1=male)	0.14 (0.11)	0.12 (0.12)	0.15 (0.11)	0.15 (0.11)
Age of household head (years)	−0.004 (0.004)	−0.003 (0.004)	−0.003 (0.004)	−0.003 (0.004)
Education of household head (years)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Literacy (1=literate)	-0.09^{*} (0.05)	-0.09^{*} (0.05)	-0.08^{*} (0.05)	-0.08^{*} (0.05)
Experience in agriculture (years)	0.002 (0.004)	0.002 (0.004)	0.001 (0.004)	0.001 (0.004)
Household size	0.03^{***} (0.01)	0.03^{***} (0.01)	0.03^{***} (0.01)	0.03^{***} (0.01)
Dependency ratio	−0.21 (0.15)	−0.21 (0.15)	−0.21 (0.15)	−0.21 (0.15)
log(total land owned (ha))	0.75^{***} (0.06)	0.74^{***} (0.06)	0.74^{***} (0.06)	0.73^{***} (0.06)
Distance to closest market (IHS, km)	0.01 (0.03)	0.01 (0.03)	0.02 (0.03)	0.02 (0.03)
Main road is tarred road (1=yes)	0.27^{***} (0.07)	0.29^{***} (0.06)	0.31^{***} (0.06)	0.32^{***} (0.06)
log(Distance to health facility (km))	0.02 (0.03)	0.03 (0.03)	0.03 (0.03)	0.03 (0.03)
log(Household assets (million FCFA))	0.05 (0.03)	0.04 (0.03)	0.04 (0.03)	0.04 (0.03)
WTP variable			-0.24^{***} (0.09)	-0.28^{***} (0.10)
Square of WTP variable			0.03^{**} (0.01)	0.03^{***} (0.01)
Constant	-0.94^{**} (0.43)	-0.81^{*} (0.46)	−0.41 (0.47)	−0.21 (0.47)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	948	948	948	948
R squared	0.49	0.49	0.49	0.49
Semi-elasticity	-0.46^{***}(0.05)	-0.54^{***}(0.07)	-0.55^{***}(0.05)	-0.61^{***}(0.06)
RESET	< 0.001	< 0.001	< 0.001	< 0.001
Weak instruments		412.80^{***}		741.11^{***}
Wu-Hausman test		1.91		1.11

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S36: OLS and IV regression results for log(household revenue), excluding the district of Pehunco

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	−0.70*** (0.14)	−0.74*** (0.17)	−0.95*** (0.18)	−0.93*** (0.22)
Sex of household head (1=male)	0.03 (0.09)	0.03 (0.10)	0.05 (0.10)	0.05 (0.09)
Age of household head (years)	−0.001 (0.003)	−0.001 (0.003)	−0.0001 (0.003)	−0.0001 (0.003)
Education of household head (years)	0.001 (0.01)	0.001 (0.01)	0.001 (0.01)	0.001 (0.01)
Literacy (1=literate)	−0.01 (0.05)	−0.01 (0.05)	−0.01 (0.05)	−0.01 (0.05)
Experience in agriculture (years)	−0.004 (0.003)	−0.004 (0.003)	−0.005* (0.003)	−0.005* (0.003)
Household size	0.02*** (0.01)	0.02*** (0.01)	0.02*** (0.01)	0.02*** (0.01)
Dependency ratio	−0.10 (0.12)	−0.10 (0.12)	−0.10 (0.12)	−0.10 (0.11)
log(total land owned (ha))	0.46*** (0.15)	0.45*** (0.14)	0.43*** (0.13)	0.43*** (0.12)
Distance to closest market (IHS, km)	0.03 (0.02)	0.02 (0.02)	0.03 (0.02)	0.03 (0.02)
Main road is tarred road (1=yes)	0.23*** (0.09)	0.24*** (0.09)	0.27*** (0.09)	0.27*** (0.09)
log(Distance to health facility (km))	0.02 (0.03)	0.03 (0.03)	0.03 (0.03)	0.03 (0.03)
log(Household assets (million FCFA))	0.06* (0.03)	0.05* (0.03)	0.05 (0.03)	0.05 (0.03)
WTP variable			−0.24** (0.09)	−0.23** (0.11)
Square of log(Total land owned (ha))	0.04 (0.03)	0.04 (0.03)	0.04 (0.03)	0.04 (0.03)
Square of log(distance to health facility (km))	−0.03*** (0.01)	−0.03*** (0.01)	−0.03*** (0.01)	−0.03*** (0.01)
Square of WTP variable			0.02** (0.01)	0.02** (0.01)
Constant	11.95*** (0.45)	11.98*** (0.42)	12.58*** (0.47)	12.56*** (0.48)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	951	951	951	951
R squared	0.51	0.51	0.51	0.51
Semi-elasticity	−0.50***(0.07)	−0.52***(0.08)	−0.61***(0.07)	−0.61***(0.09)
RESET	0.009	0.009	0.030	0.030
Weak instruments		391.31***		713.85***
Wu-Hausman test		0.15		0.01

Notes: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

G.7 Results of regression models for outcome variables with observations only from similar organic and conventional villages (with and without WTP variable)

Table S37: OLS and IV regression results for HFIES (original) in similar organic and conventional villages

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.41 (0.31)	0.13 (0.47)	1.51*** (0.53)	2.22*** (0.51)
Sex of household head (1=male)	0.24 (0.22)	0.19 (0.24)	0.13 (0.23)	0.16 (0.22)
Age of household head (years)	−0.03*** (0.01)	−0.03*** (0.01)	−0.03*** (0.01)	−0.03*** (0.01)
Education of household head (years)	−0.05* (0.03)	−0.05* (0.03)	−0.05* (0.03)	−0.06** (0.03)
Literacy (1=literate)	0.35* (0.20)	0.35* (0.20)	0.34 (0.21)	0.34 (0.21)
Experience in agriculture (years)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)
Household size	0.05** (0.03)	0.05** (0.03)	0.05** (0.02)	0.06** (0.02)
Dependency ratio	0.38 (0.39)	0.37 (0.37)	0.31 (0.38)	0.28 (0.38)
log(total land owned (ha))	−0.71*** (0.14)	−0.74*** (0.15)	−0.61*** (0.13)	−0.56*** (0.13)
Distance to closest market (IHS, km)	−0.25** (0.12)	−0.25** (0.12)	−0.23** (0.12)	−0.21* (0.12)
Main road is tarred road (1=yes)	−0.20 (0.47)	−0.17 (0.49)	−0.38 (0.49)	−0.45 (0.44)
log(Distance to health facility (km))	0.11 (0.09)	0.12 (0.09)	0.02 (0.07)	−0.01 (0.06)
log(Household assets (million FCFA))	0.02 (0.10)	0.01 (0.10)	0.003 (0.11)	0.002 (0.10)
WTP variable			1.06*** (0.33)	1.21*** (0.32)
Square of WTP variable			−0.10*** (0.04)	−0.10*** (0.04)
Constant	3.61*** (1.28)	3.85*** (1.27)	1.30 (1.31)	0.54 (1.56)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1016	1016	1016	1016
R squared	0.14	0.14	0.18	0.18
RESET	0.747	0.747	0.280	0.280
Weak instruments		398.25***		1259.97***
Wu-Hausman test		0.95		9.46***

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S38: OLS and IV regression results for HFIES (extended) in similar organic and conventional villages

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.28 (0.45)	−0.51 (0.59)	1.67** (0.78)	2.60*** (0.79)
Sex of household head (1=male)	0.29 (0.29)	0.14 (0.32)	0.16 (0.29)	0.20 (0.29)
Age of household head (years)	−0.04** (0.02)	−0.04** (0.02)	−0.04*** (0.02)	−0.04*** (0.02)
Education of household head (years)	−0.05 (0.04)	−0.05 (0.04)	−0.06 (0.04)	−0.06 (0.04)
Literacy (1=literate)	0.35 (0.30)	0.36 (0.29)	0.37 (0.29)	0.37 (0.29)
Experience in agriculture (years)	0.04** (0.02)	0.04** (0.02)	0.04** (0.02)	0.04** (0.02)
Household size	0.07* (0.04)	0.07* (0.04)	0.08* (0.04)	0.08* (0.04)
Dependency ratio	0.54 (0.63)	0.53 (0.59)	0.42 (0.61)	0.39 (0.61)
log(total land owned (ha))	−0.99*** (0.19)	−1.06*** (0.21)	−0.94*** (0.19)	−0.88*** (0.19)
Distance to closest market (IHS, km)	−0.40** (0.17)	−0.41** (0.17)	−0.35** (0.17)	−0.33* (0.17)
Main road is tarred road (1=yes)	−0.22 (0.63)	−0.14 (0.69)	−0.34 (0.67)	−0.42 (0.59)
log(Distance to health facility (km))	0.17 (0.14)	0.19 (0.14)	0.09 (0.11)	0.06 (0.11)
log(Household assets (million FCFA))	0.05 (0.15)	0.03 (0.15)	0.01 (0.14)	0.01 (0.14)
WTP variable			0.34*** (0.13)	0.46*** (0.11)
Constant	4.70** (1.93)	5.39*** (1.92)	3.20* (1.85)	2.31 (2.25)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1016	1016	1016	1016
R squared	0.14	0.13	0.16	0.16
RESET	0.447	0.447	0.001	0.001
Weak instruments		398.25***		1286.72***
Wu-Hausman test		3.47*		7.47***

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S39: OLS and IV regression results for dietary diversity (24 h) in similar organic and conventional villages

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	-0.47^{**} (0.24)	-0.48 (0.35)	-1.12^{***} (0.27)	-1.35^{***} (0.35)
Sex of household head (1=male)	-0.53^{**} (0.22)	-0.53^{***} (0.20)	-0.46^{**} (0.23)	-0.47^{**} (0.22)
Age of household head (years)	0.004 (0.01)	0.004 (0.01)	0.005 (0.01)	0.005 (0.01)
Education of household head (years)	0.05^{**} (0.03)	0.05^{**} (0.03)	0.06^{**} (0.03)	0.06^{**} (0.03)
Literacy (1=literate)	0.23 (0.15)	0.23 (0.15)	0.23 (0.15)	0.23 (0.14)
Experience in agriculture (years)	-0.01 (0.01)	-0.01 (0.01)	-0.02 (0.01)	-0.02 (0.01)
Household size	0.02 (0.02)	0.02 (0.02)	0.02 (0.03)	0.02 (0.03)
Dependency ratio	-0.36 (0.29)	-0.36 (0.28)	-0.30 (0.28)	-0.30 (0.28)
log(total land owned (ha))	0.31^{**} (0.12)	0.31^{**} (0.13)	0.29^{**} (0.13)	0.28^{**} (0.14)
Distance to closest market (IHS, km)	0.34^{***} (0.11)	0.34^{***} (0.11)	0.32^{***} (0.11)	0.31^{***} (0.11)
Main road is tarred road (1=yes)	-0.23 (0.16)	-0.22 (0.17)	-0.17 (0.17)	-0.15 (0.17)
log(Distance to health facility (km))	-0.29^{***} (0.08)	-0.29^{***} (0.08)	-0.26^{***} (0.07)	-0.25^{***} (0.07)
log(Household assets (million FCFA))	0.07 (0.06)	0.07 (0.06)	0.08 (0.06)	0.08 (0.06)
WTP variable			-0.16^{***} (0.05)	-0.19^{***} (0.05)
Constant	5.32^{***} (0.96)	5.33^{***} (0.99)	6.01^{***} (0.92)	6.24^{***} (0.93)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1016	1016	1016	1016
R squared	0.13	0.13	0.14	0.14
RESET	0.004	0.004	0.013	0.013
Weak instruments		398.25^{***}		1286.72^{***}
Wu-Hausman test		0.00		1.40

Notes: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table S40: OLS and IV regression results for dietary diversity (7 days) in similar organic and conventional villages

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.09 (0.22)	0.18 (0.26)	0.11 (0.25)	0.17 (0.36)
Sex of household head (1=male)	−0.22 (0.20)	−0.20 (0.19)	−0.21 (0.19)	−0.21 (0.19)
Age of household head (years)	0.001 (0.01)	0.001 (0.01)	0.0005 (0.01)	0.0004 (0.01)
Education of household head (years)	0.04 (0.03)	0.04 (0.03)	0.04 (0.03)	0.04 (0.03)
Literacy (1=literate)	0.30** (0.14)	0.30** (0.14)	0.29** (0.13)	0.29** (0.13)
Experience in agriculture (years)	−0.02** (0.01)	−0.02** (0.01)	−0.02** (0.01)	−0.02** (0.01)
Household size	0.04** (0.02)	0.04** (0.02)	0.04** (0.02)	0.04** (0.02)
Dependency ratio	−0.50** (0.24)	−0.50** (0.23)	−0.48** (0.24)	−0.49** (0.24)
log(total land owned (ha))	0.13 (0.09)	0.14 (0.09)	0.16* (0.08)	0.16* (0.08)
Distance to closest market (IHS, km)	0.10 (0.11)	0.10 (0.10)	0.09 (0.10)	0.09 (0.10)
Main road is tarred road (1=yes)	−0.57*** (0.15)	−0.58*** (0.16)	−0.61*** (0.14)	−0.62*** (0.13)
log(Distance to health facility (km))	−0.03 (0.07)	−0.04 (0.07)	−0.05 (0.07)	−0.05 (0.07)
log(Household assets (million FCFA))	3.10*** (0.78)	3.12*** (0.77)	2.91*** (0.71)	2.91*** (0.70)
WTP variable			0.36 (0.23)	0.37* (0.22)
Square of log(Household assets (million FCFA))	−0.11*** (0.03)	−0.11*** (0.03)	−0.10*** (0.03)	−0.10*** (0.02)
Square of WTP variable			−0.04* (0.03)	−0.04* (0.03)
Constant	−12.51** (5.44)	−12.69** (5.38)	−11.69** (5.08)	−11.71** (5.03)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1016	1016	1016	1016
R squared	0.20	0.20	0.21	0.21
RESET	0.497	0.497	0.349	0.349
Weak instruments		399.52***		1260.34***
Wu-Hausman test		0.19		0.11

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S41: OLS and IV regression results for vitamin A-rich foods (24 h) in similar organic and conventional villages

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	−0.19 (0.15)	−0.21 (0.27)	-0.53^{***} (0.19)	-0.73^{***} (0.26)
Sex of household head (1=male)	−0.13 (0.09)	−0.13 (0.10)	−0.09 (0.10)	−0.10 (0.10)
Age of household head (years)	0.002 (0.004)	0.002 (0.004)	0.002 (0.005)	0.002 (0.004)
Education of household head (years)	0.03^{**} (0.01)	0.03^{**} (0.01)	0.03^{**} (0.01)	0.03^{***} (0.01)
Literacy (1=literate)	0.09 (0.07)	0.09 (0.07)	0.08 (0.08)	0.08 (0.07)
Experience in agriculture (years)	−0.002 (0.01)	−0.002 (0.01)	−0.002 (0.01)	−0.002 (0.01)
Household size	0.005 (0.01)	0.005 (0.01)	0.003 (0.01)	0.003 (0.01)
Dependency ratio	−0.14 (0.12)	−0.14 (0.12)	−0.11 (0.11)	−0.10 (0.11)
log(total land owned (ha))	0.15^{*} (0.08)	0.15 (0.09)	0.14 (0.09)	0.12 (0.09)
Distance to closest market (IHS, km)	0.13^{*} (0.07)	0.13^{*} (0.07)	0.12^{*} (0.07)	0.11^{*} (0.06)
Main road is tarred road (1=yes)	−0.08 (0.16)	−0.08 (0.17)	−0.05 (0.17)	−0.04 (0.17)
log(Distance to health facility (km))	-0.25^{***} (0.05)	-0.25^{***} (0.05)	-0.23^{***} (0.05)	-0.22^{***} (0.05)
log(Household assets (million FCFA))	0.12^{**} (0.05)	0.12^{**} (0.05)	0.13^{**} (0.05)	0.13^{**} (0.05)
WTP variable			-0.09^{**} (0.03)	-0.11^{***} (0.04)
Constant	0.98 (0.67)	1.00 (0.71)	1.35^{**} (0.66)	1.54^{**} (0.67)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1016	1016	1016	1016
R squared	0.16	0.16	0.17	0.17
RESET	0.431	0.431	0.214	0.214
Weak instruments		398.25^{***}		1286.72^{***}
Wu-Hausman test		0.03		2.36

