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IDEAMAPS

FRAMEWORK IMPLEMENTATION PROGRESS IN MEXICO

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1 **Background**

2 **Designed methodology** (intro)

3 **Data collect**

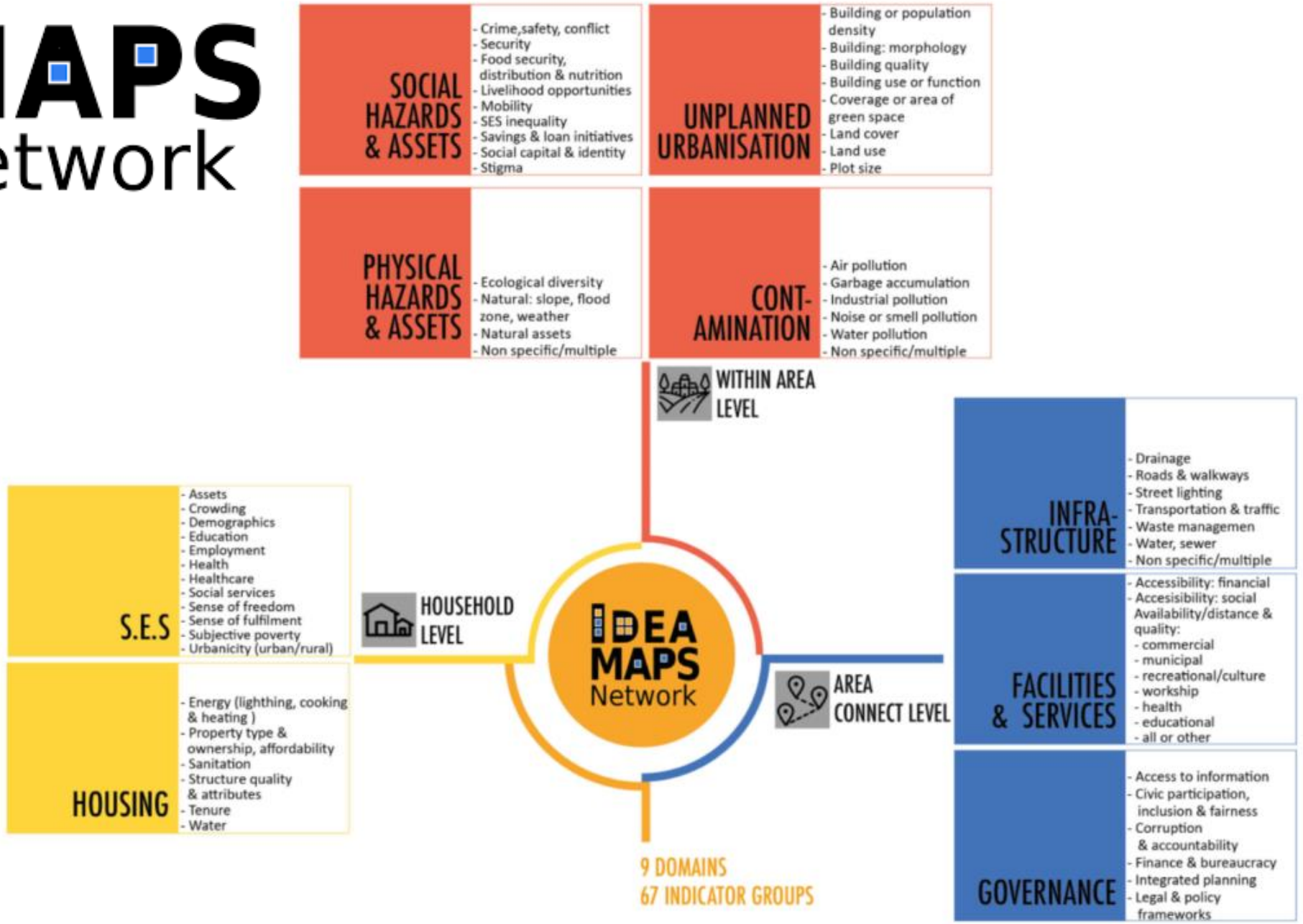
4 **Data Integration**

5 **Visualization**

1 Background

(focus in Mexico)

IDEAMAPS Network



MEXICO
BACKGROUND

Despite the increasing number of people living in urban areas, data collection methods and poverty measures have not been adapted to this reality.

For example, in Mexico, vulnerability is measured mainly through 4 indicators, calculated every 5 years using information from the Population and Housing Census and the Intercensal Survey.

- Municipal Human Development Index in Mexico (PNUD)
- Marginalization Index by federal entity, municipality, locality and urban (CONAPO)
- Social Gap Index (CONEVAL)
- Index of Social Gap at urban area level (CONEVAL)

2 Designed methodology

(intro)

