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# Geospatial Impact Evaluation

# About AidData

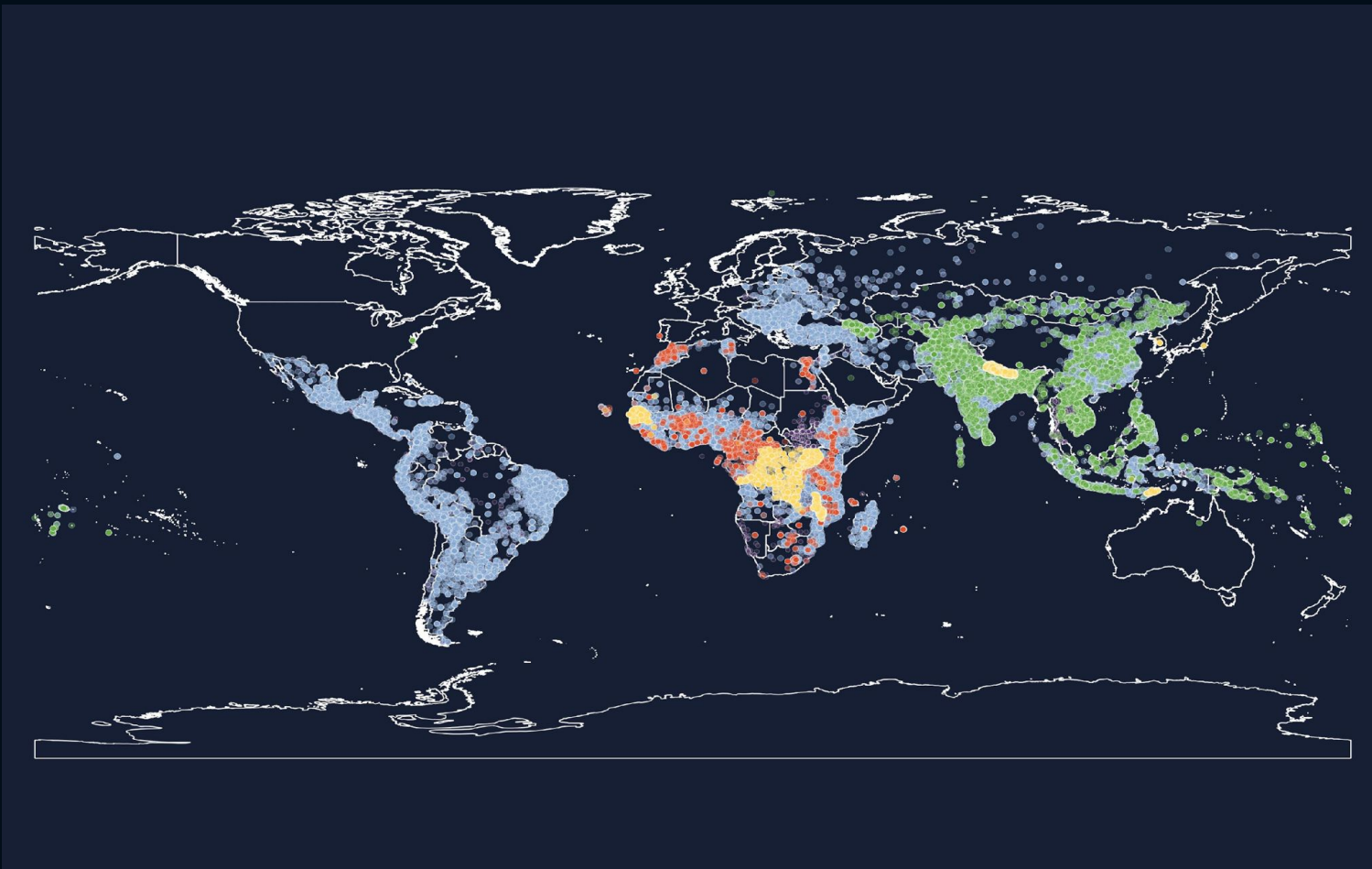
- Established in 2004, based at William & Mary
- 35 program evaluators, policy analysts, and communication professionals
- Expertise in GIS, remote sensing, machine learning, survey methods, causal inference, international development finance, economic development, public health, and governance