Notes: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table S42: OLS and IV regression results for vitamin A-rich foods (7 days) in similar organic and conventional villages

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.11 (0.12)	−0.27 (0.23)	0.11 (0.14)	−0.04 (0.20)
Sex of household head (1=male)	0.03 (0.16)	−0.04 (0.17)	0.03 (0.16)	0.03 (0.16)
Age of household head (years)	0.01* (0.005)	0.01* (0.005)	0.01* (0.005)	0.01* (0.005)
Education of household head (years)	0.02 (0.01)	0.02* (0.01)	0.02 (0.01)	0.02 (0.01)
Literacy (1=literate)	0.10 (0.09)	0.10 (0.10)	0.10 (0.09)	0.10 (0.09)
Experience in agriculture (years)	−0.02*** (0.01)	−0.01*** (0.01)	−0.02*** (0.01)	−0.02*** (0.01)
Household size	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Dependency ratio	−0.30** (0.12)	−0.31** (0.12)	−0.30** (0.12)	−0.30** (0.12)
log(total land owned (ha))	0.12* (0.07)	0.08 (0.08)	0.12* (0.07)	0.11 (0.07)
Distance to closest market (IHS, km)	0.02 (0.07)	0.01 (0.07)	0.02 (0.07)	0.01 (0.07)
Main road is tarred road (1=yes)	−0.13 (0.17)	−0.09 (0.17)	−0.13 (0.17)	−0.11 (0.17)
log(Distance to health facility (km))	−0.09** (0.04)	−0.08* (0.05)	−0.09** (0.04)	−0.09** (0.04)
log(Household assets (million FCFA))	0.13*** (0.05)	0.12*** (0.05)	0.13*** (0.05)	0.13*** (0.05)
WTP variable			0.0000 (0.02)	−0.02 (0.02)
Constant	2.60*** (0.59)	2.93*** (0.59)	2.60*** (0.60)	2.75*** (0.59)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1016	1016	1016	1016
R squared	0.24	0.22	0.24	0.24
RESET	0.349	0.349	0.340	0.340
Weak instruments		398.25***		1286.72***
Wu-Hausman test		6.73***		1.65

Notes: *p<0.1; **p<0.05; ***p<0.01

G.8 Results of regression models for mediating outcome variables with observations only from similar organic and conventional villages

Table S43: OLS and IV regression results for number of livestock species kept in similar organic and conventional villages

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.07 (0.09)	0.02 (0.22)	0.14 (0.11)	0.38* (0.20)
Sex of household head (1=male)	−0.23* (0.13)	−0.24 (0.15)	−0.23* (0.13)	−0.22* (0.13)
Age of household head (years)	−0.01* (0.004)	−0.01* (0.004)	−0.01* (0.004)	−0.01* (0.004)
Education of household head (years)	−0.03*** (0.01)	−0.03*** (0.01)	−0.04*** (0.01)	−0.04*** (0.01)
Literacy (1=literate)	0.17*** (0.06)	0.17*** (0.06)	0.17*** (0.06)	0.17** (0.07)
Experience in agriculture (years)	0.001 (0.004)	0.001 (0.004)	0.001 (0.004)	0.001 (0.004)
Household size	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Dependency ratio	0.44*** (0.14)	0.44*** (0.13)	0.43*** (0.14)	0.43*** (0.14)
log(total land owned (ha))	0.10* (0.05)	0.09* (0.05)	0.10* (0.05)	0.11** (0.06)
Distance to closest market (IHS, km)	0.04 (0.04)	0.04 (0.04)	0.05 (0.04)	0.05 (0.04)
Main road is tarred road (1=yes)	−0.10 (0.18)	−0.10 (0.18)	−0.11 (0.19)	−0.13 (0.18)
log(Distance to health facility (km))	−0.02 (0.04)	−0.02 (0.04)	−0.02 (0.04)	−0.03 (0.04)
log(Household assets (million FCFA))	0.28*** (0.04)	0.28*** (0.04)	0.28*** (0.04)	0.28*** (0.04)
WTP variable			0.02 (0.02)	0.05* (0.03)
Constant	−2.35*** (0.43)	−2.31*** (0.47)	−2.43*** (0.42)	−2.66*** (0.41)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1016	1016	1016	1016
R squared	0.22	0.22	0.22	0.22
RESET	0.320	0.320	0.405	0.405
Weak instruments		398.25***		1286.72***
Wu-Hausman test		0.16		6.97***

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S44: OLS and IV regression results for number of food crops produced in similar organic and conventional villages

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.23 (0.20)	0.22 (0.47)	0.25 (0.28)	0.27 (0.39)
Sex of household head (1=male)	−0.36** (0.18)	−0.36* (0.19)	−0.36** (0.18)	−0.36** (0.17)
Age of household head (years)	−0.03*** (0.01)	−0.03*** (0.01)	−0.03*** (0.01)	−0.03*** (0.01)
Education of household head (years)	−0.03 (0.02)	−0.03 (0.02)	−0.03 (0.02)	−0.03 (0.02)
Literacy (1=literate)	0.07 (0.17)	0.07 (0.17)	0.07 (0.18)	0.07 (0.17)
Experience in agriculture (years)	0.01* (0.01)	0.01* (0.01)	0.01* (0.01)	0.01* (0.01)
Household size	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)
Dependency ratio	−0.06 (0.28)	−0.06 (0.28)	−0.06 (0.28)	−0.06 (0.28)
log(total land owned (ha))	2.09*** (0.34)	2.08*** (0.36)	2.09*** (0.35)	2.09*** (0.35)
Distance to closest market (IHS, km)	−0.51* (0.29)	−0.51 (0.34)	−0.51* (0.29)	−0.50 (0.31)
Main road is tarred road (1=yes)	−0.25 (0.29)	−0.25 (0.30)	−0.25 (0.29)	−0.26 (0.29)
log(Distance to health facility (km))	−0.07 (0.06)	−0.07 (0.06)	−0.07 (0.06)	−0.07 (0.06)
log(Household assets (million FCFA))	−0.02 (0.06)	−0.02 (0.06)	−0.02 (0.06)	−0.02 (0.06)
WTP variable			0.01 (0.04)	0.01 (0.05)
Square of log(Total land owned (ha))	−0.15** (0.06)	−0.15** (0.06)	−0.15** (0.06)	−0.15** (0.06)
Square of distance to closest market (IHS, km)	0.19** (0.09)	0.19* (0.10)	0.19** (0.09)	0.19** (0.09)
Constant	3.80*** (1.00)	3.81*** (1.04)	3.77*** (1.04)	3.75*** (1.06)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1016	1016	1016	1016
R squared	0.50	0.50	0.50	0.50
RESET	0.053	0.053	0.039	0.039
Weak instruments		365.79***		1219.46***
Wu-Hausman test		0.00		0.02

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S45: OLS and IV regression results for food crop area (IHS, ha) in similar organic and conventional villages

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	0.24*** (0.05)	0.35*** (0.05)	0.28*** (0.05)	0.32*** (0.06)
Sex of household head (1=male)	−0.01 (0.03)	0.02 (0.03)	−0.01 (0.03)	−0.01 (0.03)
Age of household head (years)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
Education of household head (years)	−0.01*** (0.003)	−0.01*** (0.003)	−0.01*** (0.003)	−0.01*** (0.003)
Literacy (1=literate)	0.02 (0.03)	0.02 (0.02)	0.03 (0.03)	0.03 (0.03)
Experience in agriculture (years)	0.001 (0.001)	0.0003 (0.001)	0.001 (0.001)	0.001 (0.001)
Household size	0.004 (0.003)	0.004 (0.003)	0.004 (0.003)	0.004* (0.003)
Dependency ratio	0.49*** (0.18)	0.50*** (0.18)	0.46** (0.19)	0.46** (0.18)
log(total land owned (ha))	1.10*** (0.12)	1.08*** (0.12)	1.08*** (0.11)	1.07*** (0.11)
Distance to closest market (IHS, km)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Main road is tarred road (1=yes)	−0.08*** (0.03)	−0.09*** (0.02)	−0.08*** (0.03)	−0.08*** (0.02)
log(Distance to health facility (km))	−0.003 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
log(Household assets (million FCFA))	0.01 (0.01)	0.02 (0.01)	0.01 (0.01)	0.01 (0.01)
WTP variable			0.01** (0.01)	0.02** (0.01)
Square of log(Total land owned (ha))	−0.07 (0.05)	−0.06 (0.06)	−0.06 (0.05)	−0.06 (0.05)
Cube of log(total land owned (ha))	0.01 (0.01)	0.005 (0.01)	0.01 (0.01)	0.01 (0.01)
Square of dependency ratio	−0.66*** (0.21)	−0.67*** (0.21)	−0.63*** (0.22)	−0.63*** (0.21)
Constant	0.22 (0.18)	0.13 (0.18)	0.18 (0.18)	0.15 (0.19)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1016	1016	1016	1016
R squared	0.88	0.88	0.89	0.89
Semi-elasticity	0.27***(0.04)	0.43***(0.05)	0.33***(0.04)	0.38***(0.05)
RESET	0.125	0.125	0.129	0.129
Weak instruments		390.97***		1256.33***
Wu-Hausman test		10.51***		1.22

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S46: OLS and IV regression results for log(cotton area) in similar organic and conventional villages

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	−0.66*** (0.13)	−0.78*** (0.14)	−0.61*** (0.15)	−0.55*** (0.18)
Sex of household head (1=male)	−0.01 (0.10)	−0.03 (0.10)	−0.01 (0.09)	−0.01 (0.09)
Age of household head (years)	−0.0005 (0.003)	−0.0003 (0.003)	−0.001 (0.003)	−0.001 (0.003)
Education of household head (years)	0.01* (0.01)	0.01* (0.01)	0.01* (0.01)	0.01 (0.01)
Literacy (1=literate)	−0.09** (0.04)	−0.09** (0.04)	−0.09** (0.04)	−0.09** (0.04)
Experience in agriculture (years)	0.001 (0.003)	0.002 (0.003)	0.002 (0.003)	0.002 (0.003)
Household size	0.02*** (0.01)	0.02*** (0.01)	0.02*** (0.01)	0.02*** (0.01)
Dependency ratio	−0.08 (0.10)	−0.08 (0.10)	−0.08 (0.10)	−0.08 (0.10)
log(total land owned (ha))	0.71*** (0.04)	0.70*** (0.04)	0.71*** (0.05)	0.72*** (0.05)
Distance to closest market (IHS, km)	0.03 (0.03)	0.03 (0.03)	0.03 (0.03)	0.03 (0.03)
Main road is tarred road (1=yes)	0.19*** (0.06)	0.20*** (0.05)	0.18*** (0.06)	0.18*** (0.06)
log(Distance to health facility (km))	−0.03 (0.02)	−0.02 (0.02)	−0.03 (0.02)	−0.03 (0.02)
log(Household assets (million FCFA))	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)
WTP variable			0.01 (0.02)	0.02 (0.02)
Constant	−1.49*** (0.27)	−1.39*** (0.29)	−1.54*** (0.30)	−1.60*** (0.30)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1016	1016	1016	1016
R squared	0.63	0.63	0.63	0.63
Semi-elasticity	−0.48*** (0.07)	−0.54*** (0.06)	−0.46*** (0.08)	−0.42*** (0.11)
RESET	0.040	0.040	0.033	0.033
Weak instruments		398.25***		1286.72***
Wu-Hausman test		2.90*		1.35

Notes: *p<0.1; **p<0.05; ***p<0.01

Table S47: OLS and IV regression results for cotton income (IHS, 100,000 FCFA) in similar organic and conventional villages

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	−0.60*** (0.14)	−0.81*** (0.24)	−0.86*** (0.16)	−1.10*** (0.20)
Sex of household head (1=male)	0.15 (0.11)	0.11 (0.12)	0.18 (0.12)	0.17 (0.12)
Age of household head (years)	0.002 (0.005)	0.002 (0.005)	0.002 (0.005)	0.002 (0.005)
Education of household head (years)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Literacy (1=literate)	−0.10 (0.07)	−0.10 (0.07)	−0.10 (0.07)	−0.10 (0.07)
Experience in agriculture (years)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Household size	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)
Dependency ratio	−0.13 (0.17)	−0.13 (0.17)	−0.12 (0.17)	−0.11 (0.17)
log(total land owned (ha))	0.66*** (0.08)	0.64*** (0.08)	0.63*** (0.08)	0.62*** (0.08)
Distance to closest market (IHS, km)	0.07* (0.04)	0.07* (0.04)	0.07* (0.04)	0.06* (0.04)
Main road is tarred road (1=yes)	0.33*** (0.09)	0.36*** (0.08)	0.38*** (0.09)	0.40*** (0.09)
log(Distance to health facility (km))	0.03 (0.04)	0.04 (0.04)	0.06 (0.04)	0.07 (0.04)
log(Household assets (million FCFA))	0.04 (0.03)	0.03 (0.03)	0.04 (0.03)	0.04 (0.04)
WTP variable			−0.24** (0.10)	−0.29*** (0.10)
Square of WTP variable			0.02* (0.01)	0.02** (0.01)
Constant	−0.79 (0.53)	−0.62 (0.57)	−0.26 (0.52)	−0.002 (0.51)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1013	1013	1013	1013
R squared	0.51	0.51	0.52	0.51
Semi-elasticity	−0.48***(0.06)	−0.59***(0.08)	−0.61***(0.05)	−0.71***(0.05)
RESET	< 0.001	< 0.001	< 0.001	< 0.001
Weak instruments		400.48***		1254.14***
Wu-Hausman test		2.87*		6.16**

Notes: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table S48: OLS and IV regression results for log(household revenue) in similar organic and conventional villages

	without WTP		with WTP	
	OLS	IV	OLS	IV
	(1)	(2)	(3)	(4)
Organic	-0.71^{***} (0.14)	-0.71^{***} (0.18)	-0.59^{***} (0.18)	-0.37^{*} (0.20)
Sex of household head (1=male)	0.01 (0.10)	0.01 (0.11)	0.002 (0.10)	0.01 (0.10)
Age of household head (years)	−0.001 (0.003)	−0.001 (0.003)	−0.001 (0.003)	−0.001 (0.003)
Education of household head (years)	0.01 (0.01)	0.01 (0.01)	0.004 (0.01)	0.003 (0.01)
Literacy (1=literate)	−0.03 (0.06)	−0.03 (0.06)	−0.02 (0.06)	−0.02 (0.06)
Experience in agriculture (years)	−0.001 (0.003)	−0.001 (0.003)	−0.0005 (0.003)	−0.001 (0.003)
Household size	0.02^{**} (0.01)	0.02^{**} (0.01)	0.02^{***} (0.01)	0.02^{***} (0.01)
Dependency ratio	0.07 (0.12)	0.07 (0.12)	0.06 (0.12)	0.05 (0.12)
log(total land owned (ha))	0.44^{**} (0.17)	0.44^{***} (0.15)	0.42^{***} (0.16)	0.46^{***} (0.17)
Distance to closest market (IHS, km)	0.03 (0.02)	0.03 (0.02)	0.04^{*} (0.02)	0.05^{**} (0.02)
Main road is tarred road (1=yes)	0.27^{***} (0.10)	0.27^{***} (0.10)	0.28^{***} (0.10)	0.26^{**} (0.10)
log(Distance to health facility (km))	0.05 (0.04)	0.05 (0.04)	0.05 (0.04)	0.05 (0.04)
log(Household assets (million FCFA))	0.10^{***} (0.04)	0.10^{***} (0.04)	0.09^{***} (0.04)	0.09^{***} (0.04)
WTP variable			-0.16^{**} (0.08)	−0.12 (0.08)
Square of log(Total land owned (ha))	0.04 (0.04)	0.04 (0.03)	0.04 (0.03)	0.03 (0.04)
Square of log(distance to health facility (km))	-0.03^{***} (0.01)	-0.03^{**} (0.01)	-0.04^{***} (0.01)	-0.04^{***} (0.01)
Square of WTP variable			0.02^{**} (0.01)	0.02^{**} (0.01)
Constant	11.29^{***} (0.48)	11.29^{***} (0.45)	11.44^{***} (0.49)	11.19^{***} (0.47)
Arrondissement-fixed effects	Yes	Yes	Yes	Yes
Observations	1015	1015	1015	1015
R squared	0.49	0.49	0.50	0.50
Semi-elasticity	-0.51^{***}(0.07)	-0.51^{***}(0.09)	-0.44^{***}(0.10)	-0.31^{**}(0.14)
RESET	0.042	0.042	0.307	0.307
Weak instruments		381.51^{***}		1202.36^{***}
Wu-Hausman test		0.00		8.37^{***}

Notes: *p<0.1; **p<0.05; ***p<0.01

G.9 Comparing different units of measurement of IHS-transformed variables.

