

Annexes: Estimation of econometric models

Estimates are made for the 13 agricultural products highlighted in our SAM, namely corn, millet and sorghum, tubers, oilseeds, other cereals, rice, coffee and tea, cocoa, vegetables, cotton, fruit, bananas and other agricultural products.

Owing to the availability of data, the estimates cover the period 1961-2018.

The data on climate change indicators is taken from the Climate change knowledge portal. This data source also provided us with the variables for each region, which allowed us to calculate them for each AEZ. The production index data for each product is provided by FAOStat, and the input data is provided by the World Development Indicators. The above-mentioned sources allowed us to obtain data per product only for the production index variable. All other variables were aggregated at the agricultural level. We therefore made some assumptions in order to disaggregate certain variables according to the products of interest in our study. Regarding labour, we have applied the labour structure by agricultural branch of the SAM to the data set. With regard to land and fertilisers, we applied the capital structure by agricultural branches of the SAM to the data set. Rainfall, temperature and capital were left unchanged.

A.1 The econometric methodology

The model specified by equation (5) is estimated by the Autoregressive Distributed Lag (ARDL) method, proposed by Pesaran et al. (2001). Compared to other conventional co-integration methods (Engle and Granger, 1987 and Johansen, 1991), the ARDL method has two main advantages. Firstly, it can be applied to any degree of integration of the variables used: purely $I(0)$, purely $I(1)$ or mixed. Secondly, it offers the possibility of dealing simultaneously with long-term dynamics and short-term adjustments. We therefore adopt this method to analyse the dynamic relationship between climate change (and other inputs) and agricultural production of each good.

The implementation of the ARDL method requires that unit root tests be performed for the variables beforehand. Therefore, to study the stationarity of the variables in their degree of integration, we perform the augmented Dickey-Fuller test (ADF). Subsequently, the number of lags of the dependent and explanatory variables is selected using the Akaike information criterion (AIC). Therefore, the model is analysed using the ARDL procedure, because of the need to take stock of the long-term and short-term consequences of our analysis. ARDL modelling with the appropriate lags will allow the correction of correlation and endogeneity problems of the series.

A.2 Analysis of the econometric modelling results

The results of the descriptive statistics for all the variables are presented in Table A9. We find that during the period 1961 and 2018, the average temperature in Cameroon varied between 24.06°C and 25.27°C and the average rainfall varied between 1323.78 and 1859.01mm. Furthermore, analysis of these statistics also shows that, on

average over the period considered, the products with the highest agricultural productivity indices are coffee and tea, millet and sorghum, and cocoa, with values estimated to be 4.84, 4.05 and 3.92 respectively.

The graph A24 presents the comparative evolution of the climatic variables and the production index of each product over the period 1961-2018. Three main findings emerged. Firstly, on average and with the exception of tea and coffee, production of all the products examined has increased over the last six decades. Secondly, during this period, the flow of precipitation has followed a relatively constant trend, while the temperature has shown an increasing trend. Thirdly, the increase in temperature has usually been accompanied with an increase in the productivity of these products, although this has not always been the case for rainfall.

With regard to the econometric results more specifically, the application of ADF unit root tests on the series studied, leads to the rejection of the stationarity hypothesis for all the series, except for the production index series for corn, millet and sorghum, coffee and tea, tubers, cotton and vegetables; labour for all these products; land for oilseeds and vegetables; and fertilisers for cocoa, oilseeds, corn and other cereals, which are stationary in level. The results also show that the other series are integrated of order I(1). No series is therefore integrated of order two I(2) or higher, which is crucial for the application of the ARDL method.

For the choice of the number of lags, the AIC information criterion for each model estimated was applied. These tables also present the short-term and medium-term dynamics of the climatic variables as well as the other inputs, on the productivity of each product. To estimate the model in equation (5), we introduce in turn temperature (temp) and precipitation (pluv).

Concentrating exclusively on the short-term results (second section of the results tables), we find: (i) a negative impact of rainfall on the production of cotton; (ii) a negative impact of temperature on the production of corn; (iii) a positive impact of rainfall on the production of cocoa; (iv) a positive impact of temperature on the production of rice; (v) a negative impact of temperature and a positive impact of rainfall on tuber production; (vi) a negative impact of temperature on the production of cereals; (vii) a positive impact of rainfall on the production of fruit; and (viii) a negative impact of rainfall on the yields of other products. With regard to the other crops (vegetables, coffee, bananas, millet, oilseeds), we find no significant impacts.

The coefficients of the model are used to calculate the productivity elasticities of each product in relation to the climatic variables. The variation in the yields of each product as a result of climate shocks is thus obtained as the product of the elasticities calculated for each type of climate shock. The climate change coefficients are obtained for the optimistic and pessimistic climate change scenarios. Indeed, Cameroon's Climate-Resilient Investment Plan (2020) projects minimum (optimistic) and maximum (pessimistic) temperature and rainfall variations differing by AEZ by 2040-2060. As regards temperatures, the AEZ with the lowest variation is the moist savannah zone (1.2%) and the one with the highest increase is the Sudano-Sahelian zone (3%). With regard to rainfall,

under the optimistic scenario, rainfall is expected to decline by 10% on average, while under the pessimistic scenario it is expected to decline by 20% on average across the country.

Table A1: Variation in temperature by AEZ and precipitation

Temperature	Optimistic (in °C)	Pessimistic (in °C)
SSZ	1.25	3.00
HSZ-BFZ	1.55	2.75
MSZ	1.20	2.00
MZ	1.30	2.50
Precipitation	Optimistic (in %)	Pessimistic (in %)
National	-10	-20

Source: Cameroon's climate-resilient investment plan

These variations allow us to calculate the climate change coefficients for the optimistic and pessimistic scenarios. As the temperatures are given as absolute variations, the associated percentage is obtained by adding the above change values to the average temperature values calculated over the period 1961-2018 for the AEZ. The following table shows the relative temperature changes.

Table A2: Percentage change in temperature by AEZ

Temperature	Optimistic (in °C)	Pessimistic (in °C)
SSZ	4.8	11.4
HSZ-BFZ	6.4	11.3
MSZ	5.3	8.8
MZ	5.1	9.9

Source: Authors' calculations

Table A3: Results of the stationarity test and descriptive statistics

Variables	Order of stationarity	Descriptive statistics			Min	Max
		N	Mean	Standard deviation		
Temp	I(0)	58	24.692	0.285	24.060	25.270
Pluvio	I(0)	58	1599.252	91.289	1323.780	1859.010
Temp2	I(0)	58	609.770	14.056	578.884	638.573
Pluvio2	I(0)	58	2565798.000	292055.100	1752394.000	3455918.000
Temp Pluvio	I(1)	58	39485.370	2246.405	32684.130	46326.530
Ind prod Mais	I(0)	58	3.441	0.614	2.708	4.687
Ind prod Mil Sorgho	I(0)	58	4.057	0.327	2.890	4.642
Ind prod Rizpaddy	I(1)	58	2.893	0.975	0.307	4.915
Ind prod Oleagineux	I(1)	58	3.540	0.556	2.595	4.703
Ind prod Cacao	I(1)	58	3.926	0.372	3.347	4.765
Ind prod Cafe The	I(0)	58	4.844	0.277	4.128	5.345
Ind prod Bananes	I(1)	58	3.674	0.650	2.514	4.714
Ind prod autres Cereales	I(1)	58	3.524	0.555	2.879	4.678
Ind prod Tubercules	I(0)	58	3.612	0.535	2.933	4.659
Ind prod Fruits	I(1)	58	3.576	0.587	2.755	4.675
Ind prod Coton graine	I(0)	58	3.654	0.703	2.151	4.705
Ind prod total	I(1)	58	3.652	0.529	2.770	4.642
Ind prod légumes	I(0)	58	3.527	0.633	2.500	4.700
Log lab Mais	I(0)	58	9.726	1.338	6.365	10.738
Log lab Mil sorgho	I(0)	58	9.046	1.338	5.685	10.058
Log lab riz	I(0)	58	8.698	1.338	5.337	9.710
Log lab autres cereales	I(0)	58	12.284	1.338	8.924	13.297
Log lab tubercules	I(0)	58	11.485	1.338	8.125	12.498
Log lab banane	I(0)	58	12.891	1.338	9.531	13.904
Log lab oleagineux	I(0)	58	13.188	1.338	9.828	14.201
Log lab coton	I(0)	58	5.268	1.338	1.908	6.281
Log lab fruits	I(0)	58	11.457	1.338	8.096	12.469
Log lab legumes	I(0)	58	12.141	1.338	8.780	13.153
Log lab cacao	I(0)	58	12.591	1.338	9.230	13.603
Log lab cafe the	I(0)	58	9.106	1.338	5.746	10.119
Log lab autres	I(0)	58	9.984	1.338	6.624	10.997
Log Terre Mais	I(1)	58	9.397	0.078	9.235	9.496
Log Terre Mil sorgho	I(1)	58	9.851	0.078	9.689	9.950
Log Terre riz	I(1)	58	7.597	0.078	7.436	7.697
Log Terre autres cereales	I(1)	58	7.962	0.078	7.800	8.061
Log Terre tubercules	I(1)	58	9.000	0.078	8.838	9.099
Log Terre banane	I(1)	58	8.477	0.078	8.316	8.577
Log Terre oleagineux	I(0)	58	7.687	0.078	7.525	7.786
Log Terre Coton	I(1)	58	7.968	0.078	7.807	8.068
Log Terre fruits	I(1)	58	4.520	0.078	4.358	4.619
Log Terre legumes	I(0)	58	9.783	0.078	9.621	9.882
Log Terre cacao	I(1)	58	9.163	0.078	9.002	9.263
Log Terre cafe the	I(1)	58	8.013	0.078	7.851	8.112
Log Terre autres	I(1)	58	8.862	0.078	8.700	8.961
Log Fertilisants Mais	I(0)	58	10.965	0.826	8.802	12.108
Log Fertilisants Mil sorgho	I(1)	58	11.419	0.826	9.256	12.562
Log Fertilisants riz	I(1)	58	9.165	0.826	7.003	10.309
Log Fertilisants autres cereale	I(0)	58	9.530	0.826	7.367	10.674
Log Fertilisants tubercules	I(1)	58	10.568	0.826	8.406	11.712
Log Fertilisants banane	I(1)	58	10.045	0.826	7.883	11.189
Log Fertilisants oleagineux	I(0)	58	9.255	0.826	7.092	10.398
Log Fertilisants Coton	I(1)	58	9.536	0.826	7.374	10.680
Log Fertilisants fruits	I(1)	58	6.088	0.826	3.925	7.232
Log Fertilisants legumes	I(1)	58	11.351	0.826	9.189	12.495
Log Fertilisants cacao	I(0)	58	10.731	0.826	8.569	11.875
Log Fertilisants cafe the	I(1)	58	9.581	0.826	7.418	10.724
Log Fertilisants autres	I(1)	58	10.430	0.826	8.267	11.574
Livestock production index	I(1)	58	4.006	0.512	3.094	4.736
log capital	I(1)	58	7.037	0.988	5.324	8.548

Source: The authors.

Note: Descriptive statistics are calculated after logarithmic transformation of the variables.