DATA COLLECT
MATRIX CONSTRUCTION

WHAT

Identified information

RELEVANT DATASETS FOR IDEAMAPS

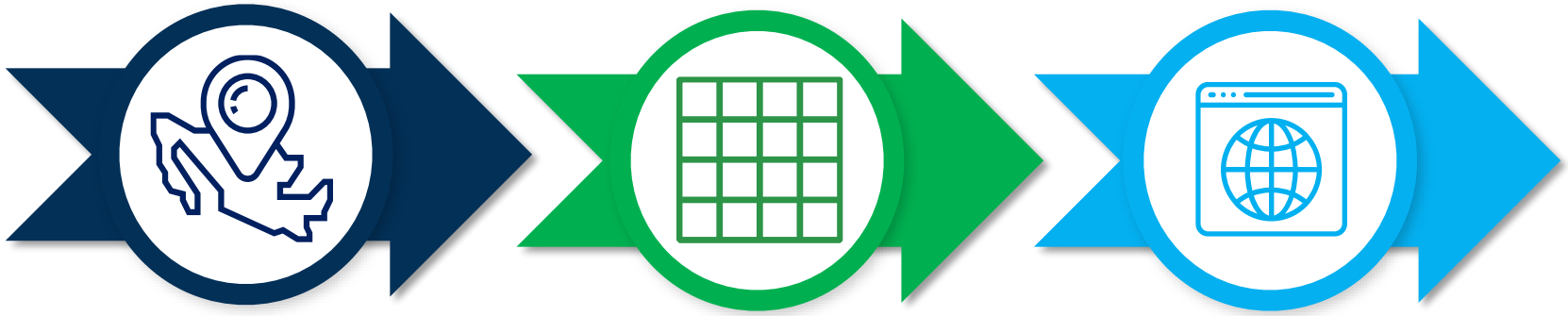
WHERE

Compiled matrix

WITH ENGLISH DESCRIPTION & DETAILS

1. Identified information that is relevant for the IDEAMAPS Framework
2. Linked each one to an indicator group (from the Framework)
3. Compiled it in a table with details (source, frequency, scale references).

DESIGNED
METHODOLOGY



Data collect: matrix construction

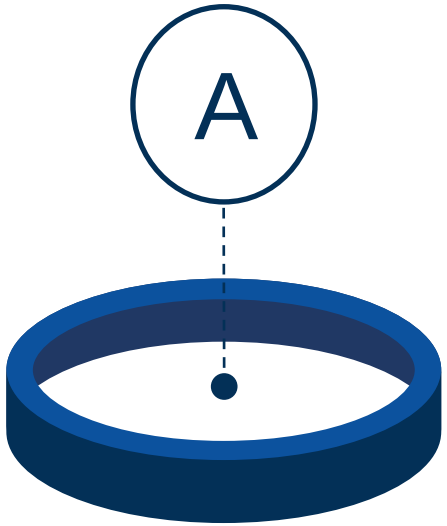
Data integration: grid-based

Visualization: web tool construction

To integrate open data from different sources using the 600m grid and data lake tools, with the goal of having an ecosystem of interoperable information that follows an integrated approach for detecting deprived areas or slums with an interactive user interface that allows different data combination queries.

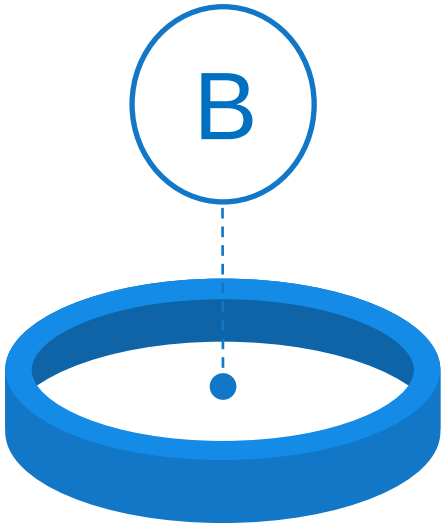
3 Data Collect

WHAT DID WE FIND (SO FAR)?
IN A NUTSHELL



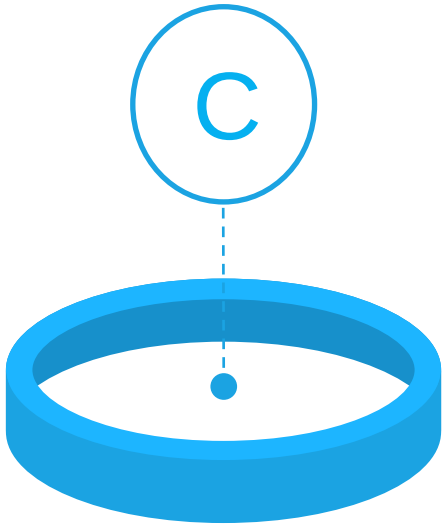
H&P CENSUS data

National cover, up to city-block level and recent (2020)



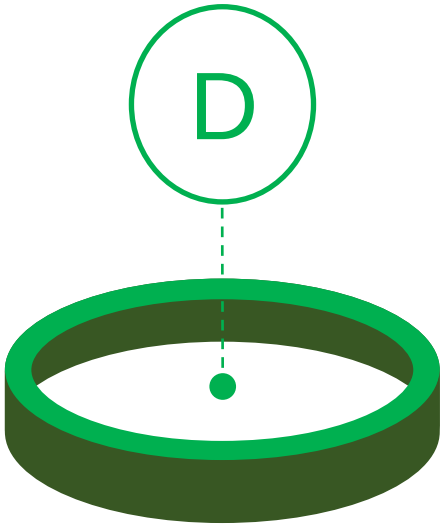
Survey / Programme data

Wide variety of statistical and geospatial national datasets (different representation, aggregation levels, scale and frequency)



External data

Generated by other State Units (Ministries) or independent entities with varied data formats and specs.



Mexico City-specific data

Plenty of data for Mexico City is available.