Table S49: Criteria for selecting the unit of measurement of food crop area (without WTP as control variable)

unit of measurement	semi-elasticity: Organic	rSquared	pSquared	logLik	logLikAdj	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} ha	0.20	0.863	0.854	**22703**	-3097	0.13	0.81	0.81	51	50783	403	16.7	**-0.6**	440.3	31.0
10^{8} ha	0.20	0.863	0.854	19836	-3097	0.13	0.81	0.81	51	50783	403	16.7	**-0.6**	440.3	31.0
10^{7} ha	0.20	0.863	0.854	16970	-3097	0.13	0.81	0.81	51	50783	403	16.7	**-0.6**	440.3	31.0
10^{6} ha	0.20	0.863	0.854	14103	-3097	0.13	0.81	0.81	51	50783	403	16.7	**-0.6**	440.3	31.0
10^{5} ha	0.20	0.863	0.854	11236	-3097	0.13	0.81	0.81	51	50783	403	16.7	-0.6	440.3	31.0
10^{4} ha	0.20	0.863	0.854	8369	-3097	0.13	0.81	0.81	51	50781	403	16.7	-0.6	440.3	31.0
10^{3} ha	0.20	0.863	0.854	5503	-3097	0.13	0.81	0.81	51	50630	402	16.7	-0.6	439.9	30.9
10^{2} ha	0.20	0.865	0.857	2685	-3057	0.13	0.83	0.82	48	39596	384	15.7	-0.7	402.9	25.7
10^{1} ha	0.21	**0.881**	**0.874**	609	-2603	**0.07**	**0.94**	**0.93**	**13**	**2491**	**115**	**8.3**	-0.8	170.5	10.8
ha	0.27	0.874	0.866	-84	**-2454**	0.07	0.92	0.91	15	5138	137	11.4	-1.5	**74.8**	**3.1**
10^{-1} ha	0.28	0.841	0.824	-315	-2639	0.10	0.77	0.77	32	320435	248	51.4	-4.2	96.3	7.5
10^{-2} ha	0.28	0.784	0.753	-570	-2887	0.13	0.61	0.60	59	6413070	429	122.7	-8.0	98.4	19.1
10^{-3} ha	0.28	0.715	0.668	-821	-3131	0.16	0.48	0.48	90	48257992	642	186.4	-10.9	99.8	34.4
10^{-4} ha	0.28	0.645	0.580	-1047	-3351	0.19	0.40	0.39	119	201860065	938	231.9	-12.9	100.9	49.7
10^{-5} ha	0.28	0.578	0.497	-1248	-3544	0.21	0.34	0.34	144	574003803	1167	262.8	-14.2	101.8	63.3
10^{-6} ha	0.28	0.518	0.422	-1425	-3714	0.24	0.30	0.30	165	1272781817	1403	283.8	-15.1	102.5	75.1
10^{-7} ha	0.28	0.466	0.357	-1582	-3865	0.25	0.27	0.27	181	2370298005	1612	298.5	-15.7	103.1	85.3
10^{-8} ha	0.28	0.421	0.301	-1724	-3999	0.26	0.25	0.25	195	3873396687	1798	309.1	-16.2	103.6	94.2
10^{-9} ha	0.29	0.383	0.253	-1852	-4120	0.28	0.24	0.23	206	5757977963	1975	316.8	-16.5	103.9	101.9

Note: Column 'unit of measurement' indicates the unit of measurement of the food crop area; column 'semi-elasticity' indicates the estimated semi-elasticity of the food crop area with respect to 'Organic'; all other columns indicate criteria for selecting the optimal unit of measurement of the food crop area as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S50: Criteria for selecting the unit of measurement of food crop area (with WTP as control variable)

unit of measurement	semi-elasticity: Organic	rSquared	pSquared	logLik	logLikAdj	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^9 ha	0.20	0.863	0.853	**22703**	-3097	0.13	0.81	0.81	51	50716	403	16.7	**-0.6**	440.5	31.0
10^8 ha	0.20	0.863	0.853	19836	-3097	0.13	0.81	0.81	51	50716	403	16.7	**-0.6**	440.5	31.0
10^7 ha	0.20	0.863	0.853	16970	-3097	0.13	0.81	0.81	51	50716	403	16.7	**-0.6**	440.5	31.0
10^6 ha	0.20	0.863	0.853	14103	-3097	0.13	0.81	0.81	51	50716	403	16.7	**-0.6**	440.5	31.0
10^5 ha	0.20	0.863	0.853	11236	-3097	0.13	0.81	0.81	51	50716	403	16.7	-0.6	440.5	31.0
10^4 ha	0.20	0.863	0.853	8369	-3097	0.13	0.81	0.81	51	50715	403	16.7	-0.6	440.5	31.0
10^3 ha	0.20	0.863	0.853	5503	-3097	0.13	0.81	0.81	51	50566	402	16.7	-0.6	440.0	30.9
10^2 ha	0.20	0.865	0.856	2685	-3057	0.13	0.83	0.82	48	39639	385	15.7	-0.7	403.0	25.7
10^1 ha	0.23	**0.881**	**0.874**	609	-2603	0.07	**0.94**	**0.93**	**13**	**2525**	**129**	**8.4**	-0.8	170.4	11.0
ha	0.31	0.875	0.866	-83	**-2453**	**0.07**	0.91	0.91	15	5232	142	11.5	-1.5	**75.5**	**3.0**
10^{-1} ha	0.33	0.841	0.824	-314	-2638	0.10	0.77	0.77	32	325440	254	51.3	-4.2	97.2	7.6
10^{-2} ha	0.34	0.784	0.753	-569	-2886	0.13	0.61	0.60	59	6490676	434	122.5	-8.0	99.5	20.1
10^{-3} ha	0.36	0.716	0.668	-820	-3130	0.16	0.48	0.48	90	48621123	660	186.1	-10.9	100.9	36.7
10^{-4} ha	0.37	0.646	0.580	-1046	-3349	0.19	0.40	0.39	120	201988520	916	231.5	-12.9	102.0	53.3
10^{-5} ha	0.39	0.579	0.497	-1246	-3543	0.22	0.34	0.34	144	573078543	1195	262.3	-14.2	102.9	68.2
10^{-6} ha	0.41	0.519	0.422	-1423	-3713	0.23	0.30	0.30	165	1263918581	1438	283.4	-15.1	103.6	81.1
10^{-7} ha	0.42	0.467	0.357	-1581	-3863	0.25	0.27	0.27	181	2362261385	1617	298.0	-15.7	104.2	92.3
10^{-8} ha	0.44	0.422	0.301	-1723	-3998	0.26	0.25	0.25	194	3859406960	1808	308.5	-16.1	104.7	102.1
10^{-9} ha	0.46	0.384	0.253	-1851	-4119	0.28	0.24	0.23	205	5707065989	1994	316.3	-16.4	105.1	110.6

Note: Column ‘unit of measurement’ indicates the unit of measurement of the food crop area; column ‘semi-elasticity’ indicates the estimated semi-elasticity of the food crop area with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the food crop area as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S51: Criteria for selecting the unit of measurement of cotton income (FCFA) (without WTP as control variable)

unit of measurement	semi-elasticity: Organic	rSquared	pSquared	logLik	logLikAdj	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^9 FCFA	-0.52	0.447	0.421	**7577**	-18161	0.11	0.85	0.85	31	27066	244	17.3	1.9	**132.7**	187.2
10^8 FCFA	-0.52	0.447	0.421	4717	-18161	0.11	0.85	0.85	31	26946	243	17.3	1.9	132.8	187.2
10^7 FCFA	-0.52	0.452	0.427	1885	-18139	0.10	0.86	0.86	29	18585	228	15.1	1.7	144.7	185.9
10^6 FCFA	-0.50	0.511	0.489	-405	-17780	**0.05**	**0.96**	**0.96**	**8**	**706**	**91**	6.5	**0.1**	178.4	119.6
10^5 FCFA	-0.48	**0.511**	**0.491**	-1665	**-17623**	0.07	0.95	0.95	11	1040	106	**6.4**	-1.0	171.8	28.4
10^4 FCFA	-0.51	0.428	0.405	-2502	-18188	0.16	0.88	0.88	51	4695	582	6.7	-1.3	308.2	6.8
10^3 FCFA	-0.54	0.370	0.345	-3079	-18739	0.22	0.82	0.82	87	10519	1184	6.8	-1.5	354.2	2.1
10^2 FCFA	-0.56	0.338	0.312	-3489	-19148	0.25	0.79	0.79	109	15686	1647	6.9	-1.5	365.4	0.9
10^1 FCFA	-0.58	0.319	0.292	-3801	-19460	0.28	0.77	0.77	121	19635	2038	6.9	-1.6	368.9	**0.8**
FCFA	-0.60	0.306	0.279	-4053	-19711	0.29	0.75	0.75	129	22462	2296	6.9	-1.6	370.0	1.1
10^{-1} FCFA	-0.61	0.298	0.270	-4262	-19921	0.30	0.75	0.75	134	24522	2493	6.9	-1.6	370.3	1.5
10^{-2} FCFA	-0.63	0.291	0.263	-4442	-20101	0.31	0.74	0.74	138	26008	2675	6.9	-1.6	370.3	1.8
10^{-3} FCFA	-0.65	0.286	0.258	-4599	-20258	0.32	0.74	0.74	140	27122	2781	6.9	-1.6	370.1	2.1
10^{-4} FCFA	-0.66	0.283	0.254	-4739	-20398	0.32	0.73	0.73	142	27988	2869	7.0	-1.6	369.9	2.4
10^{-5} FCFA	-0.68	0.280	0.251	-4865	-20523	0.32	0.73	0.73	144	28686	2965	7.0	-1.6	369.7	2.6
10^{-6} FCFA	-0.69	0.277	0.249	-4979	-20637	0.32	0.73	0.73	145	29258	3026	7.0	-1.6	369.4	2.8
10^{-7} FCFA	-0.71	0.275	0.246	-5083	-20742	0.32	0.73	0.73	146	29729	3083	7.0	-1.6	369.2	3.0
10^{-8} FCFA	-0.72	0.273	0.245	-5180	-20838	0.32	0.73	0.73	146	30127	3151	7.0	-1.6	369.0	3.1
10^{-9} FCFA	-0.73	0.272	0.243	-5269	-20928	0.33	0.73	0.73	147	30460	3175	7.0	-1.6	368.8	3.2

Note: Column 'unit of measurement' indicates the unit of measurement of the cotton income (FCFA); column 'semi-elasticity' indicates the estimated semi-elasticity of the cotton income with respect to 'Organic'; all other columns indicate criteria for selecting the optimal unit of measurement of the cotton income (FCFA) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S52: Criteria for selecting the unit of measurement of cotton income (FCFA) (with WTP as control variable)

unit of measurement	semi-elasticity: Organic	rSquared	pSquared	logLik	logLikAdj	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} FCFA	-0.57	0.448	0.421	**7578**	-18160	0.11	0.85	0.85	31	27129	253	17.3	1.9	**135.2**	191.2
10^{8} FCFA	-0.57	0.448	0.421	4719	-18160	0.11	0.85	0.85	31	27008	253	17.3	1.9	135.4	191.2
10^{7} FCFA	-0.57	0.453	0.426	1886	-18137	0.11	0.86	0.86	29	18601	229	15.1	1.7	147.4	189.7
10^{6} FCFA	-0.58	0.514	0.490	-401	-17777	**0.05**	**0.96**	**0.96**	**8**	**676**	**97**	6.4	**0.1**	183.5	122.5
10^{5} FCFA	-0.61	**0.518**	**0.496**	-1657	**-17614**	0.07	0.95	0.95	11	979	114	**6.3**	-0.9	172.8	27.1
10^{4} FCFA	-0.72	0.436	0.411	-2493	-18179	0.16	0.88	0.88	51	4460	585	6.6	-1.3	307.1	3.5
10^{3} FCFA	-0.81	0.378	0.351	-3070	-18730	0.22	0.83	0.83	84	9718	1113	6.8	-1.4	353.4	**0.1**
10^{2} FCFA	-0.87	0.346	0.317	-3481	-19139	0.26	0.79	0.79	104	14383	1529	6.8	-1.5	366.1	0.5
10^{1} FCFA	-0.91	0.327	0.297	-3793	-19452	0.27	0.78	0.78	116	17719	1850	6.9	-1.5	370.6	1.5
FCFA	-0.94	0.315	0.285	-4045	-19703	0.28	0.77	0.76	123	20046	2049	6.9	-1.6	372.6	2.4
10^{-1} FCFA	-0.96	0.306	0.276	-4254	-19913	0.29	0.76	0.76	127	21680	2183	6.9	-1.6	373.4	3.0
10^{-2} FCFA	-0.97	0.300	0.269	-4434	-20093	0.30	0.75	0.75	131	22854	2319	6.9	-1.6	373.8	3.5
10^{-3} FCFA	-0.98	0.295	0.264	-4592	-20250	0.30	0.75	0.75	133	23753	2417	6.9	-1.6	374.0	3.8
10^{-4} FCFA	-0.99	0.291	0.260	-4731	-20390	0.30	0.75	0.75	134	24467	2483	6.9	-1.6	374.0	4.1
10^{-5} FCFA	-0.99	0.288	0.257	-4857	-20516	0.30	0.75	0.75	135	25019	2527	6.9	-1.6	374.0	4.3
10^{-6} FCFA	-0.99	0.286	0.254	-4971	-20630	0.30	0.74	0.74	136	25464	2572	6.9	-1.6	374.0	4.5
10^{-7} FCFA	-1.00	0.284	0.252	-5076	-20734	0.30	0.74	0.74	137	25816	2606	6.9	-1.6	373.9	4.6
10^{-8} FCFA	-1.00	0.282	0.250	-5172	-20831	0.30	0.74	0.74	138	26085	2620	6.9	-1.6	373.8	4.7
10^{-9} FCFA	-1.00	0.280	0.248	-5262	-20921	0.31	0.74	0.74	138	26297	2641	6.9	-1.6	373.7	4.8