Table A4: Effect of climate change on cotton production

	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod_Coton_graine	-0.434*** (0.138)	-0.462*** (0.150)	-0.483*** (0.151)	-0.393** (0.154)	-0.454** (0.171)	-0.475*** (0.161)	-0.395** (0.180)	-0.226 (0.184)
LR								
Log_lab_coton	-0.278 (0.251)	-0.207 (0.238)	-0.271* (0.147)	-0.575** (0.279)	-0.352 (0.264)	-0.343 (0.247)	-0.408 (0.343)	-0.425 (0.563)
Log_Terre_Coton	4.978 (4.076)	3.322 (4.145)	7.929* (4.578)	7.163 (5.243)	8.358 (5.590)	7.557 (4.843)	2.705 (6.622)	11.934 (14.618)
Log_Fertilisants_Coton	0.270 (0.339)	0.279 (0.320)	0.244 (0.233)	0.707* (0.392)	0.323 (0.343)	0.343 (0.320)	0.593 (0.457)	0.052 (0.812)
log_Capital	0.466 (0.358)	0.542 (0.356)	0.303 (0.197)	0.094 (0.270)	0.383 (0.349)	0.413 (0.322)	-0.024 (0.496)	-0.672 (1.212)
temp	-0.181 (0.917)	76.392 (66.452)			2.050 (6.546)	-0.368 (0.879)	84.511 (79.344)	132.091 (144.363)
temp2		-1.553 (1.351)					-1.697 (1.606)	-1.935 (2.647)
pluvio			0.002 (0.003)	0.131 (0.086)	0.040 (0.100)	0.002 (0.003)	0.169 (0.113)	0.756 (0.752)
pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
temp_pluvio					-0.001 (0.004)			-0.022 (0.024)
SR								
D.Log_lab_coton	-0.147 (0.255)	-0.166 (0.257)	-0.265 (0.251)	-0.337 (0.240)	-0.263 (0.271)	-0.261 (0.268)	-0.396 (0.266)	-0.361 (0.247)
LD.Log_lab_coton	0.473* (0.258)	0.431 (0.261)	0.576** (0.242)	0.680*** (0.234)	0.601** (0.265)	0.592** (0.260)	0.608** (0.269)	0.645** (0.250)
D.Log_Terre_Coton	-6.805 (4.465)	-6.594 (5.043)	-4.485 (4.364)	-4.247 (4.075)	-4.807 (4.677)	-4.675 (4.602)	-4.376 (4.977)	-6.875 (4.757)
LD.Log_Terre_Coton	-2.963 (4.570)	-0.328 (4.917)	-5.102 (4.436)	-5.484 (4.296)	-4.453 (4.973)	-5.078 (4.646)	-2.178 (5.050)	3.736 (5.417)
L2D.Log_Terre_Coton	-2.830 (4.529)	-2.674 (4.926)	-4.849 (4.462)	-5.555 (4.228)	-5.515 (4.865)	-5.376 (4.787)	-4.175 (5.033)	-3.866 (4.671)
D.Log_Fertilisants_Coton	0.271* (0.158)	0.349** (0.166)	0.296* (0.152)	0.179 (0.154)	0.278 (0.189)	0.279 (0.186)	0.297 (0.191)	0.288 (0.178)
D.log_Capital	-0.242 (0.643)	-0.394 (0.652)	-0.199 (0.612)	-0.160 (0.571)	-0.276 (0.720)	-0.380 (0.659)	-0.442 (0.646)	0.446 (0.725)
D.temp	0.179 (0.304)	-20.097 (27.178)			0.209 (0.322)	0.211 (0.318)	-16.428 (25.573)	-3.079 (24.503)
LD.temp	0.134 (0.226)	-31.633 (23.731)			0.151 (0.234)	0.160 (0.229)	-19.847 (22.860)	-14.671 (21.339)
L2D.temp	0.053 (0.159)	-4.409 (19.016)			-0.009 (0.172)	-0.007 (0.169)	-4.459 (18.441)	1.072 (17.294)
D.temp2		0.411 (0.552)					0.331 (0.519)	0.060 (0.497)
LD.temp2		0.644 (0.482)					0.403 (0.464)	0.297 (0.433)
L2D.temp2		0.090 (0.386)					0.088 (0.374)	-0.023 (0.351)
D.pluvio			-0.001 (0.001)	-0.051** (0.020)	-0.001 (0.001)	-0.001 (0.001)	-0.061** (0.024)	-0.052** (0.022)
LD.pluvio			0.000 (0.001)	-0.040** (0.016)	-0.000 (0.001)	-0.000 (0.001)	-0.046** (0.019)	-0.039** (0.018)
L2D.pluvio			-0.000 (0.001)	-0.020* (0.012)	-0.000 (0.001)	-0.000 (0.001)	-0.029* (0.015)	-0.022 (0.014)
L3D.pluvio			0.000 (0.000)	-0.013* (0.007)	0.000 (0.000)	0.000 (0.000)	-0.020** (0.009)	-0.024** (0.009)
D.pluvio2				0.000** (0.000)			0.000** (0.000)	0.000** (0.000)
LD.pluvio2				0.000** (0.000)			0.000** (0.000)	0.000** (0.000)
L2D.pluvio2				0.000* (0.000)			0.000* (0.000)	0.000 (0.000)
L3D.pluvio2				0.000* (0.000)			0.000** (0.000)	0.000** (0.000)
Constant	-15.557 (18.168)	-446.704 (393.426)	-31.797 (20.073)	-63.365** (24.563)	-55.306 (77.186)	-26.440 (22.457)	-475.623 (392.582)	-528.688 (364.988)
Observations	55	55	54	54	54	54	54	54
R-squared	0.417	0.477	0.509	0.638	0.536	0.534	0.699	0.752

Table A5: Effect of climate change on corn production

	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod_Mais	-0.231** (0.087)	-0.207* (0.121)	-0.242*** (0.087)	-0.228** (0.092)	-0.222** (0.093)	-0.229** (0.093)	-0.141 (0.152)	-0.101 (0.153)
LR								
Log_lab_Mais	0.030 (0.264)	0.061 (0.323)	0.038 (0.183)	-0.118 (0.251)	0.098 (0.332)	0.091 (0.322)	0.220 (0.766)	0.196 (1.028)
Log_Terre_Mais	-9.637** (4.449)	-10.637 (6.477)	-10.374* (5.800)	-11.594* (6.467)	-13.331* (7.540)	-10.787 (6.555)	-17.863 (22.550)	-33.145 (54.022)
Log_Fertilisants_Mais	-0.050 (0.375)	-0.063 (0.426)	0.010 (0.286)	0.358 (0.418)	-0.030 (0.442)	-0.105 (0.432)	-0.054 (0.810)	0.560 (1.300)
log_Capital	1.343*** (0.394)	1.475** (0.566)	1.308*** (0.262)	1.181*** (0.293)	1.427*** (0.464)	1.299*** (0.421)	1.494 (1.024)	1.992 (2.021)
temp	-0.045 (0.936)	76.237 (145.099)			-7.836 (8.449)	0.190 (1.121)	147.288 (344.682)	243.028 (614.230)
temp2		-1.551 (2.947)					-2.979 (6.972)	-5.534 (13.396)
pluvio			-0.000 (0.003)	0.083 (0.076)	-0.124 (0.129)	-0.001 (0.004)	0.078 (0.161)	-0.268 (0.547)
pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
temp_pluvio					0.005 (0.005)			0.019 (0.034)
SR								
D.Log_lab_Mais	-0.062 (0.146)	-0.081 (0.147)	-0.112 (0.154)	-0.099 (0.163)	-0.109 (0.166)	-0.106 (0.166)	-0.081 (0.170)	-0.101 (0.167)
LD.Log_lab_Mais	0.154 (0.148)	0.143 (0.150)	0.174 (0.149)	0.206 (0.159)	0.148 (0.162)	0.160 (0.162)	0.158 (0.173)	0.150 (0.170)
D.Log_Terre_Mais	-0.663 (2.530)	-0.734 (2.742)	-1.014 (2.635)	-1.535 (2.723)	-0.819 (2.832)	-1.300 (2.802)	-3.196 (3.061)	-1.783 (3.187)
LD.Log_Terre_Mais	0.866 (2.561)	2.625 (2.766)	1.104 (2.592)	0.472 (2.738)	0.507 (2.848)	1.228 (2.772)	3.296 (3.110)	1.653 (3.292)
L2D.Log_Terre_Mais	2.599 (2.630)	3.166 (2.876)	2.230 (2.654)	1.567 (2.798)	3.169 (2.950)	2.713 (2.925)	3.460 (3.189)	3.570 (3.136)
D.Log_Fertilisants_Mais	-0.071 (0.090)	-0.040 (0.095)	-0.005 (0.089)	-0.033 (0.101)	-0.002 (0.113)	-0.015 (0.113)	0.027 (0.123)	0.056 (0.123)
D.log_Capital	-0.350 (0.393)	-0.335 (0.399)	-0.530 (0.392)	-0.525 (0.403)	-0.618 (0.457)	-0.461 (0.434)	-0.338 (0.432)	-0.637 (0.480)
D.temp	0.032 (0.170)	-20.013 (18.385)			-0.004 (0.198)	-0.009 (0.199)	-23.370 (20.997)	-30.545 (21.318)
LD.temp	0.025 (0.129)	-23.323 (14.730)			0.030 (0.144)	0.016 (0.144)	-27.913 (16.911)	-30.853* (16.766)
L2D.temp	0.083 (0.092)	-8.591 (10.727)			0.064 (0.105)	0.064 (0.106)	-7.483 (11.994)	-8.911 (11.837)
D.temp2		0.407 (0.373)					0.473 (0.426)	0.619 (0.432)
LD.temp2		0.473 (0.299)					0.567 (0.343)	0.627* (0.340)
L2D.temp2		0.176 (0.218)					0.154 (0.243)	0.183 (0.240)
D.pluvio			-0.000 (0.001)	-0.018 (0.013)	0.000 (0.001)	0.000 (0.001)	-0.013 (0.015)	-0.018 (0.015)
LD.pluvio			0.000 (0.001)	-0.011 (0.011)	0.000 (0.001)	0.000 (0.001)	-0.004 (0.012)	-0.007 (0.012)
L2D.pluvio			0.000 (0.000)	-0.004 (0.008)	0.000 (0.000)	0.000 (0.000)	0.004 (0.010)	0.001 (0.010)
L3D.pluvio			0.000 (0.000)	-0.001 (0.005)	0.000 (0.000)	0.000 (0.000)	0.002 (0.006)	0.003 (0.006)
D.pluvio2				0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
LD.pluvio2				0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
L2D.pluvio2				0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
L3D.pluvio2				0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
Constant	19.840 (12.545)	-174.834 (286.382)	22.306 (13.725)	8.493 (18.327)	69.853 (48.134)	21.195 (15.383)	-243.212 (363.928)	-250.609 (357.760)
Observations	55	55	54	54	54	54	54	54
R-squared	0.312	0.385	0.330	0.402	0.369	0.345	0.558	0.591

