

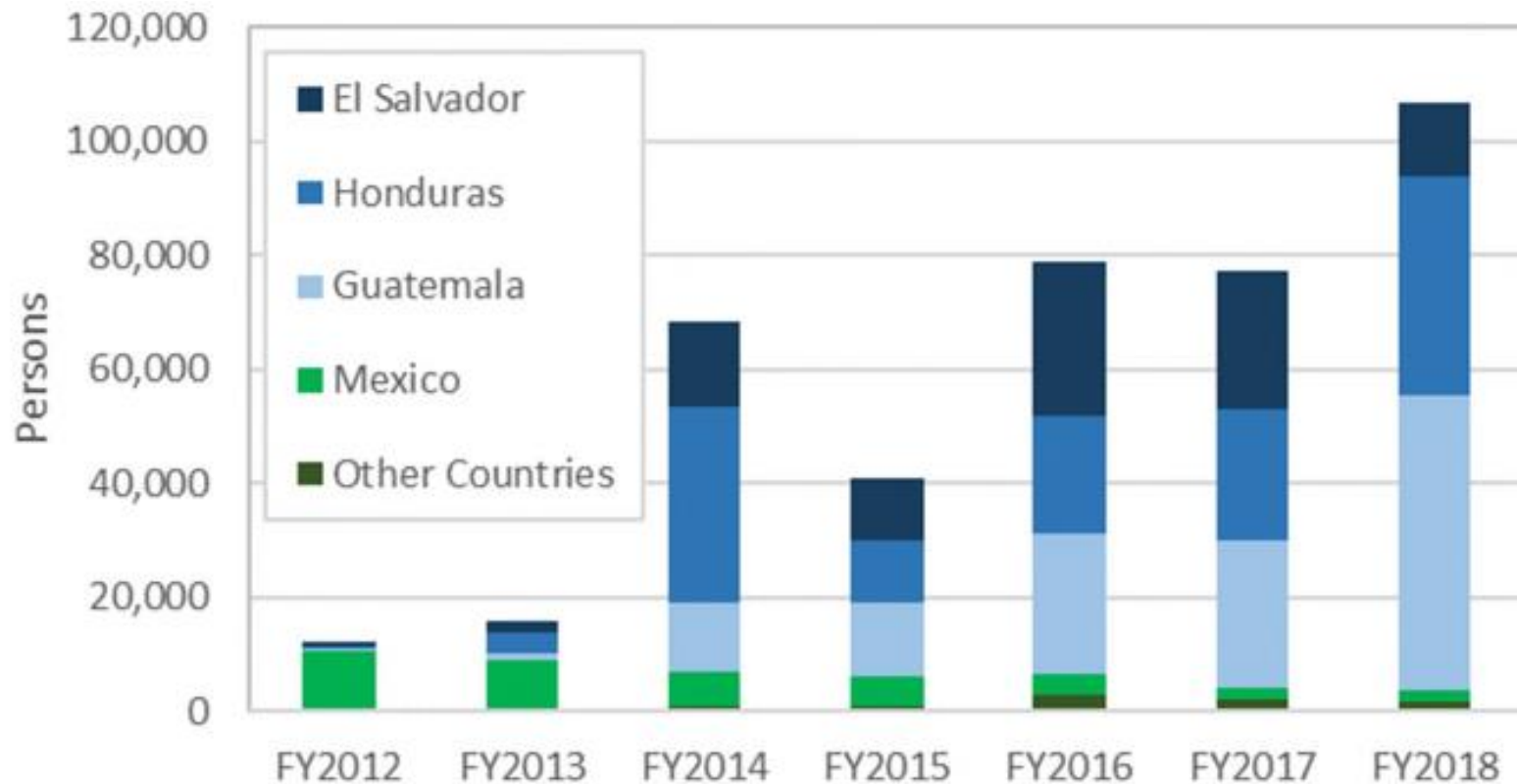
# Evaluating the drivers of international migration from the Northern Triangle of Central America and its implications for land systems in the region



