

# Natural Resources Information and Environmental Statistics

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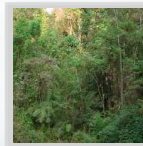


# Background



**Mexico is one of the ten most megadiversed countries of the world**

**This diversity is due to its geographic situation, relief, the variety of climates, its geology and soils, all those factors have let the existence of diverse ecological conditions**



**INEGI produces statistical and geographic information .**

**INEGI promote the integration of the National Statistical and Geographic National Information Systems in order to satisfy diverse needs from different Society sectors.**



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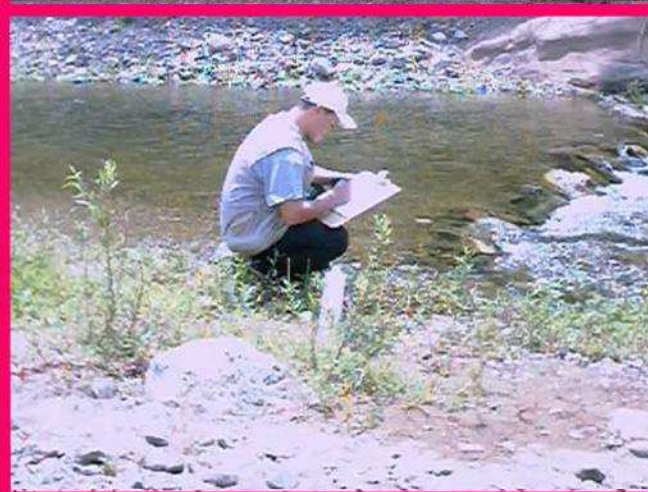
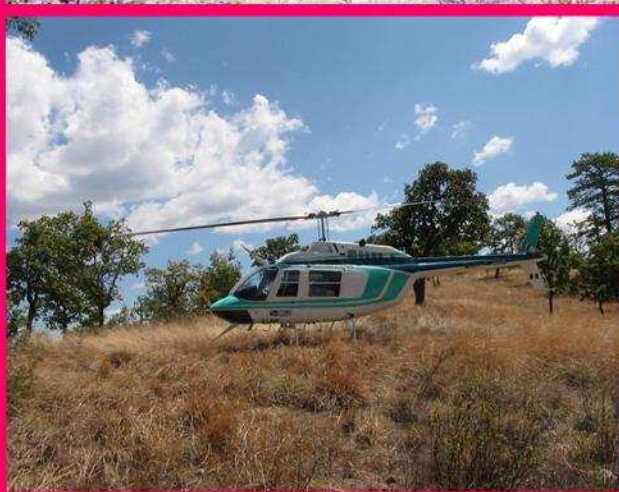
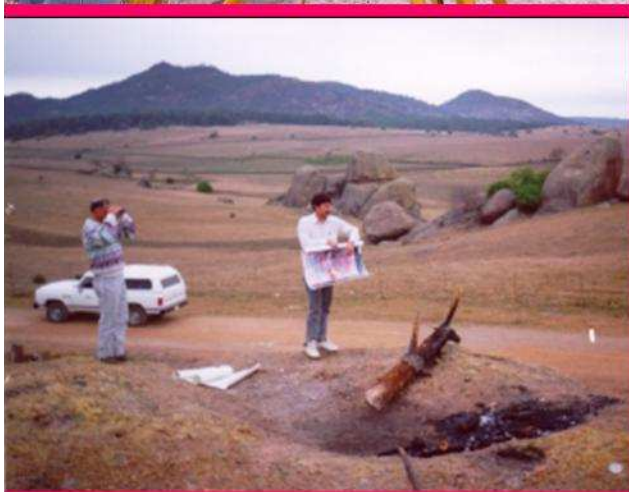