Note: Column ‘unit of measurement’ indicates the unit of measurement of the cotton income (FCFA); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the cotton income with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the cotton income (FCFA) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S53: Criteria for selecting the unit of measurement of distance to closest market (km) when using HFIES (original) as dependent variable (without WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^9 km	0.36	0.145	0.105	0.040	0.987	0.988	3.06	26.11	97.73	2.67	0.33	79.0	1.15
10^8 km	0.36	0.145	0.105	0.040	0.987	0.988	3.06	26.11	97.73	2.67	0.33	79.0	1.15
10^7 km	0.36	0.145	0.105	0.040	0.987	0.988	3.06	26.11	97.73	2.67	0.33	79.0	1.15
10^6 km	0.36	0.145	0.105	0.040	0.987	0.988	3.06	26.11	97.73	2.67	0.33	79.0	1.15
10^5 km	0.36	0.145	0.105	0.040	0.987	0.988	3.06	26.11	97.73	2.67	0.33	79.0	1.15
10^4 km	0.36	0.145	0.105	0.040	0.987	0.988	3.06	26.11	97.73	2.67	0.33	79.0	1.15
10^3 km	0.36	0.145	0.105	0.040	0.987	0.988	3.06	26.11	97.73	2.67	0.33	79.0	1.15
10^2 km	0.36	0.145	0.105	0.040	0.987	0.988	3.05	26.10	97.62	2.67	0.33	79.0	1.15
10^1 km	0.35	0.146	0.106	**0.040**	0.987	0.988	3.02	25.80	89.92	2.67	0.33	**79.0**	0.99
km	0.31	0.149	0.109	0.041	0.988	0.988	**2.94**	**24.87**	94.02	2.66	0.32	80.9	0.50
10^{-1} km	0.29	**0.149**	**0.110**	0.043	**0.988**	**0.988**	3.01	24.97	85.65	2.66	**0.32**	81.9	**0.44**
10^{-2} km	0.29	0.148	0.108	0.044	0.987	0.988	3.07	25.38	91.89	**2.66**	0.32	81.8	0.56
10^{-3} km	0.30	0.147	0.107	0.045	0.987	0.988	3.05	25.38	89.19	2.66	0.32	83.1	0.62
10^{-4} km	0.31	0.146	0.106	0.043	0.987	0.988	3.04	25.38	83.85	2.66	0.33	84.6	0.68
10^{-5} km	0.32	0.145	0.105	0.042	0.987	0.988	3.03	25.46	86.27	2.66	0.33	86.0	0.75
10^{-6} km	0.32	0.145	0.104	0.041	0.987	0.988	3.04	25.59	**81.60**	2.66	0.33	87.0	0.85
10^{-7} km	0.33	0.144	0.103	0.041	0.987	0.988	3.05	25.77	91.04	2.66	0.33	87.5	0.97
10^{-8} km	0.33	0.144	0.103	0.041	0.987	0.988	3.06	25.96	89.13	2.66	0.33	87.5	1.09
10^{-9} km	0.34	0.143	0.102	0.041	0.987	0.988	3.08	26.16	86.38	2.66	0.33	87.1	1.20

Note: Column ‘unit of measurement’ indicates the unit of measurement of the distance to closest market (km); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the HFIES (original) with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S54: Criteria for selecting the unit of measurement of distance to closest market (km) when using HFIES (original) as dependent variable (with WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^9 km	1.65	0.199	0.159	0.044	0.985	0.986	4.15	39.39	88.63	2.98	0.44	78.1	0.67
10^8 km	1.65	0.199	0.159	0.044	0.985	0.986	4.15	39.39	88.63	2.98	0.44	78.1	0.67
10^7 km	1.65	0.199	0.159	0.044	0.985	0.986	4.15	39.39	88.63	2.98	0.44	78.1	0.67
10^6 km	1.65	0.199	0.159	0.044	0.985	0.986	4.15	39.39	88.63	2.98	0.44	78.1	0.67
10^5 km	1.65	0.199	0.159	0.044	0.985	0.986	4.15	39.39	88.63	2.98	0.44	78.1	0.67
10^4 km	1.65	0.199	0.159	0.044	0.985	0.986	4.15	39.39	88.63	2.98	0.44	78.1	0.67
10^3 km	1.65	0.199	0.159	0.044	0.985	0.986	4.15	39.39	88.63	2.98	0.44	78.1	0.67
10^2 km	1.65	0.199	0.159	0.044	0.985	0.986	4.15	39.39	89.69	2.98	0.44	78.1	0.67
10^1 km	1.64	0.200	0.160	0.042	0.985	0.986	4.11	38.93	**87.16**	2.98	0.43	**77.9**	**0.58**
km	1.59	0.204	0.163	0.046	**0.986**	**0.986**	**4.04**	36.80	89.69	2.97	**0.42**	78.8	0.59
10^{-1} km	1.57	**0.205**	**0.164**	0.044	0.986	0.986	4.08	**36.55**	89.98	2.97	0.42	78.6	0.74
10^{-2} km	1.57	0.203	0.163	0.043	0.985	0.986	4.13	37.11	92.06	**2.97**	0.43	78.8	0.67
10^{-3} km	1.58	0.202	0.161	0.043	0.985	0.986	4.11	37.21	92.06	2.97	0.43	80.0	0.63
10^{-4} km	1.59	0.201	0.160	0.044	0.985	0.986	4.09	37.34	97.62	2.97	0.43	81.6	0.60
10^{-5} km	1.60	0.201	0.159	0.044	0.985	0.986	4.08	37.55	97.40	2.97	0.43	83.1	0.61
10^{-6} km	1.61	0.200	0.158	0.043	0.985	0.986	4.09	37.85	91.94	2.97	0.43	84.2	0.63
10^{-7} km	1.62	0.199	0.157	0.041	0.985	0.986	4.09	38.19	89.58	2.97	0.43	84.9	0.68
10^{-8} km	1.62	0.199	0.157	0.041	0.985	0.986	4.11	38.54	99.42	2.97	0.43	85.1	0.73
10^{-9} km	1.63	0.199	0.156	**0.040**	0.985	0.986	4.13	38.90	97.00	2.97	0.43	84.9	0.80

Note: Column ‘unit of measurement’ indicates the unit of measurement of the distance to closest market (km); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the HFIES (original) with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S55: Criteria for selecting the unit of measurement of distance to closest market (km) when using HFIES (extended) as dependent variable (without WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^9 km	0.24	0.145	0.103	0.044	0.977	0.977	4.19	98.00	80.70	3.79	0.63	**72.5**	0.23
10^8 km	0.24	0.145	0.103	0.044	0.977	0.977	4.19	98.00	80.70	3.79	0.63	**72.5**	0.23
10^7 km	0.24	0.145	0.103	0.044	0.977	0.977	4.19	98.00	80.70	3.79	0.63	**72.5**	0.23
10^6 km	0.24	0.145	0.103	0.044	0.977	0.977	4.19	98.00	80.70	3.79	0.63	**72.5**	0.23
10^5 km	0.24	0.145	0.103	0.044	0.977	0.977	4.19	98.00	80.70	3.79	0.63	72.5	0.23
10^4 km	0.24	0.145	0.103	0.044	0.977	0.977	4.19	98.00	80.70	3.79	0.63	72.5	0.23
10^3 km	0.24	0.145	0.103	0.044	0.977	0.977	4.19	98.00	80.70	3.79	0.63	72.5	0.23
10^2 km	0.24	0.145	0.103	0.043	0.977	0.977	4.18	97.99	80.31	3.79	0.63	72.5	0.23
10^1 km	0.23	0.146	0.104	0.043	0.977	0.977	4.10	97.42	80.87	3.79	0.63	73.4	0.19
km	0.17	0.150	0.107	**0.043**	0.978	0.978	**3.93**	93.55	**80.02**	3.78	0.62	77.8	0.04
10^{-1} km	0.12	**0.150**	**0.108**	0.045	**0.978**	**0.978**	3.96	**90.80**	83.68	**3.76**	**0.61**	80.6	**0.03**
10^{-2} km	0.13	0.149	0.106	0.044	0.978	0.978	4.04	91.70	86.94	3.76	0.61	80.1	0.07
10^{-3} km	0.14	0.148	0.105	0.045	0.978	0.978	4.05	92.26	94.87	3.77	0.62	80.8	0.08
10^{-4} km	0.15	0.146	0.104	0.045	0.978	0.978	4.06	92.93	88.40	3.78	0.62	81.6	0.07
10^{-5} km	0.17	0.146	0.102	0.044	0.978	0.977	4.08	93.72	80.08	3.78	0.62	82.3	0.07
10^{-6} km	0.18	0.145	0.101	0.043	0.978	0.977	4.11	94.64	80.14	3.79	0.62	82.7	0.07
10^{-7} km	0.19	0.144	0.100	0.044	0.977	0.977	4.14	95.59	80.14	3.79	0.62	82.5	0.09
10^{-8} km	0.19	0.143	0.099	0.044	0.977	0.977	4.18	96.53	81.54	3.80	0.63	81.9	0.11
10^{-9} km	0.20	0.143	0.099	0.045	0.977	0.977	4.22	97.38	80.59	3.80	0.63	80.9	0.15

Note: Column ‘unit of measurement’ indicates the unit of measurement of the distance to closest market (km); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the HFIES (extended) with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S56: Criteria for selecting the unit of measurement of distance to closest market (km) when using HFIES (extended) as dependent variable (with WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	1.90	0.176	0.134	0.051	0.972	0.972	6.13	162.37	85.70	4.17	0.74	**63.0**	1.48
10^{8} km	1.90	0.176	0.134	0.051	0.972	0.972	6.13	162.37	85.70	4.17	0.74	**63.0**	1.48
10^{7} km	1.90	0.176	0.134	0.051	0.972	0.972	6.13	162.37	85.70	4.17	0.74	**63.0**	1.48
10^{6} km	1.90	0.176	0.134	0.051	0.972	0.972	6.13	162.37	85.70	4.17	0.74	**63.0**	1.48
10^{5} km	1.90	0.176	0.134	0.051	0.972	0.972	6.13	162.37	85.70	4.17	0.74	63.0	1.48
10^{4} km	1.90	0.176	0.134	0.051	0.972	0.972	6.13	162.37	85.70	4.17	0.74	63.0	1.48
10^{3} km	1.90	0.176	0.134	0.051	0.972	0.972	6.13	162.37	85.70	4.17	0.74	63.0	1.48
10^{2} km	1.90	0.176	0.134	0.051	0.972	0.972	6.13	162.32	86.88	4.17	0.74	63.1	1.48
10^{1} km	1.89	0.177	0.135	**0.050**	0.972	0.972	6.06	160.13	**85.37**	4.17	0.73	64.1	1.44
km	1.81	0.181	0.138	0.050	0.973	0.973	**5.93**	151.56	89.98	4.13	0.72	68.6	1.56
10^{-1} km	1.77	**0.181**	**0.139**	0.053	**0.973**	**0.973**	5.99	**148.07**	96.39	**4.11**	**0.72**	70.4	1.47
10^{-2} km	1.78	0.180	0.138	0.053	0.973	0.972	6.07	150.26	102.06	4.12	0.72	69.7	1.35
10^{-3} km	1.80	0.179	0.137	0.053	0.972	0.972	6.08	151.83	100.71	4.13	0.72	70.2	**1.33**
10^{-4} km	1.81	0.178	0.135	0.053	0.972	0.972	6.08	153.44	98.35	4.14	0.72	70.9	1.35
10^{-5} km	1.83	0.177	0.134	0.054	0.972	0.972	6.09	155.23	101.95	4.15	0.73	71.3	1.38
10^{-6} km	1.84	0.176	0.133	0.054	0.972	0.972	6.10	157.11	96.16	4.16	0.73	71.4	1.41
10^{-7} km	1.85	0.176	0.132	0.056	0.972	0.972	6.12	158.97	96.10	4.17	0.73	71.1	1.44
10^{-8} km	1.86	0.175	0.132	0.053	0.972	0.972	6.14	160.77	95.82	4.18	0.73	70.4	1.47
10^{-9} km	1.87	0.175	0.131	0.052	0.972	0.971	6.16	162.44	97.85	4.18	0.74	69.5	1.50

Note: Column ‘unit of measurement’ indicates the unit of measurement of the distance to closest market (km); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the HFIES (extended) with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S57: Criteria for selecting the unit of measurement of distance to closest market (km) when using dietary diversity (24 h) as dependent variable (without WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	-0.49	0.106	0.070	0.026	0.997	0.997	0.95	3.97	**41.85**	3.18	-0.05	**172.3**	2.31
10^{8} km	-0.49	0.106	0.070	0.026	0.997	0.997	0.95	3.97	**41.85**	3.18	-0.05	**172.3**	2.31
10^{7} km	-0.49	0.106	0.070	0.026	0.997	0.997	0.95	3.97	**41.85**	3.18	-0.05	**172.3**	2.31
10^{6} km	-0.49	0.106	0.070	0.026	0.997	0.997	0.95	3.97	**41.85**	3.18	-0.05	**172.3**	2.31
10^{5} km	-0.49	0.106	0.070	0.026	0.997	0.997	0.95	3.97	**41.85**	3.18	-0.05	172.3	2.31
10^{4} km	-0.49	0.106	0.070	0.026	0.997	0.997	0.95	3.97	**41.85**	3.18	-0.05	172.3	2.31
10^{3} km	-0.49	0.106	0.070	0.026	0.997	0.997	0.95	3.97	**41.85**	3.18	-0.05	172.3	2.31
10^{2} km	-0.49	0.106	0.070	0.026	0.997	0.997	0.95	3.97	42.52	3.18	-0.05	172.4	2.32
10^{1} km	-0.48	0.108	0.071	0.026	0.997	0.998	0.93	3.68	50.34	3.17	-0.05	172.4	2.70
km	-0.43	**0.112**	**0.076**	0.027	**0.997**	**0.998**	**0.86**	**2.99**	42.30	3.14	-0.05	172.5	2.41
10^{-1} km	-0.40	0.111	0.075	0.024	0.997	0.998	0.92	3.32	45.05	3.14	-0.06	175.4	1.53
10^{-2} km	-0.39	0.111	0.075	0.024	0.997	0.998	0.96	3.37	47.36	3.14	-0.06	177.0	1.39
10^{-3} km	-0.40	0.111	0.075	0.024	0.997	0.998	0.96	3.26	44.04	3.14	-0.06	177.9	1.35
10^{-4} km	-0.40	0.111	0.074	0.024	0.997	0.998	0.96	3.21	43.82	**3.14**	-0.05	178.7	1.13
10^{-5} km	-0.41	0.111	0.074	0.024	0.997	0.998	0.96	3.22	41.90	3.14	-0.05	179.5	0.85
10^{-6} km	-0.41	0.110	0.073	0.023	0.997	0.998	0.96	3.27	42.63	3.15	-0.05	180.3	0.65
10^{-7} km	-0.42	0.110	0.073	**0.023**	0.997	0.998	0.97	3.36	46.23	3.15	-0.05	181.1	**0.58**
10^{-8} km	-0.42	0.110	0.072	0.024	0.997	0.998	0.99	3.47	47.98	3.16	-0.05	182.0	0.61
10^{-9} km	-0.43	0.109	0.071	0.024	0.997	0.997	1.00	3.59	48.71	3.16	**-0.05**	182.8	0.70

