



# ACCELERATING IMPLEMENTATION; **ACHIEVING RESILIENCE**

## GEOSPATIAL INFORMATION AS A KEY PILLAR TO ACCELERATE SUSTAINABLE DEVELOPMENT: A JOURNEY WITH A REGIONAL AND NATIONAL PERSPECTIVE

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# Multilateral context & roadmap



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the future we want →

# The future we want (Rio+20, 2012)

## VI. Means of implementation

### B. Technology



“274. We recognize the importance of space-technology-based data, *in situ* monitoring and reliable geospatial information for sustainable development policymaking, programming and project operations.

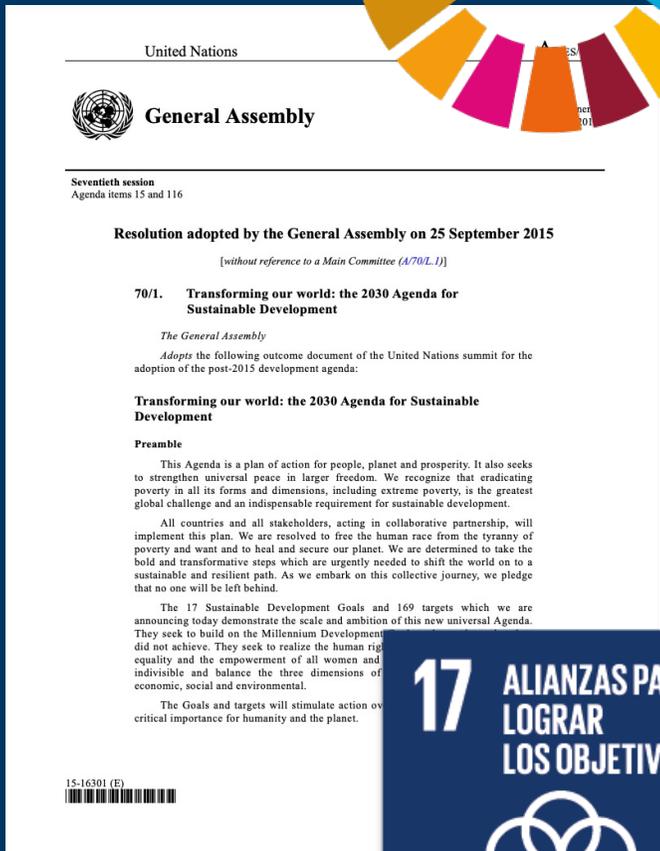
...we note the relevance of global mapping, and recognize the efforts in developing global environmental observing systems, including by the Eye on Earth network and through the Global Earth Observation System of Systems..”



# Transforming our world: the 2030 Agenda for Sustainable Development (2015)

“76. ...We will promote transparent and accountable scaling-up of appropriate public-private cooperation to exploit the contribution to be made by a wide range of data, including earth observation and geospatial information, while ensuring national ownership in supporting and tracking progress.”

“17.18. By 2020, enhance capacity-building support ...to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts.”



# Pact for the Future: Digital Compact (September 2024)



## *Data for the SDGs and for development*

### WE COMMIT BY 2030 TO:



Increase financing... and enhance efforts to build capacity in data and related skills, as well as responsible data use, particularly in developing countries (SDG 17);



Strengthen efforts to collect, analyze and disseminate relevant, accurate, reliable and disaggregated data for better monitoring and policymaking to accelerate the achievement of the 2030 Agenda, while respecting privacy and data protection.

We will aim for a 50% increase in the data available to monitor the SDGs, disaggregated by income, sex, age, race, ethnicity, migration status, disability **and geographic location** and other characteristics relevant in national contexts (All SDGs);



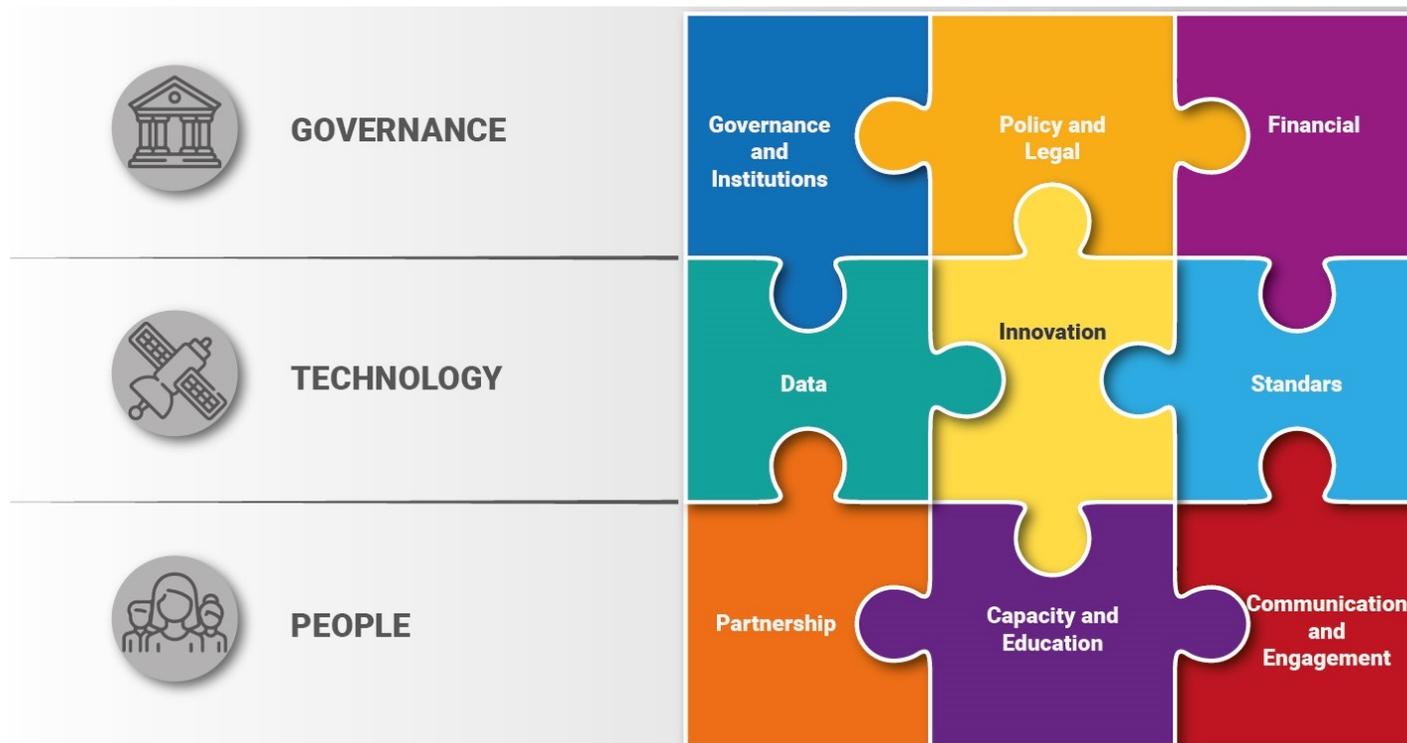
Develop open and accessible data systems to support **effective disaster early-warning, early action and crisis response** (SDG 3 & 11).

# Supporting the implementation of the United Nations Integrated Geospatial Information Framework (2018 onwards)



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# Regional perspective

## UN-ECLAC



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# ECLAC: Incorporating geospatial information

Joint bureaux meeting:  
Statistical Conference of the  
Americas (SCA) &  
UN-GGIM: Americas  
ECLAC HQ

2016

Technical assistance to  
disseminate UN global  
guidelines in LAC Member  
States

2018

Formulation of geospatial  
projects at ECLAC:  
- Statistical geoportals  
- Strengthening capabilities  
for integration

2020

2017

Joint meeting between the SCA &  
UN-GGIM: Americas (ECLAC)  
Incorporation of Regional Expert  
in Geospatial Information  
Management in the Statistics  
Division of ECLAC.