# Natural Resources Information



# INEGI 's contribution

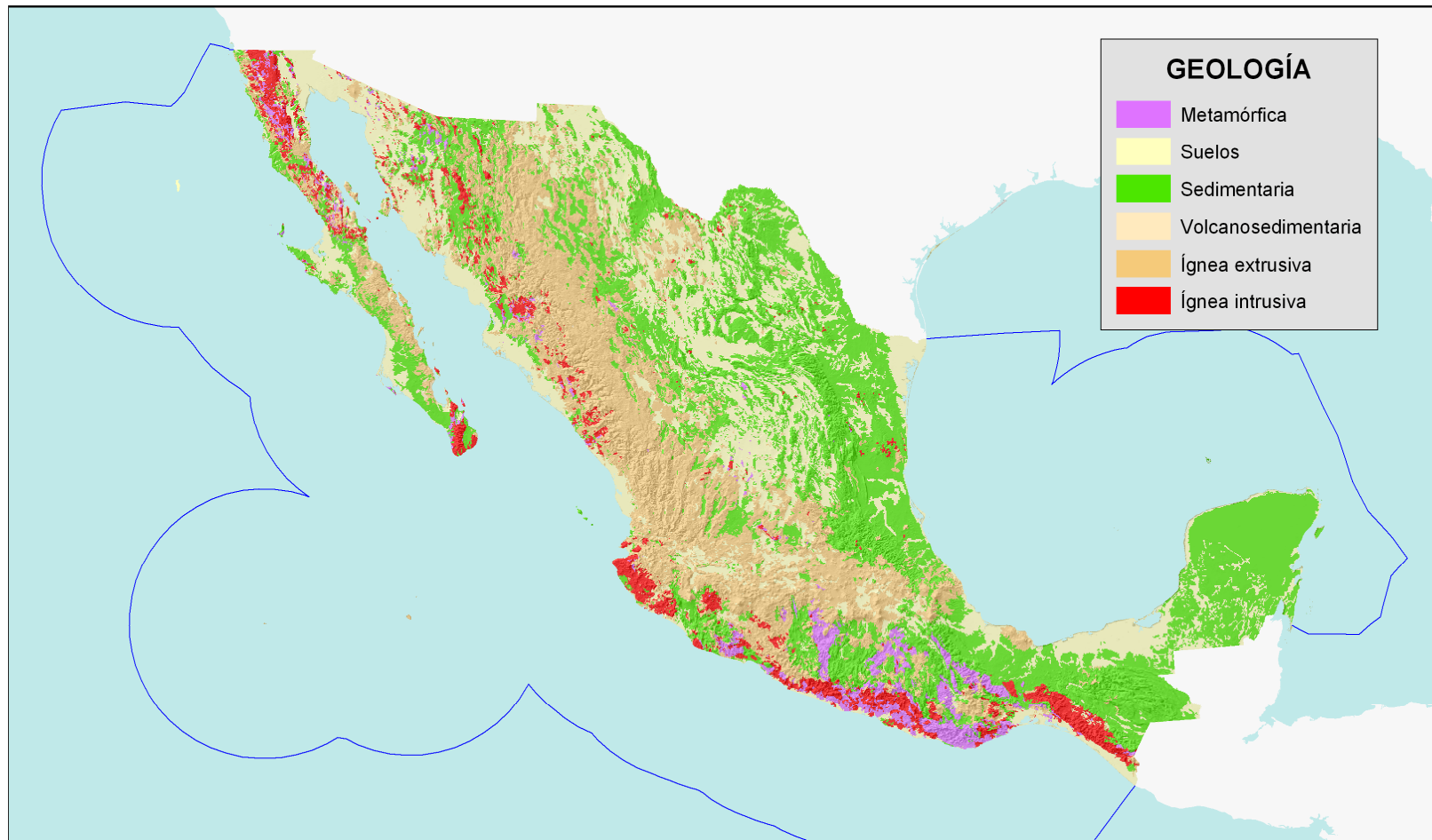
| RESOURCE   | SCALE                                | CARTOGRAPHIC<br>UNITS                                                         |
|------------|--------------------------------------|-------------------------------------------------------------------------------|
| ROCK       | 1:50 000<br>1:250 000<br>1:1 000 000 | GEOLOGICAL UNITS<br>STRUCTURAL DATA.<br>POINTS OF INTEREST                    |
| SOIL       | 1:50 000<br>1:250 000<br>1:1 000 000 | SOILS UNITS<br>PHYSICAL AND CHEMICAL CONSTRAINTS                              |
| VEGETATION | 1:50 000<br>1:250 000<br>1:1 000 000 | VEGETATION TYPES<br>AGRICULTURE UNITS<br>LAND USES                            |
| WATER      | 1:250 000<br>1: 1 000 000            | GEOHIDROLOGYCAL UNITS<br>RUNOFF UNITS<br>(SPRINGS, WELLS, DAMS, WATER BODIES) |
| CLIMATE    | 1: 250 00<br>1: 1 000 000            | TEMPERATURE<br>RAIN<br>EVAPORATION<br>CLIMATE UNITS                           |



# THEMES AND SERIES



# GEOLOGY



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# GEOLOGY

- Most of the geological time table is represented in the mexican rocks.
- There is an active Tectonic boundary in the Pacific coast, responsible of the recent sismicity and vulcanism.



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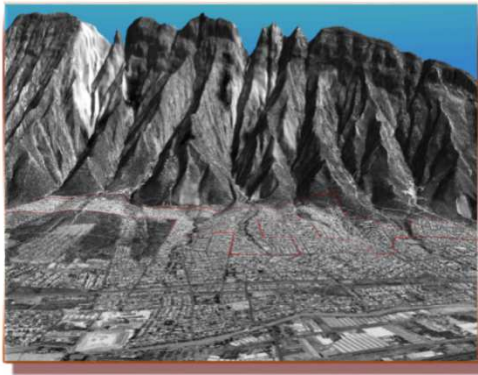