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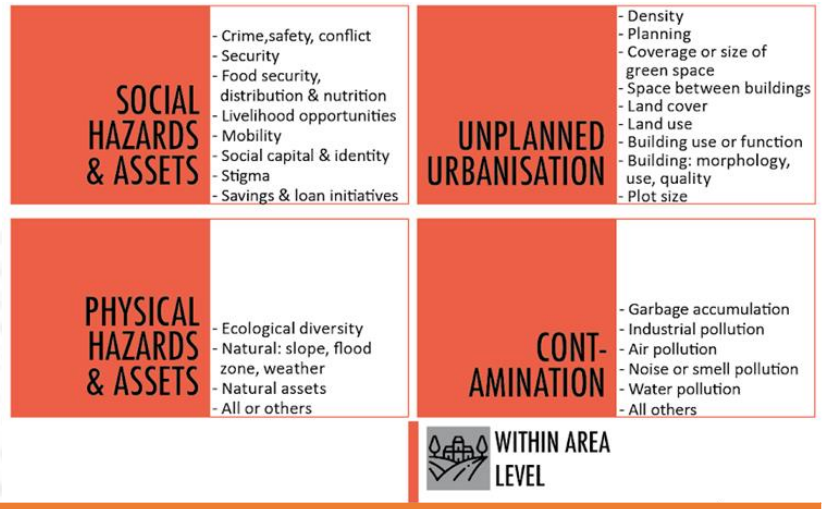
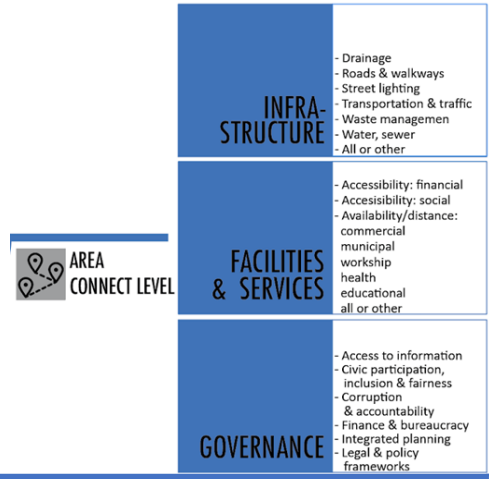
EXAMPLE
WITHIN AREA LEVEL



Domain	Indicator Group	Example variable	Scale	Source	Dataset type
Social Hazards & Assets	Mobility	Residence 5 years ago	National, Federal entity, Municipality, Localities, AGEB & Urban block	Population and Housing Census 2020	**H&P Census**
Social Hazards & Assets	Livelihood opportunities	Employment	National, Federal entity. Localities, & cities self-represented	National Survey of Occupation and Employment (ENOE) 2020	**Survey / Programme (Statistical)**
Unplanned urbanisation	Coverage or size of green space	Green areas	Municipality, Urban areas, Rural areas, AGEB & Urban blocks	National Geostatistical Framework, 2020	**Survey / Programme (Geospatial)**
Physical Hazards & Assets	Natural: slope, flood zone, weather	Hydrometeorological Risk	National Vector Continuum	National Center for Disaster Prevention (CENAPRED)	**External**
Contamination	Air pollution	Exposure to areas of high air pollution	Municipality	Air quality (SEDEMA)	**Mexico City-speficic**

EXAMPLE
AREA CONNECT LEVEL



Domain	Indicator Group	Example variable	Scale	Source	Dataset type
Infrastructure	Drainage	Housing with sewer system or drain connected to the public network	National, Federal entity, Municipality, Localities, AGEB & Urban block	Population and Housing Census 2020	**H&P Census**
Governance	Corruption & accountability	Evaluation of public services Corruption Institutional trust	Federal entity & Self-represented metropolitan areas	National Quality and Government Impact Survey 2019	**Survey / Programme (Statistical)**
Infrastructure	Roads/walkways	Type of roads	National Vector Continuum	National Road Network, 2020	**Survey / Programme (Geospatial)**
Facilities & Services	Availability/distance to commercial, workship, health, educational etc.	Access to health services	National, Federal entity & Municipality	Health Resources 2019 (Ministry of Health)	**External**
Infrastructure	Transportation & traffic	Accessibility to transportation system	Mexico City	Digital Agency for Public Innovation (ADIP)	**Mexico City-speficic**