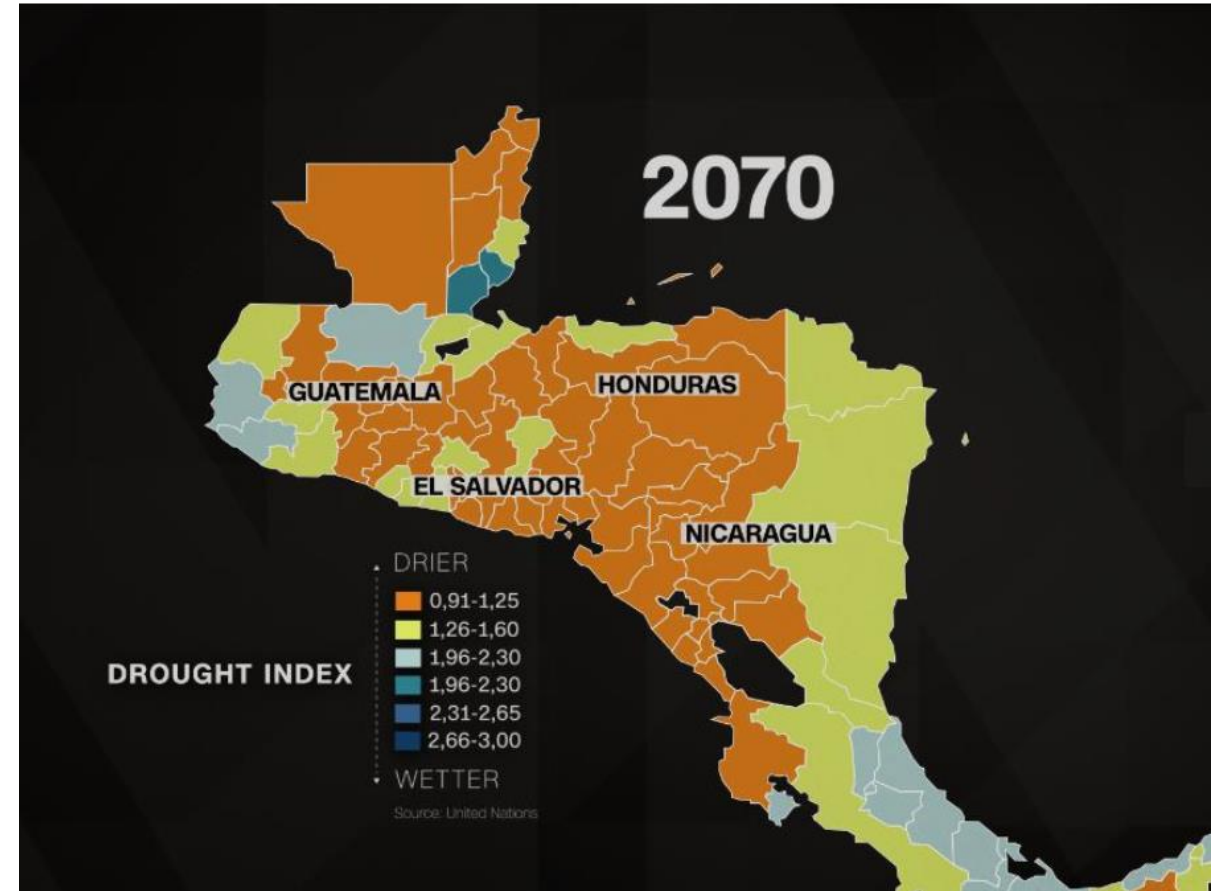
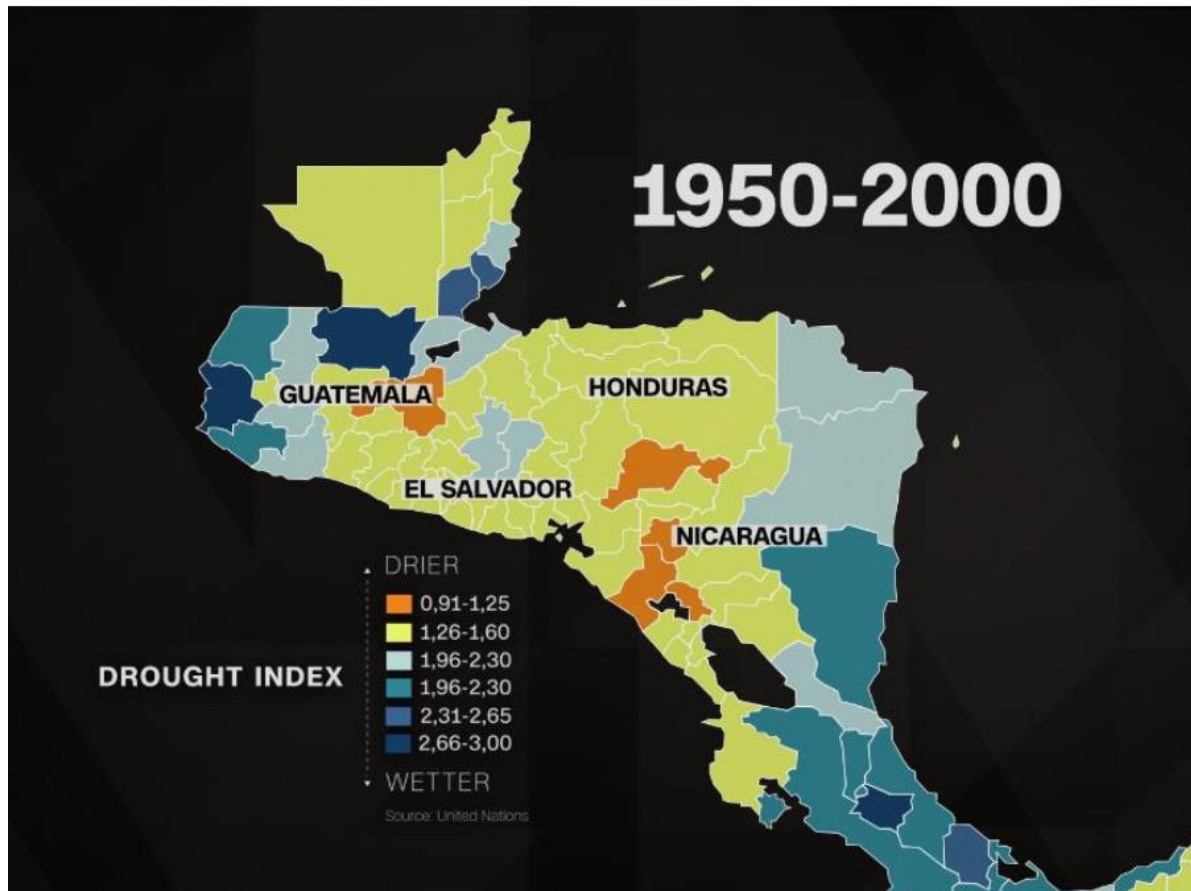
Nicholas Cuba, Principal Investigator  
Laura Sauls, Co-Investigator