Coastal erosion

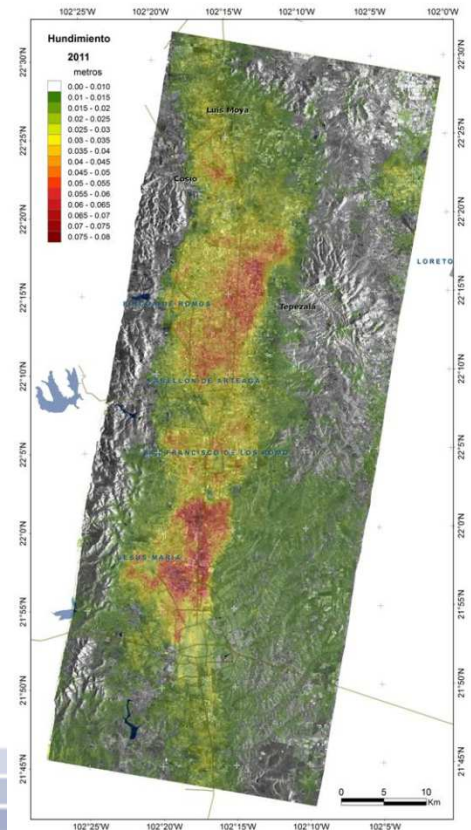


Active vulcanism

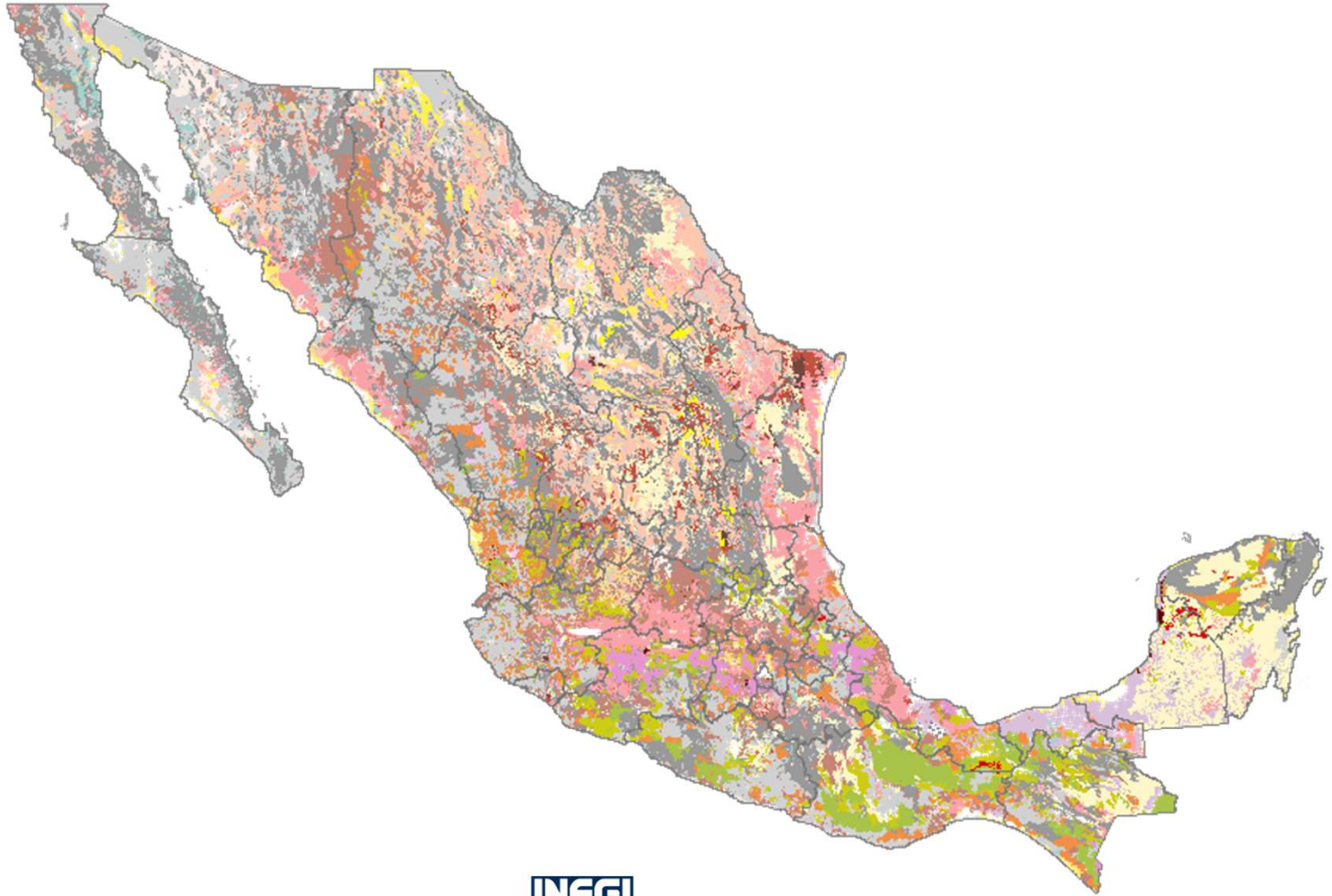


Ground movement

Subsidence



# SOILS



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# SOIL

México has 26 of the 30 soil types recognized by the WRB Soil Classification system.

The Soil provides water and nutrients to plants, besides that, is one of the most important carbon stores.



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## Organic matter in Soils



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# Sol erosión national data set