2019

Joint Declaration between the  
SCA and UN-GGIM: Americas  
for the Integration of  
Geospatial and Statistical  
Information at the 10<sup>th</sup> SCA-  
ECLAC Meeting.

2021

ECLAC as Technical Secretariat of  
UN-GGIM: Americas.  
Launch of the CEPALSTAT  
geoportal.

# Caribbean Project (2014-2018)

## Cooperation to build a regional Spatial Data Infrastructure (SDI)



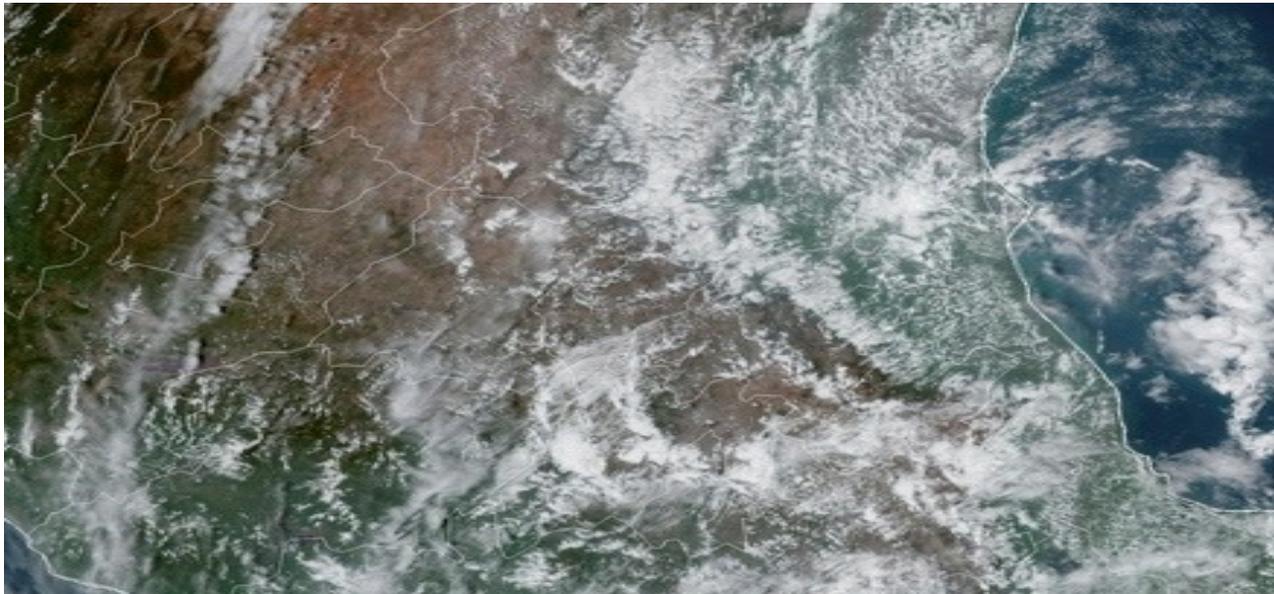
### Features & deliverables:

- Infrastructure (antennas to receive satellite data & other equipment).
- Technical capacity (courses & workshops)
- Participation in the global conversation (UNGGIM meetings)
- Regional interoperable geospatial network
- Updated land cover maps for all countries from satellite imagery.
- Geodetic infrastructure installed in all 17 countries



Association of Caribbean States  
Asociación de Estados del Caribe  
Association des Etats de la Caraïbe





# CLIMATE CHANGE



# BIODIVERSITY CRISIS

# COVID-19 Observatory (2020)

Tracks implemented public policies for 33 countries of the LAC region to limit the impact of the COVID-19. Offers analyses of the economic and social impacts that these policies will have at the national and sectoral levels.

### Measures and actions at the national level

COVID-19 Observatory in Latin America and the Caribbean: measures by country

We invite you to explore the measures that have been taken at national level to address the pandemic in the following areas: movements restrictions, economy, education, employment, gender, social protection and health. Available information includes regional thematic summaries and downloadable files detailing the measures taken by countries and the measures by theme.

Spanish / English

About

**Countries** | **Region**

- Vaccination
- Movements across and within countries
- Economy
  - Fiscal Policy
  - Monetary Policy
    - 16 to 22
    - 11 to 15
    - 6 to 10
    - 1 to 5
    - None information
  - Business policy
    - Restriction of economic activity (including shops and shopping centers)
    - Price and quantity controls
    - Economic Stimulus (includes aggregate value of fiscal measures and separately of credit guarantees)
    - Regulation of the personal hygiene and cleaning products market
    - Debt relief and suspension of credit payments (individuals, microentrepreneurs)
    - Other
  - Education / schools

**Monetary Policy**

Total of actions implemented by countries: 124

**Actions details**

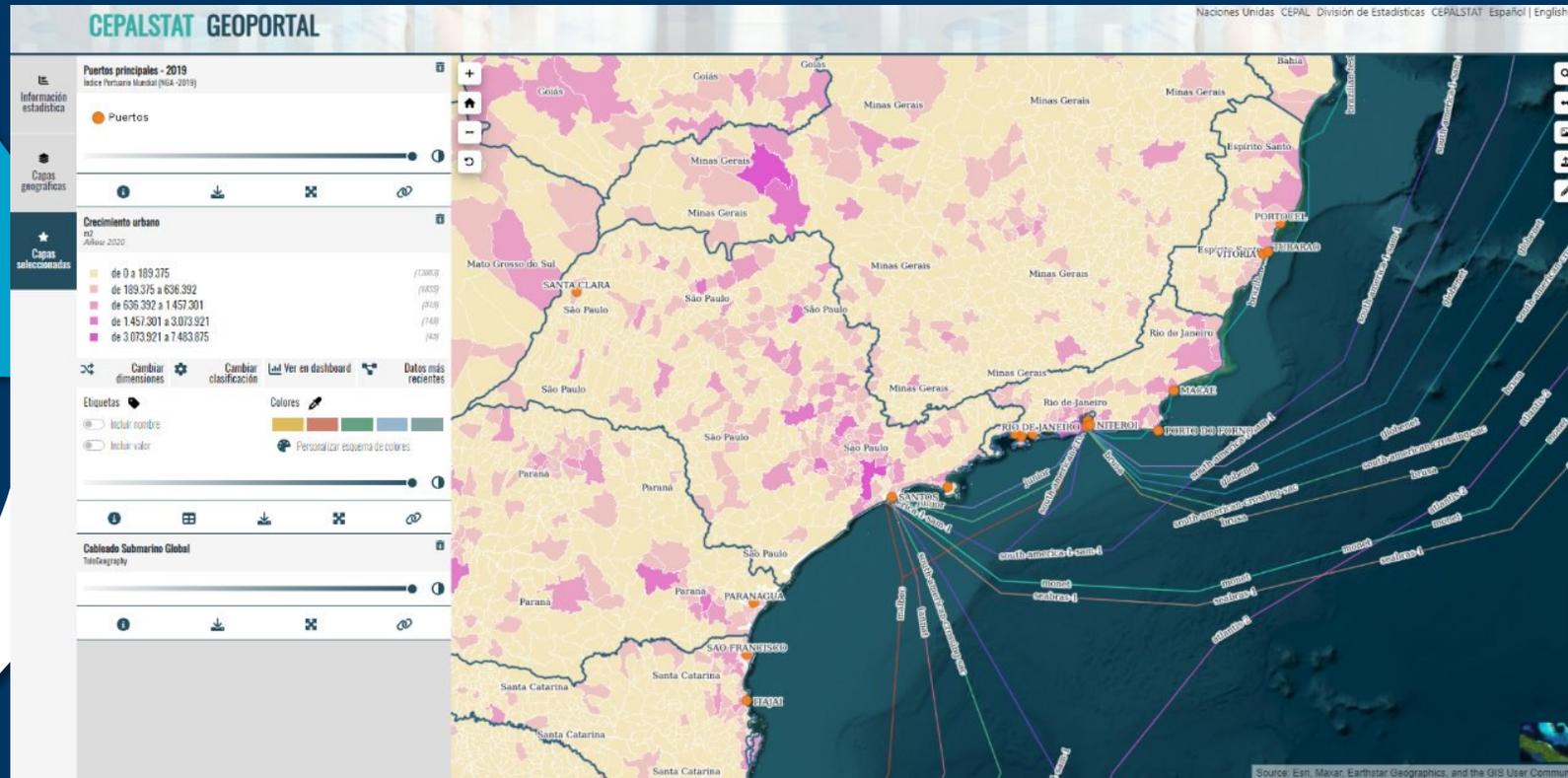
Mexico

Date: 2020-03-20  
Description: In March 2020, given the abrupt drop in international oil prices and the expansion of the pandemic by COVID-19, the Board of Governors of Banco de México decided to decrease by 50 basis points the target for the overnight Interbank Interest Rate at a level of 6.6% (from 7.0% in February 2020).  
Type: Emergency  
Authority: Banco de México (Central Bank of Mexico)