## Partners



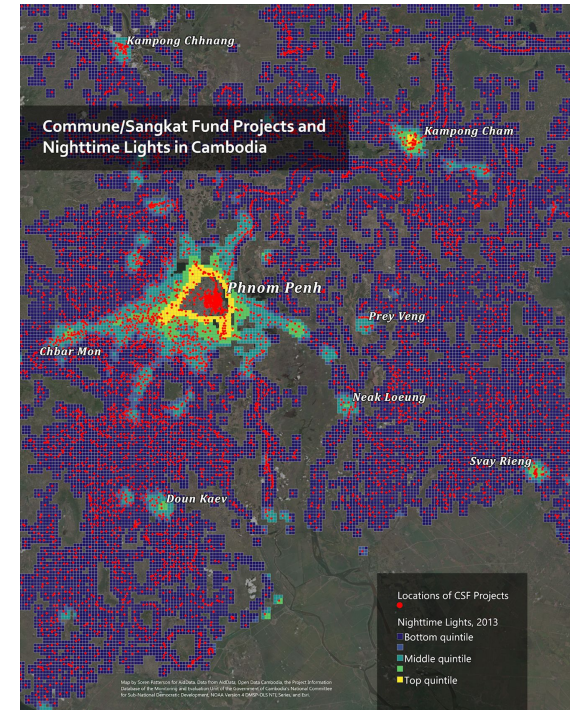
205,000 development interventions (\$1.23 trillion) geocoded



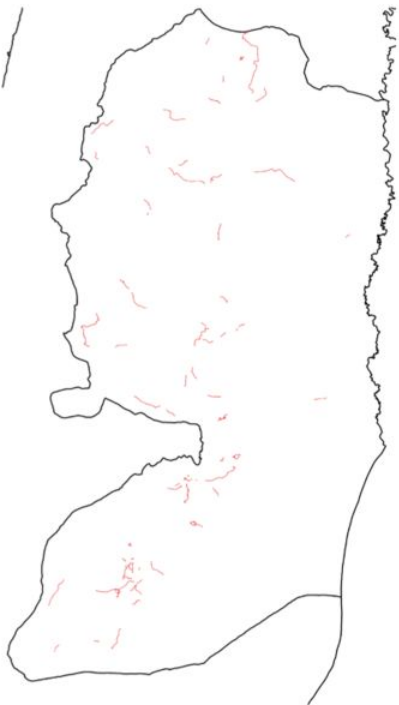
Remotely sensed outcomes cheaper and easier than ever before



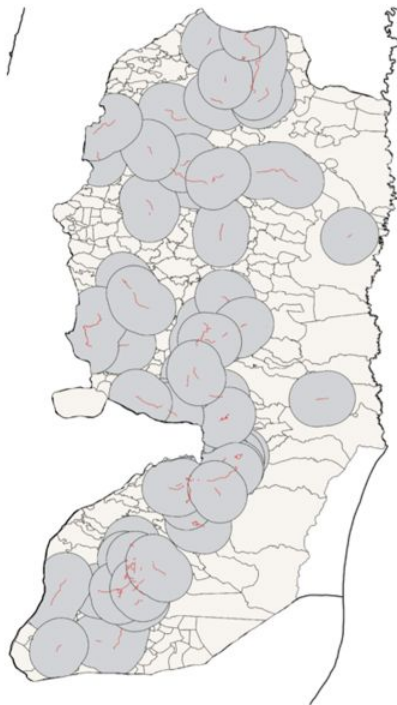
# Early uses in infrastructure evaluations



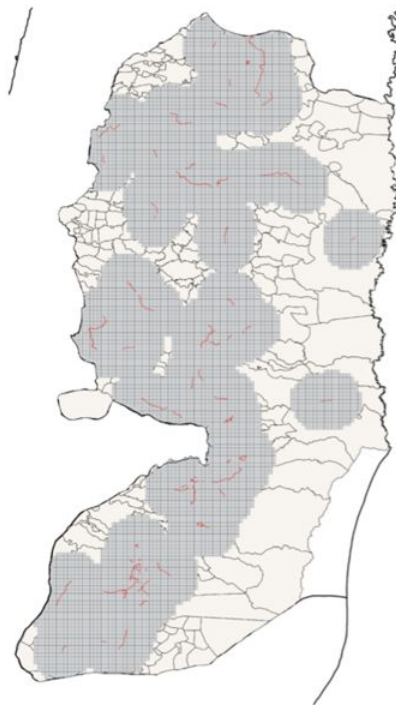
# Putting satellite data to use in evaluation