Table A6: Effect of climate change on the production of vegetables

	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod_Legumes	-0.173* (0.095)	-0.232* (0.117)	-0.158* (0.085)	-0.115 (0.084)	-0.158 (0.094)	-0.158 (0.094)	-0.227 (0.144)	-0.234 (0.146)
LR								
Log_lab_legumes	-0.045 (0.368)	-0.090 (0.287)	0.009 (0.266)	-0.282 (0.392)	-0.073 (0.440)	-0.074 (0.437)	-0.374 (0.284)	-0.417 (0.283)
Log_Terre_legumes	-9.913 (6.292)	-7.591 (5.197)	-8.262 (8.467)	-6.483 (9.555)	-4.643 (9.202)	-7.509 (8.814)	-2.841 (6.438)	-4.205 (6.891)
Log_Fertilisants_legumes	-0.142 (0.578)	-0.026 (0.429)	-0.399 (0.526)	-0.140 (0.782)	-0.383 (0.751)	-0.279 (0.700)	0.270 (0.458)	0.411 (0.462)
log_Capital	1.575** (0.582)	1.316*** (0.466)	1.397*** (0.436)	1.209** (0.533)	1.298** (0.600)	1.443** (0.594)	0.838* (0.426)	0.881* (0.427)
temp	-0.654 (1.305)	-79.713 (82.620)			9.356 (12.001)	-0.299 (1.558)	-100.297 (77.052)	-105.216 (75.028)
temp2		1.607 (1.679)					2.033 (1.559)	2.023 (1.531)
pluvio			-0.000 (0.005)	0.154 (0.122)	0.148 (0.179)	0.000 (0.005)	0.125 (0.077)	0.055 (0.123)
pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
temp_pluvio					-0.006 (0.007)			0.003 (0.005)
SR								
D.Log_lab_legumes	0.293* (0.152)	0.310* (0.157)	0.196 (0.148)	0.233* (0.128)	0.188 (0.159)	0.184 (0.159)	0.232 (0.143)	0.223 (0.145)
LD.Log_lab_legumes	-0.283* (0.159)	-0.264 (0.169)	-0.256* (0.145)	-0.248* (0.129)	-0.227 (0.159)	-0.236 (0.159)	-0.183 (0.166)	-0.179 (0.168)
D.Log_Terre_legumes	-0.504 (2.635)	-1.833 (2.971)	-2.094 (2.532)	-2.457 (2.155)	-2.363 (2.734)	-1.900 (2.686)	-3.646 (2.602)	-2.974 (2.834)
LD.Log_Terre_legumes	2.310 (2.678)	2.281 (2.976)	3.185 (2.496)	2.554 (2.136)	3.419 (2.724)	2.834 (2.649)	2.510 (2.718)	1.753 (2.993)
L2D.Log_Terre_legumes	-0.420 (2.760)	-0.040 (3.061)	-0.703 (2.564)	-2.162 (2.187)	-1.540 (2.828)	-1.113 (2.788)	-2.285 (2.702)	-2.240 (2.738)
D.Log_Fertilisants_legumes	-0.046 (0.094)	-0.022 (0.102)	0.064 (0.085)	0.099 (0.081)	0.049 (0.109)	0.059 (0.109)	0.107 (0.114)	0.113 (0.116)
D.log_Capital	-0.305 (0.403)	-0.329 (0.418)	-0.254 (0.368)	-0.279 (0.313)	-0.100 (0.436)	-0.243 (0.409)	-0.416 (0.362)	-0.558 (0.428)
D.temp	0.058 (0.182)	15.693 (19.017)			-0.041 (0.199)	-0.035 (0.199)	16.644 (19.596)	15.900 (19.883)
LD.temp	-0.009 (0.137)	2.010 (15.984)			-0.049 (0.143)	-0.036 (0.142)	2.880 (16.244)	3.199 (16.461)
L2D.temp	0.035 (0.096)	-0.085 (11.846)			-0.025 (0.101)	-0.025 (0.101)	1.309 (11.166)	1.418 (11.312)
D.temp2		-0.317 (0.386)					-0.337 (0.397)	-0.322 (0.403)
LD.temp2		-0.041 (0.324)					-0.058 (0.329)	-0.064 (0.333)
L2D.temp2		0.002 (0.240)					-0.027 (0.226)	-0.030 (0.229)
D.pluvio			-0.001 (0.001)	-0.006 (0.012)	-0.001 (0.001)	-0.001 (0.001)	-0.015 (0.015)	-0.017 (0.016)
LD.pluvio			-0.000 (0.001)	0.004 (0.010)	-0.000 (0.001)	-0.000 (0.001)	-0.002 (0.013)	-0.004 (0.013)
L2D.pluvio			-0.000 (0.000)	0.002 (0.007)	-0.000 (0.000)	-0.000 (0.000)	-0.001 (0.009)	-0.003 (0.009)
L3D.pluvio			-0.000 (0.000)	0.002 (0.004)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.005)	0.001 (0.005)
D.pluvio2				0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
LD.pluvio2				-0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
L2D.pluvio2				-0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
L3D.pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
Constant	18.633 (13.978)	245.377 (278.709)	12.560 (13.305)	-6.581 (14.142)	-29.670 (46.820)	12.348 (15.211)	264.048 (310.311)	303.460 (320.205)
Observations	55	55	54	54	54	54	54	54
R-squared	0.338	0.375	0.459	0.674	0.490	0.475	0.725	0.730

Table A7: Effect of climate change on the production of coffee

	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod_Cafe_The	-0.721*** (0.265)	-0.723** (0.285)	-0.807*** (0.262)	-0.711** (0.263)	-0.769** (0.299)	-0.764** (0.292)	-0.568* (0.313)	-0.564 (0.328)
LR								
Log_lab_cafe_the	0.238* (0.122)	0.225* (0.132)	0.209** (0.078)	0.224** (0.107)	0.298** (0.127)	0.297** (0.125)	0.285 (0.179)	0.288 (0.187)
Log_Terre_cafe_the	0.582 (2.096)	1.005 (2.231)	-0.862 (2.736)	-0.184 (2.826)	-1.666 (3.236)	-1.587 (3.118)	-2.125 (4.682)	-2.064 (4.900)
Log_Fertilisants_cafe_the	0.023 (0.166)	0.017 (0.173)	0.071 (0.127)	0.008 (0.172)	-0.064 (0.171)	-0.067 (0.167)	-0.106 (0.247)	-0.115 (0.291)
log_Capital	-0.458** (0.181)	-0.475** (0.195)	-0.355*** (0.113)	-0.347** (0.132)	-0.434** (0.189)	-0.438** (0.183)	-0.426 (0.286)	-0.427 (0.296)
temp	0.185 (0.427)	-9.832 (36.468)			0.074 (3.060)	0.443 (0.445)	12.589 (46.202)	12.827 (47.815)
temp2		0.203 (0.741)					-0.245 (0.936)	-0.242 (0.966)
pluvio			-0.001 (0.001)	-0.006 (0.029)	-0.008 (0.046)	-0.002 (0.002)	0.017 (0.044)	0.021 (0.086)
pluvio2				0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
temp_pluvio					0.000 (0.002)			-0.000 (0.004)
SR								
LD.Ind_prod_Cafe_The	-0.307* (0.181)	-0.308 (0.193)	-0.227 (0.178)	-0.143 (0.181)	-0.273 (0.204)	-0.278 (0.196)	-0.184 (0.210)	-0.187 (0.221)
D.Log_lab_cafe_the	-0.105 (0.204)	-0.103 (0.215)	-0.036 (0.225)	-0.064 (0.214)	-0.099 (0.229)	-0.099 (0.226)	-0.113 (0.224)	-0.111 (0.231)
LD.Log_lab_cafe_the	-0.012 (0.213)	0.011 (0.225)	-0.089 (0.221)	0.003 (0.213)	-0.081 (0.233)	-0.077 (0.228)	0.041 (0.233)	0.042 (0.239)
D.Log_Terre_cafe_the	-6.265* (3.405)	-5.224 (4.089)	-5.633 (3.750)	-5.884 (3.524)	-6.437 (3.847)	-6.515* (3.731)	-7.542* (4.154)	-7.661 (4.611)
LD.Log_Terre_cafe_the	-4.377 (3.732)	-4.901 (4.215)	-4.795 (3.994)	-3.362 (3.920)	-4.130 (4.109)	-4.050 (3.990)	-0.961 (4.503)	-0.840 (4.953)
L2D.Log_Terre_cafe_the	6.105 (3.769)	5.176 (4.297)	4.573 (3.983)	4.573 (3.808)	7.621* (4.210)	7.578* (4.128)	7.466 (4.485)	7.482 (4.597)
D.Log_Fertilisants_cafe_the	-0.004 (0.126)	-0.026 (0.138)	-0.007 (0.130)	0.066 (0.132)	0.031 (0.158)	0.029 (0.154)	0.097 (0.159)	0.095 (0.165)
D.log_Capital	-0.776 (0.519)	-0.775 (0.553)	-0.882 (0.564)	-0.753 (0.541)	-0.840 (0.608)	-0.817 (0.567)	-0.774 (0.575)	-0.752 (0.681)
D.temp	-0.131 (0.259)	-0.474 (22.266)			-0.254 (0.300)	-0.253 (0.295)	-6.950 (21.497)	-6.659 (22.432)
LD.temp	0.084 (0.204)	5.412 (19.415)			0.013 (0.223)	0.013 (0.220)	-1.142 (19.104)	-1.081 (19.573)
L2D.temp	0.086 (0.142)	7.801 (15.308)			0.087 (0.160)	0.089 (0.157)	-3.244 (15.442)	-3.215 (15.810)
D.temp2		0.006 (0.452)					0.139 (0.436)	0.133 (0.455)
LD.temp2		-0.108 (0.394)					0.027 (0.387)	0.026 (0.397)
L2D.temp2		-0.157 (0.311)					0.067 (0.313)	0.066 (0.320)
D.pluvio			0.001 (0.001)	0.017 (0.018)	0.002 (0.001)	0.002 (0.001)	0.007 (0.020)	0.008 (0.022)
LD.pluvio			0.001 (0.001)	0.010 (0.015)	0.001 (0.001)	0.001 (0.001)	0.006 (0.018)	0.006 (0.018)
L2D.pluvio			0.001 (0.001)	0.009 (0.011)	0.001 (0.001)	0.001 (0.001)	0.005 (0.013)	0.006 (0.014)
L3D.pluvio			0.000 (0.000)	-0.001 (0.007)	0.000 (0.000)	0.000 (0.000)	-0.007 (0.009)	-0.007 (0.009)
D.pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
LD.pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
L2D.pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
L3D.pluvio2				0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
Constant	-2.464 (16.084)	84.430 (314.533)	10.885 (16.850)	8.683 (21.912)	16.018 (65.037)	8.494 (19.343)	-84.617 (322.002)	-88.046 (333.533)
Observations	55	55	54	54	54	54	54	54
R-squared	0.625	0.633	0.603	0.706	0.666	0.666	0.782	0.782