## Scale 1:250 000

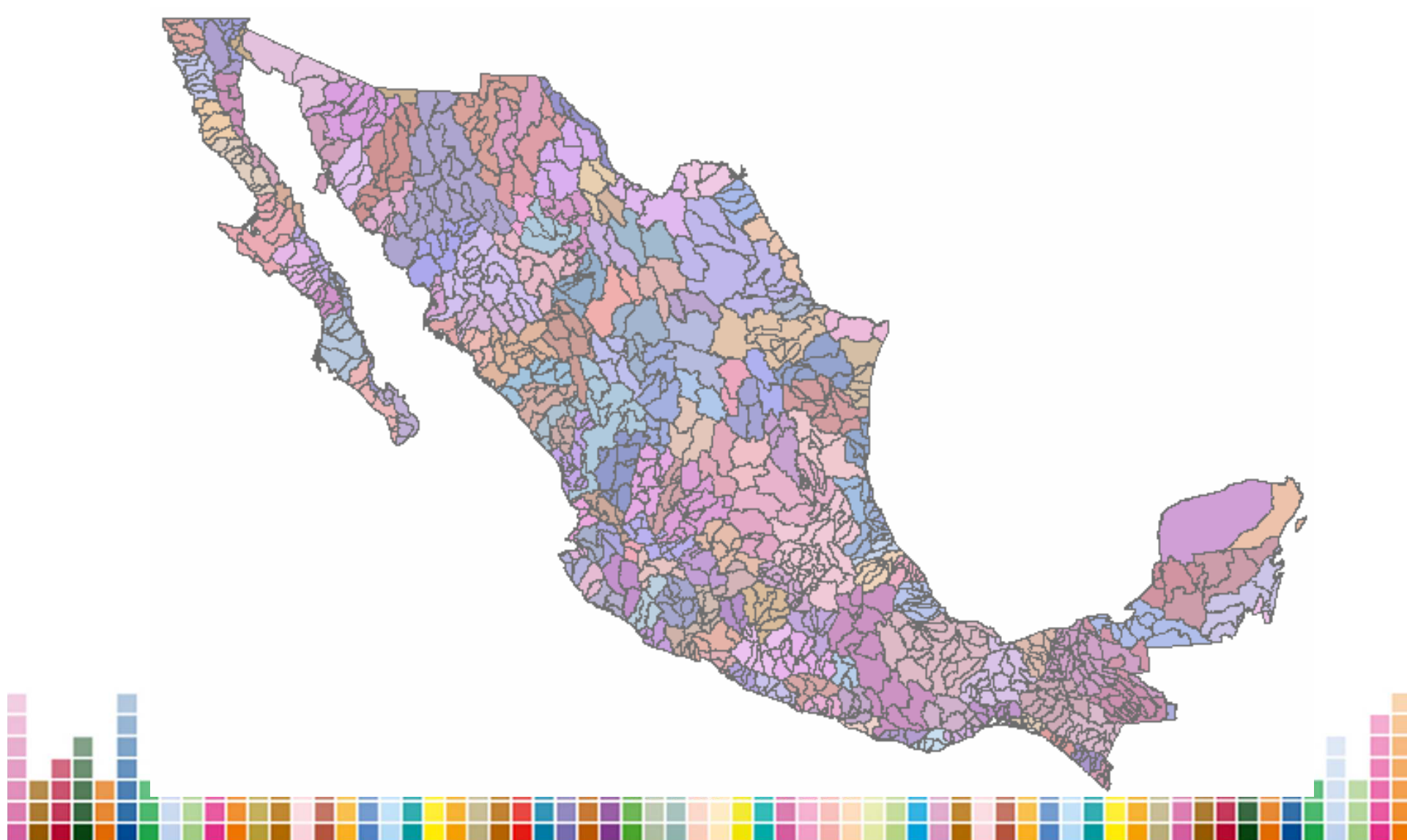
- Soil regulates runoff and infiltración processes.
- Eroded Soils produce:
  - Sedimentation in water bodies
  - Increase flooding risks



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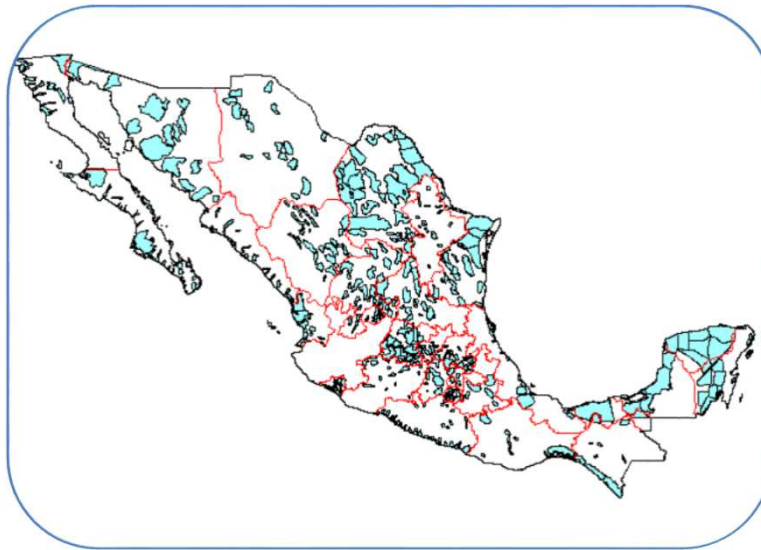
# HIDROLOGY



# WATER

In México, great part of the population live over 2,000 masl, where 4% of the runoff is generated.

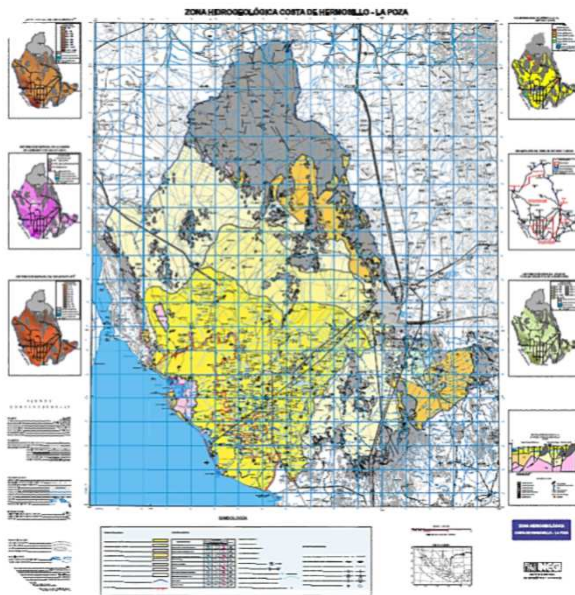
In contrast, less than 25% of the population is in the southeast where 67% of the runoff and 80% of the storage capacity are located.



