Agrodiversidad Maya: cambio económico estructural y política pública

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Cambio global, con impacto local

Crisis ambiental

Producción industrial de alimentos

Perdida de Biodiversidad, impactos ambientales, Fast Food

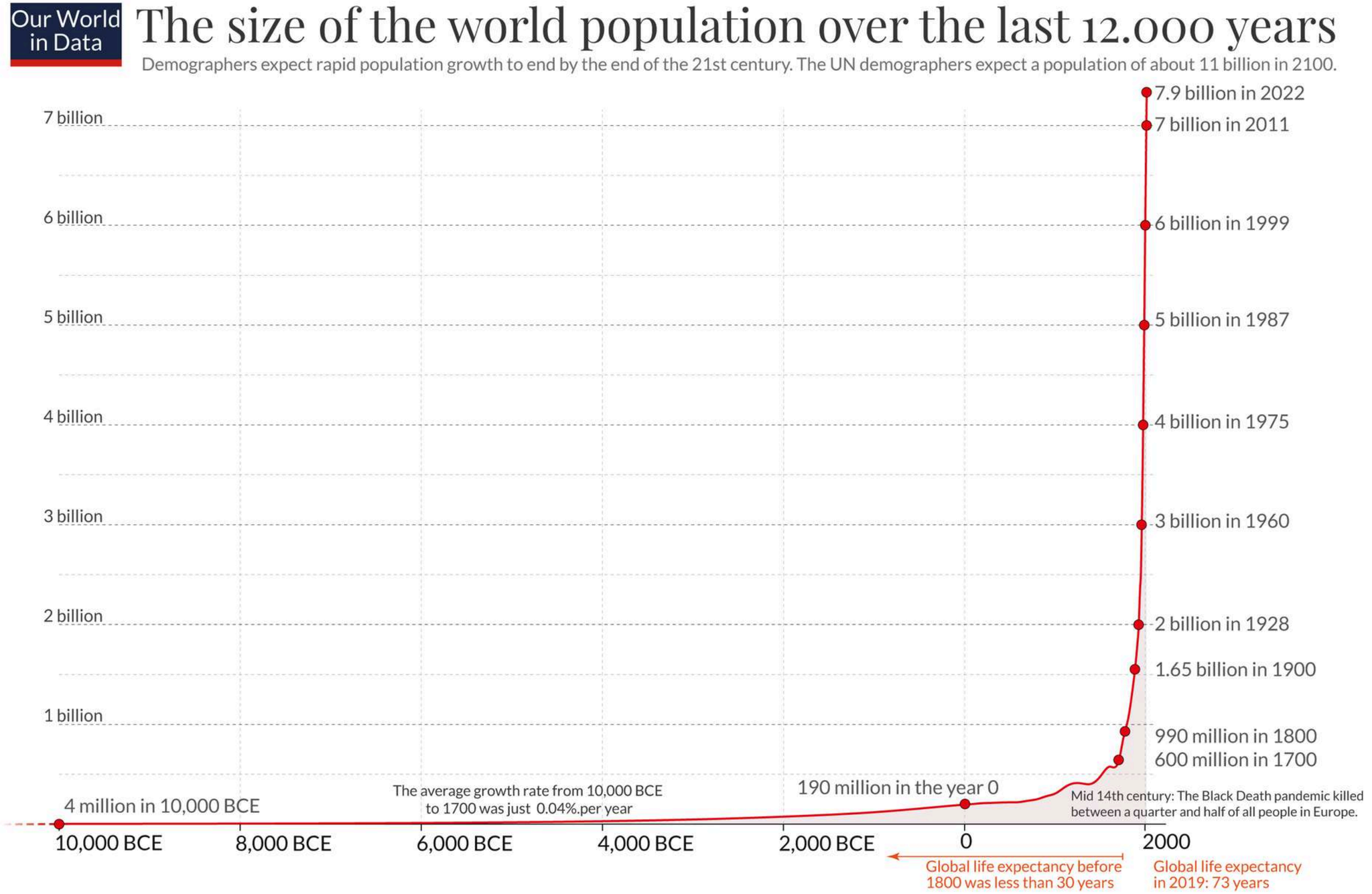
Hábitos de conumo

C02, Transporte, Fast Fashion

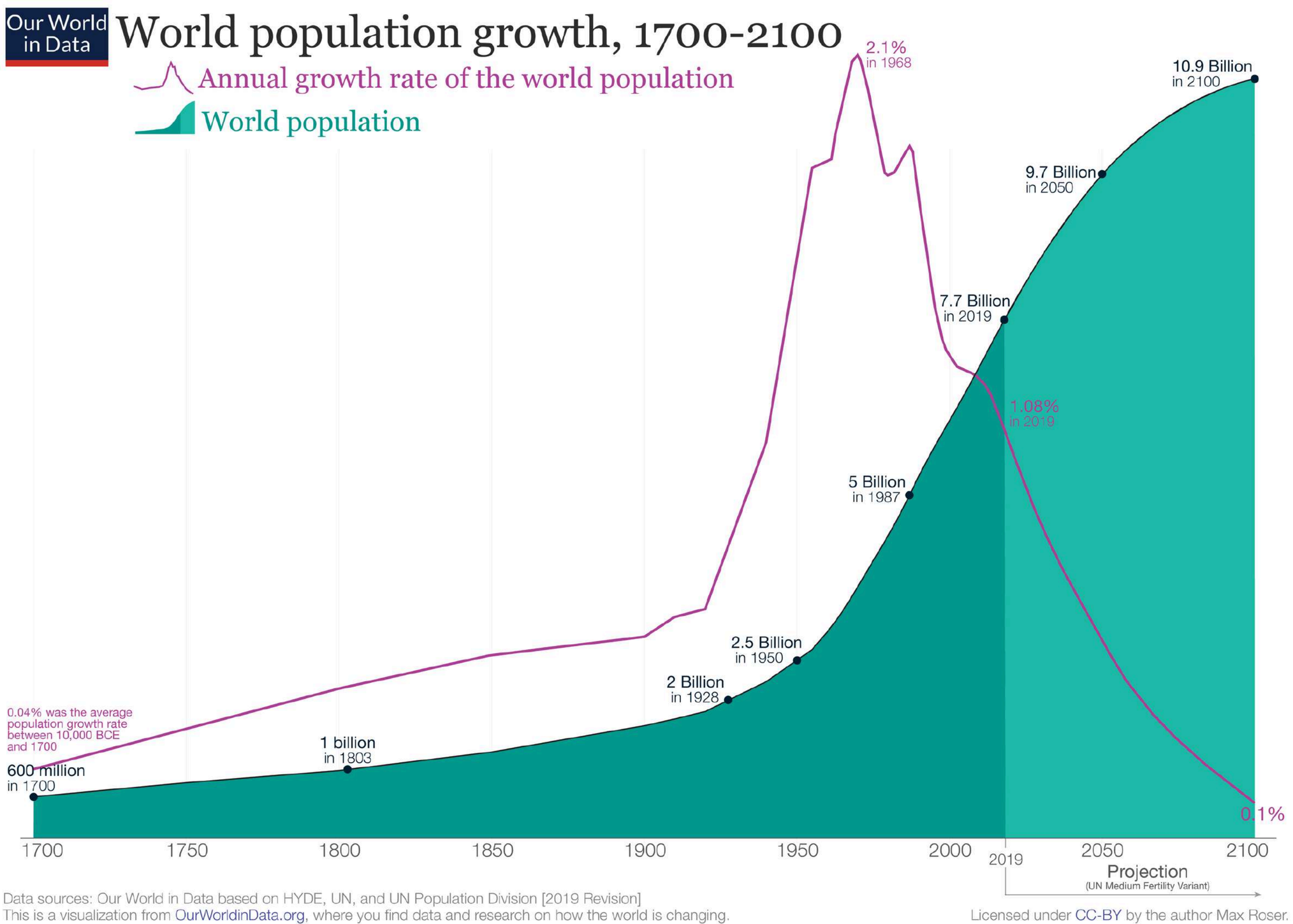
Hiper-Globalización

Gran flujo de mercancías, personas y dependencia a escala global

11 mmh en 2100



Crecimiento demográfico 0.1% en 2100



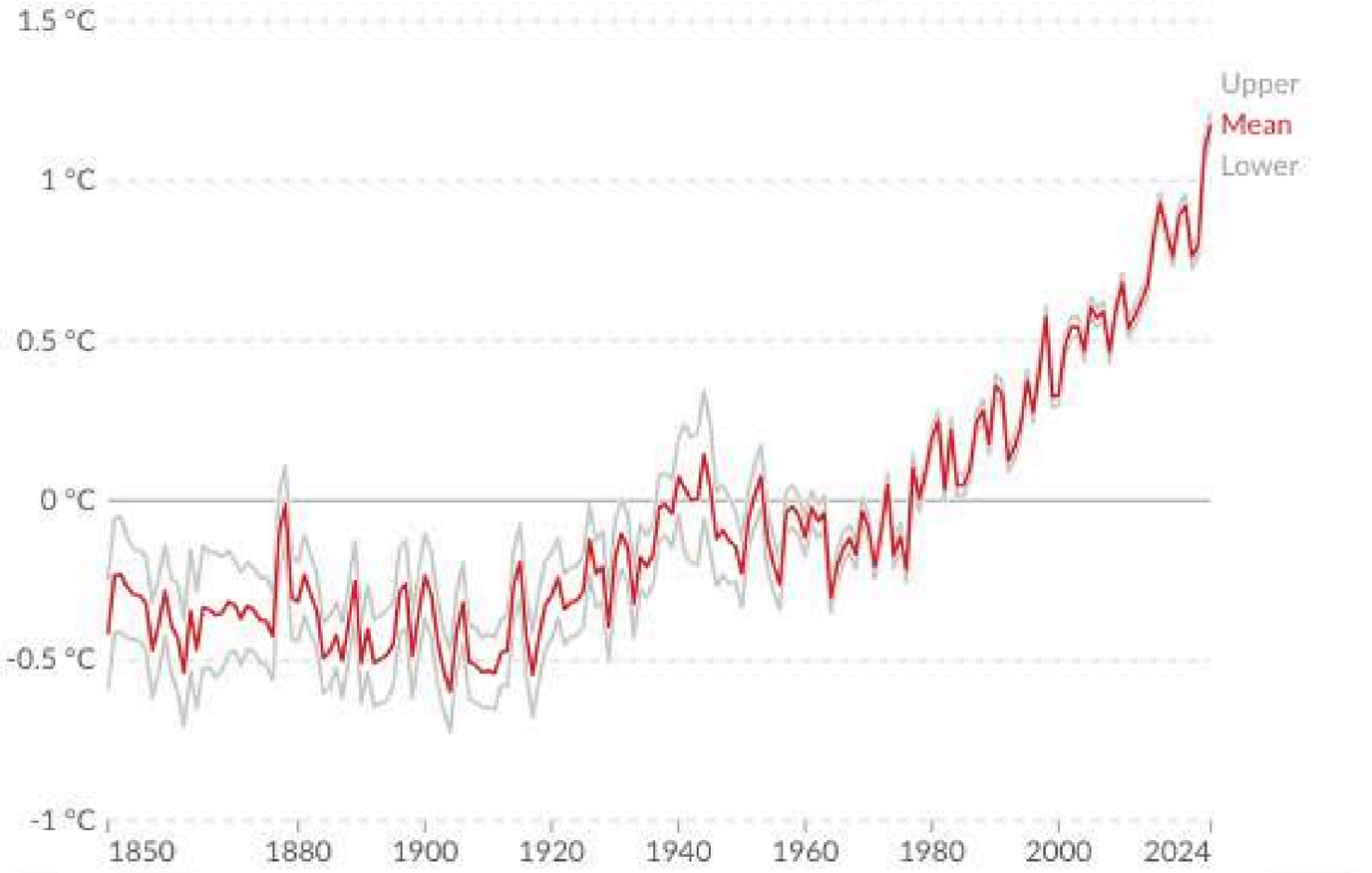
Data sources: Our World in Data based on HYDE, UN, and UN Population Division [2019 Revision]
This is a visualization from OurWorldinData.org, where you find data and research on how the world is changing.

Average temperature anomaly, Global

Our World in Data

Global average land-sea temperature anomaly relative to the 1961-1990 average temperature baseline.

Table | Chart | Change region | Settings



1850 2024

Data source: Met Office Hadley Centre (2025) – Learn more about this data

Note: The gray lines represent the upper and lower bounds of the 95% confidence interval.

