

# National Workshop on Climate Change and Disaster-related Statistics



*Prepared for: Jordan,  
National Workshop on Climate Change and Disaster-related Statistics  
3 - 5 December 2024  
From 8:30 to 16:30*

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*Place: Hilton Amman Hotel    United Nations Statistics Division*



# Geospatial Information – Everything Happens Somewhere



*“We have never been better equipped to solve the climate challenge – **but we must move into warp speed climate action now**”*

H.E Antonio Guterres  
Secretary-General of the United Nations



# Why Data Integration Matters

## 1. The Power of Integration

- Combining geospatial and statistical data provides a complete picture for evidence-based decision-making.
- Helps address complex challenges like poverty, urban planning, climate change, and health disparities.

## 2. Meeting the Data Needs of Global Development Agendas and National Development Priorities

- The 2030 Agenda for Sustainable Development emphasizes "leaving no one behind" requiring disaggregated, geospatially integrated data.
- National Statistical Systems and Geospatial Agencies are pivotal in enabling data-driven policies.

## 3. The Role of Data Integration in Decision-Making

- Supports localized interventions by visualizing trends and disparities. Enhances the granularity and precision of SDG monitoring and reporting.



# Jordan's Land cover dissemination already in the public domain

[Show table](#)[About table](#)

Edit and Calculate

Save table as

Table - Layout 2







 Table settings

 Save your query

The Kingdom 's Area By Hydrogeographical Topography (2002-2023) by Area and Time

|                           | 2003-2002 | 2005-2004 | 2007-2006 | 2009-2008 | 2011-2010 | 2013-2012 |
|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Total Area of the Kingdom | 89,342    | 89,342    | 89,342    | 89,318    | 89,318    | 89,318    |
| Land Area                 | 88,802    | 88,802    | 88,802    | 88,778    | 88,778    | 88,778    |
| Hights                    | 550       | 550       | 550       | 550       | 550       | 550       |
| Plains                    | 10,000    | 10,000    | 10,000    | 10,000    | 10,000    | 10,000    |
| Rift Valley               | 8,252     | 8,252     | 8,252     | 8,228     | 8,228     | 8,228     |



# Jordan's afforestation, reforestation, etc. dissemination already in the public domain

← ↻ 🏠 🔒 [https://jorinfo.dos.gov.jo/Databank/pxweb/en/Environment/Environment\\_State\\_Q](https://jorinfo.dos.gov.jo/Databank/pxweb/en/Environment/Environment_State_Q)

Table 2: Afforested and Reforested Areas and Length of Planted Road Sides with Forest trees (1990-2022)

Select variable

About table

Mark your selections and choose between table on screen and file format. Marking tips

For variables marked \* you need to select at least one value

Indecator \*



Total 3 Selected 0

Afforested  
Reforested  
Plantation of Road Sides

Search  ➤

☐ Beginning of word

Time \*



Total 33 Selected 0

1990  
1991  
1992  
1993  
1994  
1995

Search  ➤

☐ Beginning of word

Source: [PxWeb - Select table](#)



# Jordan's afforestation, reforestation, etc. dissemination already in the public domain

جدول 2: مساحة الأراضي المحرقة والمرقعة وأطوال جوانب الطرق المزروعة بأشجار حرجية (1990-2022)

اختر المتغير | عن الجدول

نصائح الإختيار (التظليل): ظلل اختياراتك والاختيار بين الجدول على الشاشة وشكل الملف.  
\* لا بد من اختيار متغير واحد على الأقل

| السنة *                                                                                         | المؤشر *                                                           |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| <div>المجموع 33 المختار 0</div>                                                                 | <div>المجموع 3 المختار 0</div>                                     |
| <div>1990</div> <div>1991</div> <div>1992</div> <div>1993</div> <div>1994</div> <div>1995</div> | <div>التحريج</div> <div>الترقيع</div> <div>زراعة جوانب الطرق</div> |
| <div>بحث</div> <div>بداية النص</div>                                                            | <div>بحث</div> <div>بداية النص</div>                               |