# Hydrological information

The new information series are based on natural frameworks:

- Aquifers for ground water version
- Basins for surface waters

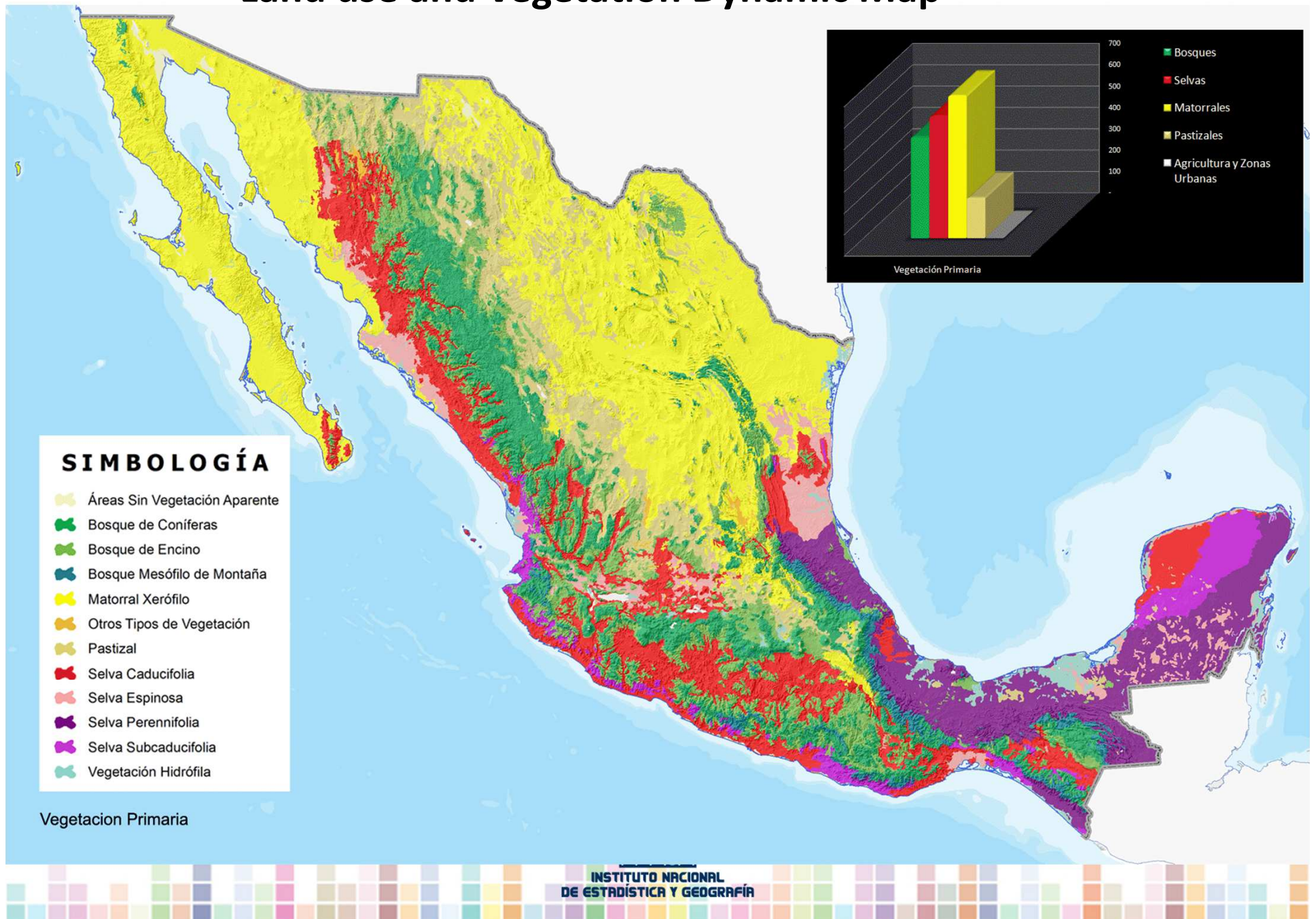


# FLORA

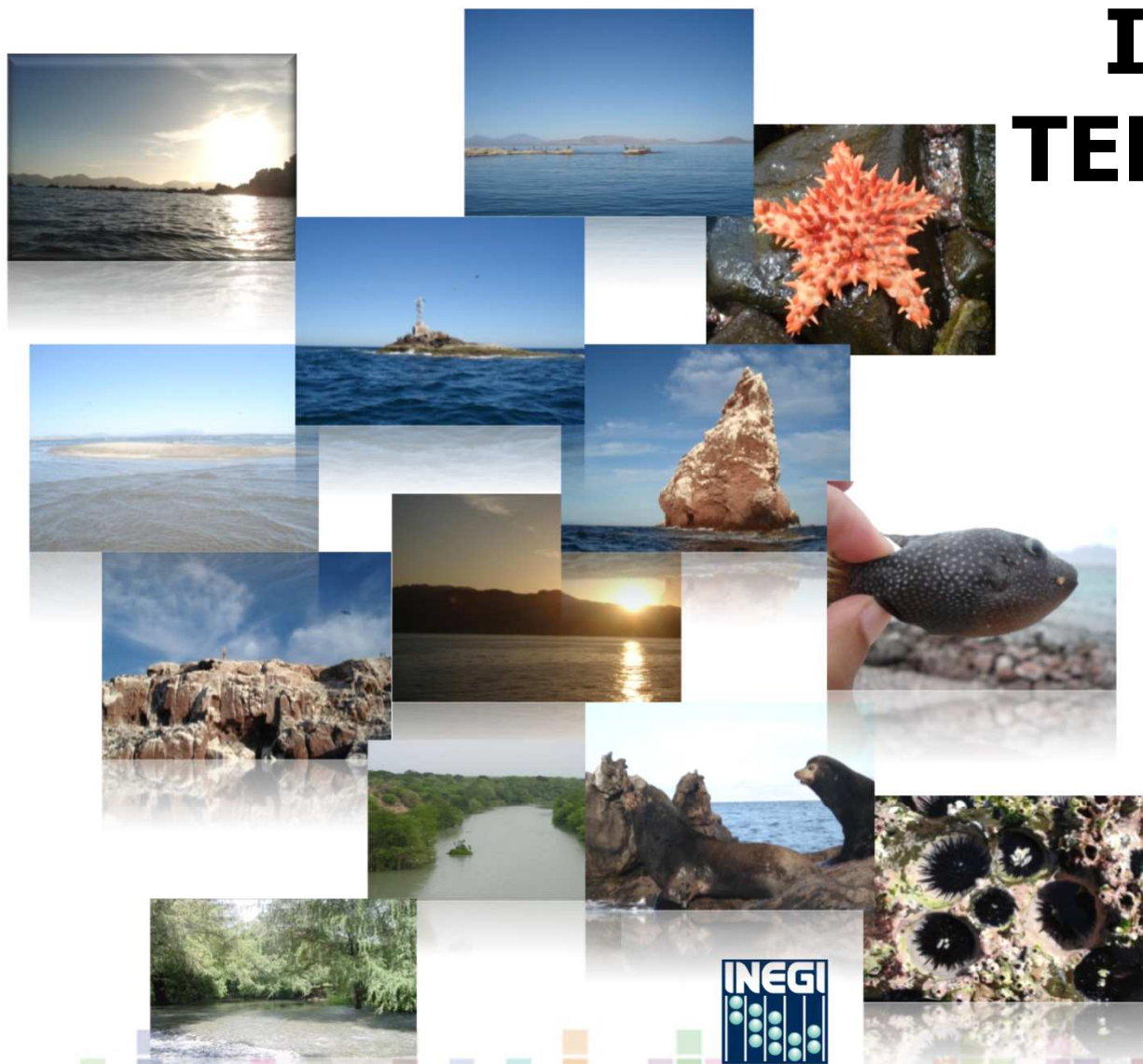
The richness of Mexican flora reach the world's fourth place, with 21,600 known species.