Note: Column 'unit of measurement' indicates the unit of measurement of the distance to closest market (km); column 'semi-elasticity' indicates the estimated semi-elasticity of the dietary diversity (24 h) with respect to 'Organic'; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S58: Criteria for selecting the unit of measurement of distance to closest market (km) when using dietary diversity (24 h) as dependent variable (with WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	-1.18	0.123	0.085	0.026	0.997	0.998	0.94	4.05	52.81	3.21	-0.02	**160.2**	3.55
10^{8} km	-1.18	0.123	0.085	0.026	0.997	0.998	0.94	4.05	52.81	3.21	-0.02	**160.2**	3.55
10^{7} km	-1.18	0.123	0.085	0.026	0.997	0.998	0.94	4.05	52.81	3.21	-0.02	**160.2**	3.55
10^{6} km	-1.18	0.123	0.085	0.026	0.997	0.998	0.94	4.05	52.81	3.21	-0.02	**160.2**	3.55
10^{5} km	-1.18	0.123	0.085	0.026	0.997	0.998	0.94	4.05	52.81	3.21	-0.02	160.2	3.55
10^{4} km	-1.18	0.123	0.085	0.026	0.997	0.998	0.94	4.05	52.81	3.21	-0.02	160.2	3.55
10^{3} km	-1.18	0.123	0.085	0.026	0.997	0.998	0.94	4.05	52.81	3.21	-0.02	160.2	3.55
10^{2} km	-1.18	0.123	0.085	0.026	0.997	0.998	0.94	4.04	53.09	3.21	-0.02	160.2	3.56
10^{1} km	-1.17	0.124	0.086	0.024	0.997	0.998	0.92	3.73	45.11	3.20	-0.02	160.3	3.86
km	-1.11	**0.128**	**0.090**	0.025	**0.998**	**0.998**	**0.79**	**2.93**	**31.05**	3.17	-0.02	160.9	3.13
10^{-1} km	-1.08	0.127	0.090	**0.023**	0.998	0.998	0.83	3.13	40.78	3.17	-0.03	163.3	2.14
10^{-2} km	-1.08	0.127	0.090	0.025	0.998	0.998	0.87	3.16	40.44	3.17	-0.03	164.7	1.98
10^{-3} km	-1.09	0.127	0.090	0.025	0.998	0.998	0.87	3.07	42.35	3.17	-0.03	165.4	1.91
10^{-4} km	-1.09	0.127	0.090	0.025	0.998	0.998	0.86	3.03	43.42	**3.16**	-0.02	165.9	1.78
10^{-5} km	-1.10	0.127	0.089	0.025	0.998	0.998	0.87	3.05	47.64	3.17	-0.02	166.4	1.61
10^{-6} km	-1.10	0.127	0.089	0.025	0.998	0.998	0.88	3.12	46.63	3.17	-0.02	167.0	1.47
10^{-7} km	-1.11	0.126	0.088	0.024	0.998	0.998	0.90	3.24	51.63	3.17	-0.02	167.6	1.40
10^{-8} km	-1.12	0.126	0.087	0.024	0.998	0.998	0.92	3.36	53.94	3.18	-0.02	168.2	**1.39**
10^{-9} km	-1.12	0.125	0.087	0.025	0.998	0.998	0.94	3.50	54.27	3.18	**-0.02**	168.8	1.42

Note: Column 'unit of measurement' indicates the unit of measurement of the distance to closest market (km); column 'semi-elasticity' indicates the estimated semi-elasticity of the dietary diversity (24 h) with respect to 'Organic'; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S59: Criteria for selecting the unit of measurement of distance to closest market (km) when using dietary diversity (7 days) as dependent variable (without WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^9 km	0.10	0.165	0.130	0.033	0.991	0.992	1.74	**13.05**	86.60	2.63	-0.20	79.4	0.85
10^8 km	0.10	0.165	0.130	0.033	0.991	0.992	1.74	**13.05**	86.60	2.63	-0.20	79.4	0.85
10^7 km	0.10	0.165	0.130	0.033	0.991	0.992	1.74	**13.05**	86.60	2.63	-0.20	79.4	0.85
10^6 km	0.10	0.165	0.130	0.033	0.991	0.992	1.74	**13.05**	86.60	2.63	-0.20	79.4	0.85
10^5 km	0.10	0.165	0.130	0.033	0.991	0.992	1.74	**13.05**	86.60	2.63	-0.20	79.4	0.85
10^4 km	0.10	0.165	0.130	0.033	0.991	0.992	1.74	13.05	86.60	2.63	-0.20	79.4	0.85
10^3 km	0.10	0.165	0.130	0.033	0.991	0.992	1.74	13.05	86.60	2.63	-0.20	79.4	0.85
10^2 km	0.10	0.165	0.130	0.033	0.991	0.992	1.74	13.05	86.60	2.63	-0.20	79.4	0.85
10^1 km	0.10	0.165	0.130	0.032	0.991	0.992	1.74	13.08	86.77	2.63	-0.20	79.5	0.87
km	0.12	0.165	0.130	0.031	0.991	0.992	1.73	13.17	87.78	2.63	-0.20	78.9	0.97
10^{-1} km	0.14	0.167	0.131	0.029	0.991	0.992	1.71	13.15	90.76	2.64	-0.20	**78.7**	1.14
10^{-2} km	0.14	0.168	0.132	0.029	0.991	0.992	1.70	13.08	83.23	2.64	-0.20	78.8	1.16
10^{-3} km	0.14	0.168	0.133	0.029	0.991	0.992	1.70	13.10	**80.98**	2.63	-0.20	78.8	0.99
10^{-4} km	0.14	0.169	0.133	0.029	0.991	0.992	1.69	13.12	81.32	2.63	-0.20	78.9	0.80
10^{-5} km	0.14	0.169	0.134	0.028	0.991	0.992	1.69	13.14	83.68	2.63	-0.20	79.0	0.65
10^{-6} km	0.14	0.169	0.134	**0.028**	0.991	0.992	1.69	13.17	82.84	2.63	-0.20	79.1	0.54
10^{-7} km	0.14	0.169	0.134	0.028	**0.991**	**0.992**	1.68	13.19	82.33	2.63	-0.20	79.2	0.48
10^{-8} km	0.14	0.169	0.134	0.028	0.991	0.992	**1.68**	13.20	81.37	2.63	-0.20	79.3	**0.45**
10^{-9} km	0.13	**0.169**	**0.134**	0.028	0.991	0.992	1.69	13.19	81.82	**2.63**	**-0.20**	79.5	0.46

Note: Column 'unit of measurement' indicates the unit of measurement of the distance to closest market (km); column 'semi-elasticity' indicates the estimated semi-elasticity of the dietary diversity (7 days) with respect to 'Organic'; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S60: Criteria for selecting the unit of measurement of distance to closest market (km) when using dietary diversity (7 days) as dependent variable (with WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	0.16	0.177	0.138	**0.028**	0.990	0.990	2.22	17.20	110.84	2.70	-0.27	90.6	2.05
10^{8} km	0.16	0.177	0.138	**0.028**	0.990	0.990	2.22	17.20	110.84	2.70	-0.27	90.6	2.05
10^{7} km	0.16	0.177	0.138	**0.028**	0.990	0.990	2.22	17.20	110.84	2.70	-0.27	90.6	2.05
10^{6} km	0.16	0.177	0.138	**0.028**	0.990	0.990	2.22	17.20	110.84	2.70	-0.27	90.6	2.05
10^{5} km	0.16	0.177	0.138	**0.028**	0.990	0.990	2.22	17.20	110.84	2.70	-0.27	90.6	2.05
10^{4} km	0.16	0.177	0.138	**0.028**	0.990	0.990	2.22	17.20	110.84	2.70	-0.27	90.6	2.05
10^{3} km	0.16	0.177	0.138	0.028	0.990	0.990	2.22	17.20	110.84	2.70	-0.27	90.6	2.05
10^{2} km	0.16	0.177	0.138	0.028	0.990	0.990	2.22	17.20	110.78	2.70	-0.27	90.6	2.06
10^{1} km	0.16	0.176	0.138	0.029	0.990	0.990	2.22	17.22	103.98	2.70	-0.27	90.6	2.15
km	0.17	0.176	0.138	0.030	0.990	0.990	2.22	17.32	98.80	2.70	-0.27	**90.1**	2.29
10^{-1} km	0.19	0.177	0.139	0.034	0.990	0.990	2.20	17.29	**90.20**	2.71	-0.27	90.3	2.18
10^{-2} km	0.20	0.178	0.140	0.033	0.990	0.990	2.20	17.23	93.80	2.71	-0.27	90.5	2.05
10^{-3} km	0.20	0.179	0.141	0.033	0.990	0.990	2.20	17.21	96.55	2.70	-0.27	90.5	1.83
10^{-4} km	0.20	0.179	0.141	0.033	0.990	0.990	2.20	17.21	99.03	2.70	-0.27	90.5	1.63
10^{-5} km	0.20	0.180	0.142	0.033	0.990	0.990	2.20	17.20	97.45	2.70	-0.27	90.5	1.47
10^{-6} km	0.20	0.180	0.142	0.033	0.990	0.990	2.20	17.20	99.59	2.70	-0.27	90.5	1.37
10^{-7} km	0.19	0.180	0.142	0.033	0.990	0.990	2.19	17.20	100.32	2.70	-0.27	90.5	**1.33**
10^{-8} km	0.19	0.180	0.142	0.034	0.990	0.990	2.18	17.20	97.85	2.70	-0.27	90.6	1.34
10^{-9} km	0.19	**0.180**	**0.142**	0.033	**0.990**	**0.990**	**2.18**	**17.20**	92.39	**2.70**	**-0.27**	90.7	1.38

Note: Column ‘unit of measurement’ indicates the unit of measurement of the distance to closest market (km); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the dietary diversity (7 days) with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S61: Criteria for selecting the unit of measurement of distance to closest market (km) when using vitamin A-rich foods (24 h) as dependent variable (without WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^9 km	-0.17	0.138	0.098	0.029	**0.996**	**0.997**	1.39	8.82	58.27	2.61	**0.06**	106.4	0.56
10^8 km	-0.17	0.138	0.098	0.029	**0.996**	**0.997**	1.39	8.82	58.27	2.61	**0.06**	106.4	0.56
10^7 km	-0.17	0.138	0.098	0.029	**0.996**	**0.997**	1.39	8.82	58.27	2.61	**0.06**	106.4	0.56
10^6 km	-0.17	0.138	0.098	0.029	**0.996**	**0.997**	1.39	8.82	58.27	2.61	**0.06**	106.4	0.56
10^5 km	-0.17	0.138	0.098	0.029	**0.996**	**0.997**	1.39	8.82	58.27	2.61	**0.06**	106.4	0.56
10^4 km	-0.17	0.138	0.098	0.029	**0.996**	**0.997**	1.39	8.82	58.27	2.61	**0.06**	106.4	0.56
10^3 km	-0.17	0.138	0.098	0.029	0.996	0.997	1.39	8.82	58.27	2.61	0.06	106.4	0.56
10^2 km	-0.17	0.138	0.098	0.029	0.996	0.997	1.39	8.82	58.77	2.61	0.06	106.4	0.56
10^1 km	-0.17	0.139	0.099	0.032	0.996	0.997	1.40	8.86	55.40	**2.61**	0.07	105.1	0.56
km	-0.15	**0.141**	**0.101**	0.029	0.996	0.997	1.34	8.49	52.25	2.61	0.07	**103.0**	**0.54**
10^{-1} km	-0.13	0.141	0.100	0.029	0.996	0.996	1.33	8.44	**51.97**	2.61	0.07	104.3	0.57
10^{-2} km	-0.13	0.140	0.100	0.027	0.996	0.996	1.33	8.39	57.98	2.61	0.07	105.4	0.57
10^{-3} km	-0.14	0.140	0.100	0.027	0.996	0.996	1.32	8.35	52.92	2.61	0.07	105.9	0.57
10^{-4} km	-0.14	0.140	0.100	0.027	0.996	0.996	1.32	8.32	**51.97**	2.61	0.07	106.5	0.59
10^{-5} km	-0.14	0.140	0.100	0.027	0.996	0.996	1.31	8.30	53.54	2.61	0.07	107.1	0.64
10^{-6} km	-0.14	0.140	0.100	0.027	0.996	0.996	1.31	8.27	54.61	2.61	0.07	107.6	0.73
10^{-7} km	-0.14	0.140	0.099	0.026	0.996	0.996	1.30	8.26	65.74	2.61	0.07	108.2	0.83
10^{-8} km	-0.15	0.139	0.099	0.026	0.996	0.997	1.30	**8.24**	63.38	2.61	0.07	108.7	0.94
10^{-9} km	-0.15	0.139	0.099	**0.026**	0.996	0.997	**1.29**	8.25	64.00	2.61	0.07	109.2	1.06

Note: Column 'unit of measurement' indicates the unit of measurement of the distance to closest market (km); column 'semi-elasticity' indicates the estimated semi-elasticity of the vitamin A-rich foods (24 h) with respect to 'Organic'; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S62: Criteria for selecting the unit of measurement of distance to closest market (km) when using vitamin A-rich foods (24 h) as dependent variable (with WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^9 km	-0.52	0.148	0.106	0.027	**0.996**	**0.996**	1.51	9.82	44.21	2.60	**0.09**	99.4	1.62
10^8 km	-0.52	0.148	0.106	0.027	**0.996**	**0.996**	1.51	9.82	44.21	2.60	**0.09**	99.4	1.62
10^7 km	-0.52	0.148	0.106	0.027	**0.996**	**0.996**	1.51	9.82	44.21	2.60	**0.09**	99.4	1.62
10^6 km	-0.52	0.148	0.106	0.027	**0.996**	**0.996**	1.51	9.82	44.21	2.60	**0.09**	99.4	1.62
10^5 km	-0.52	0.148	0.106	0.027	**0.996**	**0.996**	1.51	9.82	44.21	2.60	**0.09**	99.4	1.62
10^4 km	-0.52	0.148	0.106	0.027	**0.996**	**0.996**	1.51	9.82	44.21	2.60	**0.09**	99.4	1.62
10^3 km	-0.52	0.148	0.106	0.027	0.996	0.996	1.51	9.82	44.21	2.60	0.09	99.4	1.62
10^2 km	-0.52	0.148	0.106	0.027	0.996	0.996	1.51	9.82	**42.92**	2.59	0.09	99.3	1.62
10^1 km	-0.51	0.149	0.107	0.028	0.996	0.996	1.53	9.87	43.08	**2.59**	0.09	98.2	1.65
km	-0.49	**0.151**	**0.109**	0.028	0.996	0.996	1.48	9.57	44.21	2.60	0.10	**96.2**	1.67
10^{-1} km	-0.48	0.150	0.109	0.026	0.996	0.996	1.48	9.64	43.98	2.60	0.10	96.9	1.71
10^{-2} km	-0.48	0.150	0.108	0.027	0.996	0.996	1.48	9.61	45.95	2.60	0.10	97.8	1.72
10^{-3} km	-0.48	0.150	0.108	0.027	0.996	0.996	1.47	9.56	47.19	2.60	0.10	98.2	1.66
10^{-4} km	-0.48	0.150	0.108	0.027	0.996	0.996	1.46	9.53	47.81	2.60	0.10	98.5	1.60
10^{-5} km	-0.48	0.150	0.108	0.026	0.996	0.996	1.46	9.50	48.31	2.60	0.10	99.0	1.57
10^{-6} km	-0.49	0.150	0.108	0.026	0.996	0.996	1.45	9.46	47.24	2.60	0.10	99.4	**1.57**
10^{-7} km	-0.49	0.150	0.108	0.026	0.996	0.996	1.45	9.44	47.24	2.60	0.10	99.8	1.59
10^{-8} km	-0.49	0.149	0.108	**0.025**	0.996	0.996	1.44	**9.43**	45.50	2.60	0.10	100.2	1.61
10^{-9} km	-0.49	0.149	0.108	0.025	0.996	0.996	**1.44**	9.44	44.27	2.60	0.10	100.6	1.65