# Global Fundamental Geospatial Data Themes



Global Geodetic  
Reference Frame



Addresses



Buildings and  
Settlements



Elevation and  
Depth



Functional Areas



Geographical  
Names



Geology and  
Soils



Land Cover  
and Use



Land Parcels



Orthoimagery



Physical  
Infrastructure



Population  
Distribution



Transport  
Networks



Water

Source: [https://ggim.un.org/meetings/GGIM-committee/9th-Session/documents/Fundamental Data Publication.pdf](https://ggim.un.org/meetings/GGIM-committee/9th-Session/documents/Fundamental_Data_Publication.pdf)

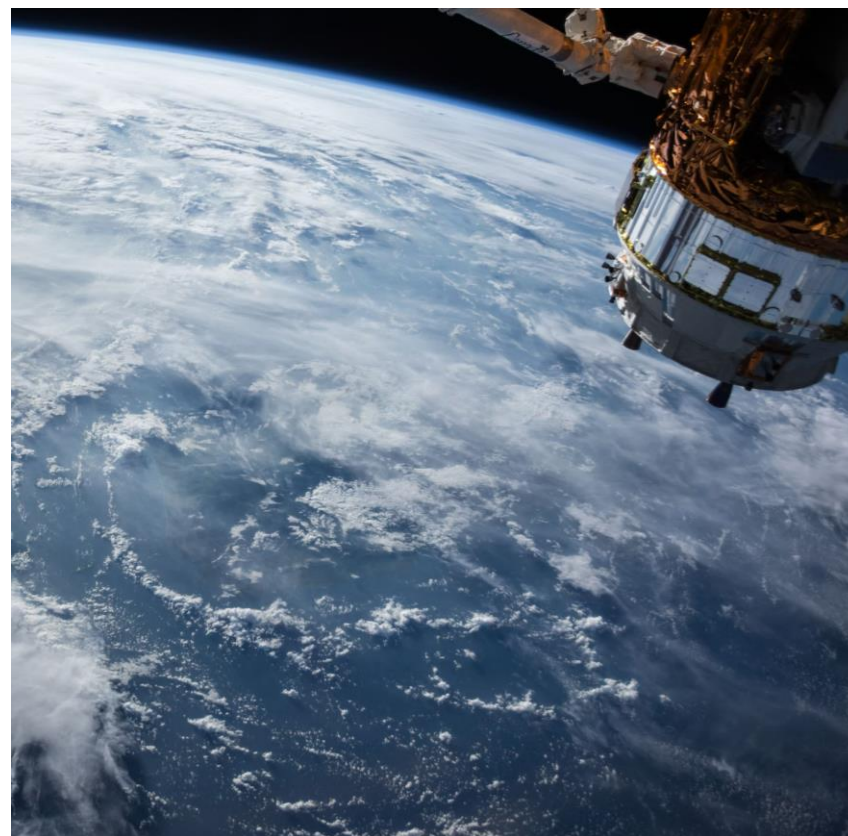


# Sources of Geo-Statistical Information

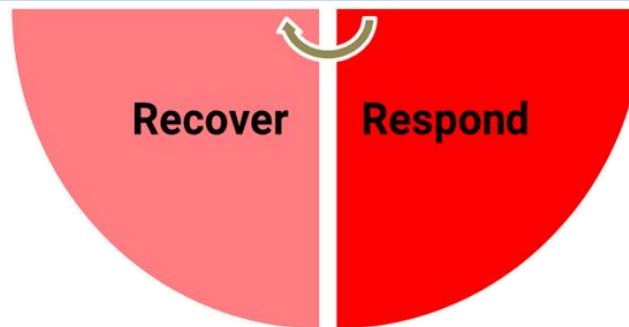
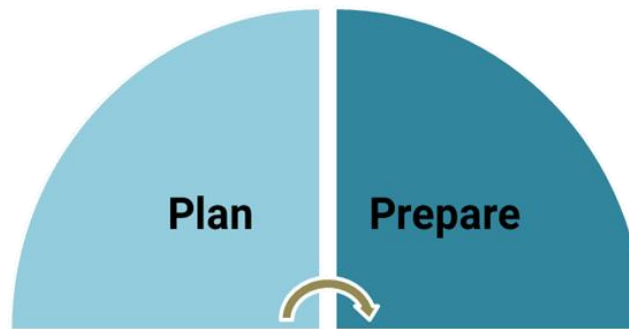
## National