Table A7: Effect of climate change on cocoa production

	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod_Cacao	-0.270** (0.105)	-0.168 (0.113)	-0.323*** (0.110)	-0.392*** (0.106)	-0.300** (0.119)	-0.300** (0.117)	-0.288** (0.128)	-0.310** (0.125)
LR								
Log_lab_cacao	-0.228 (0.223)	-0.248 (0.342)	-0.099 (0.130)	0.175 (0.139)	-0.124 (0.227)	-0.124 (0.224)	0.132 (0.237)	0.189 (0.225)
Log_Terre_cacao	-5.461 (3.808)	-9.381 (8.242)	-5.960 (4.099)	-5.559* (3.105)	-6.885 (4.809)	-6.888 (4.460)	-7.616 (5.611)	-4.694 (4.973)
Log_Fertilisants_cacao	0.281 (0.305)	0.317 (0.468)	0.258 (0.208)	-0.175 (0.223)	0.219 (0.304)	0.219 (0.294)	-0.221 (0.343)	-0.421 (0.370)
log_Capital	0.950** (0.391)	1.296 (0.845)	0.736*** (0.187)	0.916*** (0.168)	0.860** (0.361)	0.860** (0.343)	1.352** (0.510)	1.209*** (0.428)
temp	-0.552 (0.837)	-8.370 (100.593)			-0.168 (5.368)	-0.180 (0.838)	-12.391 (60.390)	-8.369 (54.972)
temp2		0.153 (2.048)					0.236 (1.225)	0.345 (1.098)
pluvio			-0.002 (0.002)	-0.122*** (0.042)	-0.002 (0.081)	-0.002 (0.003)	-0.160** (0.073)	-0.035 (0.091)
pluvio2				0.000*** (0.000)			0.000** (0.000)	0.000** (0.000)
temp_pluvio					-0.000 (0.003)			-0.006 (0.004)
SR								
D.Log_lab_cacao	0.060 (0.144)	0.094 (0.137)	0.054 (0.151)	0.101 (0.142)	0.057 (0.157)	0.057 (0.155)	0.158 (0.145)	0.178 (0.141)
LD.Log_lab_cacao	0.142 (0.146)	0.117 (0.141)	0.157 (0.147)	0.075 (0.139)	0.148 (0.155)	0.148 (0.152)	0.050 (0.150)	0.057 (0.146)
D.Log_Terre_cacao	-1.817 (2.485)	-2.669 (2.680)	-2.231 (2.587)	-1.745 (2.374)	-3.069 (2.692)	-3.068 (2.616)	-2.844 (2.705)	-4.159 (2.775)
LD.Log_Terre_cacao	4.987* (2.490)	3.427 (2.577)	5.671** (2.492)	7.297*** (2.358)	5.989** (2.670)	5.987** (2.554)	6.004** (2.642)	7.669*** (2.799)
L2D.Log_Terre_cacao	1.818 (2.639)	0.750 (2.697)	2.075 (2.683)	4.625* (2.584)	2.661 (2.997)	2.662 (2.928)	3.370 (2.919)	3.420 (2.841)
D.Log_Fertilisants_cacao	-0.111 (0.090)	-0.109 (0.091)	-0.024 (0.089)	0.053 (0.088)	-0.055 (0.107)	-0.055 (0.105)	-0.033 (0.102)	-0.054 (0.100)
D.log_Capital	0.122 (0.384)	0.209 (0.369)	0.113 (0.396)	0.076 (0.363)	0.080 (0.435)	0.080 (0.406)	0.093 (0.372)	0.384 (0.411)
D.temp	0.215 (0.169)	18.583 (14.289)			0.138 (0.199)	0.138 (0.196)	14.866 (13.784)	18.290 (13.609)
LD.temp	0.215* (0.127)	20.461 (12.595)			0.178 (0.141)	0.178 (0.138)	15.791 (12.364)	16.542 (12.046)
L2D.temp	0.149 (0.091)	6.406 (9.969)			0.121 (0.101)	0.121 (0.100)	8.817 (9.926)	9.568 (9.676)
D.temp2		-0.372 (0.290)					-0.296 (0.280)	-0.366 (0.276)
LD.temp2		-0.410 (0.256)					-0.315 (0.251)	-0.331 (0.244)
L2D.temp2		-0.127 (0.202)					-0.175 (0.201)	-0.189 (0.196)
D.pluvio			0.000 (0.001)	0.039*** (0.012)	0.000 (0.001)	0.000 (0.001)	0.036** (0.014)	0.042*** (0.014)
LD.pluvio			0.000 (0.001)	0.028*** (0.010)	0.000 (0.001)	0.000 (0.001)	0.029** (0.012)	0.032** (0.012)
L2D.pluvio			0.000 (0.000)	0.016** (0.007)	0.000 (0.000)	0.000 (0.000)	0.016* (0.009)	0.020** (0.009)
L3D.pluvio			-0.000 (0.000)	0.009** (0.004)	-0.000 (0.000)	-0.000 (0.000)	0.008 (0.005)	0.007 (0.005)
D.pluvio2				-0.000*** (0.000)			-0.000** (0.000)	-0.000*** (0.000)
LD.pluvio2				-0.000*** (0.000)			-0.000** (0.000)	-0.000** (0.000)
L2D.pluvio2				-0.000** (0.000)			-0.000* (0.000)	-0.000** (0.000)
L3D.pluvio2				-0.000** (0.000)			-0.000 (0.000)	-0.000 (0.000)
Constant	16.373 (11.141)	32.611 (209.385)	17.618 (13.616)	56.745*** (16.948)	20.122 (45.383)	20.221 (14.015)	101.528 (218.161)	54.098 (214.697)
Observations	55	55	54	54	54	54	54	54
R-squared	0.375	0.499	0.399	0.573	0.470	0.470	0.698	0.726

Table A8: Effect of climate change on banana production

	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod_Bananes	-0.284** (0.137)	-0.278* (0.146)	-0.310** (0.119)	-0.322** (0.127)	-0.300** (0.128)	-0.307** (0.126)	-0.316** (0.148)	-0.319** (0.152)
LR								
Log_lab_banane	0.108 (0.224)	0.076 (0.230)	0.216 (0.149)	0.241 (0.167)	0.223 (0.221)	0.215 (0.211)	0.181 (0.219)	0.186 (0.225)
Log_Terre_banane	2.943 (3.294)	4.104 (3.482)	0.773 (3.286)	1.313 (3.226)	1.489 (3.717)	0.765 (3.533)	3.731 (4.034)	4.019 (4.348)
Log_Fertilisants_banane	-0.237 (0.274)	-0.261 (0.292)	-0.260 (0.166)	-0.374* (0.215)	-0.275 (0.246)	-0.243 (0.229)	-0.352 (0.270)	-0.375 (0.304)
log_Capital	0.564** (0.269)	0.504* (0.294)	0.576*** (0.141)	0.613*** (0.152)	0.529** (0.232)	0.569** (0.218)	0.570** (0.274)	0.561* (0.281)
temp	-0.188 (0.659)	-41.568 (60.069)			2.711 (4.319)	0.007 (0.585)	-26.800 (50.922)	-25.698 (51.673)
temp2		0.841 (1.222)					0.541 (1.033)	0.540 (1.045)
pluvio			-0.002 (0.002)	-0.025 (0.034)	0.039 (0.065)	-0.002 (0.002)	-0.028 (0.043)	-0.014 (0.082)
pluvio2				0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
temp_pluvio					-0.002 (0.003)			-0.001 (0.003)
SR								
D.Log_lab_banane	0.097 (0.127)	0.106 (0.131)	0.196* (0.110)	0.213* (0.116)	0.186 (0.120)	0.183 (0.119)	0.207 (0.131)	0.208 (0.135)
LD.Log_lab_banane	-0.036 (0.129)	-0.010 (0.133)	-0.021 (0.106)	-0.068 (0.113)	-0.003 (0.118)	-0.007 (0.117)	-0.016 (0.132)	-0.016 (0.135)
D.Log_Terre_banane	0.916 (2.080)	2.076 (2.396)	0.064 (1.785)	0.152 (1.833)	-0.167 (1.955)	0.083 (1.903)	1.576 (2.290)	1.407 (2.504)
LD.Log_Terre_banane	2.521 (2.182)	1.406 (2.447)	3.499* (1.792)	4.095** (1.909)	3.692* (2.002)	3.389* (1.934)	3.128 (2.417)	3.330 (2.693)
L2D.Log_Terre_banane	1.699 (2.232)	0.477 (2.496)	2.534 (1.869)	2.604 (2.001)	2.154 (2.125)	2.407 (2.074)	1.215 (2.533)	1.214 (2.588)
D.Log_Fertilisants_banane	0.057 (0.078)	0.022 (0.083)	0.063 (0.064)	0.066 (0.072)	0.065 (0.081)	0.071 (0.080)	0.032 (0.092)	0.030 (0.094)
D.log_Capital	0.094 (0.323)	0.102 (0.333)	0.130 (0.269)	0.156 (0.275)	0.193 (0.322)	0.114 (0.297)	0.172 (0.321)	0.207 (0.377)
D.temp	-0.009 (0.152)	5.034 (13.517)			-0.041 (0.143)	-0.037 (0.141)	-0.980 (12.578)	-0.641 (12.975)
LD.temp	0.026 (0.113)	13.095 (11.950)			-0.023 (0.103)	-0.015 (0.102)	9.239 (11.361)	9.243 (11.607)
L2D.temp	-0.003 (0.080)	10.927 (9.268)			-0.031 (0.075)	-0.031 (0.074)	7.424 (8.735)	7.455 (8.926)
D.temp2		-0.103 (0.275)					0.020 (0.255)	0.013 (0.264)
LD.temp2		-0.265 (0.243)					-0.187 (0.231)	-0.187 (0.236)
L2D.temp2		-0.222 (0.188)					-0.151 (0.177)	-0.152 (0.181)
D.pluvio			0.000 (0.001)	0.006 (0.010)	0.000 (0.001)	0.000 (0.001)	0.008 (0.012)	0.008 (0.013)
LD.pluvio			0.000 (0.000)	0.006 (0.008)	0.000 (0.000)	0.000 (0.000)	0.007 (0.010)	0.007 (0.010)
L2D.pluvio			-0.000 (0.000)	-0.001 (0.006)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.008)	0.001 (0.008)
L3D.pluvio			-0.000* (0.000)	-0.001 (0.003)	-0.000* (0.000)	-0.000 (0.000)	-0.001 (0.004)	-0.001 (0.005)
D.pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
LD.pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
L2D.pluvio2				0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
L3D.pluvio2				0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
Constant	-5.586 (10.484)	133.724 (187.707)	-1.090 (8.812)	3.162 (11.824)	-22.942 (33.714)	-1.121 (9.843)	102.174 (183.219)	94.593 (191.461)
Observations	55	55	54	54	54	54	54	54
R-squared	0.263	0.316	0.502	0.555	0.515	0.508	0.613	0.614