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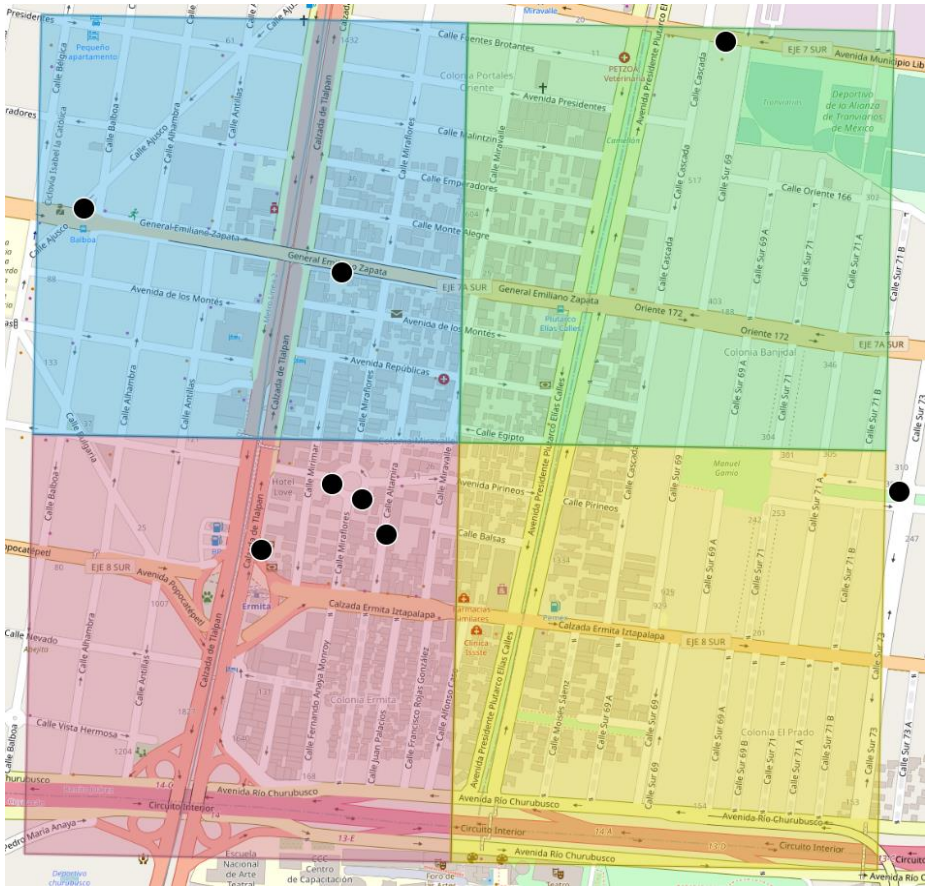
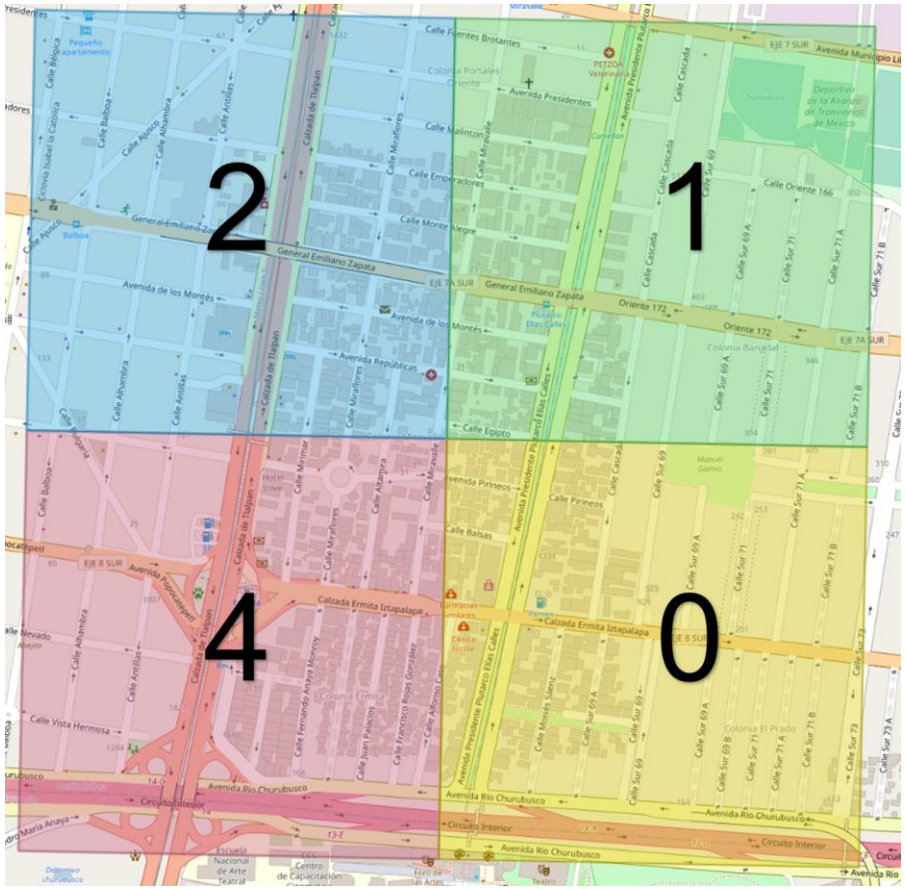
EXAMPLE
HOUSEHOLD LEVEL

Domain	Indicator Group	Example variable	Scale	Source	Dataset type
Housing	Structure quality & attributes	Housing flooring material (durable or earth)	National, Federal entity, Municipality, Localities, AGEB & Urban block	Population and Housing Census 2020	**H&P Census**
S.E.S.	Sense of freedom	Perception of public safety Institutional performance	Federal entity & Metropolitan Areas selected for the main variables	National Survey of Victimization and Perception of Public Safety (ENVIPE) 2020	**Survey / Programme (Statistical)**
S.E.S.	Healthcare	Care services	National Vector Continuum	National Statistical Directory of Economic Units. (DENUE)	**Survey / Programme (Geospatial)**
S.E.S.	Health	Life expectancy	Federal entity	Life expectancy at birth. National Population Council (CONAPO)	**External**
S.E.S.	Health	Use of Health Services	National, Regional, Subregional & Metropolitan area of the Valley of Mexico	National Health and Nutrition Survey (ENSANUT) 2018. National Institute of Public Health (INSP)	**Mexico City-speficic**