Explore the data →

Retos al 2100

Producir más y mejores alimentos

Con menos impactos ambientales

Cambio Climático

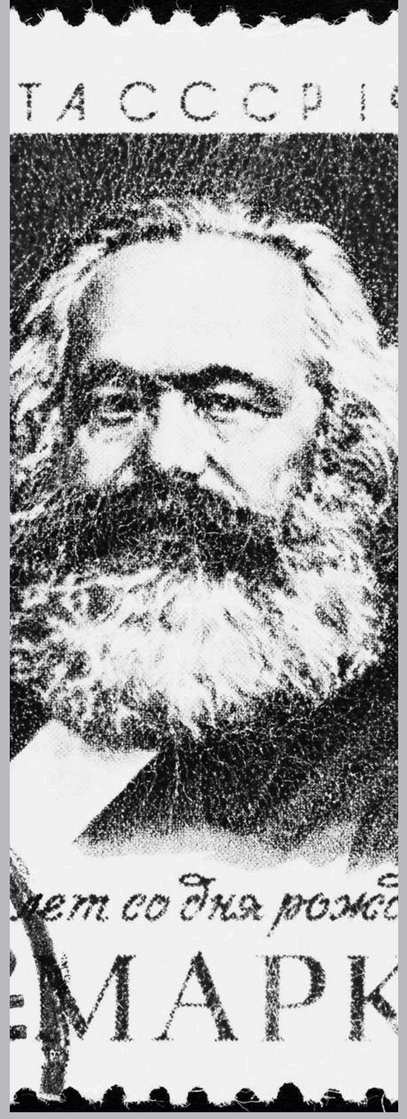
Adaptación & Mitigación

Conservación Patrimonio Biocultural

Biodiversidad y Agro-Biodiversidad

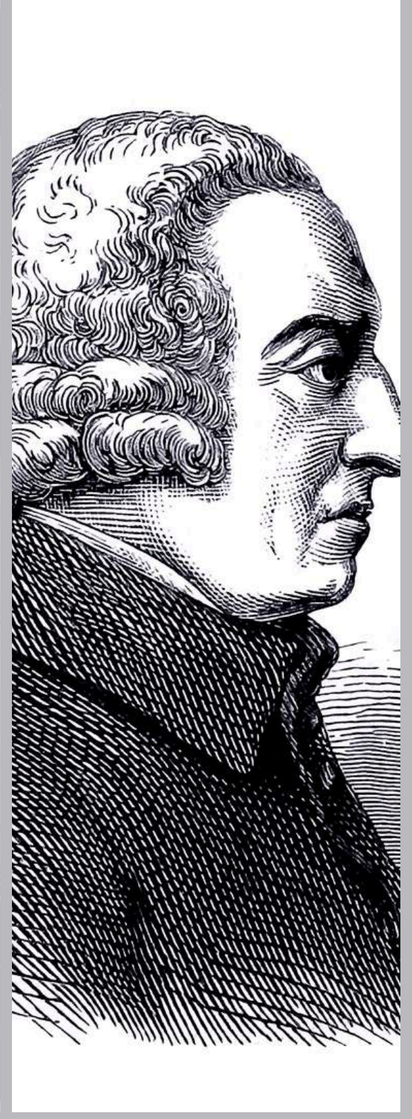
Un México de altos contrastes

Pobreza & Riqueza



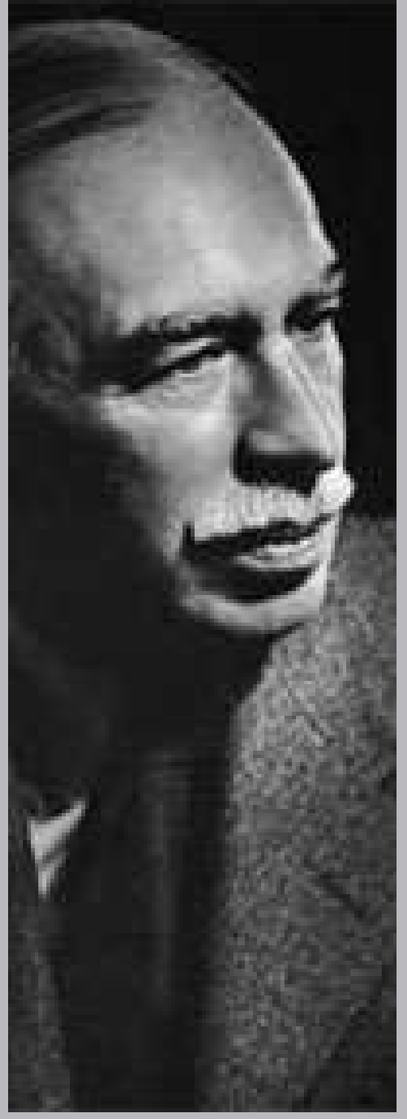
@MARX

El mercado es un defecto, el Estado debe intervenir



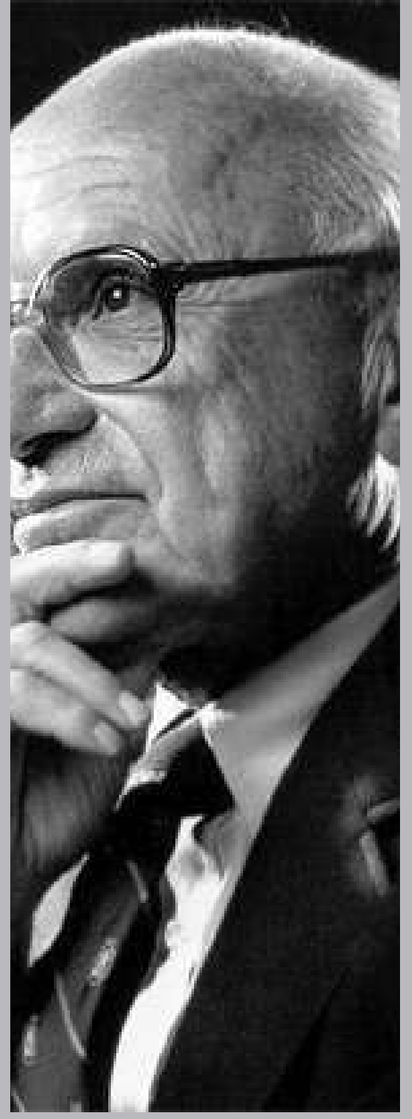
@SMITH

El Estado No Debe Intervenir: Mano Invisible



@KEYNES

El Estado Si Debe Intervenir



@FRIEDMAN

Libre mercado: la empresa resuelve la demanda.

Teoría económica

POLÍTICA PÚBLICA

Prof. Dr. Javier Becerril |UADY

Mexico, centero de origen y domesticación

Territorio Maya

Maps H. Estrada (2023)

LA MILPA MAYA EN EL TIEMPO

According to V. Tiesler et al (2017) Perhaps the boundaries of past and present are blurry at Yucatan because by its nature, it is situated in both the past and present.

Prehispanic:
preclassic & classic
Maya
2,500 B.C. to **300** A.D

Around 2,000 B.C., the Maya people began cultivating crops such as **Maize, Beans, Squash, and chili**. Quezada (2021)

Conquest
1521

Mayans were **forced** to live in concentrated villages and even enslaved

Independence
1810

latifundium:
Property or set of large rural properties, belonging to a single owner

Revolution
1910

End ***Latifundium***
Mexican Revolution the creation of the ***Ejido***.
Social Property of the Land

NAFTA
1994

In **1992**, Article 27 of the Constitution was modified, allowing for the privatization of socially-owned land.