Table A9: Effect of climate change on millet production

	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod_Mil_Sorgho	-0.489** (0.183)	-0.566** (0.218)	-0.382** (0.166)	-0.308* (0.154)	-0.360* (0.178)	-0.361** (0.176)	-0.286 (0.225)	-0.333 (0.223)
LR								
Log_lab_Mil_sorgho	-0.004 (0.241)	-0.051 (0.220)	0.006 (0.206)	0.135 (0.329)	0.192 (0.400)	0.182 (0.390)	-0.153 (0.435)	0.233 (0.563)
Log_Terre_Mil_sorgho	-5.337 (4.219)	-3.398 (4.092)	-10.036 (7.636)	-10.906 (8.995)	-10.446 (9.154)	-11.329 (9.003)	-5.004 (13.285)	-7.211 (12.876)
Log_Fertilisants_Mil_sorgho	-0.106 (0.331)	-0.110 (0.296)	0.040 (0.296)	-0.036 (0.434)	-0.157 (0.472)	-0.110 (0.445)	0.197 (0.545)	-0.411 (0.638)
log_Capital	0.627* (0.347)	0.519 (0.334)	0.865** (0.331)	0.930** (0.420)	0.673 (0.471)	0.725 (0.451)	0.722 (0.747)	0.690 (0.628)
temp	0.413 (0.857)	-40.751 (62.629)			3.865 (8.594)	0.681 (1.256)	-93.147 (100.592)	-6.673 (117.530)
temp2		0.835 (1.272)					1.881 (2.040)	0.306 (2.313)
pluvio			-0.000 (0.003)	-0.015 (0.074)	0.046 (0.127)	-0.002 (0.004)	0.013 (0.107)	0.099 (0.176)
pluvio2				0.000 (0.000)			-0.000 (0.000)	0.000 (0.000)
temp_pluvio					-0.002 (0.005)			-0.005 (0.007)
SR								
LD.Ind_prod_Mil_Sorgho	-0.310* (0.170)	-0.264 (0.189)	-0.436** (0.171)	-0.460** (0.177)	-0.479** (0.190)	-0.484** (0.187)	-0.457** (0.220)	-0.469** (0.217)
L2D.Ind_prod_Mil_Sorgho	-0.454*** (0.145)	-0.435*** (0.155)	-0.374** (0.152)	-0.244 (0.164)	-0.468** (0.193)	-0.449** (0.184)	-0.194 (0.235)	-0.284 (0.235)
D.Log_lab_Mil_sorgho	-0.186 (0.275)	-0.164 (0.289)	-0.319 (0.252)	-0.143 (0.234)	-0.273 (0.277)	-0.278 (0.273)	-0.146 (0.274)	-0.096 (0.269)
LD.Log_lab_Mil_sorgho	-0.073 (0.284)	-0.042 (0.299)	-0.016 (0.250)	-0.101 (0.232)	-0.087 (0.283)	-0.092 (0.278)	-0.008 (0.286)	-0.140 (0.289)
D.Log_Terre_Mil_sorgho	3.558 (4.717)	3.088 (5.446)	4.715 (4.279)	2.485 (3.899)	4.810 (4.658)	5.135 (4.516)	3.349 (4.751)	-0.082 (5.108)
LD.Log_Terre_Mil_sorgho	7.155 (4.991)	7.655 (5.537)	4.263 (4.376)	4.975 (4.012)	5.806 (5.053)	5.248 (4.773)		9.140 (5.378)
L2D.Log_Terre_Mil_sorgho	8.256 (5.195)	8.312 (5.802)	6.330 (4.505)	5.626 (4.164)	6.534 (5.126)	6.760 (5.020)		6.793 (5.123)
D.Log_Fertilisants_Mil_sorgho	0.051 (0.176)	0.066 (0.193)	0.067 (0.149)	0.159 (0.147)	0.109 (0.189)	0.117 (0.185)	0.117 (0.197)	0.171 (0.198)
D.log_Capital	-0.076 (0.716)	-0.095 (0.746)	-0.742 (0.629)	-0.580 (0.572)	-0.565 (0.763)	-0.682 (0.690)	-0.708 (0.652)	-0.331 (0.759)
D.temp	-0.074 (0.319)	7.849 (32.248)			-0.077 (0.329)	-0.070 (0.324)	9.735 (27.997)	-2.137 (29.185)
LD.temp	-0.118 (0.241)	-3.022 (27.510)			-0.119 (0.240)	-0.106 (0.235)	9.194 (23.476)	-10.392 (25.533)
L2D.temp	-0.023 (0.172)	4.638 (20.891)			-0.058 (0.174)	-0.061 (0.172)	14.791 (17.997)	0.277 (19.336)
D.temp2		-0.161 (0.655)					-0.194 (0.569)	0.044 (0.592)
LD.temp2		0.058 (0.558)					-0.182 (0.476)	0.213 (0.517)
L2D.temp2		-0.095 (0.424)					-0.298 (0.364)	-0.004 (0.392)
D.pluvio			0.001 (0.001)	0.004 (0.019)	0.001 (0.001)	0.001 (0.001)	-0.001 (0.025)	0.006 (0.025)
LD.pluvio			0.002* (0.001)	0.022 (0.016)	0.002* (0.001)	0.002* (0.001)	0.021 (0.021)	0.026 (0.021)
L2D.pluvio			0.001 (0.001)	0.016 (0.012)	0.001 (0.001)	0.001 (0.001)	0.017 (0.017)	0.020 (0.017)
L3D.pluvio			0.000 (0.000)	0.003 (0.007)	0.000 (0.001)	0.000 (0.000)	0.002 (0.010)	0.000 (0.010)
D.pluvio2				-0.000 (0.000)			0.000 (0.000)	-0.000 (0.000)
LD.pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
L2D.pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
L3D.pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
Constant	21.119 (22.241)	301.336 (470.641)	37.042 (22.681)	35.686 (26.882)	3.163 (85.217)	34.557 (24.885)	339.243 (467.736)	22.464 (484.621)
Observations	55	55	54	54	54	54	54	54
R-squared	0.564	0.585	0.682	0.782	0.695	0.693	0.786	0.823

Table A10: Effect of climate change on oilseed production

	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod_Oleagineux	-0.267*** (0.084)	-0.387*** (0.111)	-0.283*** (0.088)	-0.264*** (0.094)	-0.299*** (0.089)	-0.284*** (0.090)	-0.300** (0.140)	-0.322** (0.136)
LR								
Log_lab_oleagineux	-0.072 (0.228)	-0.144 (0.155)	-0.192 (0.162)	-0.315 (0.251)	0.010 (0.238)	0.032 (0.256)	-0.226 (0.247)	-0.164 (0.253)
Log_Terre_oleagineux	-7.427* (3.744)	-5.474* (2.732)	-11.939** (5.160)	-11.821* (5.810)	-13.345** (5.166)	-11.270** (5.151)	-8.617 (6.852)	-14.645* (8.202)
Log_Fertilisants_oleagineux	-0.007 (0.331)	0.075 (0.219)	0.131 (0.259)	0.284 (0.393)	0.003 (0.323)	-0.078 (0.346)	0.260 (0.357)	0.369 (0.396)
log_Capital	1.085*** (0.334)	0.946*** (0.240)	1.477*** (0.256)	1.413*** (0.291)	1.263*** (0.329)	1.119*** (0.334)	0.763 (0.446)	0.976** (0.387)
temp	0.794 (0.909)	-84.472* (49.432)			-7.230 (6.128)	1.145 (0.998)	-93.770 (77.790)	-37.881 (84.133)
temp2		1.724* (1.003)					1.928 (1.569)	0.523 (1.787)
pluvio			-0.003 (0.003)	0.050 (0.070)	-0.130 (0.094)	-0.004 (0.003)	0.080 (0.089)	-0.102 (0.120)
pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
temp_pluvio					0.005 (0.004)			0.008 (0.006)
SR								
LD.Ind_prod_Oleagineux	-0.360** (0.150)	-0.296* (0.162)	-0.305* (0.157)	-0.312* (0.167)	-0.443** (0.173)	-0.354** (0.163)	-0.347 (0.203)	-0.500** (0.211)
L2D.Ind_prod_Oleagineux							-0.151 (0.244)	
D.Log_lab_oleagineux	0.135 (0.148)	0.160 (0.145)	0.171 (0.161)	0.176 (0.174)	0.144 (0.164)	0.156 (0.166)	0.148 (0.187)	0.108 (0.178)
LD.Log_lab_oleagineux	0.065 (0.158)	0.111 (0.158)	0.095 (0.160)	0.109 (0.173)	0.097 (0.168)	0.089 (0.170)	0.157 (0.204)	0.117 (0.193)
D.Log_Terre_oleagineux	4.160 (2.636)	2.010 (2.742)	3.469 (2.842)	3.158 (2.981)	5.554* (3.004)	4.246 (2.895)	1.923 (3.456)	4.125 (3.589)
LD.Log_Terre_oleagineux	2.798 (2.646)	3.303 (2.702)	2.812 (2.804)	2.532 (3.064)	2.100 (2.897)	3.064 (2.855)		1.216 (3.532)
L2D.Log_Terre_oleagineux	1.329 (2.739)	3.004 (2.869)	2.158 (2.924)	1.293 (3.211)	3.315 (3.065)	2.489 (3.052)		4.409 (3.479)
D.Log_Fertilisants_oleagineux	-0.087 (0.093)	-0.081 (0.096)	-0.146 (0.097)	-0.171 (0.111)	-0.058 (0.113)	-0.060 (0.115)	-0.065 (0.143)	-0.047 (0.130)
D.log_Capital	-0.337 (0.390)	-0.357 (0.380)	-0.399 (0.406)	-0.364 (0.425)	-0.540 (0.463)	-0.279 (0.429)	-0.193 (0.467)	-0.716 (0.525)
D.temp	-0.237 (0.176)	20.415 (19.133)			-0.333 (0.197)	-0.329 (0.200)	19.706 (22.860)	2.745 (22.691)
LD.temp	-0.209 (0.131)	2.394 (16.041)			-0.253* (0.142)	-0.269* (0.144)	7.342 (19.388)	-8.861 (18.957)
L2D.temp	-0.128 (0.095)	-4.423 (11.532)			-0.171 (0.105)	-0.161 (0.106)	-1.953 (13.908)	-15.321 (14.039)
D.temp2		-0.418 (0.388)					-0.407 (0.463)	-0.064 (0.460)
LD.temp2		-0.052 (0.325)					-0.155 (0.393)	0.174 (0.384)
L2D.temp2		0.087 (0.234)					0.036 (0.282)	0.306 (0.284)
D.pluvio			0.001 (0.001)	-0.010 (0.014)	0.001 (0.001)	0.001 (0.001)	-0.020 (0.017)	-0.026 (0.017)
LD.pluvio			0.000 (0.001)	-0.006 (0.012)	0.001 (0.001)	0.001 (0.001)	-0.016 (0.014)	-0.018 (0.014)
L2D.pluvio			0.000 (0.000)	-0.003 (0.008)	0.000 (0.000)	0.000 (0.000)	-0.009 (0.011)	-0.013 (0.011)
L3D.pluvio			0.000 (0.000)	-0.004 (0.005)	0.000 (0.000)	0.000 (0.000)	-0.005 (0.007)	-0.004 (0.006)
D.pluvio2				0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
LD.pluvio2				0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
L2D.pluvio2				0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
L3D.pluvio2				0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
Constant	9.192 (11.252)	416.378 (297.785)	25.603** (12.384)	12.941 (18.747)	84.739 (50.424)	17.232 (13.726)	343.558 (396.929)	209.032 (378.353)
Observations	55	55	54	54	54	54	54	54
R-squared	0.426	0.521	0.402	0.442	0.502	0.470	0.555	0.636