4 Data Integration

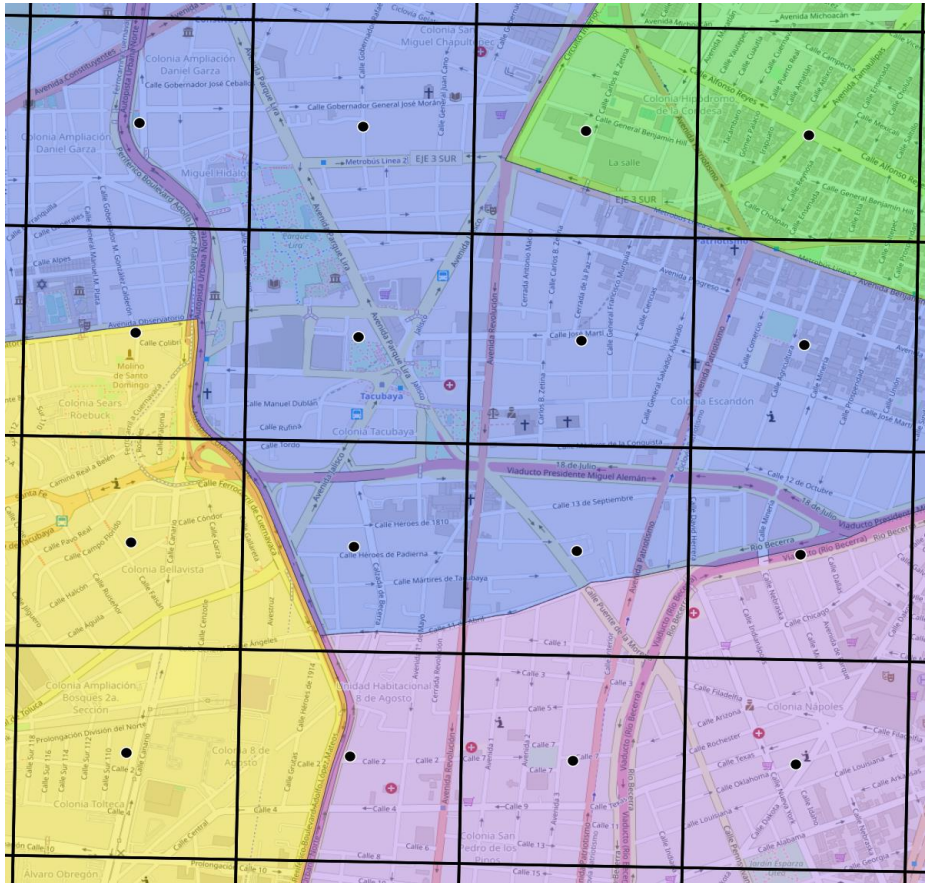
SOURCE: **DATA POINTS**

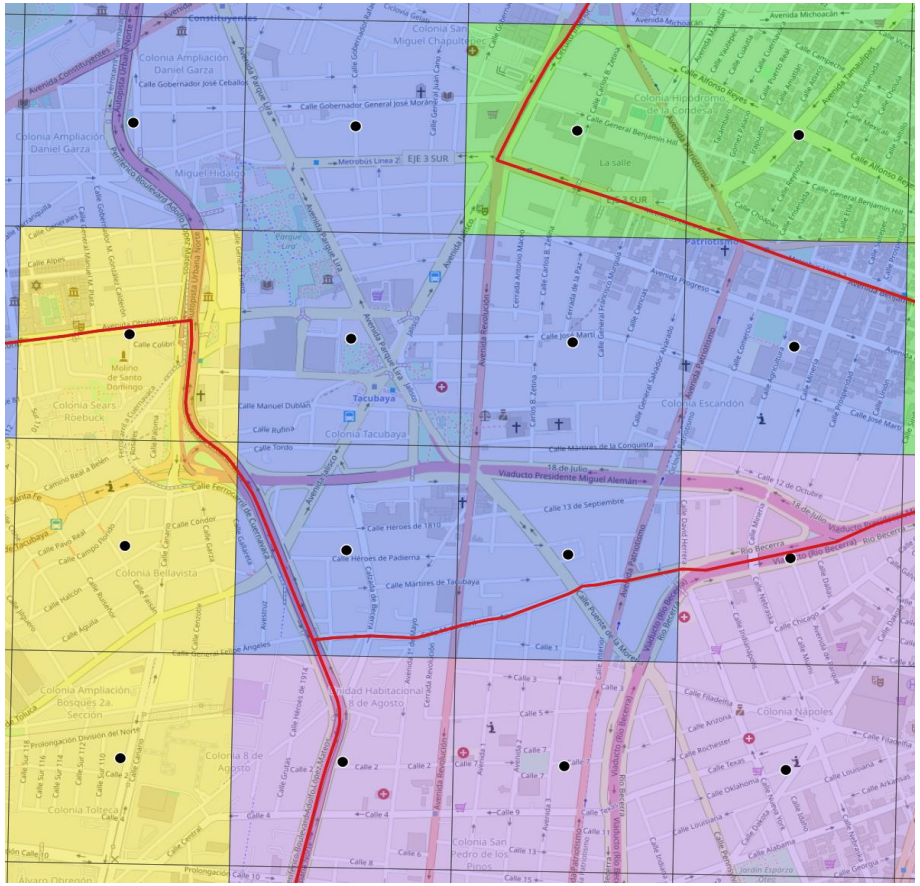




SOURCE: **HIGHER RESOLUTION THAN GRID**

SOURCE: **LOWER RESOLUTION THAN GRID**





TOOLS

DATA LAKE