# Migration to the USA from the Northern Triangle Countries increased during the past decade



There has been good media coverage of this that largely understands these migrants as climate refugees...



...made so when the impact of climate undermines agricultural livelihoods that had been viable



<https://www.un.org/sustainabledevelopment/blog/2017/08/emigration-and-food-insecurity-in-central-american-dry-corridor-focus-of-new-un-backed-study/>



[https://www.youtube.com/watch?v=Xem9EvvkJSc&feature=emb\\_title](https://www.youtube.com/watch?v=Xem9EvvkJSc&feature=emb_title)

At the same time, there are a host of other factors that have undermined traditional agricultural livelihoods in the region, such as

patterns of land holding,

infrastructure and extractive development,

differential access to capital through remittances, and

discrete, extreme weather events

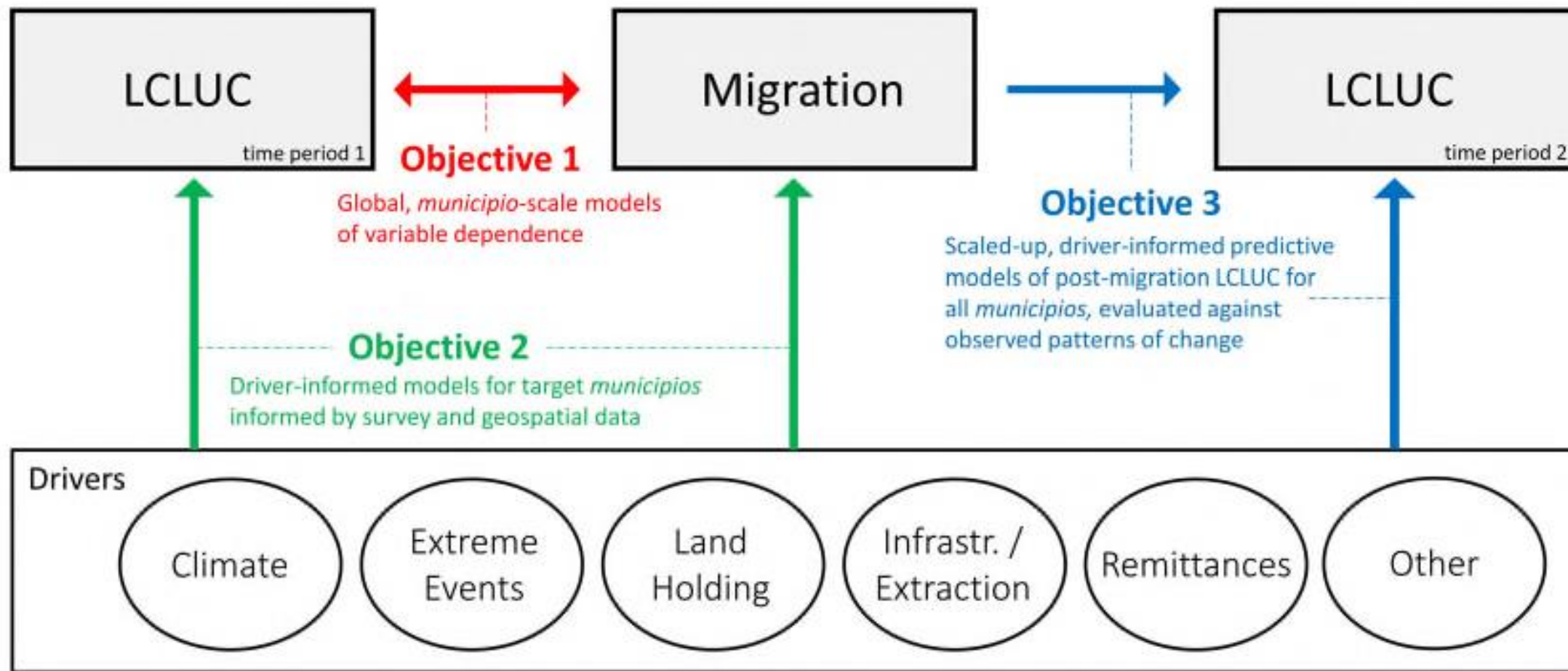
How to understand and explain the phenomenon?

Agricultural land can be directly measured and described with EO sensors but deriving meaningful information can be challenging and this information does not typically appear in media coverage.