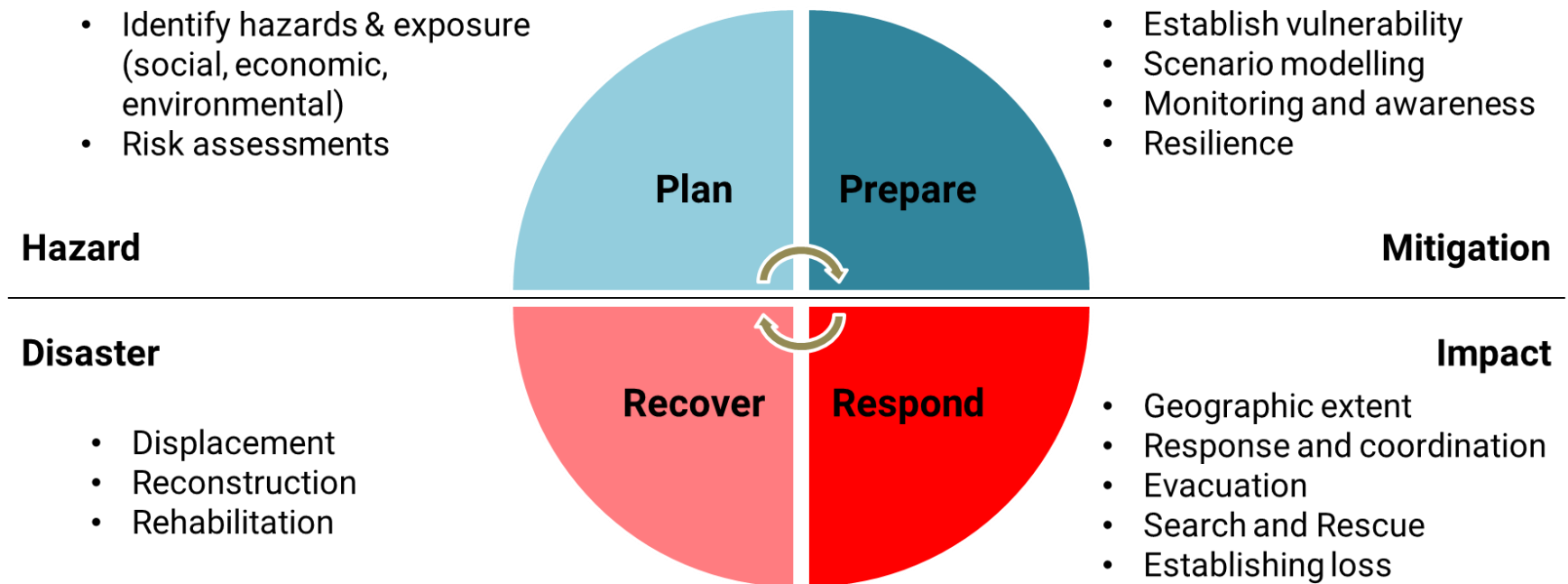
## Global



# Geospatial Information impacts each stage of the Disaster Risk Management Cycle



# Geospatial Information impacts each stage of the Disaster Risk Management Cycle



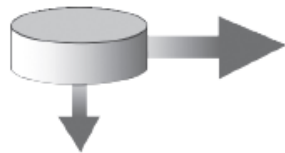
# Geospatial information in the FDES

It adds significant value and utility to environment statistics

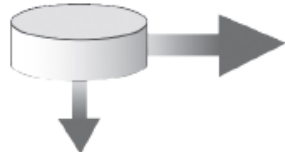
Example of GIS data layers or themes<sup>16</sup>