Interoperability

DevSecOps

GitLab

DevSecOps - Alops

mlflow

Data Products

MINIO

NAS

Data Storage

Kedro

python

Data Integration

HIVE

trino

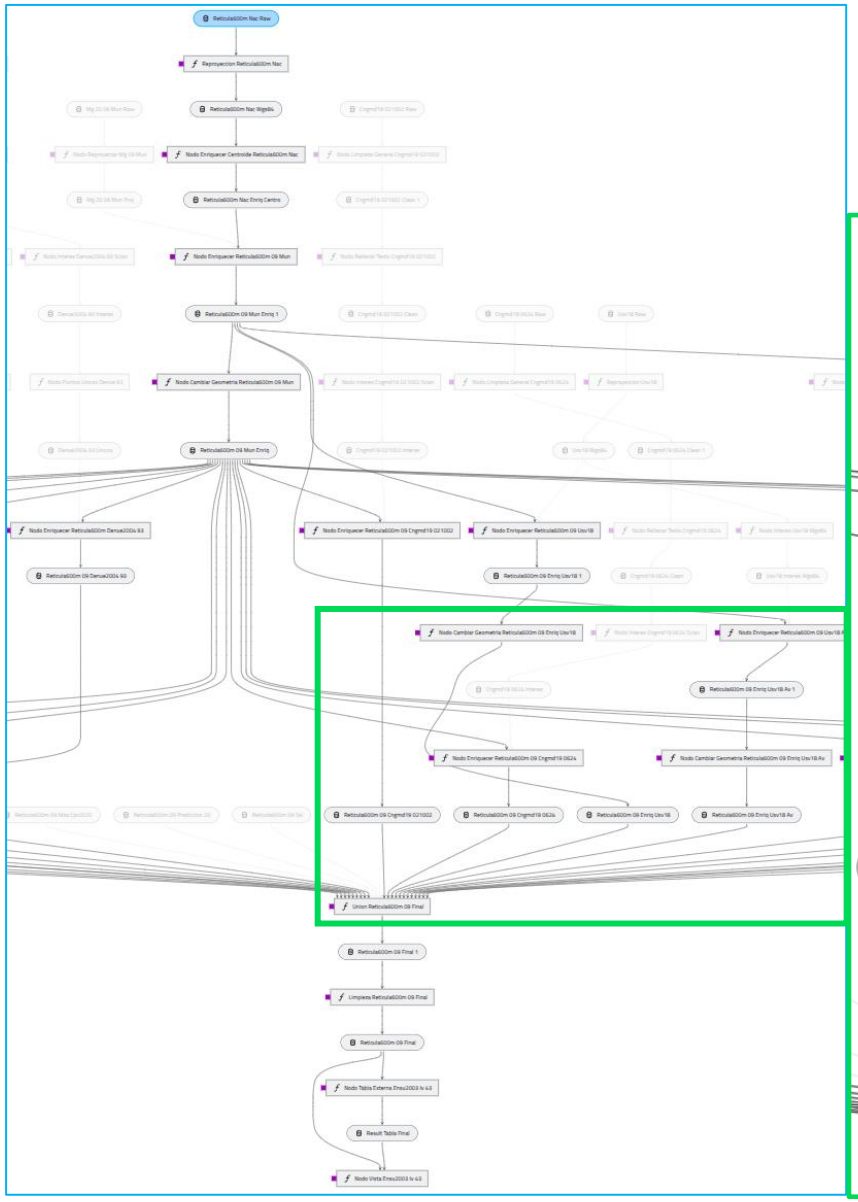
Data Virtualization