Date: 2020-04-21  
Description: Reduction of the monetary policy interest rate by 50 basis points to 6.0%.  
Type: Emergency  
Authority: Banco de México (Central Bank of Mexico)

Date: 2020-04-21  
Description: The Central Bank of Mexico announced 10 measures to promote the orderly operation of financial markets, strengthen credit granting channels, and provide liquidity for the healthy development of the financial system: a) Increase in liquidity during hours of operation to facilitate optimal functioning of financial markets and payment systems; b) Expansion of the titles eligible for the Ordinary Additional Liquidity Facility (FLAO), foreign exchange hedging operations and credit operations in dollars; c) Expansion of counterparties eligible for the Ordinary Additional Liquidity Facility (FLAO); d) Term government securities repurchase window; e) Temporary exchange of guarantees window; f) Corporate Titles Reporting Facility (FRTC); g) Provision of resources to banking institutions to channel credit to micro, small and medium-sized enterprises and to individuals affected by the pandemic; h) Facility of financing to multiple banking institutions guaranteed with loans to corporations, for the financing of micro, small and medium enterprises; i) Exchange of government securities, and j) Exchangeable hedges for difference in United States dollars with counterparties not domiciled in the country to be able to operate during the hours in which the national markets are closed.  
Type: Emergency  
Authority: Banco de México (Central Bank of Mexico)

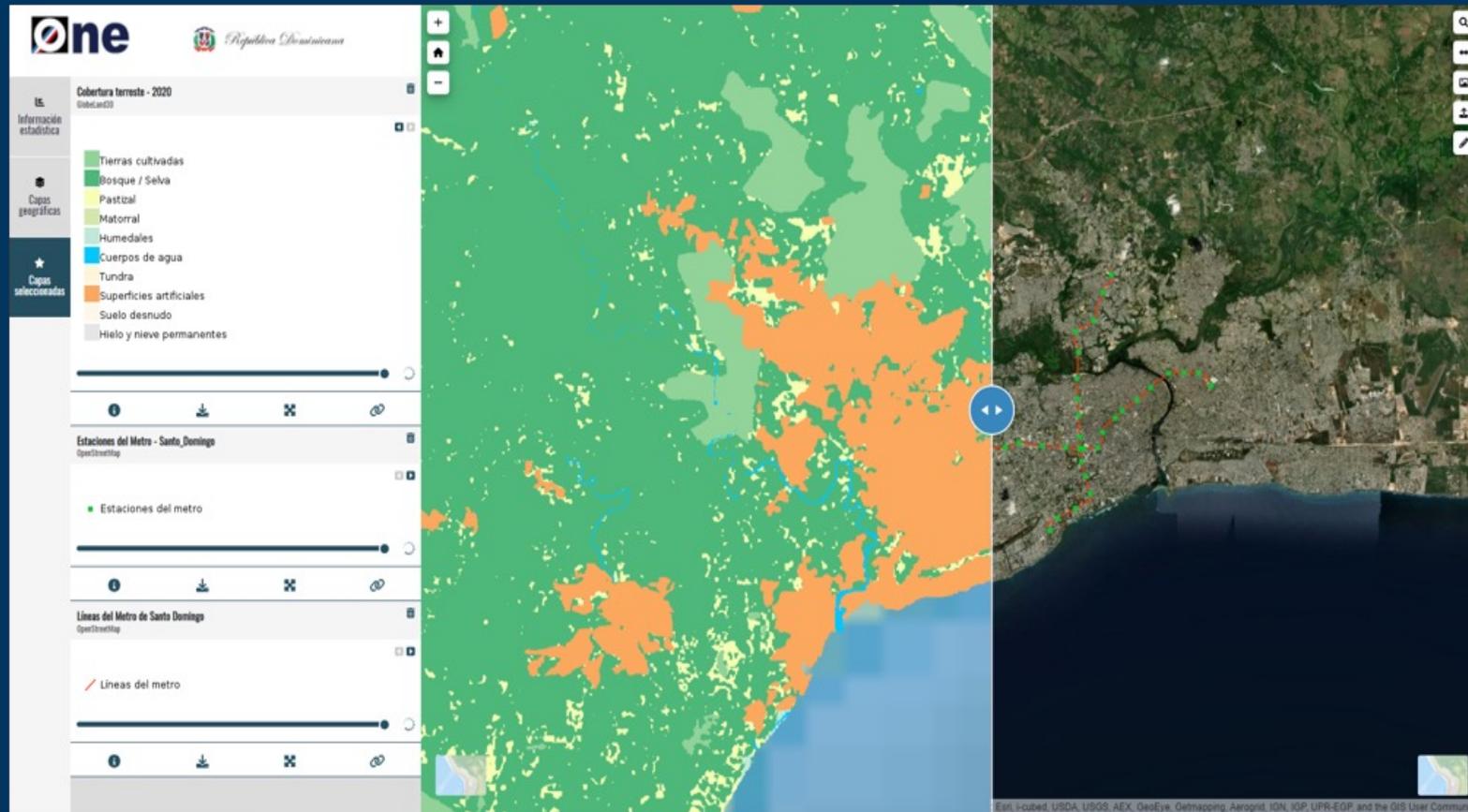
# CEPALSTAT Geoportal (2021)



<https://statistics.cepal.org/geo/geo-cepalstat/?lang=es>

Deploys georeferenced information produced by the official national organizations and international agencies, as well as relevant indicators to describe the regional situation. Interoperable between statistical and geospatial information.