Note: Column 'unit of measurement' indicates the unit of measurement of the distance to closest market (km); column 'semi-elasticity' indicates the estimated semi-elasticity of the vitamin A-rich foods (24 h) with respect to 'Organic'; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S63: Criteria for selecting the unit of measurement of distance to closest market (km) when using vitamin A-rich foods (7 days) as dependent variable (without WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	0.14	0.221	0.186	0.034	0.994	0.994	1.58	16.62	52.42	2.94	-0.28	**79.2**	0.84
10^{8} km	0.14	0.221	0.186	0.034	0.994	0.994	1.58	16.62	52.42	2.94	-0.28	**79.2**	0.84
10^{7} km	0.14	0.221	0.186	0.034	0.994	0.994	1.58	16.62	52.42	2.94	-0.28	**79.2**	0.84
10^{6} km	0.14	0.221	0.186	0.034	0.994	0.994	1.58	16.62	52.42	2.94	-0.28	**79.2**	0.84
10^{5} km	0.14	0.221	0.186	0.034	0.994	0.994	1.58	16.62	52.42	2.94	-0.28	**79.2**	0.84
10^{4} km	0.14	0.221	0.186	0.034	0.994	0.994	1.58	16.62	52.42	2.94	-0.28	79.2	0.84
10^{3} km	0.14	0.221	0.186	0.034	0.994	0.994	1.58	16.62	52.42	2.94	-0.28	79.2	0.84
10^{2} km	0.14	0.221	0.186	0.034	0.994	0.994	1.58	16.62	52.42	2.94	-0.28	79.2	0.84
10^{1} km	0.14	0.221	0.186	0.033	0.994	0.994	1.57	16.60	53.82	2.94	-0.28	79.4	0.83
km	0.14	0.221	0.186	0.034	0.994	0.994	1.57	16.58	52.59	**2.94**	-0.28	80.5	0.84
10^{-1} km	0.14	0.222	0.186	**0.032**	0.994	0.994	1.54	16.35	52.76	2.95	-0.28	81.9	0.81
10^{-2} km	0.15	0.222	0.186	0.034	0.994	0.994	1.51	16.17	53.82	2.95	-0.28	82.0	0.79
10^{-3} km	0.15	0.222	0.186	0.035	0.994	0.994	1.50	16.09	50.51	2.95	-0.28	81.7	0.78
10^{-4} km	0.15	0.222	0.186	0.035	0.994	0.995	1.49	16.03	52.64	2.95	-0.28	81.3	0.77
10^{-5} km	0.15	0.222	0.186	0.035	0.994	0.995	1.49	16.00	51.29	2.95	-0.27	81.0	0.75
10^{-6} km	0.15	0.222	0.187	0.035	0.994	0.995	1.48	**15.99**	50.67	2.95	**-0.27**	80.6	0.73
10^{-7} km	0.15	0.222	0.187	0.034	**0.994**	**0.995**	1.48	15.99	48.43	2.95	-0.27	80.3	0.72
10^{-8} km	0.15	0.222	0.187	0.034	**0.994**	0.995	**1.48**	16.01	**48.14**	2.96	-0.27	80.0	0.70
10^{-9} km	0.15	**0.223**	**0.187**	0.034	0.994	0.995	1.48	16.03	48.76	2.96	-0.28	79.7	**0.69**

Note: Column 'unit of measurement' indicates the unit of measurement of the distance to closest market (km); column 'semi-elasticity' indicates the estimated semi-elasticity of the vitamin A-rich foods (7 days) with respect to 'Organic'; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S64: Criteria for selecting the unit of measurement of distance to closest market (km) when using vitamin A-rich foods (7 days) as dependent variable (with WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	0.19	0.222	0.185	0.031	0.994	0.994	1.54	16.30	48.43	2.94	-0.28	**80.3**	0.80
10^{8} km	0.19	0.222	0.185	0.031	0.994	0.994	1.54	16.30	48.43	2.94	-0.28	**80.3**	0.80
10^{7} km	0.19	0.222	0.185	0.031	0.994	0.994	1.54	16.30	48.43	2.94	-0.28	**80.3**	0.80
10^{6} km	0.19	0.222	0.185	0.031	0.994	0.994	1.54	16.30	48.43	2.94	-0.28	**80.3**	0.80
10^{5} km	0.19	0.222	0.185	0.031	0.994	0.994	1.54	16.30	48.43	2.94	-0.28	**80.3**	0.80
10^{4} km	0.19	0.222	0.185	0.031	0.994	0.994	1.54	16.30	48.43	2.94	-0.28	80.3	0.80
10^{3} km	0.19	0.222	0.185	0.031	0.994	0.994	1.54	16.30	48.43	2.94	-0.28	80.3	0.80
10^{2} km	0.19	0.222	0.185	0.031	0.994	0.994	1.54	16.30	48.14	2.94	-0.28	80.3	0.79
10^{1} km	0.19	0.222	0.185	**0.031**	0.994	0.994	1.54	16.27	48.71	2.94	-0.28	80.6	0.79
km	0.19	0.222	0.185	0.031	0.994	0.994	1.53	16.24	48.65	**2.94**	-0.28	81.6	0.79
10^{-1} km	0.20	0.222	0.185	0.031	0.994	0.994	1.50	16.01	48.54	2.94	-0.28	83.0	0.77
10^{-2} km	0.20	0.222	0.185	0.031	0.994	0.995	1.48	15.83	48.48	2.94	-0.27	83.1	0.76
10^{-3} km	0.20	0.222	0.185	0.032	0.994	0.995	1.47	15.76	52.19	2.95	-0.27	82.7	0.75
10^{-4} km	0.20	0.222	0.185	0.032	0.994	0.995	1.46	15.71	48.54	2.95	-0.27	82.3	0.74
10^{-5} km	0.21	0.222	0.185	0.033	0.994	0.995	1.46	15.68	49.44	2.95	-0.27	81.9	0.72
10^{-6} km	0.21	0.223	0.186	0.033	0.994	0.995	1.45	**15.67**	51.24	2.95	**-0.27**	81.6	0.70
10^{-7} km	0.21	0.223	0.186	0.033	**0.994**	**0.995**	1.45	15.67	47.86	2.95	-0.27	81.2	0.69
10^{-8} km	0.21	0.223	0.186	0.033	0.994	0.995	**1.45**	15.69	**47.30**	2.95	-0.27	80.9	0.67
10^{-9} km	0.20	**0.223**	**0.186**	0.032	0.994	0.995	1.45	15.72	47.98	2.95	-0.27	80.7	**0.66**

Note: Column ‘unit of measurement’ indicates the unit of measurement of the distance to closest market (km); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the vitamin A-rich foods (7 days) with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S65: Criteria for selecting the unit of measurement of distance to closest market (km) when using number of livestock species kept as dependent variable (without WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	0.03	**0.201**	**0.163**	0.059	**0.986**	**0.986**	**5.23**	**26.68**	98.13	2.42	**-0.26**	108.7	1.15
10^{8} km	0.03	**0.201**	**0.163**	0.059	**0.986**	**0.986**	**5.23**	**26.68**	98.13	2.42	**-0.26**	108.7	1.15
10^{7} km	0.03	**0.201**	**0.163**	0.059	**0.986**	**0.986**	**5.23**	**26.68**	98.13	2.42	**-0.26**	108.7	1.15
10^{6} km	0.03	**0.201**	**0.163**	0.059	**0.986**	**0.986**	**5.23**	**26.68**	98.13	2.42	**-0.26**	108.7	1.15
10^{5} km	0.03	**0.201**	**0.163**	0.059	**0.986**	**0.986**	**5.23**	**26.68**	98.13	2.42	**-0.26**	108.7	1.15
10^{4} km	0.03	**0.201**	**0.163**	0.059	**0.986**	**0.986**	5.23	26.68	98.13	2.42	**-0.26**	108.7	1.15
10^{3} km	0.03	0.201	0.163	0.059	0.986	0.986	5.23	26.68	98.13	2.42	-0.26	108.7	1.15
10^{2} km	0.03	0.201	0.163	0.059	0.986	0.986	5.23	26.69	98.13	2.42	-0.26	108.7	1.15
10^{1} km	0.03	0.201	0.162	0.059	0.986	0.986	5.27	26.87	102.68	**2.42**	-0.26	107.7	1.16
km	0.04	0.199	0.161	0.058	0.985	0.986	5.41	27.33	98.97	2.42	-0.27	104.9	1.13
10^{-1} km	0.04	0.199	0.161	0.056	0.985	0.986	5.40	27.26	99.14	2.42	-0.27	105.8	1.10
10^{-2} km	0.05	0.200	0.161	**0.056**	0.985	0.986	5.37	27.17	98.92	2.42	-0.26	106.3	1.07
10^{-3} km	0.05	0.200	0.161	0.057	0.985	0.986	5.38	27.20	97.00	2.42	-0.26	106.0	1.06
10^{-4} km	0.05	0.200	0.162	0.057	0.985	0.986	5.39	27.24	97.23	2.42	-0.27	105.7	1.05
10^{-5} km	0.05	0.200	0.162	0.056	0.985	0.986	5.41	27.28	97.85	2.42	-0.27	105.5	1.05
10^{-6} km	0.04	0.200	0.162	0.057	0.985	0.986	5.42	27.31	99.65	2.42	-0.27	105.2	1.04
10^{-7} km	0.04	0.200	0.162	0.057	0.985	0.986	5.44	27.34	**96.05**	2.42	-0.27	105.0	**1.04**
10^{-8} km	0.04	0.200	0.162	0.057	0.985	0.986	5.45	27.36	99.42	2.42	-0.27	104.8	1.04
10^{-9} km	0.04	0.200	0.162	0.057	0.985	0.986	5.46	27.38	98.63	2.42	-0.27	**104.7**	1.05

Note: Column ‘unit of measurement’ indicates the unit of measurement of the distance to closest market (km); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the number of livestock species kept with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S66: Criteria for selecting the unit of measurement of distance to closest market (km) when using number of livestock species kept as dependent variable (with WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	0.17	**0.204**	**0.164**	0.058	**0.986**	**0.987**	**4.97**	**26.40**	89.36	2.42	**-0.26**	105.2	1.13
10^{8} km	0.17	**0.204**	**0.164**	0.058	**0.986**	**0.987**	**4.97**	**26.40**	89.36	2.42	**-0.26**	105.2	1.13
10^{7} km	0.17	**0.204**	**0.164**	0.058	**0.986**	**0.987**	**4.97**	**26.40**	89.36	2.42	**-0.26**	105.2	1.13
10^{6} km	0.17	**0.204**	**0.164**	0.058	**0.986**	**0.987**	**4.97**	**26.40**	89.36	2.42	**-0.26**	105.2	1.13
10^{5} km	0.17	**0.204**	**0.164**	0.058	**0.986**	**0.987**	**4.97**	**26.40**	89.36	2.42	**-0.26**	105.2	1.13
10^{4} km	0.17	**0.204**	**0.164**	0.058	**0.986**	**0.987**	4.97	26.40	89.36	2.42	**-0.26**	105.2	1.13
10^{3} km	0.17	0.204	0.164	0.058	0.986	0.987	4.97	26.40	89.36	2.42	-0.26	105.2	1.13
10^{2} km	0.17	0.204	0.164	0.058	0.986	0.987	4.97	26.41	90.03	2.42	-0.26	105.2	1.13
10^{1} km	0.17	0.204	0.164	0.058	0.986	0.987	5.01	26.59	**88.74**	**2.42**	-0.26	104.4	1.13
km	0.18	0.202	0.162	0.058	0.986	0.987	5.13	27.02	95.09	2.42	-0.26	101.7	1.06
10^{-1} km	0.19	0.202	0.162	0.057	0.986	0.987	5.10	26.90	94.19	2.42	-0.26	102.7	1.00
10^{-2} km	0.19	0.203	0.162	0.058	0.986	0.987	5.08	26.78	89.53	2.42	-0.26	103.2	0.96
10^{-3} km	0.19	0.203	0.163	0.058	0.986	0.987	5.09	26.81	91.10	2.42	-0.26	102.8	0.95
10^{-4} km	0.19	0.203	0.163	0.058	0.986	0.987	5.11	26.86	88.91	2.43	-0.26	102.4	0.93
10^{-5} km	0.19	0.203	0.163	0.058	0.986	0.987	5.12	26.90	89.75	2.43	-0.26	102.0	0.92
10^{-6} km	0.19	0.203	0.163	0.058	0.986	0.987	5.14	26.94	92.17	2.43	-0.26	101.7	0.90
10^{-7} km	0.19	0.203	0.163	0.058	0.986	0.987	5.15	26.97	98.58	2.43	-0.26	101.4	0.88
10^{-8} km	0.18	0.203	0.163	0.058	0.986	0.987	5.16	27.00	98.86	2.43	-0.26	101.2	0.87
10^{-9} km	0.18	0.203	0.163	**0.057**	0.986	0.987	5.18	27.02	98.86	2.43	-0.26	**101.0**	**0.86**

Note: Column 'unit of measurement' indicates the unit of measurement of the distance to closest market (km); column 'semi-elasticity' indicates the estimated semi-elasticity of the number of livestock species kept with respect to 'Organic'; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S67: Criteria for selecting the unit of measurement of distance to closest market (km) when using number of food crops produced as dependent variable (without WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^9 km	0.27	0.483	0.459	0.020	0.994	0.994	**1.17**	27.79	47.47	3.46	0.30	82.1	3.08
10^8 km	0.27	0.483	0.459	0.020	0.994	0.994	**1.17**	27.79	47.47	3.46	0.30	82.1	3.08
10^7 km	0.27	0.483	0.459	0.020	0.994	0.994	**1.17**	27.79	47.47	3.46	0.30	82.1	3.08
10^6 km	0.27	0.483	0.459	0.020	0.994	0.994	**1.17**	27.79	47.47	3.46	0.30	82.1	3.08
10^5 km	0.27	0.483	0.459	0.020	0.994	0.994	**1.17**	27.79	47.47	3.46	0.30	82.1	3.08
10^4 km	0.27	0.483	0.459	0.020	0.994	0.994	1.17	27.79	47.47	3.46	0.30	82.1	3.08
10^3 km	0.27	0.483	0.459	0.020	0.994	0.994	1.17	27.79	47.47	3.46	0.30	82.1	3.08
10^2 km	0.27	0.483	0.459	0.020	0.994	0.994	1.17	27.79	47.69	3.46	0.30	82.1	3.08
10^1 km	0.26	0.484	0.459	**0.020**	0.994	0.993	1.18	28.01	44.77	3.45	0.30	82.4	3.07
km	0.21	**0.485**	**0.460**	0.026	0.994	0.993	1.18	28.56	59.00	3.47	0.29	83.8	3.31
10^{-1} km	0.25	0.482	0.457	0.023	**0.994**	**0.994**	1.17	28.74	52.14	3.50	**0.29**	83.0	3.22
10^{-2} km	0.28	0.480	0.455	0.022	0.994	0.993	1.20	28.44	45.45	3.48	0.29	80.8	3.13
10^{-3} km	0.29	0.480	0.455	0.021	0.994	0.993	1.22	28.07	48.37	3.47	0.30	79.4	3.08
10^{-4} km	0.30	0.479	0.455	0.022	0.993	0.993	1.25	27.68	57.82	3.46	0.30	78.5	3.02
10^{-5} km	0.31	0.479	0.455	0.021	0.993	0.993	1.25	27.48	48.03	3.45	0.30	78.2	2.98
10^{-6} km	0.31	0.479	0.454	0.022	0.993	0.993	1.26	27.41	49.61	3.45	0.30	**78.1**	2.95
10^{-7} km	0.31	0.479	0.454	0.021	0.993	0.993	1.26	27.38	48.54	3.45	0.30	78.1	2.93
10^{-8} km	0.31	0.478	0.454	0.022	0.993	0.993	1.26	27.33	47.36	3.45	0.30	78.1	2.91
10^{-9} km	0.31	0.478	0.454	0.022	0.993	0.993	1.26	**27.30**	**41.85**	**3.45**	0.30	78.1	**2.90**