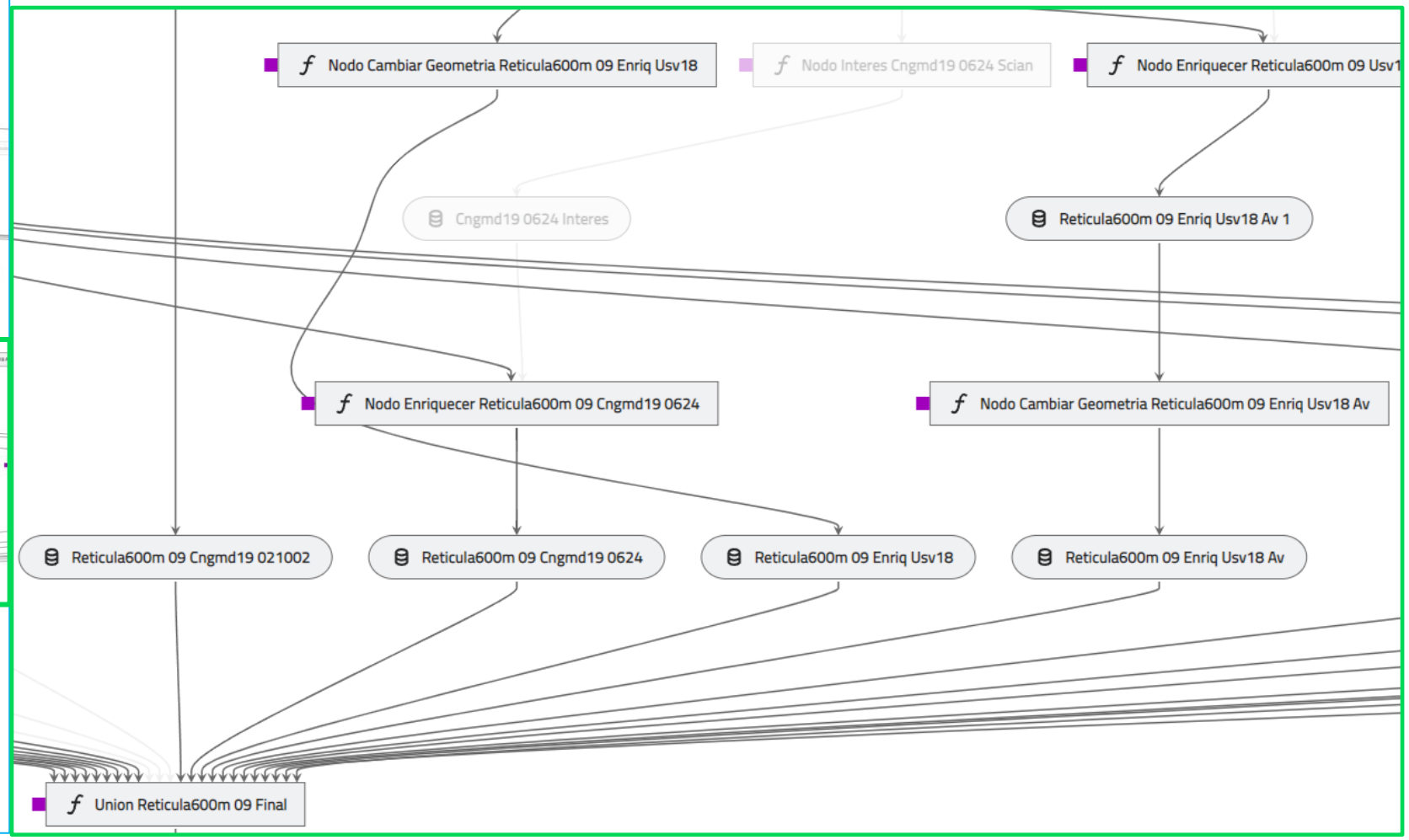
Superset

Arc GIS ESRI

Data Visualization

KEDRO

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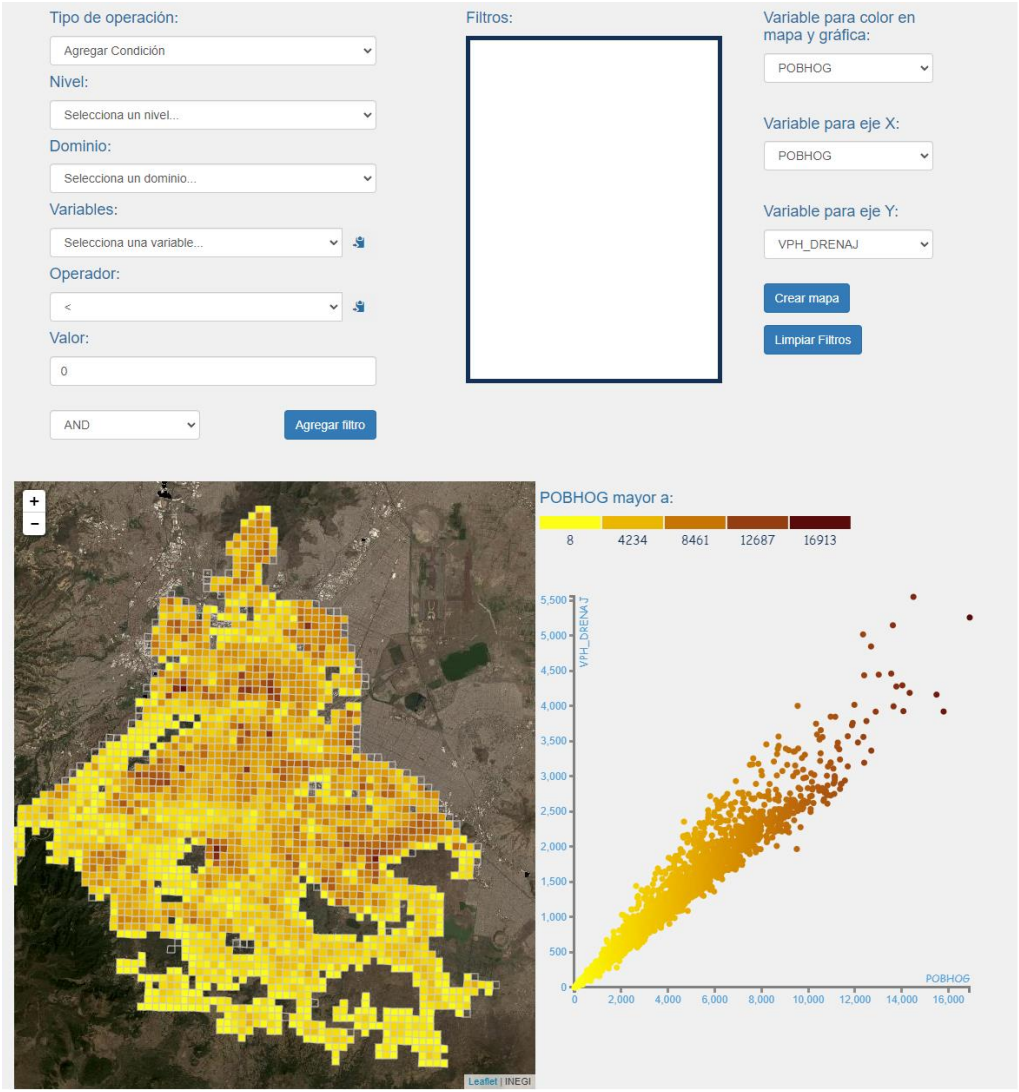
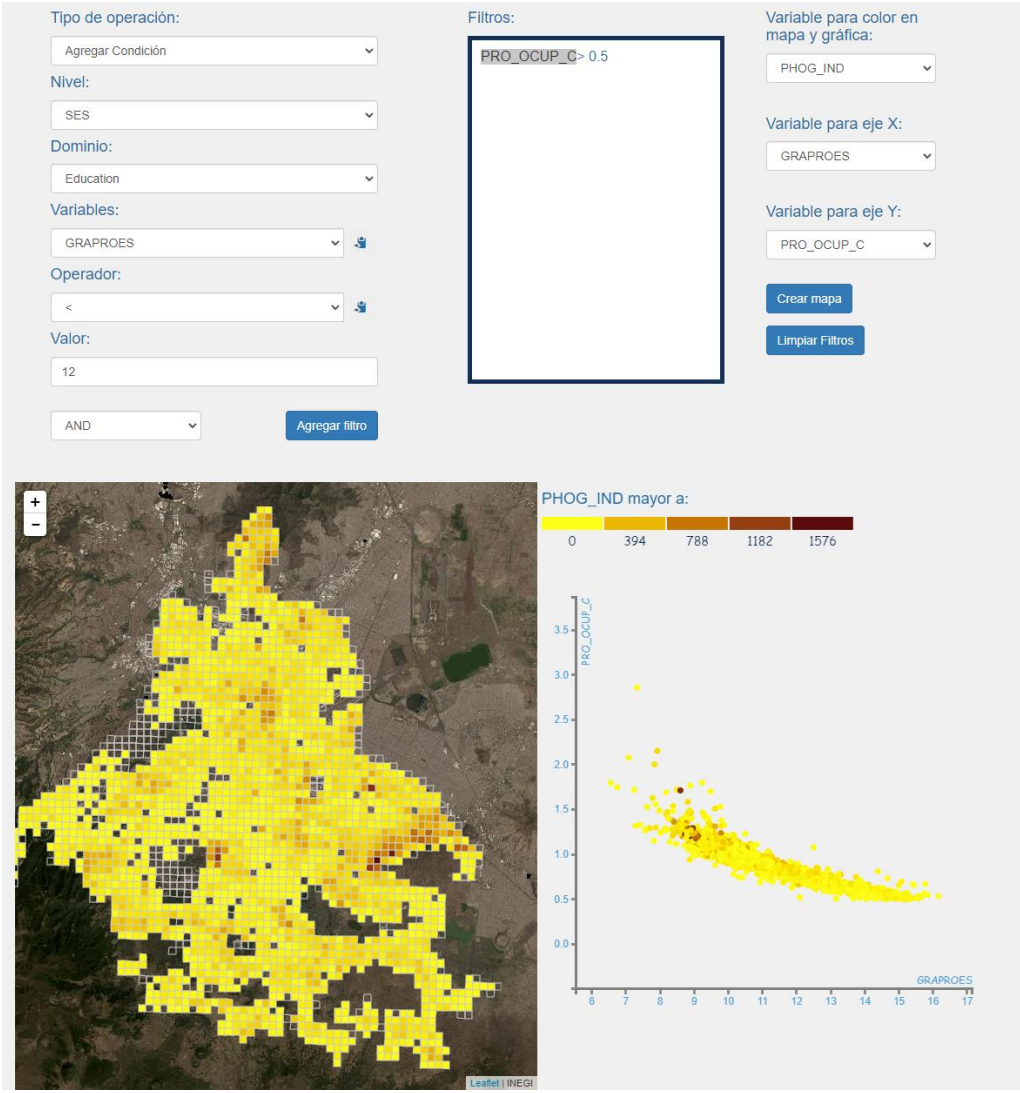
5 Visualization