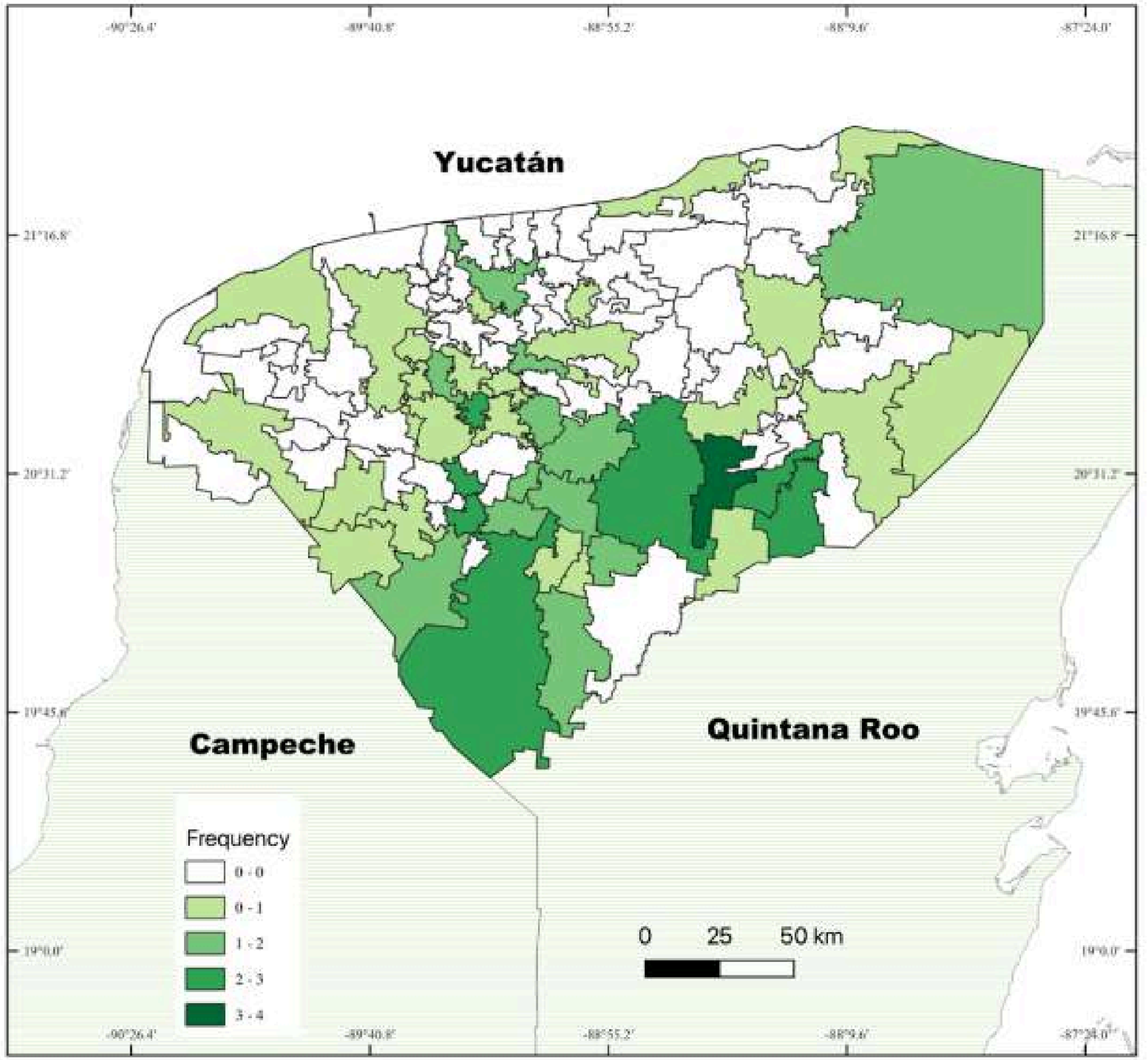
Milpa Maya

(Es un sistema agroecológico de facto)

La Milpa Maya, o "Ich ko’ol" en lengua maya, es un sistema que implica la siembra de diferentes cultivos como maíz, frijol y calabaza. Este sistema se basa en el conocimiento ancestral tradicional y es una actividad económica importante para los hogares rurales. También contribuye a la seguridad alimentaria. Varios estudios han destacado la importancia de la Milpa Maya, incluidos Terán y Rasmussen (1994) Fontayne et al. (2023), Rodríguez-Robayo et al. (2020) y Ávalos-Rangel et al. (2021).

Area de estudio

7 años de sección cruzada de 2009 a 2023
2,248 hogares
96 localidades
12 municipios