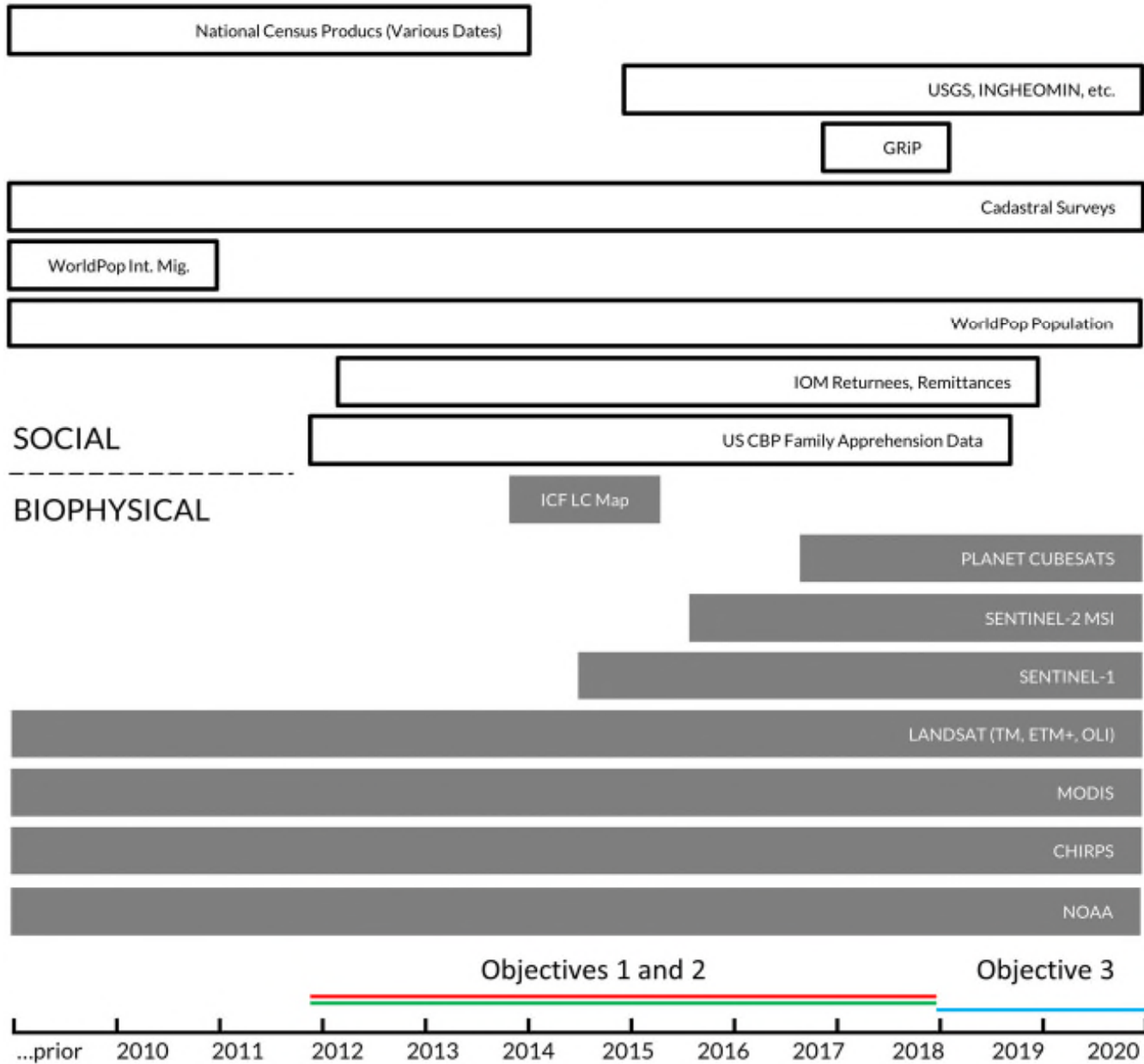
TIME PERIODS

2012-2018

2019-2023



# DATA AVAILABILITY



Obj.	VARIABLE	SPATIAL GRAIN
123	Persons, area, yield	Municipio/Department
23	Rivers, mines/leases	Vector-point/line/poly
23	Roads	Vector-polyline
23	Plots/tracts	Sub-Municipio
1	Persons	Department
123	Persons	1 km gridded
123	Persons/\$	Municipio
123	Persons	Municipio
1	Land Cover	Vector-polygon
23	Reflectance	5m
123	Reflectance	10, 20 m
123	Backscatter	5x20 m area (IW)
123	Reflectance	30 m
123	Reflectance	250, 500, 1000 m
23	Precipitation	0.05 degree
23	Storm Tracks	Vector-polyline