Table A11: Effect of climate change on rice production

	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod_Riz paddy	-0.337** (0.144)	-0.623*** (0.171)	-0.328** (0.145)	-0.337** (0.152)	-0.251 (0.162)	-0.340** (0.156)	-0.567** (0.257)	-0.585** (0.226)
LR								
Log_lab_riz	-0.658 (0.424)	-0.848*** (0.194)	-0.020 (0.381)	-0.280 (0.412)	-0.332 (0.682)	-0.417 (0.504)	-0.870*** (0.293)	-0.787** (0.289)
Log_Terre_riz	0.693 (8.966)	12.583*** (3.662)	-6.976 (12.808)	-7.995 (13.101)	-4.808 (16.517)	-6.479 (12.935)	13.393* (6.771)	14.867** (6.669)
Log_Fertilisants_riz	0.840 (0.600)	0.717** (0.270)	0.223 (0.523)	0.517 (0.653)	0.332 (0.941)	0.637 (0.664)	0.736* (0.367)	0.592 (0.455)
log_Capital	1.303* (0.743)	0.513 (0.329)	0.884 (0.535)	0.770 (0.526)	1.298 (1.040)	1.355 (0.801)	0.625 (0.496)	0.523 (0.453)
temp	-2.419 (1.650)	-236.919*** (57.906)			24.679 (26.972)	-1.698 (1.824)	-275.546*** (95.728)	-246.744*** (76.616)
temp2		4.776*** (1.176)					5.552*** (1.933)	5.076*** (1.578)
pluvio			-0.008 (0.006)	0.072 (0.117)	0.400 (0.417)	-0.006 (0.007)	-0.020 (0.019)	0.042 (0.145)
pluvio2				-0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
temp_pluvio					-0.016 (0.017)			-0.003 (0.006)
SR								
D.Log_lab_riz	0.186 (0.351)	0.337 (0.300)	0.331 (0.373)	0.317 (0.384)	0.268 (0.386)	0.263 (0.396)	0.446 (0.356)	0.480 (0.376)
LD.Log_lab_riz	-0.402 (0.366)	-0.086 (0.319)	-0.584 (0.372)	-0.696* (0.386)	-0.467 (0.392)	-0.450 (0.402)	-0.145 (0.388)	-0.191 (0.406)
D.Log_Terre_riz	6.043 (5.913)	5.655 (5.467)	5.046 (6.258)	5.408 (6.303)	1.784 (6.623)	4.545 (6.561)	5.729 (7.226)	3.446 (7.176)
LD.Log_Terre_riz	-0.019 (6.143)	-4.821 (5.555)	2.824 (6.242)	2.537 (6.483)	3.531 (6.549)	1.394 (6.576)	-3.716 (6.783)	-2.116 (7.514)
L2D.Log_Terre_riz	5.335 (6.194)	1.615 (5.731)	9.080 (6.293)	7.207 (6.508)	5.614 (6.817)	7.705 (6.863)	1.635 (6.840)	1.125 (7.059)
D.Log_Fertilisants_riz	-0.015 (0.223)	-0.237 (0.196)	0.171 (0.215)	0.017 (0.239)	0.016 (0.264)	0.041 (0.271)	-0.286 (0.302)	-0.311 (0.267)
D.log_Capital	-2.080** (0.890)	-1.730** (0.748)	-1.971** (0.913)	-1.945** (0.916)	-1.553 (1.049)	-2.226** (0.987)	-1.629* (0.894)	-1.227 (1.079)
D.temp	0.398 (0.424)	68.112 (41.168)			0.208 (0.473)	0.280 (0.482)	69.649 (49.762)	65.763 (48.496)
LD.temp	0.396 (0.314)	62.637** (30.552)			0.241 (0.339)	0.318 (0.344)	60.016 (42.113)	58.824 (37.088)
L2D.temp	0.101 (0.221)	32.770 (23.363)			0.098 (0.244)	0.096 (0.250)	32.620 (27.510)	32.798 (28.194)
D.temp2		-1.372 (0.834)					-1.402 (1.008)	-1.324 (0.982)
LD.temp2		-1.261** (0.620)					-1.208 (0.853)	-1.185 (0.752)
L2D.temp2		-0.661 (0.474)					-0.658 (0.558)	-0.661 (0.572)
D.pluvio			0.002 (0.002)	-0.031 (0.032)	0.001 (0.002)	0.002 (0.002)	-0.001 (0.002)	0.005 (0.034)
LD.pluvio			0.002 (0.001)	-0.026 (0.026)	0.001 (0.002)	0.001 (0.002)	-0.001 (0.001)	0.002 (0.027)
L2D.pluvio			0.001 (0.001)	-0.029 (0.019)	0.000 (0.001)	0.001 (0.001)	-0.001 (0.001)	-0.001 (0.022)
L3D.pluvio			0.000 (0.001)	-0.011 (0.011)	-0.000 (0.001)	-0.000 (0.001)	-0.001 (0.001)	0.002 (0.013)
D.pluvio2				0.000 (0.000)				-0.000 (0.000)
LD.pluvio2				0.000 (0.000)				-0.000 (0.000)
L2D.pluvio2				0.000 (0.000)				0.000 (0.000)
L3D.pluvio2				0.000 (0.000)				-0.000 (0.000)
LD.Ind_prod_Riz paddy							-0.099 (0.230)	
L2D.Ind_prod_Riz paddy							-0.095 (0.195)	
Constant	15.696 (26.269)	1769.415*** (575.049)	20.220 (27.990)	2.382 (39.039)	-143.679 (112.101)	31.515 (30.704)	1889.732** (693.406)	1704.057** (763.723)
Observations	55	55	54	54	54	54	54	54
R-squared	0.364	0.606	0.370	0.462	0.450	0.403	0.661	0.676

Table A12: Effect of climate change on tuber production

	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod_Tubercules	-0.206*** (0.074)	-0.206** (0.099)	-0.203** (0.076)	-0.190** (0.078)	-0.210** (0.078)	-0.214*** (0.078)	-0.073 (0.110)	-0.167 (0.110)
LR								
Log_lab_tubercules	0.160 (0.223)	0.146 (0.245)	-0.109 (0.149)	-0.155 (0.215)	0.239 (0.245)	0.232 (0.240)	1.390 (2.565)	0.275 (0.421)
Log_Terre_tubercules	-3.858 (3.281)	-2.482 (3.375)	-7.870 (4.675)	-7.402 (5.119)	-5.682 (4.702)	-7.600* (4.379)	-20.262 (31.688)	-3.473 (6.917)
Log_Fertilisants_tubercules	0.050 (0.278)	0.032 (0.267)	0.207 (0.245)	0.319 (0.361)	-0.229 (0.319)	-0.156 (0.301)	-0.812 (1.667)	-0.281 (0.542)
log_Capital	0.566* (0.324)	0.493 (0.331)	1.098*** (0.207)	1.039*** (0.242)	0.506 (0.348)	0.613* (0.315)	0.148 (1.261)	0.365 (0.550)
temp	1.144 (0.856)	-17.242 (68.848)			8.175 (6.181)	1.629 (0.972)	361.272 (752.250)	35.608 (122.468)
temp2		0.375 (1.391)					-7.202 (15.066)	-0.460 (2.334)
pluvio			-0.002 (0.003)	0.023 (0.059)	0.095 (0.089)	-0.004 (0.003)	0.031 (0.062)	0.169 (0.184)
pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
temp_pluvio					-0.004 (0.004)			-0.007 (0.007)
SR								
D.Log_lab_tubercules	0.273*** (0.100)	0.274*** (0.096)	0.245** (0.108)	0.222* (0.113)	0.243** (0.108)	0.238** (0.109)	0.239** (0.101)	0.215* (0.110)
LD.Log_lab_tubercules	-0.052 (0.105)	-0.041 (0.107)	-0.031 (0.108)	0.017 (0.113)	-0.053 (0.111)	-0.059 (0.111)	-0.015 (0.115)	-0.023 (0.125)
D.Log_Terre_tubercules	1.049 (1.666)	1.710 (1.792)	0.230 (1.796)	0.321 (1.833)	0.108 (1.803)	0.535 (1.787)	0.624 (1.824)	-0.145 (2.086)
LD.Log_Terre_tubercules	-0.321 (1.735)	0.106 (1.817)	-0.534 (1.797)	-1.069 (1.893)	0.619 (1.834)	0.105 (1.804)	1.732 (1.879)	1.490 (2.195)
L2D.Log_Terre_tubercules	-0.010 (1.765)	-1.034 (1.854)	-0.362 (1.843)	-0.539 (1.938)	0.185 (1.919)	0.585 (1.910)	0.025 (1.978)	-0.798 (2.070)
D.Log_Fertilisants_tubercules	-0.041 (0.062)	-0.024 (0.062)	-0.076 (0.062)	-0.057 (0.070)	-0.002 (0.074)	0.007 (0.074)	0.091 (0.075)	0.035 (0.078)
D.log_Capital	-0.286 (0.263)	-0.320 (0.255)	-0.445 (0.276)	-0.473 (0.281)	-0.189 (0.302)	-0.322 (0.285)	-0.318 (0.269)	-0.183 (0.327)
D.temp	-0.207* (0.116)	-2.290 (12.158)			-0.287** (0.130)	-0.283** (0.131)	-23.704 (14.657)	-5.017 (12.993)
LD.temp	-0.178** (0.088)	-5.848 (9.741)			-0.224** (0.094)	-0.213** (0.094)	-26.169** (12.175)	-11.968 (10.522)
L2D.temp	-0.082 (0.063)	7.361 (7.006)			-0.094 (0.070)	-0.095 (0.071)	-5.715 (8.704)	4.672 (7.545)
D.temp2		0.042 (0.247)					0.473 (0.297)	0.096 (0.264)
LD.temp2		0.114 (0.198)					0.525** (0.246)	0.238 (0.213)
L2D.temp2		-0.151 (0.142)					0.112 (0.176)	-0.097 (0.153)
D.pluvio			0.000 (0.000)	0.001 (0.009)	0.001 (0.001)	0.001 (0.001)	0.001* (0.001)	0.002 (0.010)
LD.pluvio			0.000 (0.000)	0.000 (0.008)	0.000 (0.000)	0.001 (0.000)	0.001 (0.000)	0.000 (0.008)
L2D.pluvio			0.000 (0.000)	0.003 (0.005)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.003 (0.006)
L3D.pluvio			-0.000 (0.000)	0.001 (0.003)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.001 (0.004)
D.pluvio2				-0.000 (0.000)				-0.000 (0.000)
LD.pluvio2				-0.000 (0.000)				-0.000 (0.000)
L2D.pluvio2				-0.000 (0.000)				-0.000 (0.000)
L3D.pluvio2				-0.000 (0.000)				-0.000 (0.000)
LD.Ind_prod_Tubercules							-0.339* (0.197)	
L2D.Ind_prod_Tubercules							-0.162 (0.149)	
Constant	0.788 (8.179)	44.844 (187.648)	13.978 (9.756)	8.452 (12.929)	-30.553 (31.605)	7.043 (10.182)	-316.330 (225.878)	-94.521 (219.789)
Observations	55	55	54	54	54	54	54	54
R-squared	0.454	0.550	0.361	0.435	0.480	0.454	0.650	0.655