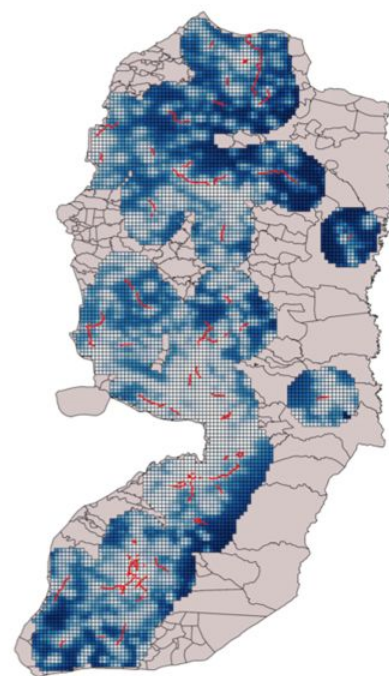
Identify USAID-funded road segments



Create a 5km buffer around road segments (within administrative boundaries)

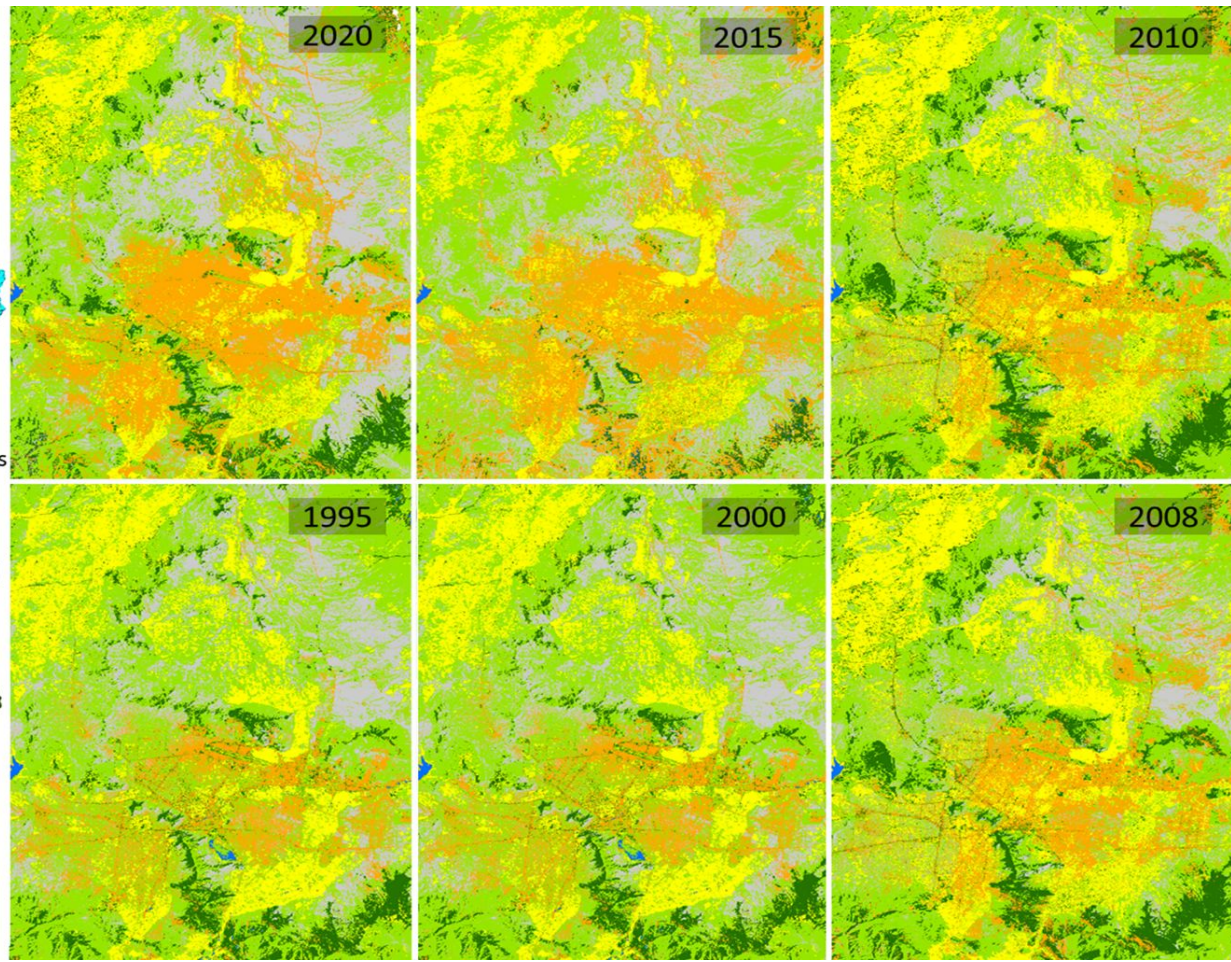
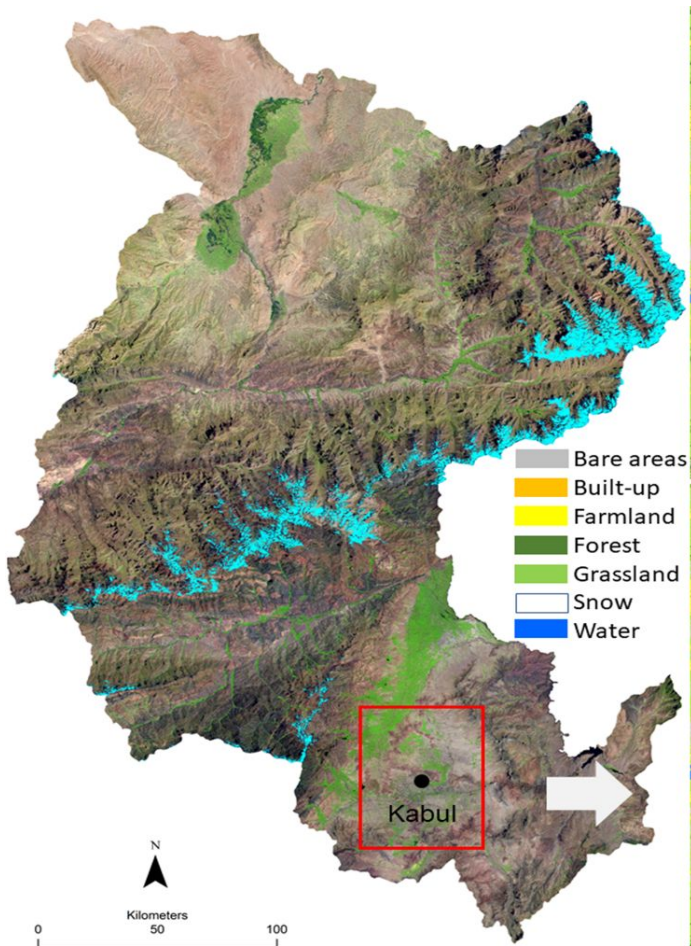