# Project for the implementation of statistical geoportals supported by the European Union and EUROSTAT (2021 – 2023)



## MAIN ACHIEVEMENTS:

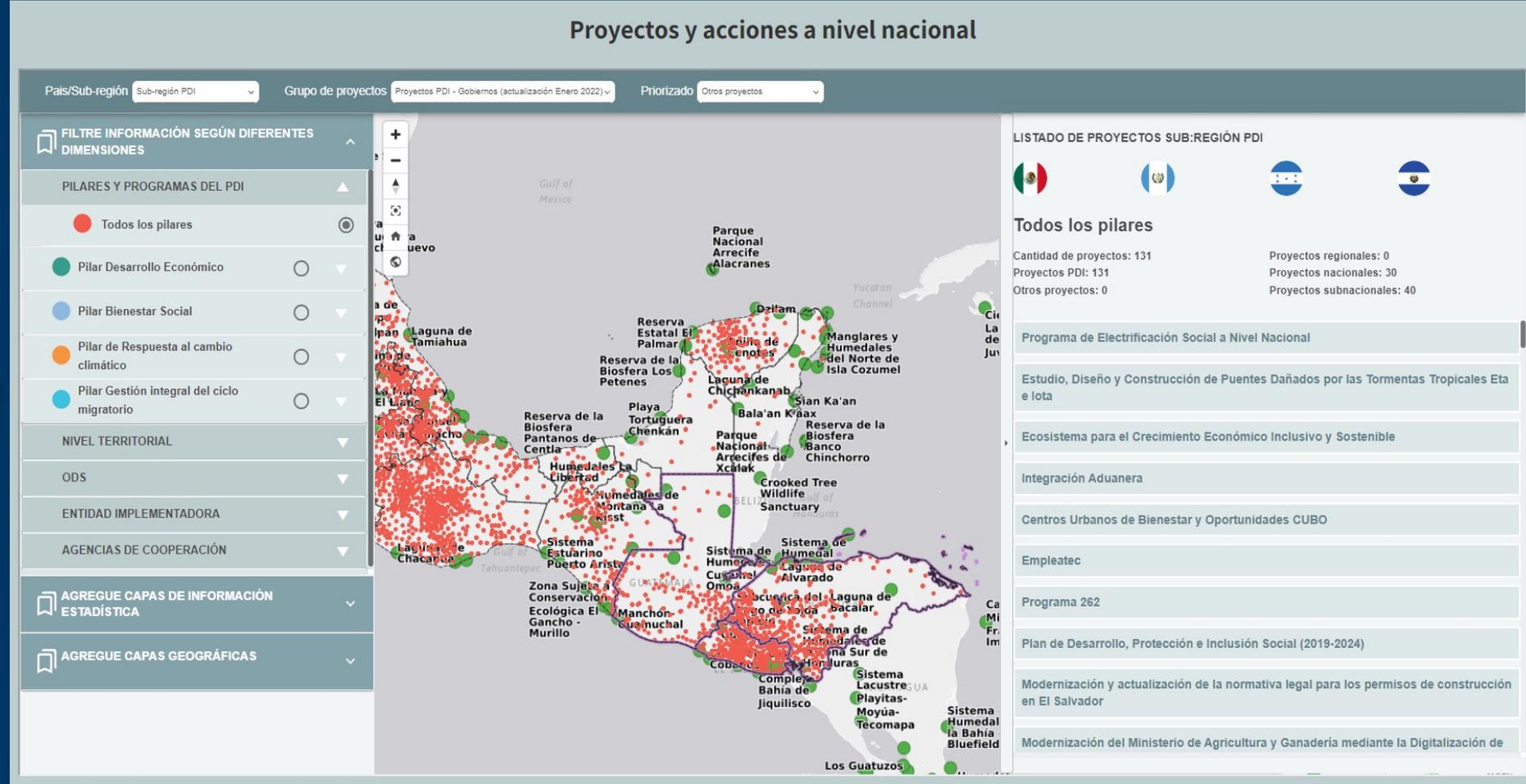


Improved access to geostatistical data produced by the NSO in seven countries of Latin America.



Facilitates its integration with geospatial information generated by public actors and non-governmental sectors at the country level.

# “Plan de Desarrollo Integral” - Geoportal (2021)



<https://www.cepal.org/es/subtemas/plan-desarrollo-integral>

Tool for governments and UN System for monitoring projects and actions to address the structural causes of migration in Central America and Mexico



# Mexico: a national perspective



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# Geospatial data in Mexico: State & Federal Government



- Sectoral
- Non-environmental federal programmes



- Environmental
- Social
- Economic

- Environmental
- Environment-related federal programmes
- Territorial management



- Environmental
- Social
- Economic
- Government & Justice



# Mexico's environmental sector: a key source of geospatial information



NATIONAL

- Diagnosis
- Policy making
- Monitoring
- Accountability
- Education

INTERNATIONAL



» PRODUCERS

» SYSTEMS

USES

# Geospatial platforms in Mexico: use in public policy

Land use & land cover



- Land planning
- Environmental impact assessment (EIA)
- GHG inventories
- Environmental reporting

Air quality monitoring (SINAICA)



- Air quality policy
- Early warnings for human health protection

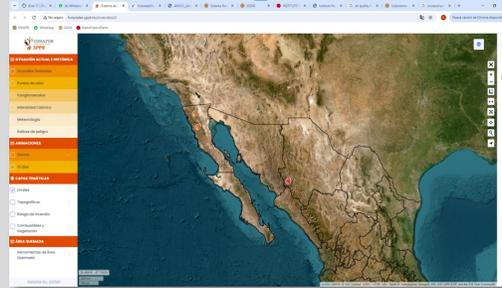
Inventory of National Emissions (INEM)



- Air quality policy & forecast
- Health protection policy

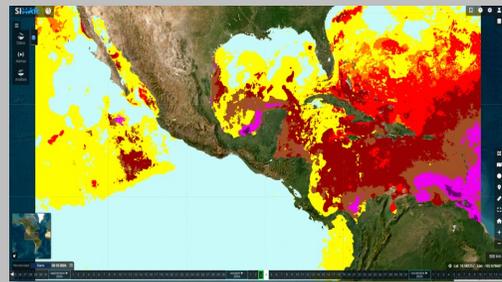
# Geospatial data platforms in Mexico and their use in public policy

## Wildfires



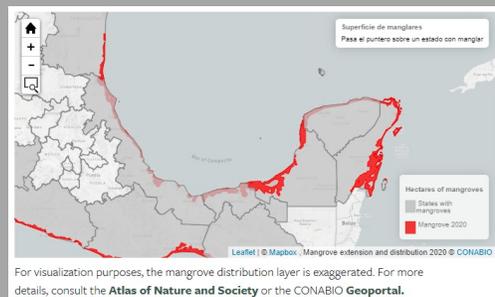
- Preparing and prevention plans
- Combat actions
- Restoration/reforestation programmes
- International cooperation (e.g, Chile)

## Marine-Coastal Information and Analysis System (SIMAR)



- Marine-coastal protection
- Human health protection
- Early warning for coral bleaching, sargassum arrival and red tides

## Mangrove Monitoring System (SMMM)



- Marine-coastal protection and natural protected areas policies
- GHG inventories



*The unavoidable challenge:*  
a **new socio-environmental agenda**, and how  
geospatial information can support its achievement



# Towards a humanist and ecological agenda

Ensure shared prosperity and the right to a healthy environment for current and future generations, by decoupling sustainable development from unequal and extractivist policies.

**Adaptation to  
climate change**

Reduce vulnerability of human settlements to extreme climate events.