Table A13: Effect of climate change on cereal production

	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod_autres_Cereales	-0.171 (0.109)	-0.150 (0.157)	-0.161 (0.103)	-0.163 (0.106)	-0.154 (0.112)	-0.153 (0.110)	-0.058 (0.165)	-0.071 (0.194)
LR								
Log_lab_autres_cereales	0.117 (0.409)	0.156 (0.613)	0.207 (0.361)	0.179 (0.398)	0.336 (0.599)	0.342 (0.597)	1.796 (6.291)	1.230 (4.473)
Log_Terre_autres _cereales	-15.405 (10.372)	-18.104 (20.576)	-21.640 (14.632)	-21.037 (14.656)	-23.451 (17.967)	-22.722 (17.199)	-70.850 (211.091)	-53.343 (157.135)
Log_Fertilisants_autres _cereales	0.166 (0.453)	0.153 (0.493)	0.175 (0.364)	0.215 (0.486)	0.126 (0.553)	0.090 (0.540)	-0.530 (2.528)	-0.245 (1.865)
log_Capital	1.584** (0.674)	1.896 (1.400)	1.771** (0.710)	1.687** (0.683)	1.728* (0.856)	1.689** (0.819)	4.331 (10.640)	3.522 (7.790)
temp	0.014 (1.162)	78.061 (216.693)			-2.526 (9.713)	0.453 (1.490)	476.865 (1709.969)	322.919 (1236.834)
temp2		-1.590 (4.402)					-9.661 (34.640)	-6.573 (25.189)
pluvio			-0.003 (0.004)	0.008 (0.082)	-0.049 (0.148)	-0.003 (0.005)	-0.111 (0.321)	-0.084 (0.464)
pluvio2				-0.000 (0.000)			0.000 (0.000)	0.000 (0.000)
temp_pluvio					0.002 (0.006)			0.001 (0.018)
SR								
LD.Ind_prod_autres_Cereales	-0.537*** (0.152)	-0.653*** (0.168)	-0.575*** (0.153)	-0.538*** (0.173)	-0.593*** (0.166)	-0.593*** (0.164)	-0.803*** (0.182)	-0.761*** (0.215)
L2D.Ind_prod_autres_Cereales	-0.554*** (0.140)	-0.628*** (0.144)	-0.492*** (0.144)	-0.371** (0.166)	-0.509*** (0.163)	-0.516*** (0.159)	-0.592*** (0.166)	-0.497** (0.218)
D.Log_lab_autres_cereales	-0.153 (0.132)	-0.168 (0.128)	-0.205 (0.131)	-0.160 (0.138)	-0.186 (0.143)	-0.185 (0.141)	-0.186 (0.132)	-0.167 (0.152)
LD.Log_lab_autres_cereales	-0.008 (0.138)	-0.033 (0.136)	0.015 (0.130)	-0.013 (0.137)	-0.014 (0.145)	-0.011 (0.143)	-0.115 (0.142)	-0.087 (0.163)
D.Log_Terre_autres _cereales	1.893 (2.338)	2.093 (2.422)	1.753 (2.289)	0.830 (2.396)	2.115 (2.495)	1.990 (2.426)	1.542 (2.401)	1.020 (2.896)
LD.Log_Terre_autres _cereales	0.625 (2.380)	2.442 (2.444)	0.241 (2.250)	0.663 (2.377)	0.238 (2.517)	0.420 (2.412)	3.278 (2.435)	3.081 (2.941)
L2D.Log_Terre_autres _cereales	1.694 (2.437)	2.511 (2.515)	1.963 (2.308)	2.076 (2.433)	2.001 (2.611)	1.871 (2.539)	3.251 (2.550)	3.227 (2.808)
D.Log_Fertilisants_autres _cereales	0.016 (0.086)	0.018 (0.088)	0.044 (0.078)	0.037 (0.088)	0.066 (0.100)	0.062 (0.098)	0.073 (0.100)	0.073 (0.115)
D.log_Capital	-0.168 (0.357)	-0.099 (0.352)	-0.458 (0.333)	-0.415 (0.340)	-0.467 (0.403)	-0.422 (0.371)	-0.258 (0.348)	-0.278 (0.433)
D.temp	0.019 (0.155)	-23.273 (17.919)			-0.013 (0.171)	-0.014 (0.169)	-33.236* (18.179)	-31.300 (20.730)
LD.temp	-0.041 (0.117)	-24.232 (14.429)			-0.048 (0.124)	-0.052 (0.122)	-33.687** (15.243)	-30.650* (17.354)
L2D.temp	-0.006 (0.083)	-12.598 (10.112)			-0.029 (0.091)	-0.029 (0.090)	-16.411 (10.467)	-13.892 (12.364)
D.temp2		0.473 (0.364)					0.674* (0.369)	0.635 (0.420)
LD.temp2		0.491 (0.293)					0.682** (0.309)	0.621* (0.351)
L2D.temp2		0.255 (0.205)					0.333 (0.212)	0.282 (0.250)
D.pluvio			0.001 (0.001)	-0.005 (0.011)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	-0.001 (0.015)
LD.pluvio			0.001* (0.000)	-0.000 (0.009)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.003 (0.012)
L2D.pluvio			0.001 (0.000)	0.000 (0.007)	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	0.004 (0.010)
L3D.pluvio			0.000 (0.000)	-0.002 (0.004)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.001 (0.006)
D.pluvio2				0.000 (0.000)				0.000 (0.000)
LD.pluvio2				0.000 (0.000)				-0.000 (0.000)
L2D.pluvio2				0.000 (0.000)				-0.000 (0.000)
L3D.pluvio2				0.000 (0.000)				-0.000 (0.000)
Constant	19.156* (9.562)	-124.418 (275.591)	26.376** (9.720)	24.621* (14.353)	37.093 (41.045)	24.746** (11.150)	-304.862 (298.086)	-250.523 (360.504)
Observations	55	55	54	54	54	54	54	54
R-squared	0.564	0.646	0.633	0.677	0.644	0.643	0.753	0.763

Table A14: Effect of climate change on fruit production

	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod_Fruits	-0.179* (0.092)	-0.224* (0.122)	-0.166* (0.093)	-0.155 (0.094)	-0.173* (0.094)	-0.172* (0.092)	-0.256* (0.132)	-0.280** (0.104)
LR								
Log_lab_fruits	-0.041 (0.202)	-0.034 (0.172)	-0.208 (0.167)	-0.070 (0.218)	-0.158 (0.230)	-0.159 (0.228)	-0.155 (0.170)	-0.208 (0.131)
Log_Terre_fruits	0.688 (4.020)	-0.147 (3.090)	4.871 (6.851)	4.991 (7.504)	5.132 (6.881)	4.807 (6.520)	3.329 (4.386)	5.866 (3.823)
Log_Fertilisants_fruits	-0.378 (0.402)	-0.270 (0.328)	-0.406 (0.392)	-0.583 (0.563)	-0.372 (0.431)	-0.362 (0.421)	-0.216 (0.307)	-0.121 (0.231)
log_Capital	0.890*** (0.295)	0.840*** (0.253)	0.995*** (0.232)	1.102*** (0.306)	0.837** (0.323)	0.856*** (0.307)	0.791*** (0.231)	1.002*** (0.214)
temp	0.525 (0.793)	-20.767 (55.280)			1.539 (5.698)	0.343 (0.858)	-44.781 (48.051)	-72.667** (33.463)
temp2		0.430 (1.120)					0.913 (0.973)	1.499** (0.673)
pluvio			0.003 (0.003)	-0.057 (0.069)	0.021 (0.086)	0.002 (0.003)	-0.002 (0.012)	-0.040 (0.061)
pluvio2				0.000 (0.000)			0.000 (0.000)	0.000* (0.000)
temp_pluvio					-0.001 (0.003)			-0.001 (0.002)
SR								
LD.Ind_prod_Fruits	-0.093 (0.136)	-0.138 (0.144)	-0.132 (0.137)	-0.091 (0.146)	-0.139 (0.144)	-0.137 (0.141)	-0.179 (0.161)	-0.055 (0.139)
L2D.Ind_prod_Fruits	-0.459*** (0.134)	-0.421*** (0.139)	-0.488*** (0.132)	-0.518*** (0.146)	-0.487*** (0.142)	-0.494*** (0.137)	-0.439*** (0.152)	-0.299** (0.137)
D.Log_lab_fruits	0.013 (0.087)	0.027 (0.089)	0.026 (0.091)	0.013 (0.096)	-0.008 (0.094)	-0.009 (0.093)	0.016 (0.098)	0.011 (0.080)
LD.Log_lab_fruits	0.096 (0.090)	0.084 (0.093)	0.096 (0.090)	0.110 (0.094)	0.129 (0.094)	0.129 (0.092)	0.119 (0.101)	0.192** (0.083)
D.Log_Terre_fruits	-0.787 (1.490)	-2.386 (1.743)	-1.145 (1.606)	-0.855 (1.654)	-1.085 (1.645)	-1.012 (1.582)	-2.743 (1.967)	-2.258 (1.725)
LD.Log_Terre_fruits	0.949 (1.542)	1.321 (1.748)	1.021 (1.538)	0.869 (1.605)	0.906 (1.631)	0.813 (1.547)	1.091 (1.857)	0.398 (1.614)
L2D.Log_Terre_fruits	-0.074 (1.599)	0.723 (1.771)	-0.524 (1.606)	-0.124 (1.679)	-0.764 (1.696)	-0.716 (1.654)	-0.089 (1.976)	-0.803 (1.558)
D.Log_Fertilisants_fruits	0.134** (0.055)	0.167*** (0.059)	0.109* (0.054)	0.130** (0.060)	0.143** (0.066)	0.145** (0.065)	0.160** (0.073)	0.138** (0.058)
D.log_Capital	0.002 (0.240)	-0.037 (0.247)	0.149 (0.246)	0.158 (0.250)	0.141 (0.268)	0.124 (0.252)	0.078 (0.271)	0.104 (0.235)
D.temp	-0.143 (0.102)	6.272 (11.726)			-0.142 (0.113)	-0.141 (0.111)	8.246 (12.482)	10.040 (9.954)
LD.temp	-0.081 (0.078)	-4.742 (9.721)			-0.085 (0.083)	-0.083 (0.081)	-1.507 (10.484)	-0.605 (8.215)
L2D.temp	-0.080 (0.056)	-4.554 (6.995)			-0.101 (0.061)	-0.102 (0.060)	-2.173 (7.470)	1.371 (5.951)
D.temp2		-0.130 (0.238)					-0.170 (0.253)	-0.204 (0.202)
LD.temp2		0.094 (0.197)					0.029 (0.213)	0.011 (0.166)
L2D.temp2		0.091 (0.142)					0.042 (0.152)	-0.028 (0.121)
D.pluvio			-0.001 (0.000)	0.007 (0.008)	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.001)	0.015** (0.007)
LD.pluvio			-0.001 (0.000)	0.003 (0.006)	-0.000 (0.000)	-0.000 (0.000)	-0.001 (0.000)	0.009 (0.006)
L2D.pluvio			-0.000* (0.000)	0.004 (0.005)	-0.000* (0.000)	-0.000* (0.000)	-0.001* (0.000)	0.012** (0.005)
L3D.pluvio			-0.000 (0.000)	0.003 (0.003)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.010*** (0.003)
D.pluvio2				-0.000 (0.000)				-0.000** (0.000)
LD.pluvio2				-0.000 (0.000)				-0.000 (0.000)
L2D.pluvio2				-0.000 (0.000)				-0.000** (0.000)
L3D.pluvio2				-0.000 (0.000)				-0.000*** (0.000)
Constant	-2.834 (4.812)	56.290 (171.421)	-4.169 (4.083)	3.026 (8.042)	-10.927 (25.826)	-5.520 (5.062)	137.257 (191.125)	252.829 (155.496)
Observations	55	55	54	54	54	54	54	54
R-squared	0.521	0.575	0.539	0.599	0.607	0.606	0.651	0.830