# Land use and Vegetation Dynamic Map

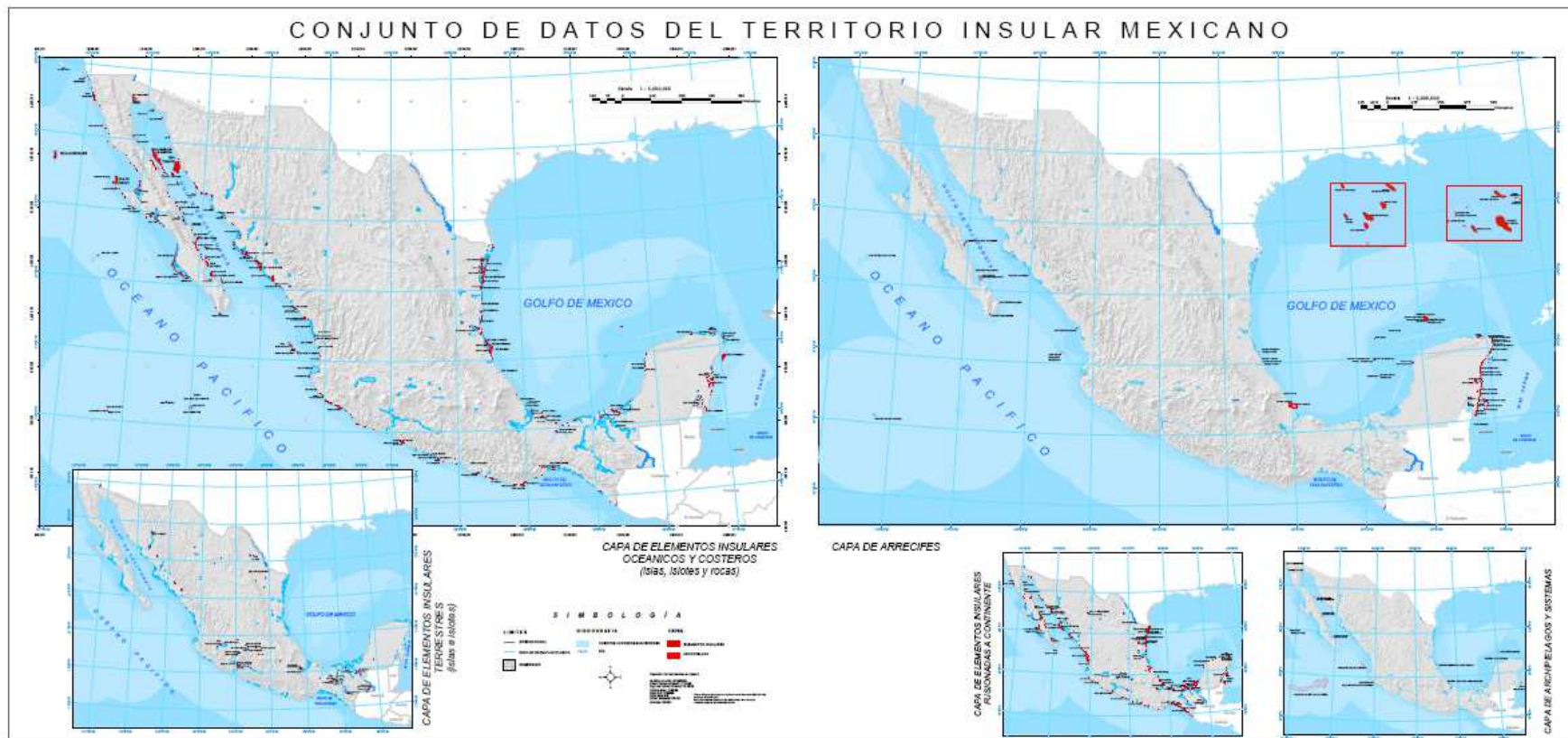


# ISLAND TERRITORY



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National Dataset  
Scale 1:250 000