**Ecosystem  
protection and  
restoration**

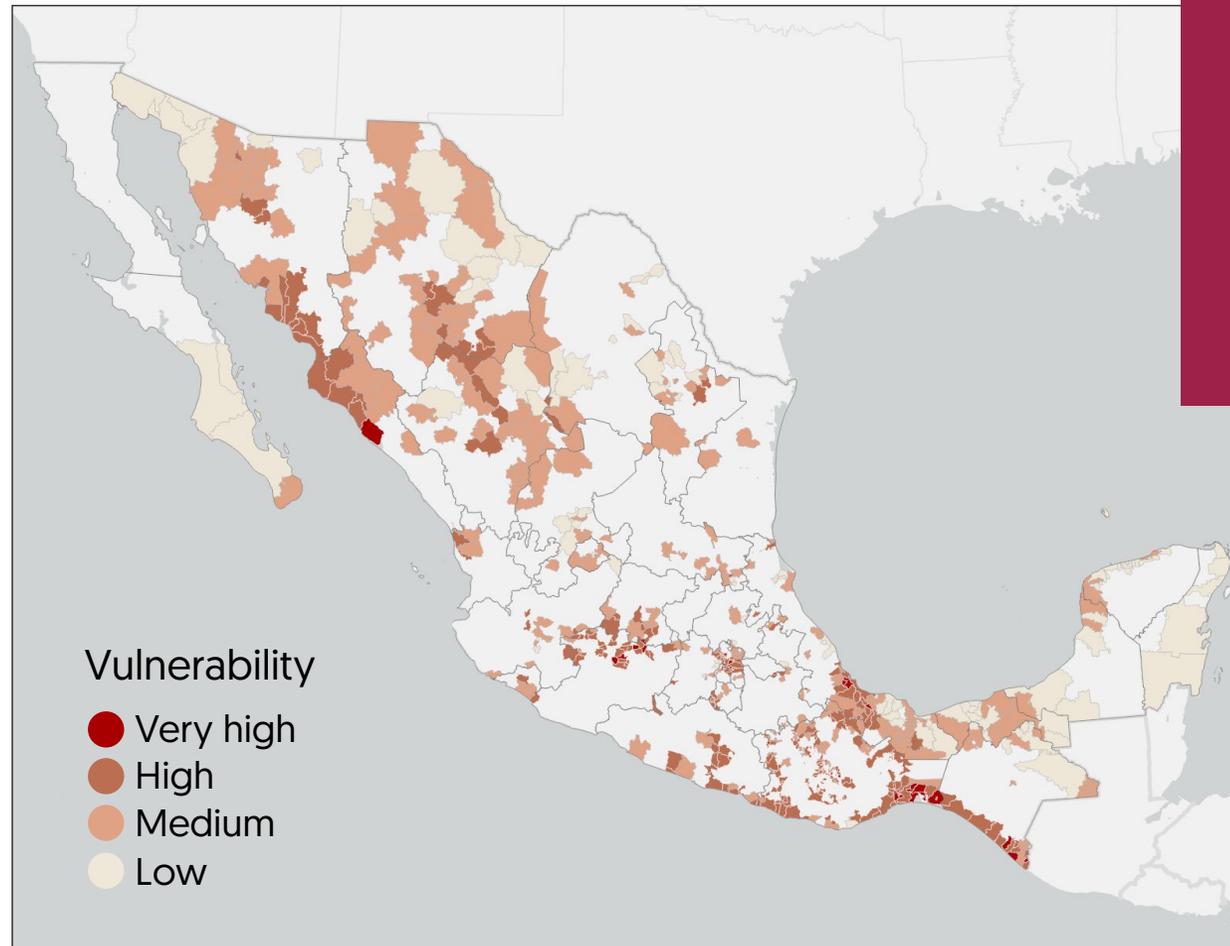
Measure, protect and restore natural ecosystems, including mangroves and river basins.

# Adaptation to climate change: geospatial information to assess vulnerability of human settlements to **extreme climate events**



Acapulco, Mexico  
September 2024

# Geospatial information to assess climate change vulnerability

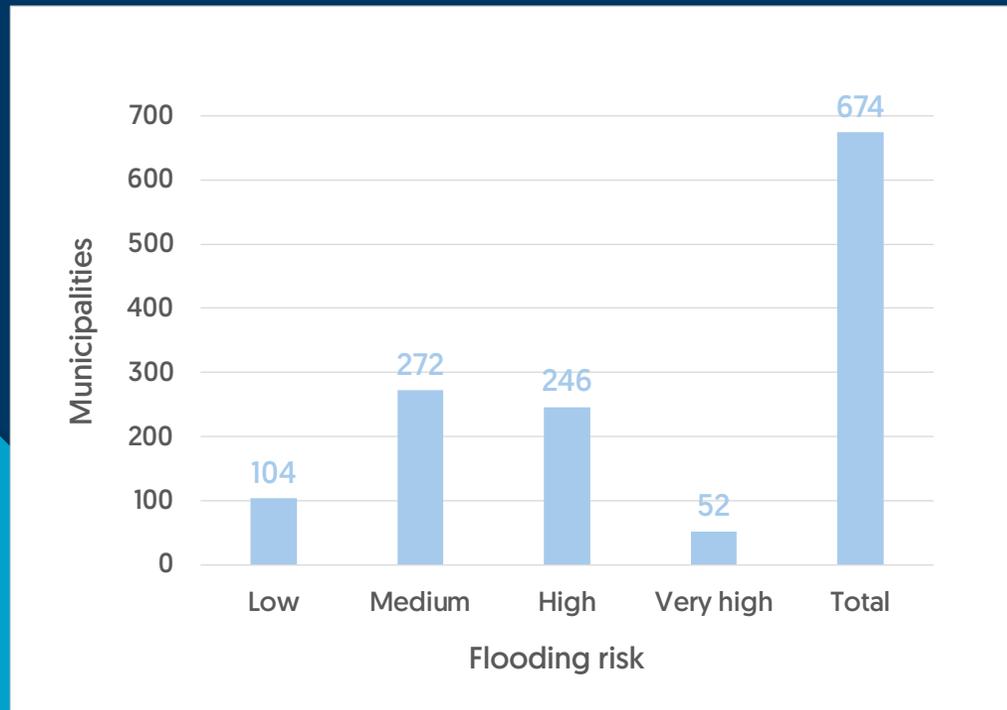


Vulnerability of human  
settlements to flood risk

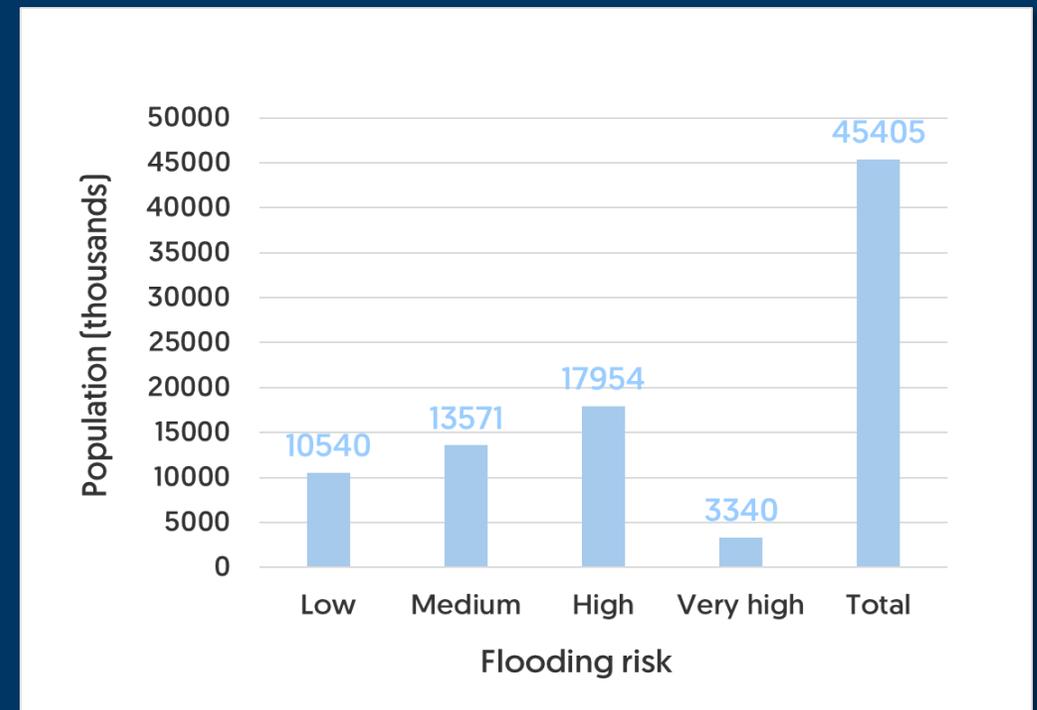
INECC. 2019. *Atlas Nacional de Vulnerabilidad al Cambio Climático*. Mexico.