Note: Column 'unit of measurement' indicates the unit of measurement of the distance to closest market (km); column 'semi-elasticity' indicates the estimated semi-elasticity of the number of food crops produced with respect to 'Organic'; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S68: Criteria for selecting the unit of measurement of distance to closest market (km) when using number of food crops produced as dependent variable (with WTP as control variable)

unit of measurement	Coefficient: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	0.27	0.483	0.458	0.020	0.994	0.994	**1.17**	27.78	47.19	3.45	0.30	82.3	3.12
10^{8} km	0.27	0.483	0.458	0.020	0.994	0.994	**1.17**	27.78	47.19	3.45	0.30	82.3	3.12
10^{7} km	0.27	0.483	0.458	0.020	0.994	0.994	**1.17**	27.78	47.19	3.45	0.30	82.3	3.12
10^{6} km	0.27	0.483	0.458	0.020	0.994	0.994	**1.17**	27.78	47.19	3.45	0.30	82.3	3.12
10^{5} km	0.27	0.483	0.458	0.020	0.994	0.994	**1.17**	27.78	47.19	3.45	0.30	82.3	3.12
10^{4} km	0.27	0.483	0.458	0.020	0.994	0.994	**1.17**	27.78	47.19	3.45	0.30	82.3	3.12
10^{3} km	0.27	0.483	0.458	0.020	0.994	0.994	1.17	27.78	47.19	3.45	0.30	82.3	3.12
10^{2} km	0.27	0.483	0.458	0.021	0.994	0.994	1.17	27.78	46.63	3.45	0.30	82.3	3.12
10^{1} km	0.26	0.484	0.458	**0.019**	0.994	0.993	1.18	28.00	45.28	3.45	0.30	82.6	3.11
km	0.22	**0.485**	**0.460**	0.026	0.994	0.993	1.18	28.56	60.74	3.47	0.29	84.1	3.35
10^{-1} km	0.26	0.482	0.456	0.023	**0.994**	**0.994**	1.18	28.71	58.15	3.50	**0.29**	83.2	3.28
10^{-2} km	0.29	0.480	0.455	0.022	0.994	0.993	1.20	28.42	46.01	3.48	0.29	81.0	3.18
10^{-3} km	0.30	0.480	0.454	0.021	0.994	0.993	1.22	28.05	46.01	3.47	0.30	79.5	3.13
10^{-4} km	0.31	0.479	0.454	0.022	0.993	0.993	1.25	27.67	57.03	3.46	0.30	78.7	3.07
10^{-5} km	0.31	0.479	0.454	0.021	0.993	0.993	1.25	27.47	45.61	3.45	0.30	78.3	3.03
10^{-6} km	0.32	0.479	0.453	0.022	0.993	0.993	1.26	27.39	49.49	3.45	0.30	**78.2**	2.99
10^{-7} km	0.32	0.479	0.453	0.021	0.993	0.993	1.26	27.36	48.54	3.45	0.30	78.2	2.97
10^{-8} km	0.32	0.478	0.453	0.022	0.993	0.993	1.26	27.32	46.06	3.45	0.30	78.3	2.95
10^{-9} km	0.32	0.478	0.453	0.022	0.993	0.993	1.26	**27.29**	**41.90**	**3.45**	0.30	78.3	**2.94**

Note: Column ‘unit of measurement’ indicates the unit of measurement of the distance to closest market (km); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the number of food crops produced with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S69: Criteria for selecting the unit of measurement of distance to closest market (km) when using food crop area (IHS, ha) as dependent variable (without WTP as control variable)

unit of measurement	semi-elasticity: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	0.27	**0.875**	0.866	0.075	**0.915**	**0.913**	**15.19**	**5089.88**	137.04	**11.39**	**-1.45**	75.0	**2.97**
10^{8} km	0.27	**0.875**	0.866	0.075	**0.915**	**0.913**	**15.19**	**5089.88**	137.04	**11.39**	**-1.45**	75.0	**2.97**
10^{7} km	0.27	**0.875**	0.866	0.075	**0.915**	**0.913**	**15.19**	**5089.88**	137.04	**11.39**	**-1.45**	75.0	**2.97**
10^{6} km	0.27	**0.875**	0.866	0.075	**0.915**	**0.913**	**15.19**	**5089.88**	137.04	**11.39**	**-1.45**	75.0	**2.97**
10^{5} km	0.27	**0.875**	0.866	0.075	**0.915**	**0.913**	**15.19**	5089.88	137.04	**11.39**	**-1.45**	75.0	**2.97**
10^{4} km	0.27	**0.875**	0.866	0.075	**0.915**	**0.913**	15.19	5089.88	137.04	11.39	**-1.45**	75.0	2.97
10^{3} km	0.27	**0.875**	0.866	0.075	0.915	0.913	15.19	5089.88	137.04	11.39	-1.45	75.0	2.97
10^{2} km	0.27	0.875	0.866	0.075	0.915	0.913	15.20	5090.11	137.04	11.40	-1.45	75.0	2.97
10^{1} km	0.27	0.875	0.866	0.074	0.915	0.913	15.25	5107.90	**133.49**	11.41	-1.45	75.0	3.03
km	0.27	0.874	0.866	0.073	0.915	0.913	15.30	5137.75	137.09	11.43	-1.46	74.8	3.10
10^{-1} km	0.27	0.875	0.866	0.073	0.915	0.913	15.31	5123.93	136.76	11.41	-1.45	75.4	3.10
10^{-2} km	0.27	0.875	0.866	**0.072**	0.915	0.913	15.31	5123.01	136.64	11.41	-1.45	75.3	3.11
10^{-3} km	0.27	0.875	0.866	0.073	0.915	0.913	15.31	5132.27	137.54	11.42	-1.45	75.1	3.12
10^{-4} km	0.27	0.874	0.866	0.073	0.915	0.913	15.31	5141.87	136.02	11.43	-1.46	75.0	3.12
10^{-5} km	0.27	0.874	0.866	0.073	0.915	0.913	15.31	5150.39	136.19	11.44	-1.46	74.9	3.13
10^{-6} km	0.27	0.874	0.866	0.074	0.915	0.913	15.30	5157.31	134.28	11.45	-1.46	74.7	3.14
10^{-7} km	0.27	0.874	0.866	0.075	0.915	0.913	15.30	5163.15	135.29	11.45	-1.46	74.7	3.15
10^{-8} km	0.27	0.874	0.866	0.074	0.915	0.913	15.30	5168.02	138.50	11.46	-1.46	74.6	3.15
10^{-9} km	0.27	0.874	**0.866**	0.075	0.915	0.913	15.30	5171.98	138.67	11.46	-1.46	**74.5**	3.16

Note: Column 'unit of measurement' indicates the unit of measurement of the distance to closest market (km); column 'semi-elasticity' indicates the estimated semi-elasticity of the food crop area with respect to 'Organic'; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S70: Criteria for selecting the unit of measurement of distance to closest market (km) when using food crop area (IHS, ha) as dependent variable (with WTP as control variable)

unit of measurement	semi-elasticity: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^9 km	0.31	**0.875**	0.866	0.072	**0.915**	**0.912**	**15.35**	**5188.91**	147.66	**11.43**	**-1.45**	75.7	**2.90**
10^8 km	0.31	**0.875**	0.866	0.072	**0.915**	**0.912**	**15.35**	**5188.91**	147.66	**11.43**	**-1.45**	75.7	**2.90**
10^7 km	0.31	**0.875**	0.866	0.072	**0.915**	**0.912**	**15.35**	**5188.91**	147.66	**11.43**	**-1.45**	75.7	**2.90**
10^6 km	0.31	**0.875**	0.866	0.072	**0.915**	**0.912**	**15.35**	**5188.91**	147.66	**11.43**	**-1.45**	75.7	**2.90**
10^5 km	0.31	**0.875**	0.866	0.072	**0.915**	**0.912**	**15.35**	5188.91	147.66	**11.43**	**-1.45**	75.7	**2.90**
10^4 km	0.31	**0.875**	0.866	0.072	**0.915**	**0.912**	15.35	5188.91	147.66	11.43	**-1.45**	75.7	2.90
10^3 km	0.31	**0.875**	0.866	0.072	0.915	0.912	15.35	5188.91	147.66	11.43	-1.45	75.7	2.90
10^2 km	0.31	0.875	0.866	0.072	0.915	0.912	15.35	5189.25	148.06	11.43	-1.45	75.7	2.90
10^1 km	0.31	0.875	0.866	0.072	0.915	0.912	15.40	5206.57	144.12	11.44	-1.45	75.6	2.95
km	0.31	0.875	0.866	0.072	0.915	0.912	15.46	5232.43	141.76	11.46	-1.46	75.5	3.02
10^{-1} km	0.31	0.875	0.866	0.071	0.915	0.912	15.47	5219.61	143.39	11.44	-1.45	76.0	3.03
10^{-2} km	0.31	0.875	0.866	**0.071**	0.915	0.912	15.47	5218.55	**140.07**	11.44	-1.45	75.9	3.04
10^{-3} km	0.31	0.875	0.866	0.071	0.915	0.912	15.47	5226.72	142.77	11.45	-1.46	75.7	3.05
10^{-4} km	0.31	0.875	0.866	0.071	0.914	0.912	15.47	5235.30	141.82	11.46	-1.46	75.6	3.06
10^{-5} km	0.31	0.875	0.866	0.072	0.914	0.912	15.46	5243.83	141.70	11.47	-1.46	75.5	3.07
10^{-6} km	0.31	0.875	0.866	0.072	0.914	0.912	15.46	5251.97	143.39	11.48	-1.46	75.4	3.07
10^{-7} km	0.31	0.875	0.866	0.072	0.914	0.912	15.46	5259.62	144.01	11.48	-1.46	75.3	3.08
10^{-8} km	0.31	0.875	0.866	0.072	0.914	0.912	15.46	5265.51	147.55	11.49	-1.46	75.2	3.09
10^{-9} km	0.30	0.875	**0.866**	0.072	0.914	0.912	15.45	5269.12	144.57	11.49	-1.46	**75.1**	3.09

Note: Column ‘unit of measurement’ indicates the unit of measurement of the distance to closest market (km); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the food crop area with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S71: Criteria for selecting the unit of measurement of distance to closest market (km) when using log(Cotton area) as dependent variable (without WTP as control variable)

unit of measurement	semi-elasticity: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	-0.48	0.609	0.591	0.057	**0.980**	**0.980**	**7.05**	**118.33**	98.02	**3.75**	**-0.57**	**81.8**	8.02
10^{8} km	-0.48	0.609	0.591	0.057	**0.980**	**0.980**	**7.05**	**118.33**	98.02	**3.75**	**-0.57**	**81.8**	8.02
10^{7} km	-0.48	0.609	0.591	0.057	**0.980**	**0.980**	**7.05**	**118.33**	98.02	**3.75**	**-0.57**	**81.8**	8.02
10^{6} km	-0.48	0.609	0.591	0.057	**0.980**	**0.980**	**7.05**	**118.33**	98.02	**3.75**	**-0.57**	**81.8**	8.02
10^{5} km	-0.48	0.609	0.591	0.057	**0.980**	**0.980**	**7.05**	**118.33**	98.02	**3.75**	**-0.57**	81.8	8.02
10^{4} km	-0.48	0.609	0.591	0.057	**0.980**	**0.980**	7.05	118.33	98.02	**3.75**	**-0.57**	81.8	8.02
10^{3} km	-0.48	0.609	0.591	0.057	0.980	0.980	7.05	118.33	98.02	3.75	-0.57	81.8	8.02
10^{2} km	-0.48	0.609	0.591	0.057	0.980	0.980	7.05	118.34	99.08	3.75	-0.57	81.8	8.02
10^{1} km	-0.48	0.609	0.591	0.058	0.980	0.980	7.07	118.83	**95.77**	3.75	-0.57	82.5	8.02
km	-0.48	0.609	0.591	0.057	0.980	0.980	7.11	120.59	98.41	3.76	-0.57	84.2	7.97
10^{-1} km	-0.48	0.609	0.591	0.056	0.980	0.980	7.09	120.05	99.20	3.76	-0.57	84.0	7.97
10^{-2} km	-0.48	0.609	0.591	0.056	0.980	0.980	7.09	119.88	102.23	3.76	-0.57	84.5	7.98
10^{-3} km	-0.48	0.609	0.591	**0.056**	0.980	0.980	7.10	120.13	100.83	3.76	-0.57	84.5	7.97
10^{-4} km	-0.48	0.609	0.592	0.056	0.980	0.980	7.11	120.44	98.24	3.76	-0.57	84.4	7.96
10^{-5} km	-0.48	0.609	0.592	0.057	0.980	0.980	7.12	120.72	99.87	3.76	-0.57	84.3	7.96
10^{-6} km	-0.48	0.609	0.592	0.057	0.980	0.980	7.13	120.98	98.47	3.76	-0.57	84.3	7.95
10^{-7} km	-0.48	0.609	0.592	0.057	0.980	0.980	7.13	121.19	99.03	3.76	-0.57	84.2	7.95
10^{-8} km	-0.48	0.609	0.592	0.057	0.980	0.980	7.14	121.38	98.18	3.76	-0.57	84.1	7.95
10^{-9} km	-0.48	**0.609**	**0.592**	0.058	0.980	0.980	7.15	121.48	99.08	3.76	-0.57	84.0	**7.94**