SEMAR  
SECRETARÍA DE MARINA



SEGOB  
SECRETARÍA DE GOBERNACIÓN



SEMARNAT  
SECRETARÍA DE MEDIO AMBIENTE  
Y RECURSOS NATURALES



SRE  
SECRETARÍA DE  
RELACIONES EXTERIORES



SCT  
SECRETARÍA DE  
COMUNICACIONES  
Y TRANSPORTES



# INVENTORY OF ISLAND TERRITORY

| REGIÓN                   | TÉRMINO           | ZONAS   |                |        | SUBTOTAL<br>POR<br>TÉRMINO |
|--------------------------|-------------------|---------|----------------|--------|----------------------------|
|                          |                   | COSTERA | OCEÁNICA       |        |                            |
|                          |                   |         | MARINA COSTERA | MARINA |                            |
| I. OCÉANO PACÍFICO NORTE | ARRECIFES         |         |                | 1      | 1                          |
|                          | CAYOS             |         |                |        | 0                          |
|                          | ISLAS             | 274     | 210            | 13     | 497                        |
|                          | SUBTOTAL POR ZONA | 274     | 210            | 14     | 498                        |
| II. OCÉANO PACÍFICO SUR  | ARRECIFES         |         |                | 1      | 1                          |
|                          | CAYOS             |         |                |        | 0                          |
|                          | ISLAS             | 160     | 241            | 10     | 411                        |
|                          | SUBTOTAL POR ZONA | 160     | 241            | 11     | 412                        |
| III. GOLFO DE CALIFORNIA | ARRECIFES         |         | 11             | 2      | 13                         |
|                          | CAYOS             |         |                |        | 0                          |
|                          | ISLAS             | 594     | 321            | 75     | 990                        |
|                          | SUBTOTAL POR ZONA | 594     | 332            | 77     | 1,003                      |
| IV. GOLFO DE TEHUANTEPEC | ARRECIFES         |         |                |        | 0                          |
|                          | CAYOS             |         |                |        | 0                          |
|                          | ISLAS             | 95      | 42             |        | 137                        |
|                          | SUBTOTAL POR ZONA | 95      | 42             | 0      | 137                        |
| V. GOLFO DE MÉXICO       | ARRECIFES         |         | 83             |        | 83                         |
|                          | CAYOS             |         | 45             |        | 45                         |
|                          | ISLAS             | 1,068   | 20             |        | 1,088                      |
|                          | SUBTOTAL POR ZONA | 1,068   | 148            | 0      | 1,216                      |
| VI. MAR CARIBE           | ARRECIFES         |         | 450            | 49     | 499                        |
|                          | CAYOS             | 62      | 194            | 3      | 259                        |
|                          | ISLAS             | 58      | 27             | 2      | 87                         |
|                          | SUBTOTAL POR ZONA | 120     | 671            | 54     | 845                        |
| TOTALES                  |                   | 2,311   | 1,644          | 156    | 4,111                      |
|                          |                   |         | 1,800          |        |                            |

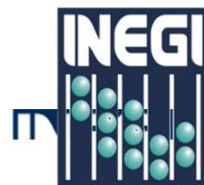
Actualización al 31 de mayo de 2013

\*Escala de referencia 1:50,000.

\*El Capítulo VII – Cayos del Golfo de México y Mar Caribe contiene información adicional preparada por la CONANP, generada a escala 1:5,000.



# Environmental Statistics.



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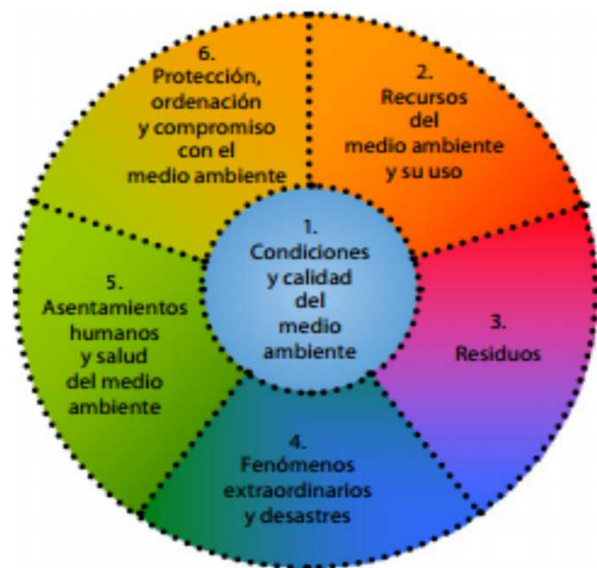
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## Environmental statistics: a new domain in official statistics

- The growing concern about the environment and sustainable development imply a growing demand for environmental statistics.
- It is important to provide high quality environmental statistics that support evidence based environmental policies decisions.
- Much of the historic information gathered in economic and sociodemographic statistical projects has a direct use in the assessment of environmental issues; however, it is important to increase efforts to the generation of new data of interest, built since the beginning with an environmental approach.



# A new frame to support improvement efforts in environmental statistics



➤ FDES is a statistical and flexible conceptual frame, it is multipurpose; allows and facilitates the compilation, gathering and production of environmental statistics.

➤ Provides a structure to organize the compilation and gathering of environmental statistics, including data from different sources and sectors for relevant themes.