# Geospatial data as a primary source for integration and analysis



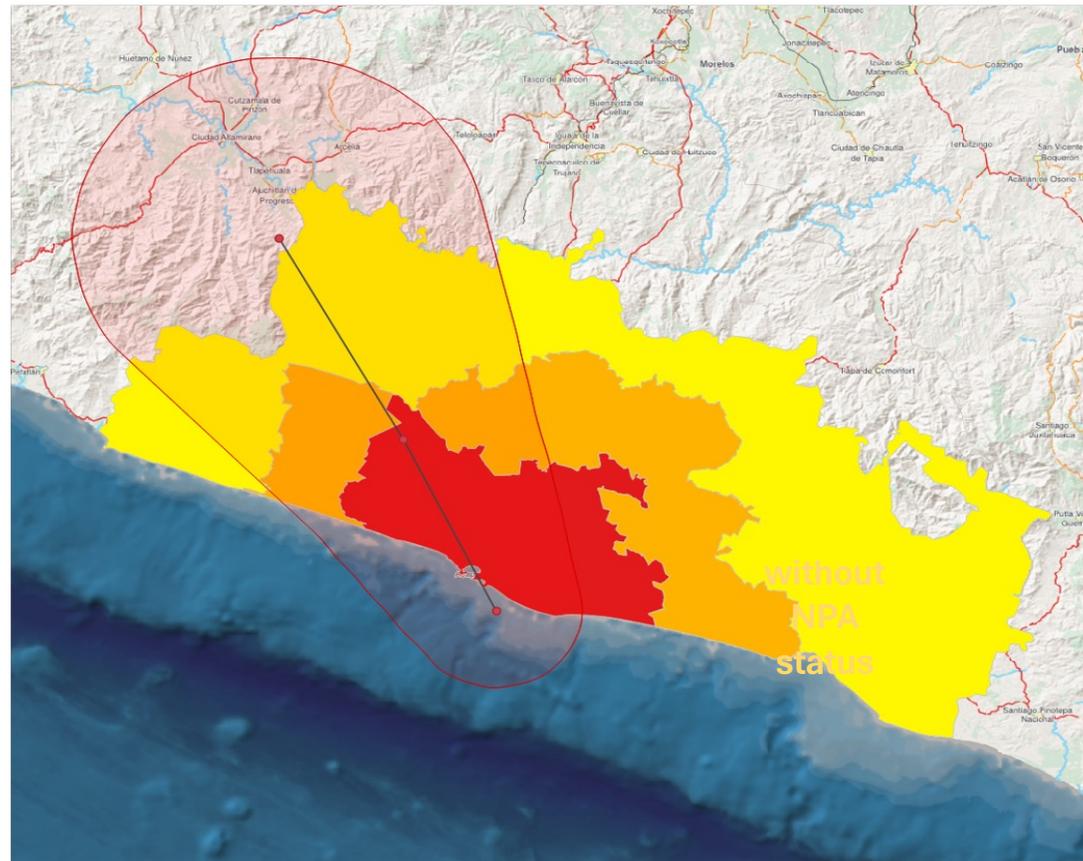
**674** municipalities



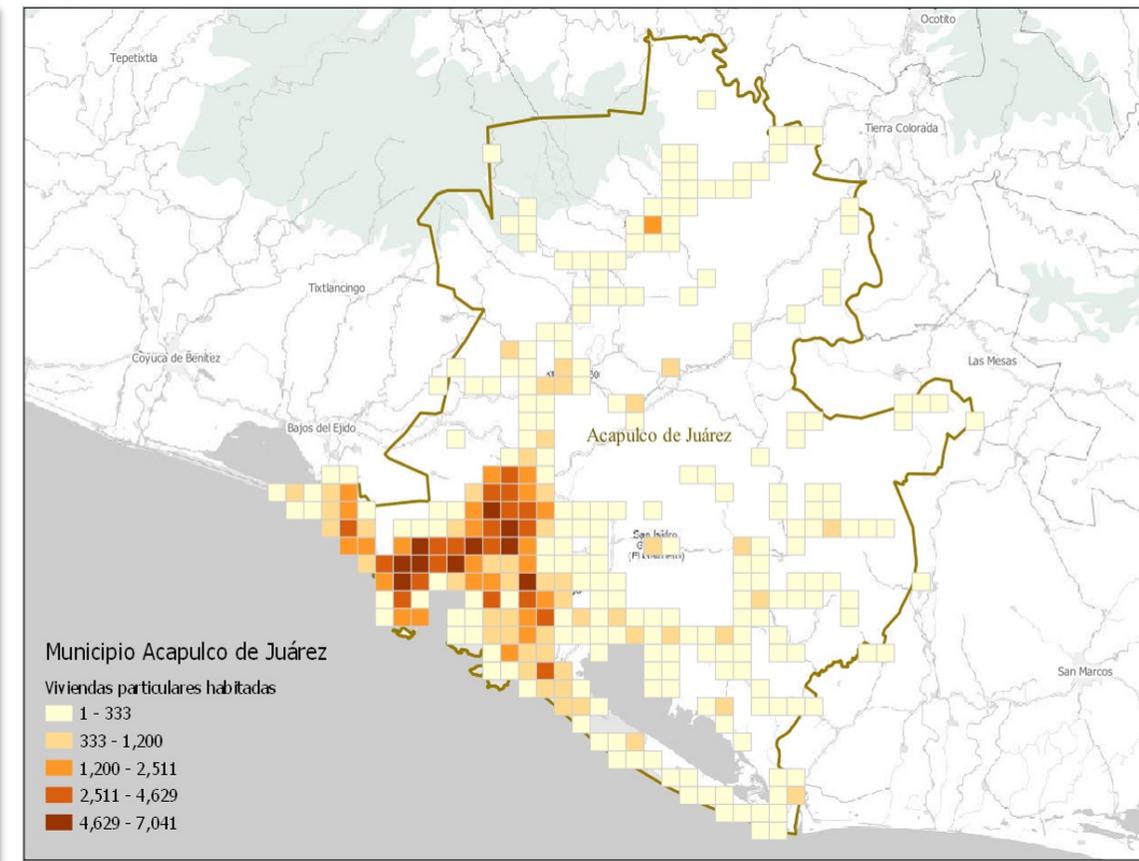
**45.5** million people are at risk of  
flooding in México