Table A15: Effect of climate change on other productions

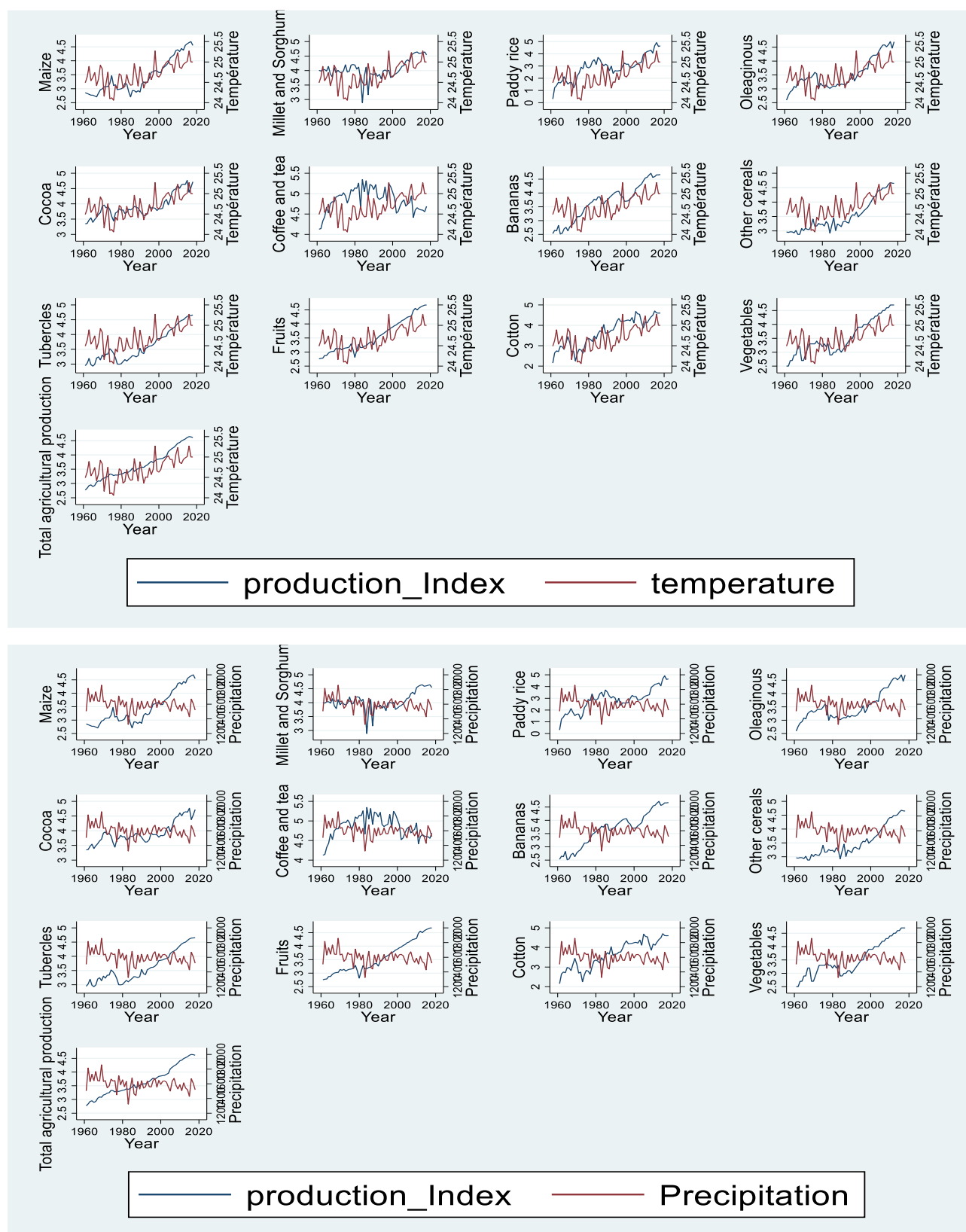
	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod__total	-0.145** (0.057)	-0.165** (0.079)	-0.141** (0.056)	-0.102* (0.054)	-0.143** (0.060)	-0.143** (0.059)	-0.178** (0.079)	-0.090 (0.084)
LR								
Log_lab_tot	0.056 (0.141)	0.030 (0.132)	0.053 (0.152)	0.219 (0.281)	0.052 (0.178)	0.056 (0.175)	-0.029 (0.135)	0.312 (0.549)
Log_Terre_tot	-4.231 (2.684)	-3.724 (2.746)	-5.881 (3.859)	-8.819 (6.135)	-5.970 (4.043)	-5.750 (3.822)	-4.052 (3.288)	-10.147 (11.244)
Log_Fertilisants_tot	0.162 (0.172)	0.152 (0.163)	0.158 (0.162)	0.211 (0.262)	0.148 (0.186)	0.139 (0.179)	0.172 (0.157)	0.195 (0.362)
log_Capital	0.706*** (0.211)	0.674*** (0.206)	0.854*** (0.158)	0.899*** (0.224)	0.831*** (0.249)	0.812*** (0.229)	0.731*** (0.195)	0.545 (0.432)
temp	0.251 (0.469)	-26.542 (39.112)			-0.727 (3.747)	0.139 (0.487)	-41.053 (33.304)	-15.526 (79.608)
temp2		0.543 (0.794)					0.834 (0.677)	0.331 (1.583)
pluvio			-0.001 (0.002)	0.035 (0.047)	-0.014 (0.056)	-0.001 (0.002)	0.011 (0.010)	0.088 (0.158)
pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
temp_pluvio					0.001 (0.002)			0.000 (0.004)
SR								
D.Log_lab_tot	0.044 (0.051)	0.042 (0.052)	0.065 (0.060)	0.153** (0.063)	0.058 (0.063)	0.057 (0.062)	0.067 (0.063)	0.141** (0.066)
D.Log_Terre_tot	1.684** (0.827)	1.094 (0.973)	1.163 (0.851)	0.706 (0.820)	1.332 (0.905)	1.316 (0.890)	0.146 (1.053)	0.191 (1.051)
D.Log_Fertilisants_tot	-0.039 (0.033)	-0.037 (0.036)	-0.054* (0.029)	-0.040 (0.031)	-0.059 (0.037)	-0.057 (0.036)	-0.064* (0.036)	-0.033 (0.042)
D.log_Capital	-0.189 (0.133)	-0.233 (0.142)	-0.201 (0.130)	-0.172 (0.123)	-0.234 (0.149)	-0.224 (0.141)	-0.301** (0.145)	-0.217 (0.160)
D.temp	-0.062 (0.058)	2.228 (6.003)			-0.041 (0.062)	-0.043 (0.060)	2.923 (5.824)	-0.397 (5.773)
LD.temp	-0.004 (0.044)	1.083 (4.552)			0.014 (0.048)	0.012 (0.046)	1.317 (4.403)	0.490 (4.299)
L2D.temp	-0.017 (0.032)	4.148 (3.481)			-0.013 (0.033)	-0.014 (0.032)	4.556 (3.480)	2.670 (3.517)
D.temp2		-0.047 (0.122)					-0.060 (0.118)	0.007 (0.117)
LD.temp2		-0.022 (0.093)					-0.026 (0.089)	-0.010 (0.087)
L2D.temp2		-0.085 (0.071)					-0.093 (0.071)	-0.055 (0.071)
D.pluvio			-0.000 (0.000)	-0.001 (0.004)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.005 (0.005)
LD.pluvio			-0.000 (0.000)	-0.002 (0.003)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.004 (0.004)
L2D.pluvio			-0.000 (0.000)	-0.002 (0.002)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.004 (0.003)
L3D.pluvio			-0.000 (0.000)	-0.003** (0.001)	-0.000 (0.000)	-0.000 (0.000)	-0.000* (0.000)	-0.005** (0.002)
D.pluvio2				0.000 (0.000)				0.000 (0.000)
LD.pluvio2				0.000 (0.000)				0.000 (0.000)
L2D.pluvio2				0.000 (0.000)				0.000 (0.000)
L3D.pluvio2				0.000** (0.000)				0.000** (0.000)
Constant	5.492 (4.533)	59.982 (93.652)	8.901 (5.501)	6.698 (5.669)	11.861 (15.592)	8.483 (5.908)	95.973 (92.559)	19.862 (101.479)
Observations	55	55	54	54	54	54	54	54
R-squared	0.350	0.390	0.397	0.537	0.457	0.456	0.555	0.661

p < 0.10, ** p < 0.05, *** p < 0.01

Table A16: Effect of climate change on cotton production

	(1)	(2)	(3)	(4)	(5)	(6)	a7	a8
ADJ								
L.Ind_prod_Coton_graine	-0.434*** (0.138)	-0.462*** (0.150)	-0.483*** (0.151)	-0.393** (0.154)	-0.454** (0.171)	-0.475*** (0.161)	-0.395** (0.180)	-0.226 (0.184)
LR								
Log_lab_coton	-0.278 (0.251)	-0.207 (0.238)	-0.271* (0.147)	-0.575** (0.279)	-0.352 (0.264)	-0.343 (0.247)	-0.408 (0.343)	-0.425 (0.563)
Log_Terre_Coton	4.978 (4.076)	3.322 (4.145)	7.929* (4.578)	7.163 (5.243)	8.358 (5.590)	7.557 (4.843)	2.705 (6.622)	11.934 (14.618)
Log_Fertilisants_Coton	0.270 (0.339)	0.279 (0.320)	0.244 (0.233)	0.707* (0.392)	0.323 (0.343)	0.343 (0.320)	0.593 (0.457)	0.052 (0.812)
log_Capital	0.466 (0.358)	0.542 (0.356)	0.303 (0.197)	0.094 (0.270)	0.383 (0.349)	0.413 (0.322)	-0.024 (0.496)	-0.672 (1.212)
temp	-0.181 (0.917)	76.392 (66.452)			2.050 (6.546)	-0.368 (0.879)	84.511 (79.344)	132.091 (144.363)
temp2		-1.553 (1.351)					-1.697 (1.606)	-1.935 (2.647)
pluvio			0.002 (0.003)	0.131 (0.086)	0.040 (0.100)	0.002 (0.003)	0.169 (0.113)	0.756 (0.752)
pluvio2				-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
temp_pluvio					-0.001 (0.004)			-0.022 (0.024)
SR								
D.Log_lab_coton	-0.147 (0.255)	-0.166 (0.257)	-0.265 (0.251)	-0.337 (0.240)	-0.263 (0.271)	-0.261 (0.268)	-0.396 (0.266)	-0.361 (0.247)
LD.Log_lab_coton	0.473* (0.258)	0.431 (0.261)	0.576** (0.242)	0.680*** (0.234)	0.601** (0.265)	0.592** (0.260)	0.608** (0.269)	0.645** (0.250)
D.Log_Terre_Coton	-6.805 (4.465)	-6.594 (5.043)	-4.485 (4.364)	-4.247 (4.075)	-4.807 (4.677)	-4.675 (4.602)	-4.376 (4.977)	-6.875 (4.757)
LD.Log_Terre_Coton	-2.963 (4.570)	-0.328 (4.917)	-5.102 (4.436)	-5.484 (4.296)	-4.453 (4.973)	-5.078 (4.646)	-2.178 (5.050)	3.736 (5.417)
L2D.Log_Terre_Coton	-2.830 (4.529)	-2.674 (4.926)	-4.849 (4.462)	-5.555 (4.228)	-5.515 (4.865)	-5.376 (4.787)	-4.175 (5.033)	-3.866 (4.671)
D.Log_Fertilisants_Coton	0.271* (0.158)	0.349** (0.166)	0.296* (0.152)	0.179 (0.154)	0.278 (0.189)	0.279 (0.186)	0.297 (0.191)	0.288 (0.178)
D.log_Capital	-0.242 (0.643)	-0.394 (0.652)	-0.199 (0.612)	-0.160 (0.571)	-0.276 (0.720)	-0.380 (0.659)	-0.442 (0.646)	0.446 (0.725)
D.temp	0.179 (0.304)	-20.097 (27.178)			0.209 (0.322)	0.211 (0.318)	-16.428 (25.573)	-3.079 (24.503)
LD.temp	0.134 (0.226)	-31.633 (23.731)			0.151 (0.234)	0.160 (0.229)	-19.847 (22.860)	-14.671 (21.339)
L2D.temp	0.053 (0.159)	-4.409 (19.016)			-0.009 (0.172)	-0.007 (0.169)	-4.459 (18.441)	1.072 (17.294)
D.temp2		0.411 (0.552)					0.331 (0.519)	0.060 (0.497)
LD.temp2		0.644 (0.482)					0.403 (0.464)	0.297 (0.433)
L2D.temp2		0.090 (0.386)					0.088 (0.374)	-0.023 (0.351)
D.pluvio			-0.001 (0.001)	-0.051** (0.020)	-0.001 (0.001)	-0.001 (0.001)	-0.061** (0.024)	-0.052** (0.022)
LD.pluvio			0.000 (0.001)	-0.040** (0.016)	-0.000 (0.001)	-0.000 (0.001)	-0.046** (0.019)	-0.039** (0.018)
L2D.pluvio			-0.000 (0.001)	-0.020* (0.012)	-0.000 (0.001)	-0.000 (0.001)	-0.029* (0.015)	-0.022 (0.014)
L3D.pluvio			0.000 (0.000)	-0.013* (0.007)	0.000 (0.000)	0.000 (0.000)	-0.020** (0.009)	-0.024** (0.009)
D.pluvio2				0.000** (0.000)			0.000** (0.000)	0.000** (0.000)
LD.pluvio2				0.000** (0.000)			0.000** (0.000)	0.000** (0.000)
L2D.pluvio2				0.000* (0.000)			0.000* (0.000)	0.000 (0.000)
L3D.pluvio2				0.000* (0.000)			0.000** (0.000)	0.000** (0.000)
Constant	-15.557 (18.168)	-446.704 (393.426)	-31.797 (20.073)	-63.365** (24.563)	-55.306 (77.186)	-26.440 (22.457)	-475.623 (392.582)	-528.688 (364.988)
Observations	55	55	54	54	54	54	54	54
R-squared	0.417	0.477	0.509	0.638	0.536	0.534	0.699	0.752

Graph A1: Changes in climate (temperature and precipitation) and in production



Source: The authors.