Note: Column ‘unit of measurement’ indicates the unit of measurement of the distance to closest market (km); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the cotton area with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S72: Criteria for selecting the unit of measurement of distance to closest market (km) when using log(Cotton area) as dependent variable (with WTP as control variable)

unit of measurement	semi-elasticity: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^9 km	-0.44	0.610	0.592	0.053	**0.980**	**0.980**	**7.07**	**123.52**	89.64	**3.81**	**-0.57**	**84.4**	8.56
10^8 km	-0.44	0.610	0.592	0.053	**0.980**	**0.980**	**7.07**	**123.52**	89.64	**3.81**	**-0.57**	**84.4**	8.56
10^7 km	-0.44	0.610	0.592	0.053	**0.980**	**0.980**	**7.07**	**123.52**	89.64	**3.81**	**-0.57**	**84.4**	8.56
10^6 km	-0.44	0.610	0.592	0.053	**0.980**	**0.980**	**7.07**	**123.52**	89.64	**3.81**	**-0.57**	**84.4**	8.56
10^5 km	-0.44	0.610	0.592	0.053	**0.980**	**0.980**	**7.07**	123.52	89.64	**3.81**	**-0.57**	84.4	8.56
10^4 km	-0.44	0.610	0.592	0.053	**0.980**	**0.980**	7.07	123.52	89.64	**3.81**	**-0.57**	84.4	8.56
10^3 km	-0.44	0.610	0.592	0.053	0.980	0.980	7.07	123.52	89.64	3.81	-0.57	84.4	8.56
10^2 km	-0.44	0.610	0.592	0.053	0.980	0.980	7.07	123.53	89.64	3.81	-0.57	84.4	8.56
10^1 km	-0.44	0.610	0.592	0.053	0.980	0.980	7.09	124.21	87.56	3.81	-0.57	85.1	8.56
km	-0.44	0.611	0.592	0.053	0.979	0.979	7.13	126.44	**83.90**	3.82	-0.58	86.9	8.51
10^{-1} km	-0.44	0.610	0.592	0.053	0.979	0.979	7.11	125.74	87.22	3.81	-0.57	86.7	8.51
10^{-2} km	-0.44	0.610	0.592	**0.053**	0.979	0.979	7.12	125.44	92.51	3.81	-0.57	87.1	8.51
10^{-3} km	-0.44	0.610	0.592	0.053	0.979	0.979	7.12	125.73	91.55	3.81	-0.57	87.2	8.50
10^{-4} km	-0.44	0.610	0.592	0.053	0.979	0.979	7.13	126.08	90.65	3.81	-0.57	87.1	8.49
10^{-5} km	-0.44	0.611	0.592	0.053	0.979	0.979	7.14	126.40	89.92	3.82	-0.58	87.1	8.48
10^{-6} km	-0.44	0.611	0.592	0.053	0.979	0.979	7.15	126.66	90.14	3.82	-0.58	87.0	8.48
10^{-7} km	-0.44	0.611	0.592	0.053	0.979	0.979	7.16	126.88	88.68	3.82	-0.58	86.9	8.47
10^{-8} km	-0.44	0.611	0.592	0.053	0.979	0.979	7.17	127.05	88.06	3.82	-0.58	86.8	8.47
10^{-9} km	-0.44	**0.611**	**0.592**	0.053	0.979	0.979	7.18	127.09	90.93	3.82	-0.58	86.7	**8.47**

Note: Column 'unit of measurement' indicates the unit of measurement of the distance to closest market (km); column 'semi-elasticity' indicates the estimated semi-elasticity of the cotton area with respect to 'Organic'; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S73: Criteria for selecting the unit of measurement of distance to closest market (km) when using cotton income (IHS, 100,000 FCFA) as dependent variable (without WTP as control variable)

unit of measurement	semi-elasticity: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	-0.49	0.511	0.490	0.072	**0.953**	**0.952**	10.78	**1033.97**	113.53	6.41	**-0.95**	172.3	29.36
10^{8} km	-0.49	0.511	0.490	0.072	**0.953**	**0.952**	10.78	**1033.97**	113.53	6.41	**-0.95**	172.3	29.36
10^{7} km	-0.49	0.511	0.490	0.072	**0.953**	**0.952**	10.78	**1033.97**	113.53	6.41	**-0.95**	172.3	29.36
10^{6} km	-0.49	0.511	0.490	0.072	**0.953**	**0.952**	10.78	**1033.97**	113.53	6.41	**-0.95**	172.3	29.36
10^{5} km	-0.49	0.511	0.490	0.072	**0.953**	**0.952**	10.78	1033.97	113.53	6.41	**-0.95**	172.3	29.36
10^{4} km	-0.49	0.511	0.490	0.072	**0.953**	**0.952**	10.78	1033.97	113.53	6.41	**-0.95**	172.3	29.36
10^{3} km	-0.49	0.511	0.490	0.072	0.953	0.952	10.78	1033.97	113.53	6.41	-0.95	172.3	29.36
10^{2} km	-0.49	0.511	0.490	0.072	0.953	0.952	10.78	1034.10	113.87	6.41	-0.95	172.3	29.35
10^{1} km	-0.49	0.511	0.491	0.071	0.953	0.952	**10.78**	1039.00	107.95	6.41	-0.95	171.9	28.98
km	-0.48	0.511	0.491	**0.070**	0.953	0.952	10.79	1039.98	105.81	6.40	-0.95	**171.8**	**28.37**
10^{-1} km	-0.48	0.511	0.491	0.073	0.953	0.952	10.79	1038.15	106.20	**6.40**	-0.95	172.3	28.79
10^{-2} km	-0.48	0.511	0.491	0.073	0.953	0.952	10.79	1038.57	104.18	6.40	-0.95	172.4	28.81
10^{-3} km	-0.48	0.511	0.491	0.073	0.953	0.952	10.79	1038.93	104.18	6.41	-0.95	172.4	28.73
10^{-4} km	-0.48	0.511	0.491	0.073	0.953	0.952	10.79	1039.47	103.89	6.41	-0.95	172.5	28.65
10^{-5} km	-0.48	0.511	0.491	0.073	0.953	0.952	10.79	1039.94	**102.88**	6.41	-0.95	172.6	28.59
10^{-6} km	-0.48	0.511	0.491	0.073	0.953	0.952	10.79	1040.37	103.44	6.41	-0.95	172.6	28.55
10^{-7} km	-0.48	0.511	0.491	0.073	0.953	0.952	10.79	1040.74	103.78	6.41	-0.95	172.7	28.52
10^{-8} km	-0.48	0.511	0.491	0.073	0.953	0.952	10.79	1041.05	103.39	6.41	-0.95	172.8	28.51
10^{-9} km	-0.48	**0.511**	**0.491**	0.072	0.953	0.952	10.79	1041.29	105.64	6.41	-0.95	172.8	28.51

Note: Column ‘unit of measurement’ indicates the unit of measurement of the distance to closest market (km); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the cotton income with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S74: Criteria for selecting the unit of measurement of distance to closest market (km) when using cotton income (IHS, 100,000 FCFA) as dependent variable (with WTP as control variable)

unit of measurement	semi-elasticity: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	-0.62	0.517	0.495	0.069	0.953	0.952	11.03	980.45	131.79	6.27	**-0.93**	173.3	27.99
10^{8} km	-0.62	0.517	0.495	0.069	0.953	0.952	11.03	980.45	131.79	6.27	**-0.93**	173.3	27.99
10^{7} km	-0.62	0.517	0.495	0.069	0.953	0.952	11.03	980.45	131.79	6.27	**-0.93**	173.3	27.99
10^{6} km	-0.62	0.517	0.495	0.069	0.953	0.952	11.03	980.45	131.79	6.27	**-0.93**	173.3	27.99
10^{5} km	-0.62	0.517	0.495	0.069	0.953	0.952	11.03	980.45	131.79	6.27	**-0.93**	173.3	27.99
10^{4} km	-0.62	0.517	0.495	0.069	0.953	0.952	11.03	980.45	131.79	6.27	**-0.93**	173.3	27.99
10^{3} km	-0.62	0.517	0.495	0.069	0.953	0.952	11.03	980.45	131.79	6.27	-0.93	173.3	27.99
10^{2} km	-0.62	0.517	0.495	0.069	0.953	0.952	11.03	980.51	130.16	6.27	-0.93	173.3	27.99
10^{1} km	-0.62	0.518	0.495	0.069	0.953	0.952	11.02	982.46	129.43	6.27	-0.93	172.9	27.66
km	-0.61	0.518	0.496	0.068	**0.953**	**0.952**	11.01	**978.99**	114.49	6.26	-0.94	**172.8**	27.07
10^{-1} km	-0.61	0.518	0.496	0.069	0.953	0.952	11.01	979.97	121.08	**6.26**	-0.94	173.2	27.34
10^{-2} km	-0.61	0.518	0.496	0.069	0.953	0.952	11.02	981.76	119.05	6.26	-0.94	173.3	27.35
10^{-3} km	-0.61	0.518	0.496	**0.068**	0.953	0.952	11.01	982.50	120.41	6.26	-0.94	173.4	27.26
10^{-4} km	-0.61	0.518	0.496	0.068	0.953	0.952	11.01	982.75	116.69	6.26	-0.94	173.4	27.18
10^{-5} km	-0.61	0.518	0.496	0.068	0.953	0.952	**11.01**	983.03	115.33	6.27	-0.94	173.5	27.11
10^{-6} km	-0.61	0.518	0.496	0.068	0.953	0.952	11.01	983.39	**114.38**	6.27	-0.94	173.5	27.06
10^{-7} km	-0.61	0.518	0.496	0.069	0.953	0.952	11.01	983.80	114.55	6.27	-0.94	173.6	27.04
10^{-8} km	-0.61	0.518	0.496	0.068	0.953	0.952	11.01	984.22	115.62	6.27	-0.94	173.7	**27.03**
10^{-9} km	-0.61	**0.518**	**0.496**	0.068	0.953	0.952	11.02	984.64	116.18	6.27	-0.94	173.7	27.03

Note: Column 'unit of measurement' indicates the unit of measurement of the distance to closest market (km); column 'semi-elasticity' indicates the estimated semi-elasticity of the cotton income with respect to 'Organic'; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S75: Criteria for selecting the unit of measurement of distance to closest market (km) when using log(Household revenue) as dependent variable (without WTP as control variable)

unit of measurement	semi-elasticity: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	-0.51	0.474	0.450	0.042	0.977	0.976	4.21	408.59	53.32	5.55	-0.48	67.8	2.06
10^{8} km	-0.51	0.474	0.450	0.042	0.977	0.976	4.21	408.59	53.32	5.55	-0.48	67.8	2.06
10^{7} km	-0.51	0.474	0.450	0.042	0.977	0.976	4.21	408.59	53.32	5.55	-0.48	67.8	2.06
10^{6} km	-0.51	0.474	0.450	0.042	0.977	0.976	4.21	408.59	53.32	5.55	-0.48	67.8	2.06
10^{5} km	-0.51	0.474	0.450	0.042	0.977	0.976	4.21	408.59	53.32	5.55	-0.48	67.8	2.06
10^{4} km	-0.51	0.474	0.450	0.042	0.977	0.976	4.21	408.59	53.32	5.55	-0.48	67.8	2.06
10^{3} km	-0.51	0.474	0.450	0.042	0.977	0.976	4.21	408.59	53.32	5.55	-0.48	67.8	2.06
10^{2} km	-0.51	0.474	0.450	0.042	0.977	0.976	4.21	408.58	53.32	5.55	-0.48	67.8	2.06
10^{1} km	-0.51	0.474	0.450	0.043	0.977	0.976	4.21	408.14	**51.80**	5.55	-0.48	67.8	2.03
km	-0.51	0.474	0.450	0.042	0.977	0.976	4.19	404.69	59.73	5.53	-0.49	67.5	1.94
10^{-1} km	-0.51	0.474	0.450	**0.040**	0.977	0.976	4.15	393.00	53.15	5.49	-0.48	**67.0**	1.87
10^{-2} km	-0.51	0.475	0.450	0.041	0.977	0.976	4.13	382.29	52.08	5.46	-0.48	67.7	1.83
10^{-3} km	-0.51	0.475	0.450	0.042	0.977	0.976	**4.13**	379.87	53.49	5.45	-0.48	67.8	1.80
10^{-4} km	-0.51	0.475	0.451	0.042	**0.977**	**0.976**	4.13	**379.43**	55.40	5.44	**-0.48**	67.7	1.78
10^{-5} km	-0.51	0.475	0.451	0.042	0.977	0.976	4.14	379.80	55.23	**5.44**	-0.48	67.6	1.77
10^{-6} km	-0.51	0.475	0.451	0.042	0.977	0.976	4.15	380.82	56.13	5.45	-0.48	67.5	1.76
10^{-7} km	-0.51	0.475	0.451	0.042	0.977	0.976	4.15	382.31	54.95	5.45	-0.48	67.4	**1.76**
10^{-8} km	-0.51	0.475	0.451	0.042	0.977	0.976	4.16	383.66	55.51	5.45	-0.48	67.4	1.76
10^{-9} km	-0.51	**0.475**	**0.451**	0.042	0.977	0.976	4.17	384.39	55.29	5.46	-0.48	67.4	1.76

Note: Column ‘unit of measurement’ indicates the unit of measurement of the distance to closest market (km); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the household revenue with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).

Table S76: Criteria for selecting the unit of measurement of distance to closest market (km) when using log(Household revenue) as dependent variable (with WTP as control variable)

unit of measurement	semi-elasticity: Organic	rSquared	pSquared	Kolmogorov-Smirnov	Shapiro-Wilk	Shapiro-Fancia	Anderson	Jarque-Bera	Pearson	kurtosis	skewness	Breusch-Pagan	RESET
10^{9} km	-0.40	0.489	0.463	0.040	0.977	0.975	3.98	390.27	52.70	5.52	-0.54	69.9	0.56
10^{8} km	-0.40	0.489	0.463	0.040	0.977	0.975	3.98	390.27	52.70	5.52	-0.54	69.9	0.56
10^{7} km	-0.40	0.489	0.463	0.040	0.977	0.975	3.98	390.27	52.70	5.52	-0.54	69.9	0.56
10^{6} km	-0.40	0.489	0.463	0.040	0.977	0.975	3.98	390.27	52.70	5.52	-0.54	69.9	0.56
10^{5} km	-0.40	0.489	0.463	0.040	0.977	0.975	3.98	390.27	52.70	5.52	-0.54	69.9	0.56
10^{4} km	-0.40	0.489	0.463	0.040	0.977	0.975	3.98	390.27	52.70	5.52	-0.54	69.9	0.56
10^{3} km	-0.40	0.489	0.463	0.040	0.977	0.975	3.98	390.27	52.70	5.52	-0.54	69.9	0.56
10^{2} km	-0.40	0.489	0.463	0.040	0.977	0.975	3.98	390.24	52.70	5.52	-0.54	69.9	0.56
10^{1} km	-0.40	0.489	0.463	0.040	0.977	0.975	3.97	389.05	51.41	5.52	-0.54	69.9	0.55
km	-0.40	0.489	0.463	0.040	0.977	0.976	3.95	382.77	52.76	5.51	-0.54	69.3	0.48
10^{-1} km	-0.40	0.490	0.464	0.040	0.977	0.976	3.89	366.98	49.33	5.46	-0.53	**68.5**	0.42
10^{-2} km	-0.40	0.490	0.464	0.039	0.977	0.976	3.85	354.98	**48.82**	5.41	-0.53	69.2	0.39
10^{-3} km	-0.40	0.490	0.464	0.039	0.977	0.976	3.84	352.71	49.72	5.40	-0.53	69.2	0.37
10^{-4} km	-0.40	0.490	0.464	0.038	**0.977**	**0.976**	3.83	**352.56**	51.07	**5.40**	**-0.53**	69.1	0.36
10^{-5} km	-0.40	0.490	0.464	0.038	0.977	0.976	**3.83**	352.58	50.45	5.40	-0.53	69.0	0.36
10^{-6} km	-0.40	0.491	0.464	0.038	0.977	0.976	3.83	353.23	51.01	5.40	-0.53	68.9	**0.35**
10^{-7} km	-0.40	0.491	0.465	0.038	0.977	0.976	3.83	353.72	51.41	5.41	-0.53	68.9	0.36
10^{-8} km	-0.40	0.491	0.465	**0.038**	0.977	0.976	3.84	354.67	53.32	5.41	-0.53	68.9	0.36
10^{-9} km	-0.40	**0.491**	**0.465**	0.039	0.977	0.976	3.84	355.93	55.00	5.42	-0.53	68.8	0.37

Note: Column ‘unit of measurement’ indicates the unit of measurement of the distance to closest market (km); column ‘semi-elasticity’ indicates the estimated semi-elasticity of the household revenue with respect to ‘Organic’; all other columns indicate criteria for selecting the optimal unit of measurement of the distance to closest market (km) as explained in Table 1 of Aïhounton and Henningsen (2021).