*Vulnerability Atlas + Population & Housing Census (INEGI, 2020)*

# Risk, damage and cost assessment before & after extreme climate events



Areas exceeding rainfall thresholds



+ Households & businesses in affected areas

Zempoala, Puebla

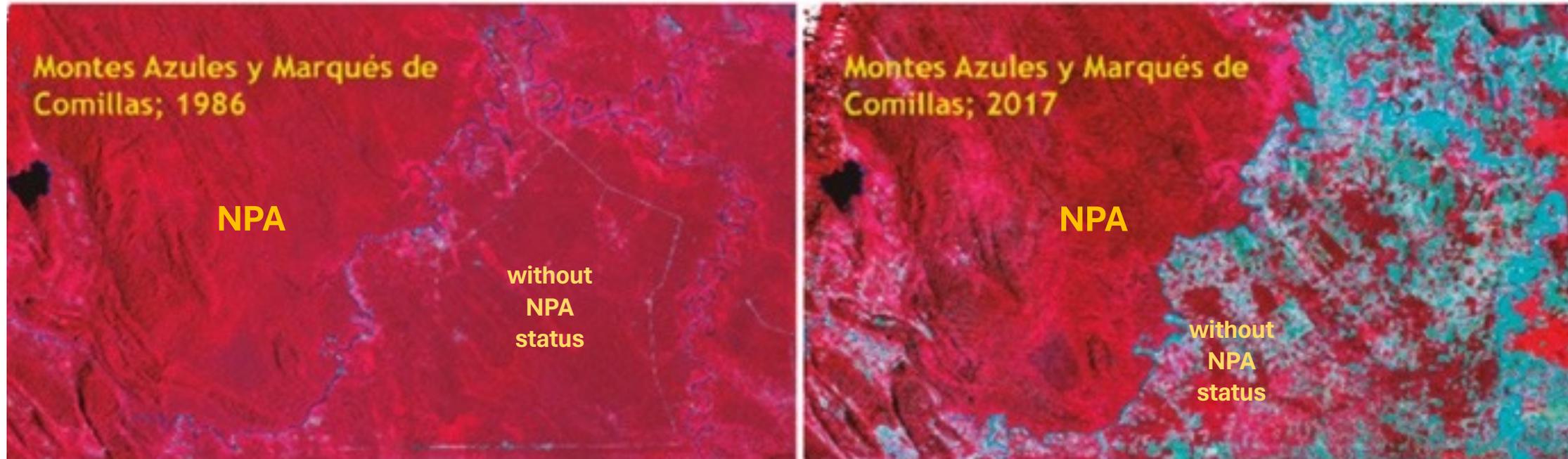
15 LIFE ON LAND



**Ecosystem protection & restoration:  
remote sensing to monitor illegal logging**

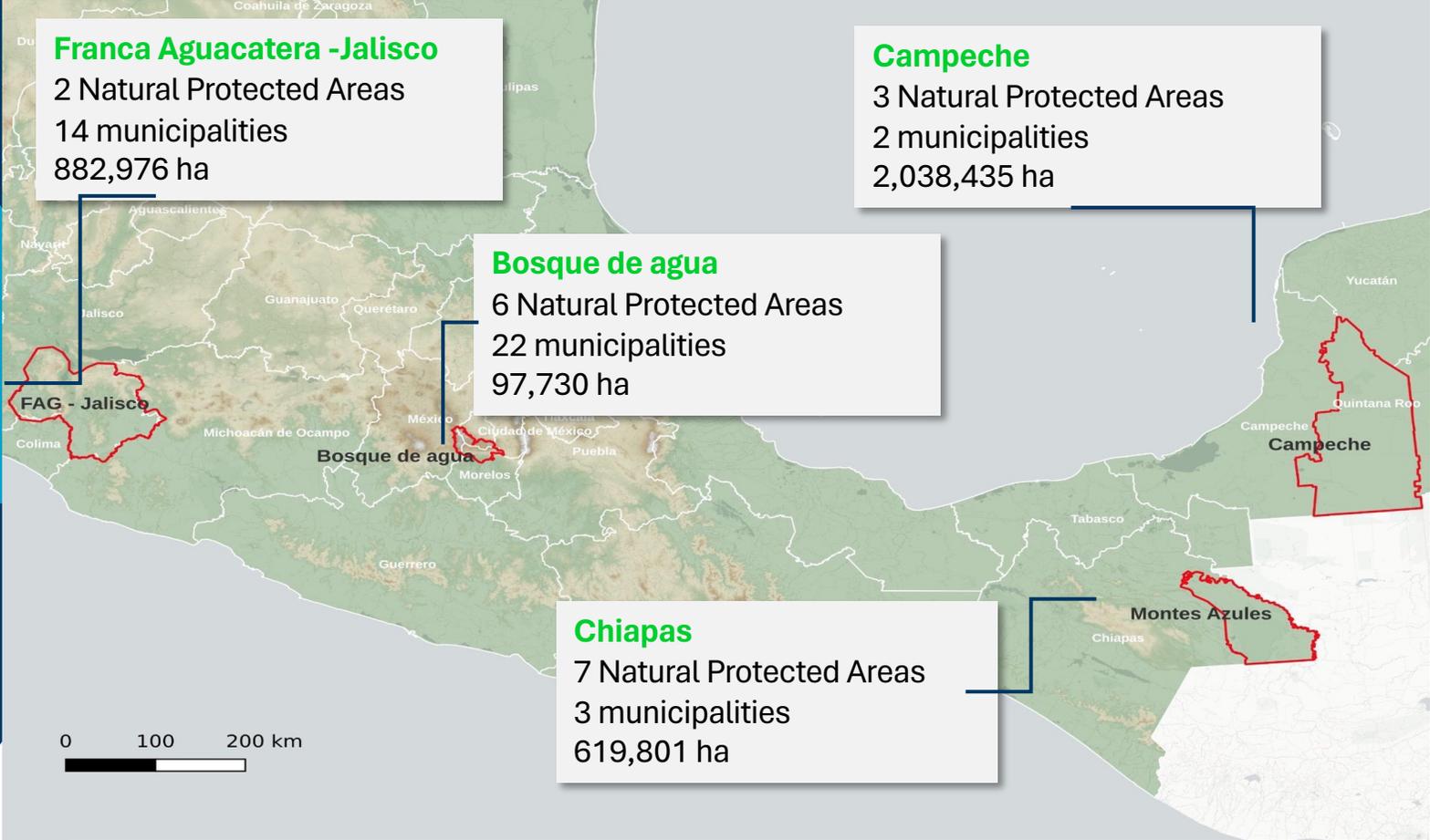
# Earth Observations to monitor environmental policies

Montes Azules Natural Protected Area (NPA) in Chiapas, Mexico



Comparison of land use & vegetation cover over time using Mexico's **Geospatial Data Cube**

# Illegal logging in Mexico: Early Warning System for Deforestation (2022-ongoing)



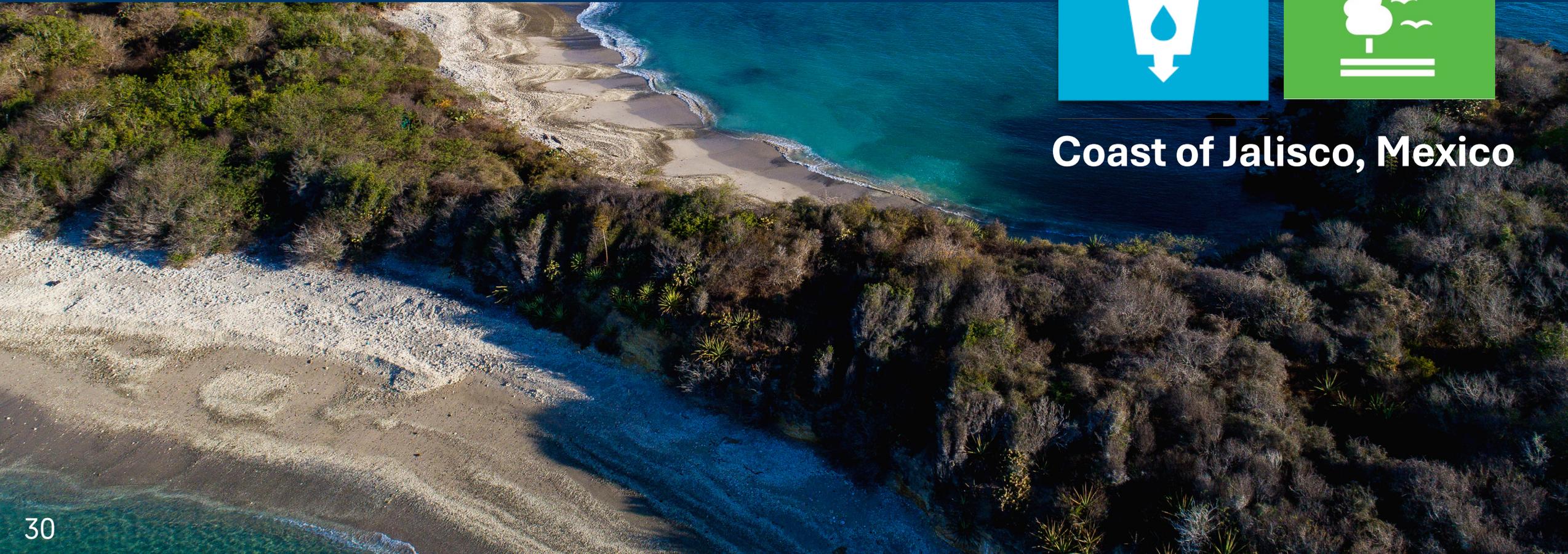
Tracking changes over time in forest cover with satellite data



# Assessing ecosystem integrity to provide goods & services to society and the economy



Coast of Jalisco, Mexico



# Accounting and Valuation of Ecosystem Services (NCAVES, 2017-21)



UN/EU pilot project to include an ecosystem perspective, and a geographic lens, into the UN System of Environmental Economic Accounting (SEEA).