Municipalities surveyed in the available databases 2009-2020

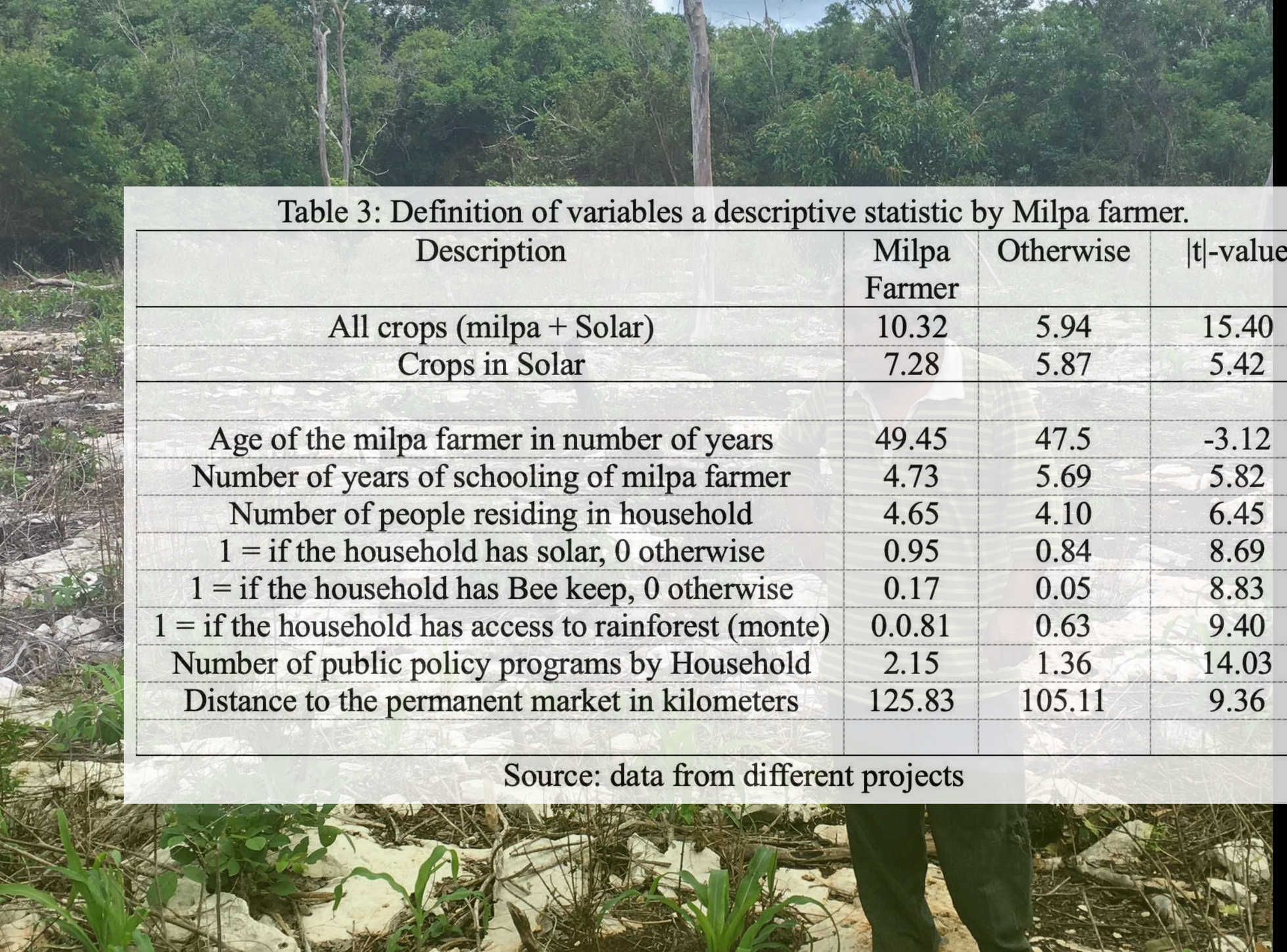


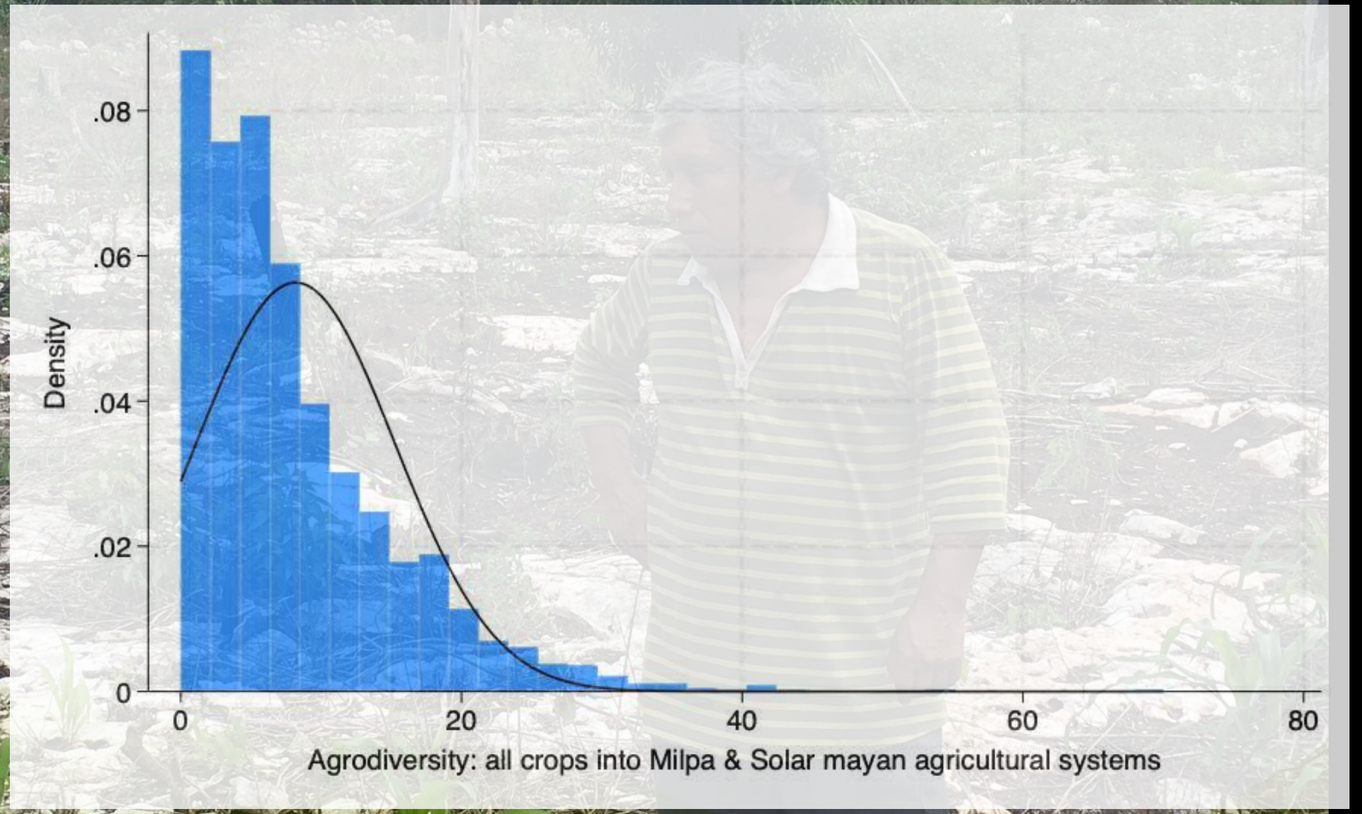
Table 3: Definition of variables a descriptive statistic by Milpa farmer.

Description	Milpa Farmer	Otherwise	|t|-value
All crops (milpa + Solar)	10.32	5.94	15.40
Crops in Solar	7.28	5.87	5.42
Age of the milpa farmer in number of years	49.45	47.5	-3.12
Number of years of schooling of milpa farmer	4.73	5.69	5.82
Number of people residing in household	4.65	4.10	6.45
1 = if the household has solar, 0 otherwise	0.95	0.84	8.69
1 = if the household has Bee keep, 0 otherwise	0.17	0.05	8.83
1 = if the household has access to rainforest (monte)	0.0.81	0.63	9.40
Number of public policy programs by Household	2.15	1.36	14.03
Distance to the permanent market in kilometers	125.83	105.11	9.36