EXPLORATION TOOL





IDEAMAPS Network

MEXICO CITY

MEXICO

SOCIAL HAZARDS & ASSETS
- Crime,safety, conflict
- Security
- Food security, distribution & nutrition
- Livelihood opportunities
- Mobility
- SES inequality
- Savings & loan initiatives
- Social capital & identity
- Stigma

UNPLANNED URBANISATION
- Building or population density
- Building: morphology
- Building quality
- Building use or function
- Coverage or area of green space
- Land cover
- Land use
- Plot size

PHYSICAL HAZARDS & ASSETS
- Ecological diversity
- Natural: slope, flood zone, weather
- Natural assets
- Non specific/multiple

CONT-AMINATION
- Air pollution
- Garbage accumulation
- Industrial pollution
- Noise or smell pollution
- Water pollution
- Non specific/multiple

WITHIN AREA LEVEL

S.E.S
- Assets
- Crowding
- Demographics
- Education
- Employment
- Health
- Healthcare
- Social services
- Sense of freedom
- Sense of fulfilment
- Subjective poverty
- Urbanicity (urban/rural)

HOUSING
- Energy (lighthing, cooking & heating)
- Property type & ownership, affordability
- Sanitation
- Structure quality & attributes
- Tenure
- Water

HOUSEHOLD LEVEL

IDEA MAPS Network

AREA CONNECT LEVEL

INFRA-STRUCTURE
- Drainage
- Roads & walkways
- Street lighting
- Transportation & traffic
- Waste managemen
- Water, sewer
- Non specific/multiple

FACILITIES & SERVICES
- Accessibility: financial
- Accesisibility: social Availability/distance & quality:
  - commercial
  - municipal
  - recreational/culture
  - workship
  - health
  - educational
  - all or other

GOVERNANCE
- Access to information
- Civic participation, inclusion & fairness
- Corruption & accountability
- Finance & bureaucracy
- Integrated planning
- Legal & policy frameworks

9 DOMAINS
67 INDICATOR GROUPS

THANK YOU!

Conociendo
México

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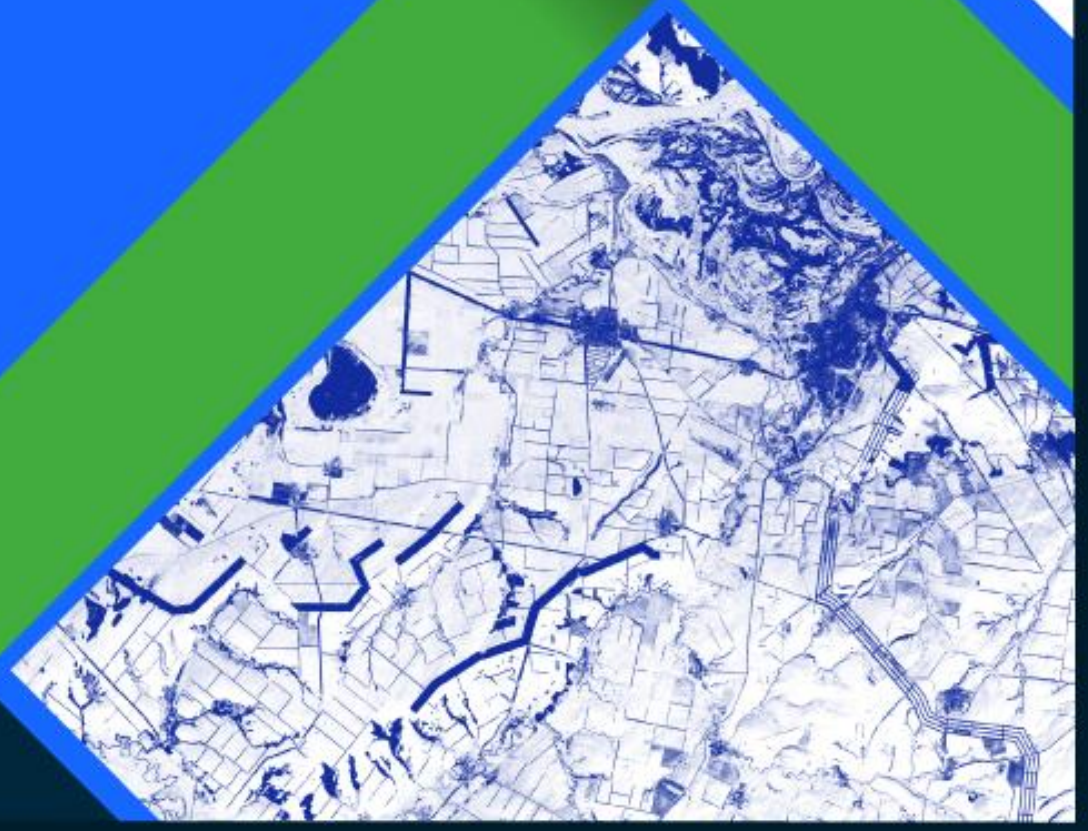
INEGI Informa

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