Included five biodiverse countries: Brazil, China, India, Mexico & South Africa



Physical & economic accounts – to measure ecosystem extent & condition, provision of essential services & their contribution to the economy and GDP.

Mexico's contribution index of ecosystem integrity.



System of  
Environmental  
Economic  
Accounting



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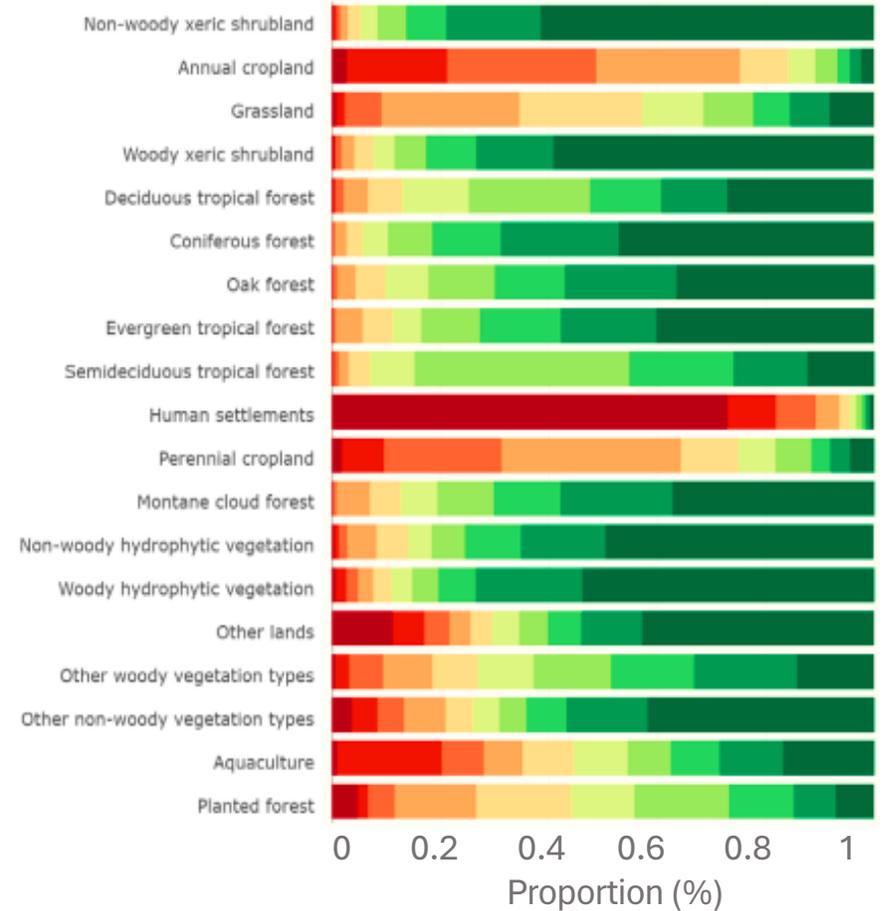
# Ecosystem Condition (physical accounts)

## Ecosystem Integrity Index

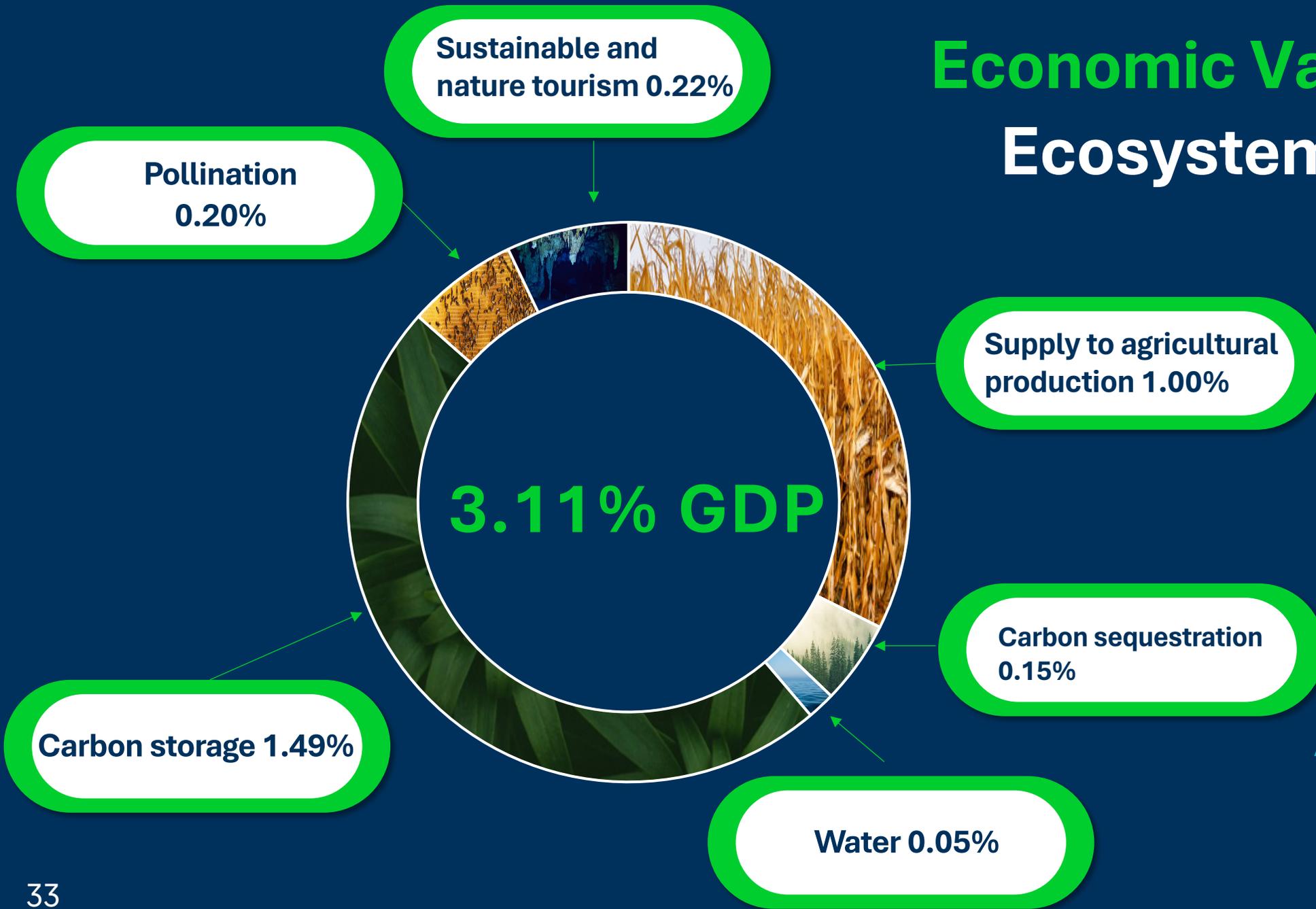


Lower ← [Color Scale: Red, Orange, Yellow, Light Green, Green, Dark Green] → Higher

### By ecosystem type



# Economic Valuation of Ecosystem Services



AS % OF MEXICO'S GDP (2013)

# How can geospatial information support governments to **accelerate progress of the SDGs?**



**Information**



**Technology**



**Strategic alliances**



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# Final thoughts



Collective commitments & emerging challenges require quality, timely & integrated data.



The geospatial dimension is a powerful tool to generate, integrate and analyze data to design and monitor public policy and sustainable development.



Alliances, public, private & with all stakeholders are key to expand access, skills and uses of geospatial data to achieve its full potential.



UN-GGIM exemplifies successful multilateral cooperation and technical guidance, as the UN strives to achieve collective goals and renew trust towards the future.



Mexico and ECLAC have built important tools, platforms & contributions to conceptual frameworks based on geospatial data.



Mexico's current administration & priorities present an opportunity to integrate and apply all the geospatial tools, work & potential built jointly over time, in partnership with UN-GGIM.



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**¡GRACIAS!**

**THANK YOU!**



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