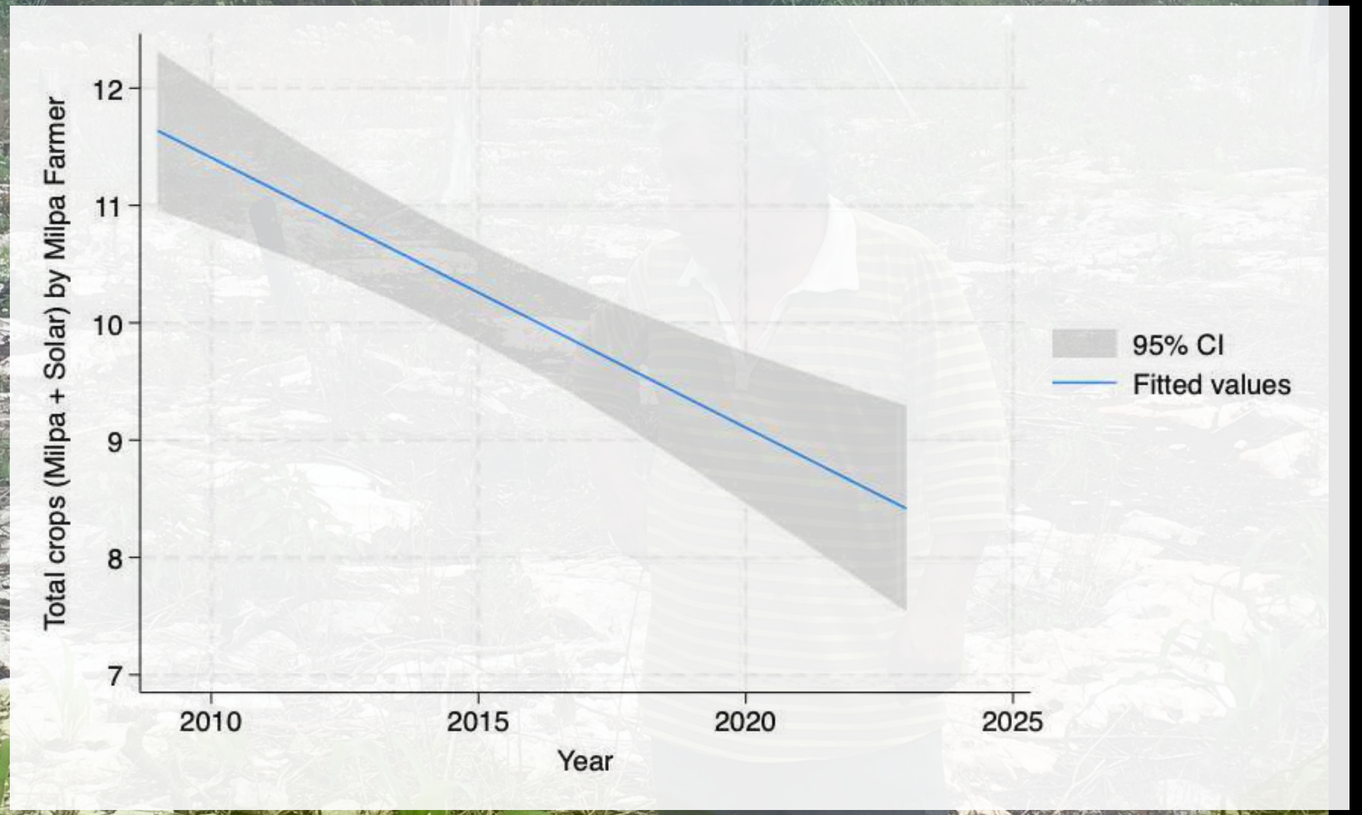
Source: data from different projects

Variables

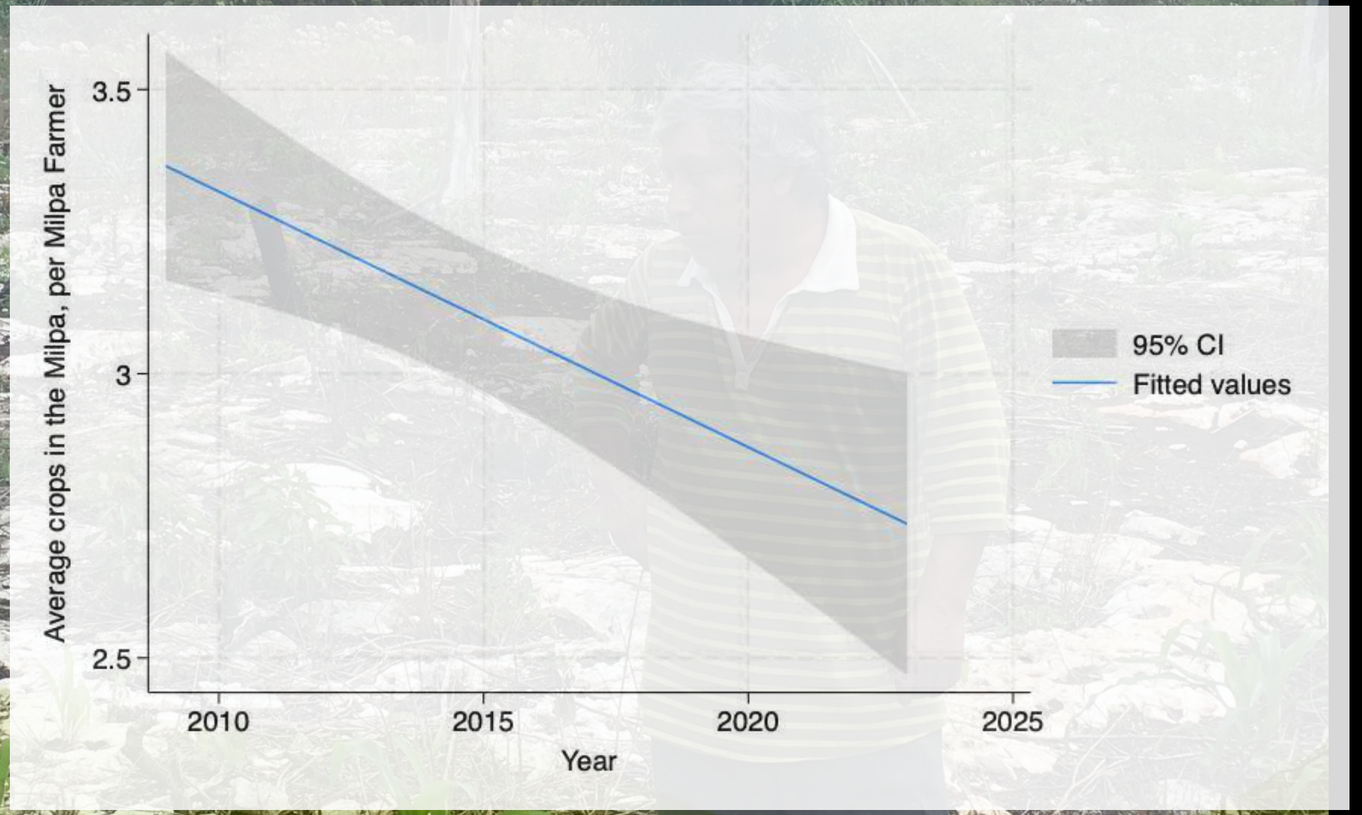
Variable Dependiente



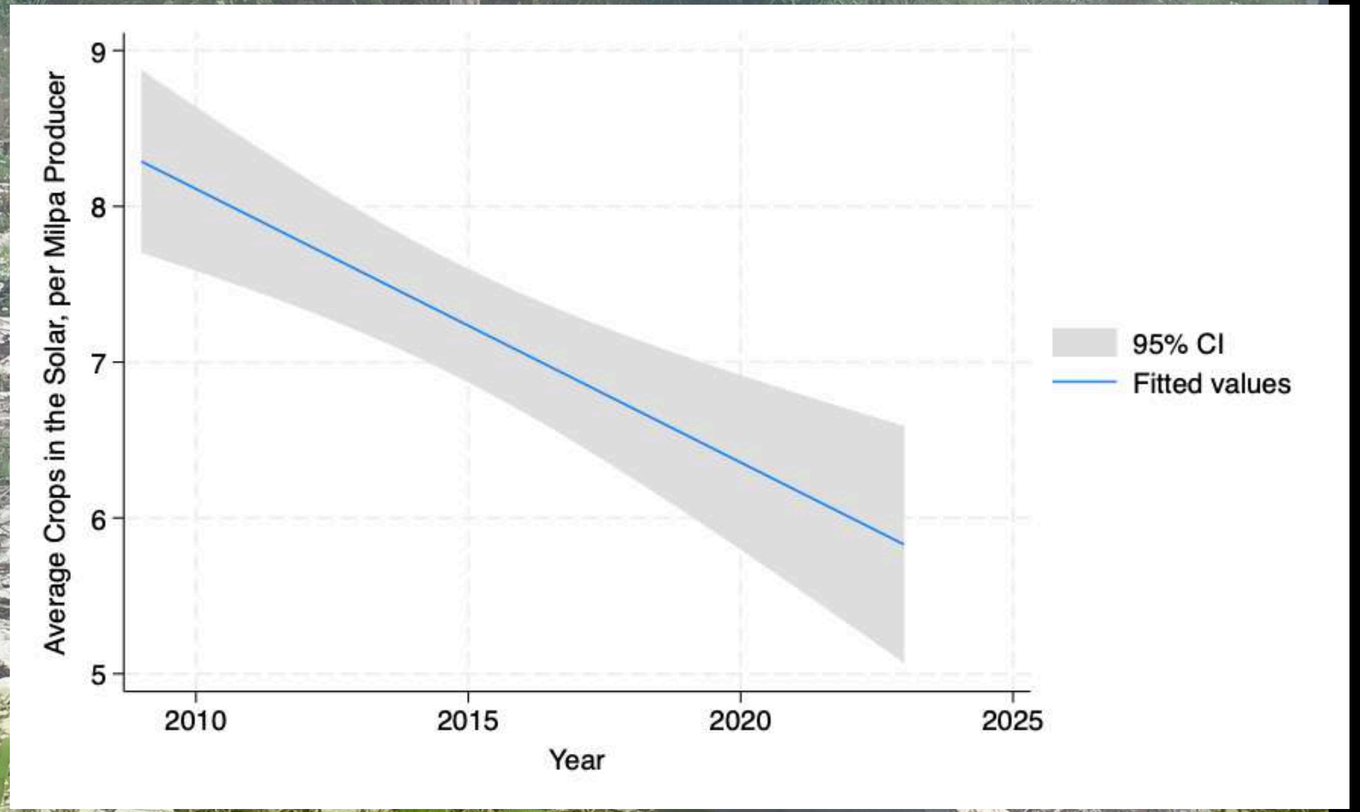
Perdida de Agrobiodiversidad



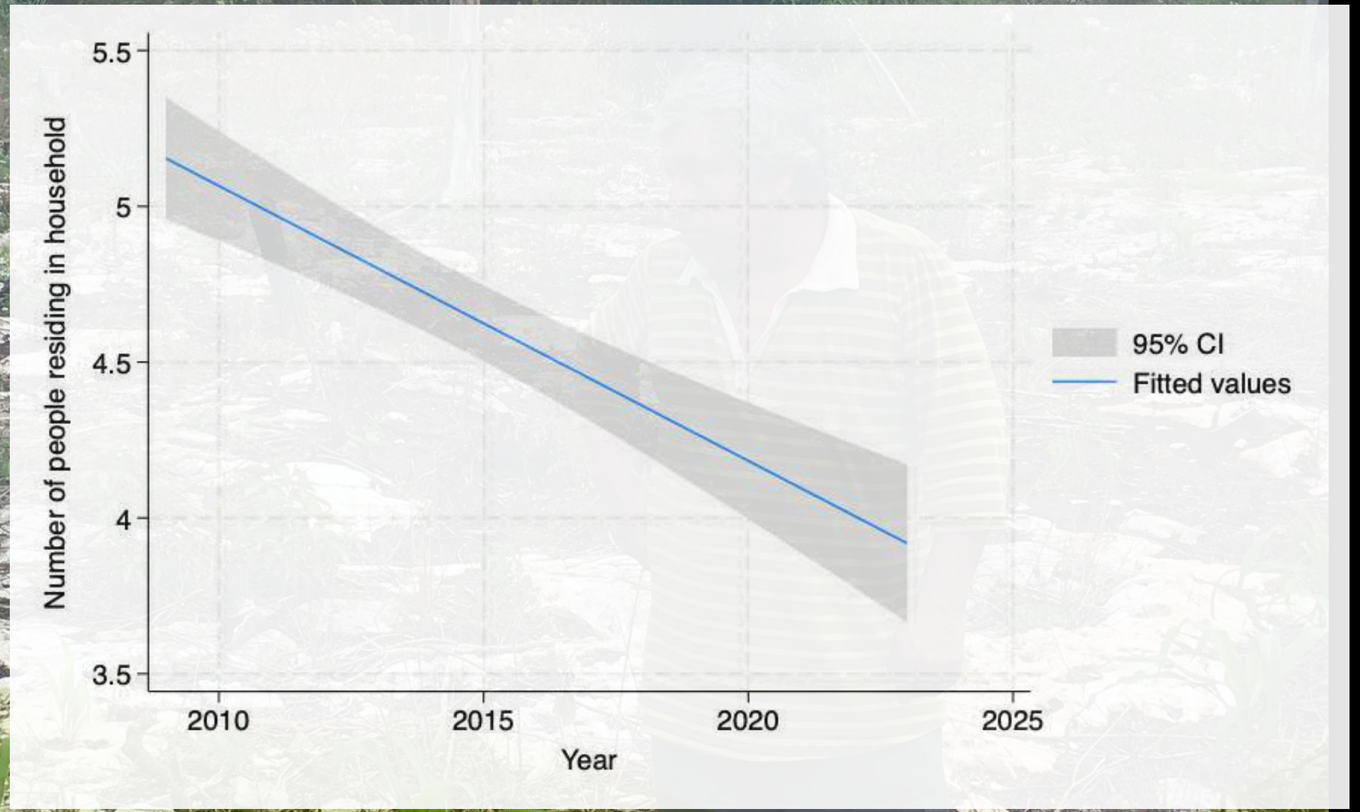
Perdida de Agrobiodiversidad Milpa



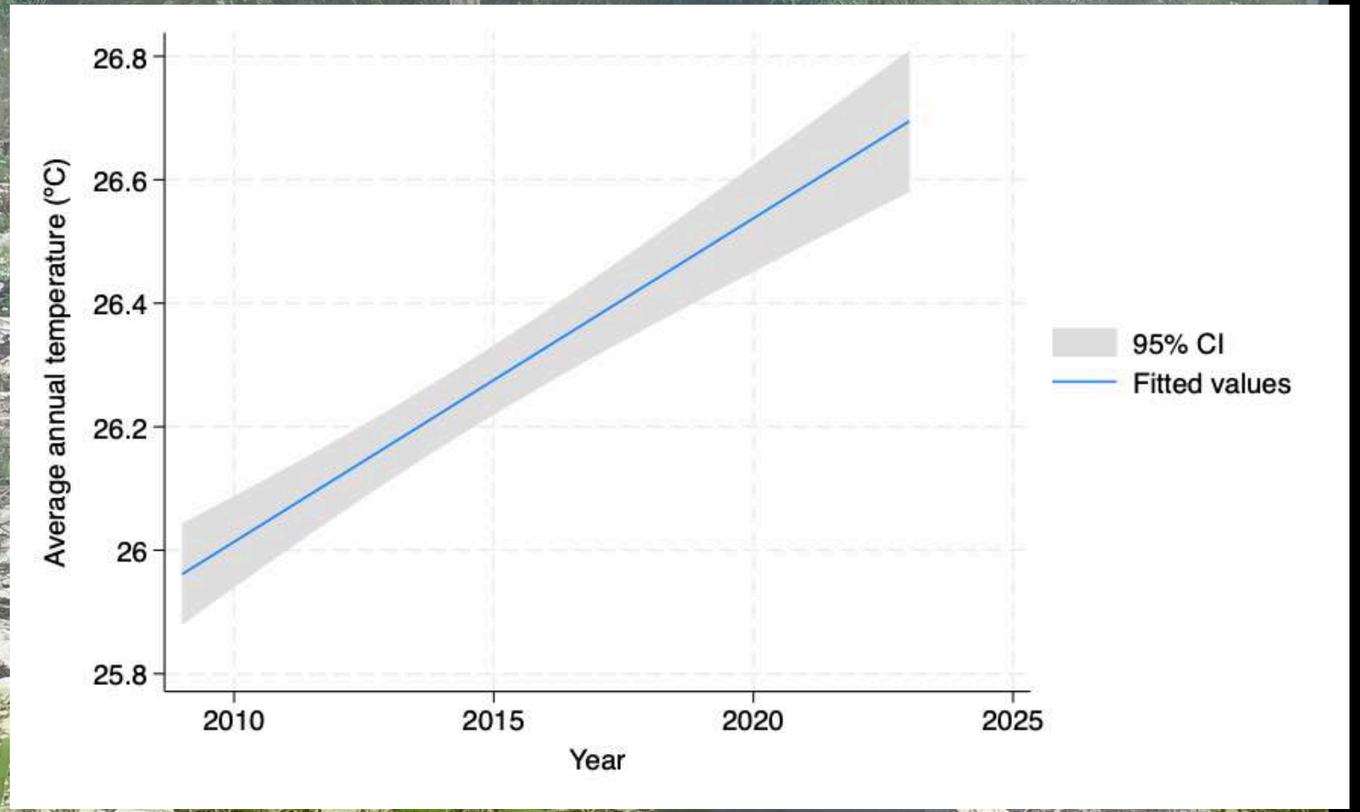
Perdida de Agrobiodiversidad Solar Maya



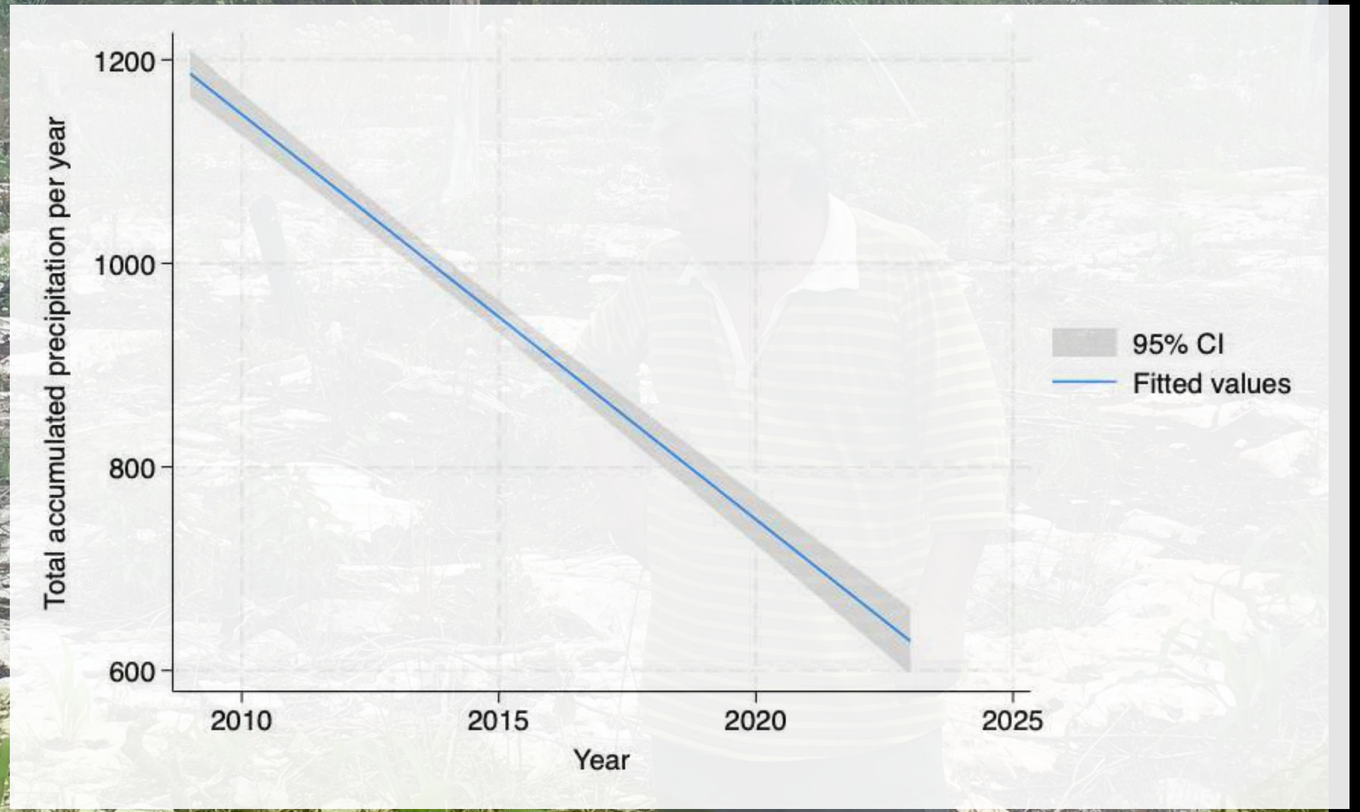
Tamaño de la Familia



Aumento de la temperatura



Caida de la precipitación (lluvia)



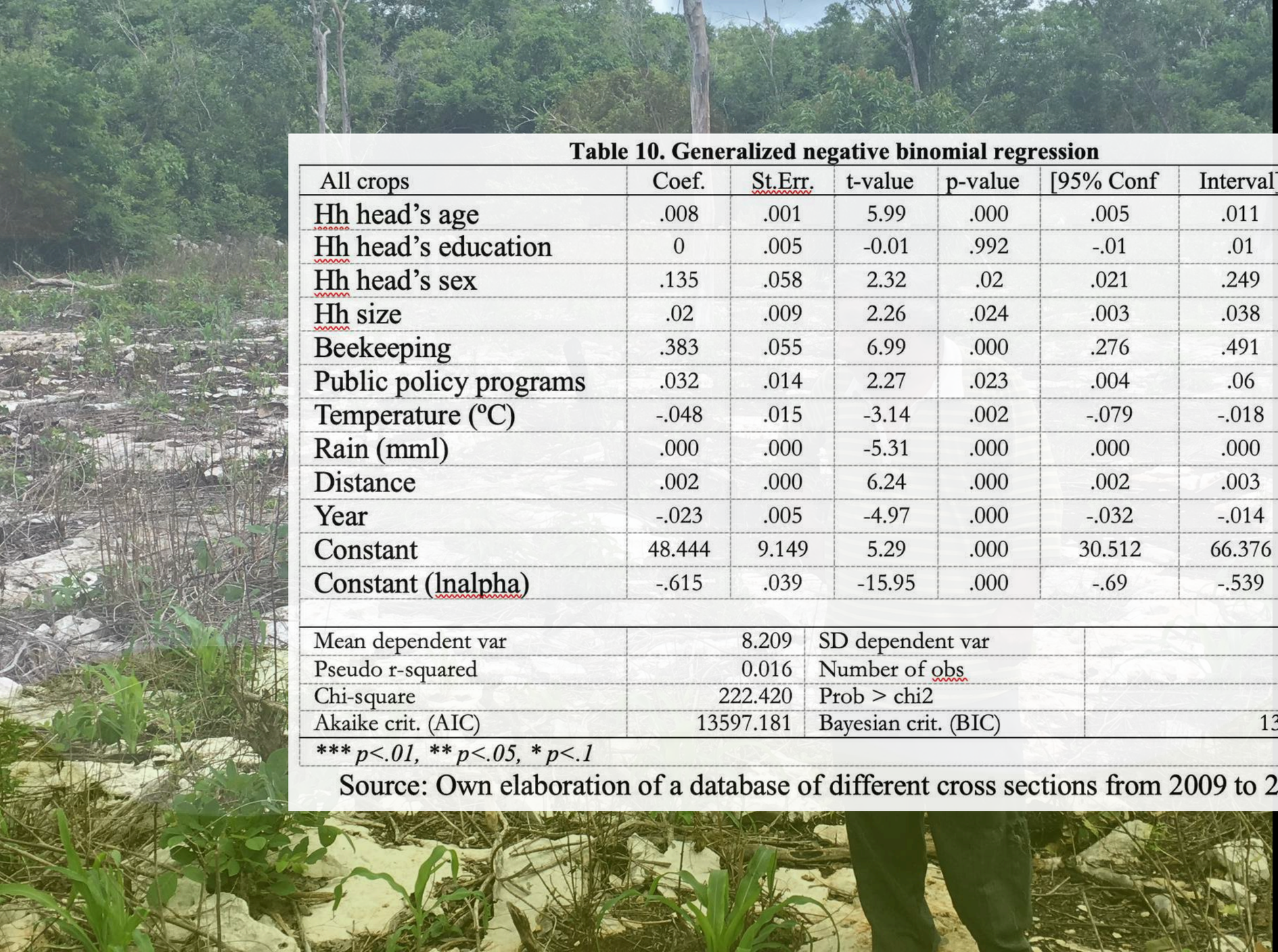


Table 10. Generalized negative binomial regression