Unit of analysis (750m square grid cells) within the buffer



Analyze changes in nighttime light output within each grid cell from 04/2012 - 12/2016









# What does it take? (Ingredients of a GIE)

## Program Data

- Geographic features
- Time details

## Georeferenced Outcomes

- Spatial resolution and coverage
- Temporal resolution and coverage
- can be ground-based or remotely sensed

## Causal Inference Method

- Spatial and temporal variation in roll-out
- Discontinuities
- Matching



# Advantages of GIE

- Useful alternative when impractical or unethical to randomize
- Can be cheaper and faster than RCTs leveraging primary data collection alone
- Ability to identify geographic variation in impacts
- Can be conducted remotely and retrospectively
- Enables evaluation of long-run impacts
- Can be applied at project or portfolio level
- Can be paired with qualitative work and/or RCTs (even more powerful!)



# Overview of Training

## Today:

Administrative/Program  
Data

Remote Sensing for  
Agriculture and Environment  
Outcomes

Using Google Earth Engine  
for Remote Sensing

## Tomorrow

Combining remote and  
ground-based data

Overview of IE Design

Panel Data Analysis

Other Options

Example from start-to-finish:  
irrigation in Northern Mali

Mechanisms, spillovers

## Thursday

Break-out groups to  
workshop your ideas



# Your homework assignment

Fill out form with your ideas so we can create break-out groups based on related themes

## FAO GIE Training: Workshopping Your Ideas

Please submit your ideas for potential geospatial impact evaluations to discuss together. There is no obligation to actually launch or conduct these evaluations – these are only ideas that we can use to learn about the process and details of GIEs together. We will use these ideas to construct break-out groups based on related themes.

 abenyishay@aiddata.wm.edu (not shared) [Switch account](#)



\* Required

Your name: \*

Your answer

Your email: \*

Your answer

What is the project you would like to potentially evaluate?

Your answer

What is the timeline for the project?

Your answer