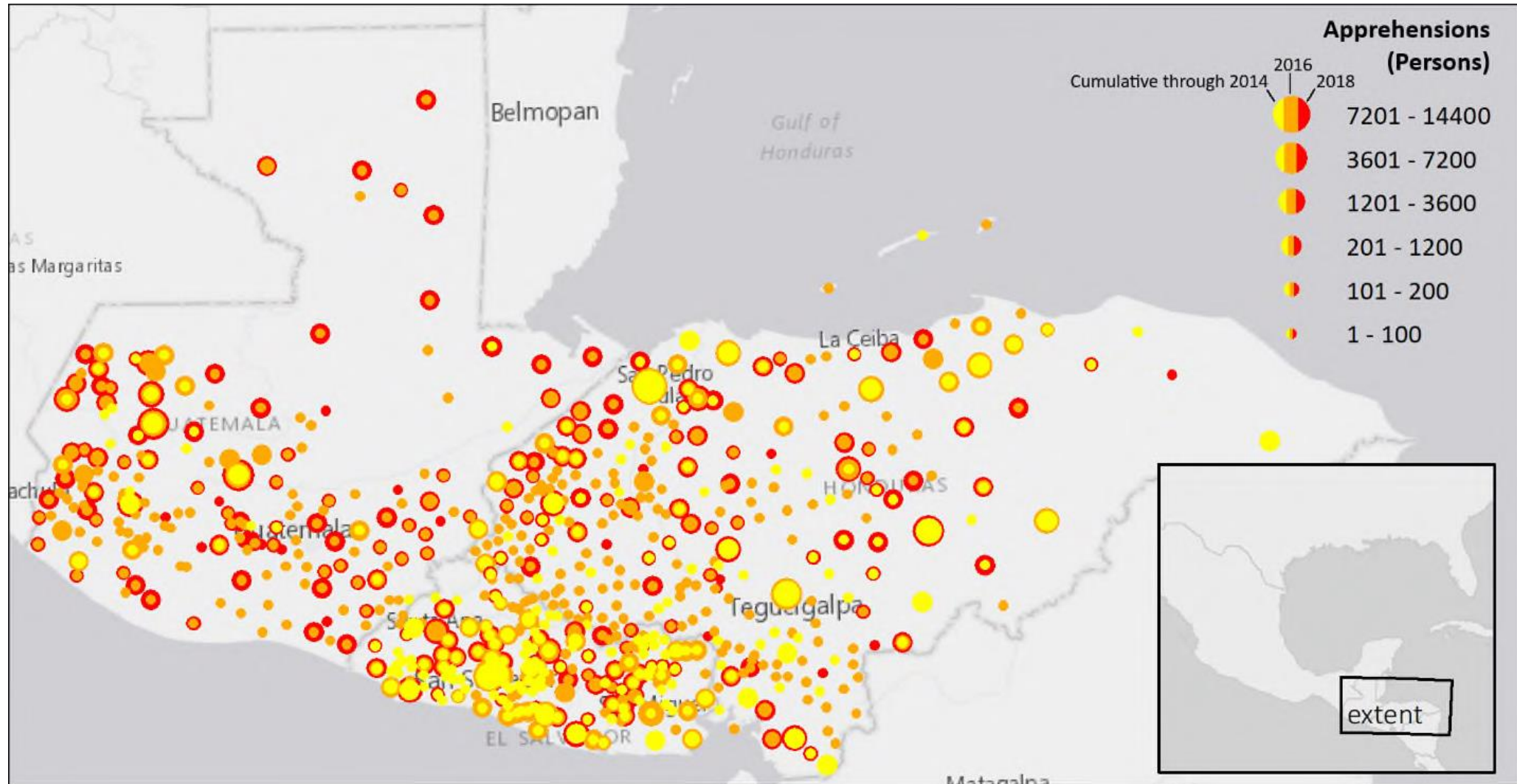
Objectives 1 and 2

Objective 3

...prior 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 ...



# Data: Hometowns with 2nd level admin. unit precision, annual 2012-2018



**MAPPING:** Makes use of a 2014 ~5 m resolution (vectorized), categorically rich land cover map for Honduras.

**ANALYZING DRIVERS:** Leverages high frequency observation data to reconstruct phenology, high spatial resolution data to derive configuration metrics within *municipios* to try and understand changes in how land is cultivated – thus impacts to agricultural livelihoods that are *not* reflected in baseline change of agricultural LC extent.



**MAPPING:** With support of colleagues at the *Observatorio Universidad de Ordenamiento Territorial* at UNAH: R. Corrales, J.-L. Palma Herrera

**ANALYZING DRIVERS:** With support of colleagues at Fundacion PRISMA and the Institute of Research and Development, Nitlapán: S. Kanel, J. Casolo



	2021				2022				2023			
	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter
<b>Objective 1: Migration and Agricultural LCLUC in NT</b>												
Produce Land Cover maps, derive phenology	Cuba, Palma Herrera, Corrales, Student											
Collect all available demographic and migration-related data, including via FOIA Request	Sauls											
Online/remote archival work	Sauls											
Develop interview structure	Sauls, Kandel											
Fieldwork, in-country archival work	Sauls, Cuba, Kandel, Casolo											
Continued field data collection			Casolo									
Synthesis of Findings and Writing			Cuba, Sauls									
<b>Objective 2: Identifying and Evaluating Drivers</b>												
Spatially and temporally differentiate drivers	Cuba, Sauls, Palma Herrera, Corrales, Student											
Analyze composition and configuration of landscape and change			Cuba, Palma Herrera, Corrales, Student									
Statistical analysis of relationship between drivers and LCLUC, migration			Cuba, Sauls, Palma Herrera, Corrales, Student									
Development of survey instrument			Sauls, Kandel									
Fieldwork					Sauls, Cuba, Kandel, Casolo							
Continued field data collection							Casolo					
Synthesis of Findings and Writing							Sauls, Cuba					
<b>Objective 3: Monitoring landscapes post-outmigration</b>												
Produce Land Cover maps, derive phenology					Cuba, Palma Herrera, Corrales							
Possible refinement of survey instrument					Sauls, Kandel, Student							
Fieldwork	Sauls, Cuba, Kandel, Casolo				Sauls, Cuba, Kandel, Casolo				Sauls, Cuba, Kandel, Casolo			
Continued field data collection											Casolo	
Synthesis of Findings and Writing											Cuba, Sauls	

- Plan had been for Year 2's fieldwork season to be most intensive, Year 1 to include substantial data processing and mapping

Thank You

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