All crops	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Hh head's age	.008	.001	5.99	.000	.005	.011	***
Hh head's education	0	.005	-0.01	.992	-.01	.01	
Hh head's sex	.135	.058	2.32	.02	.021	.249	**
Hh size	.02	.009	2.26	.024	.003	.038	**
Beekeeping	.383	.055	6.99	.000	.276	.491	***
Public policy programs	.032	.014	2.27	.023	.004	.06	**
Temperature (ºC)	-.048	.015	-3.14	.002	-.079	-.018	***
Rain (mml)	.000	.000	-5.31	.000	.000	.000	***
Distance	.002	.000	6.24	.000	.002	.003	***
Year	-.023	.005	-4.97	.000	-.032	-.014	***
Constant	48.444	9.149	5.29	.000	30.512	66.376	***
Constant (lnalpha)	-.615	.039	-15.95	.000	-.69	-.539	***

Mean dependent var	8.209	SD dependent var	7.093
Pseudo r-squared	0.016	Number of obs	2207
Chi-square	222.420	Prob > chi2	0.000
Akaike crit. (AIC)	13597.181	Bayesian crit. (BIC)	13665.574

*** $p<.01$, ** $p<.05$, * $p<.1$

Source: Own elaboration of a database of different cross sections from 2009 to 2023.

Resultados

Los resultados sugieren...

La Milpa Maya en Audultos Mayores

Reducción de la fuerza de trabajo familiar

Cambio Climático

Evidencia que la temperatura y temporal afectan negativamente la “agrobiodiversidad”

Apicultura y Políticas Públicas

El servicio ecosistémico (polinizadores) e ingresos, los PP contribuyen a la resiliencia de la Agrobiodiversidad

¡Muchas gracias!

Facultad de Economía | UADY