# SDG and the importance of environmental statistics (ES)

|         |                                                                                                               |
|---------|---------------------------------------------------------------------------------------------------------------|
| Goal 1  | End poverty in all its forms everywhere                                                                       |
| Goal 2  | End hunger, achieve food security and improved nutrition and promote                                          |
| Goal 3  | Ensure healthy lives and promote well-being for all at all ages                                               |
| Goal 4  | Ensure inclusive and quality education for all and promote lifelong learning                                  |
| Goal 5  | Achieve gender equality and empower all women and girls                                                       |
| Goal 6  | Ensure access to water and sanitation for all                                                                 |
| Goal 7  | Ensure access to affordable, reliable, sustainable and modern energy for all                                  |
| Goal 8  | Promote inclusive and sustainable economic growth, employment and decent work for all                         |
| Goal 9  | Build resilient infrastructure, promote sustainable industrialization and                                     |
| Goal 10 | Reduce inequality within and among countries                                                                  |
| Goal 11 | Make cities inclusive, safe, resilient and sustainable                                                        |
| Goal 12 | Ensure sustainable consumption and production patterns                                                        |
| Goal 13 | Take urgent action to combat climate change and its impacts                                                   |
| Goal 14 | Conserve and sustainably use the oceans, seas and marine resources                                            |
| Goal 15 | Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss |
| Goal 16 | Promote just, peaceful and inclusive societies                                                                |
| Goal 17 | Revitalize the global partnership for sustainable development                                                 |

|  |                                                    |
|--|----------------------------------------------------|
|  | ES needed to measure substantial parts of the goal |
|  | ES needed for specific targets within goal         |
|  | ES not needed to measure goal                      |



# Advances in the production of basic environmental statistics at INEGI



# Outlook of a National System of Environmental Statistics

We are producing and consolidating information about:

## Economic Units

- It is necessary to make progress in covering the information gaps that prevail today, including issues such as: environmental management and spending, energy use, water and materials, waste generation and disposal, emissions, conversion to more environmentally friendly production models .

## Households

- Consolidate information that allows to know the patterns of consumption, behavior and perception of the households, in subjects like water, energy, green products, residues, investment and mobility

## Governments

- It is of fundamental importance to study the performance of governments from a sustainability perspective, addressing among others, the following topics: drinking water and sanitation, urban solid waste, transport and mobility, climate change, environmental legal framework, energy, governance, Natural protected areas, land use, among others.



# Information production

| Projects                                                                                                                                                                                                | Products                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
|  Drinking Water and Sanitation Module<br>(From the National Census of Municipal Governments).                          | Micro data, data tables and georeferenced data layers. |
|  Urban Solid Waste Module<br>(From the National Census of Municipal Governments).                                      | Micro data, data tables and georeferenced data layers. |
|  States Environmental Module.<br>(From the National Government, Public Safety and States Penitentiary Systems Census). | Data tables.                                           |
|  Household and Environment Module<br>(Through the National Household Survey ENH).                                    | Micro data (from samples); data tables.                |

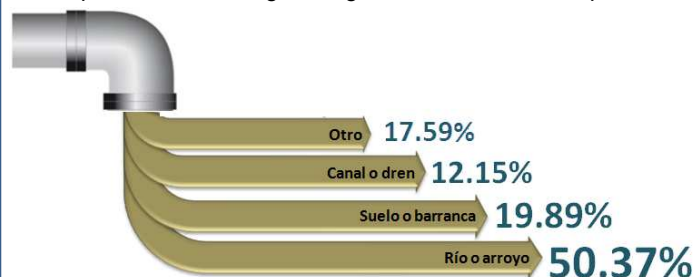
# Outcomes

- ❑ 4 information series on the Drinking Water and Sanitation and Urban Solid Waste modules.

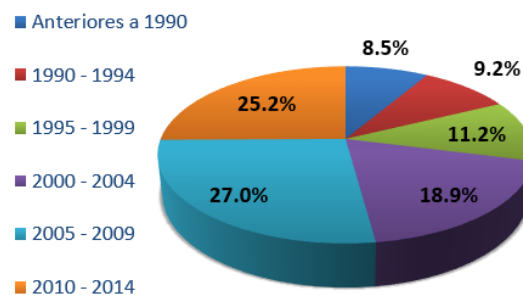
Years 2011, 2013, 2015 and 2017.

## Puntos de descarga de aguas residuales sin tratamiento, 2015

4,888 puntos de descarga de aguas residuales municipales



## Porcentaje de vehículos utilizados para la recolección de residuos sólidos urbanos, según rango de antigüedad, 2015

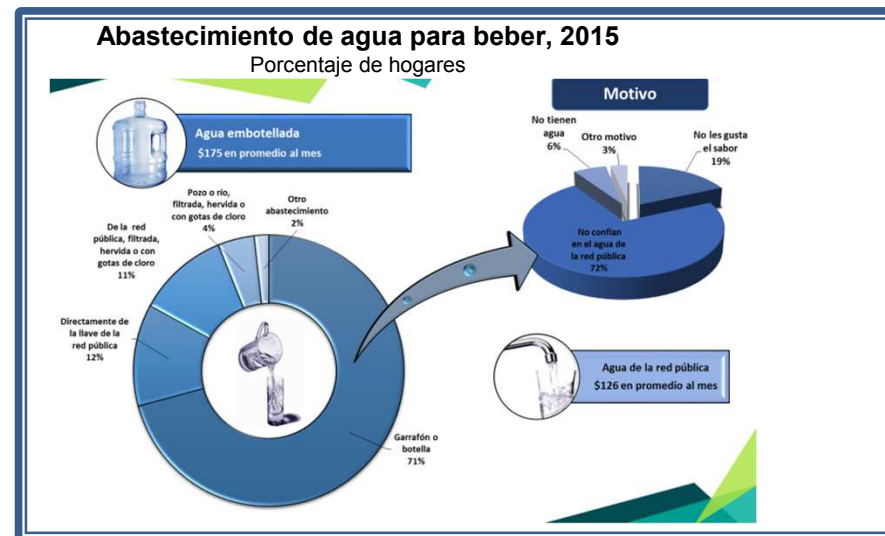


- 3 information updates from the Household and Environment Module.

Years: 2011, 2015 and 2017.

- 3 surveys for information about environmental management in state governments:

2015, 2016 and 2017.



# Thank you!

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