## Data source

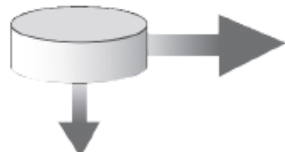
Street data



Buildings data



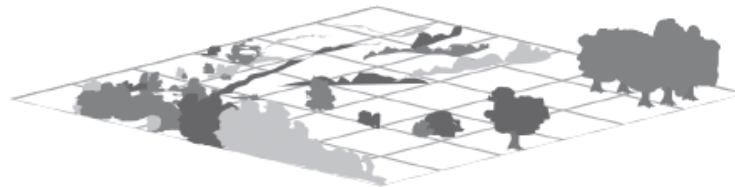
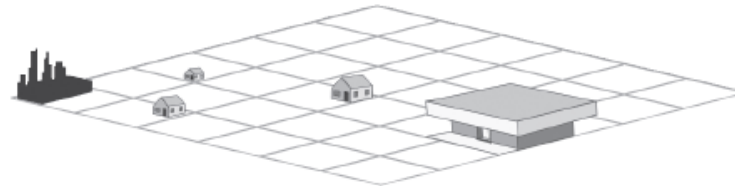
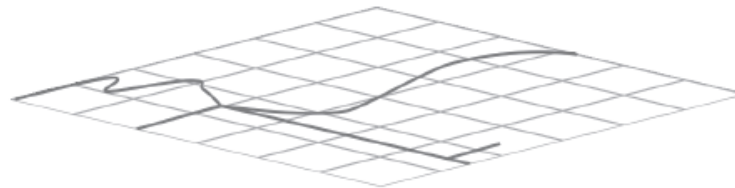
Vegetation data



Integrated data



## Data layers



Manual  
on the Basic Set of Environment Statistics of the FDES 2013



Geological and geographical information and  
Statistics  
(Topic 1.1.3)  
of the Basic Set of Environment Statistics of the FDES 2013

Draft Version 1.0  
05 April 2019

Elaborated by the Environment Statistics Section of the United Nations Statistics  
Division, in collaboration with the Expert Group on Environment Statistics.



# Geographic and geological statistics in the BSES

|                                                                 |    |                                                                                                                |                           |               |                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------|----|----------------------------------------------------------------------------------------------------------------|---------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Topic 1.1.3:<br/>Geological and geographical information</b> | a. | Geological, <u>geographical</u> and geomorphological conditions of terrestrial areas and islands               |                           | ▪ National    | <ul style="list-style-type: none"> <li>▪ UNSD: Demographic Yearbook</li> <li>▪ Food and Agriculture Organization of the United Nations (FAO)</li> <li>▪ <u>Center for International Earth Science Information Network (CIESIN)</u></li> </ul> |
|                                                                 |    | 1. Length of border                                                                                            | Length                    |               |                                                                                                                                                                                                                                               |
|                                                                 |    | 2. <b>Area of country or region</b>                                                                            | Area, Location            |               |                                                                                                                                                                                                                                               |
|                                                                 |    | 3. Number of islands                                                                                           | Number                    | ▪ By location |                                                                                                                                                                                                                                               |
|                                                                 |    | 4. Area of islands                                                                                             | Area                      | ▪ National    |                                                                                                                                                                                                                                               |
|                                                                 |    | 5. <i>Main geomorphological characteristics of islands</i>                                                     | Description               |               |                                                                                                                                                                                                                                               |
|                                                                 |    | 6. <i>Spatial distribution of land relief</i>                                                                  | Description, Location     |               |                                                                                                                                                                                                                                               |
|                                                                 |    | 7. <i>Characteristics of landforms</i> (e.g., plains, hills, plateaus, dunes, volcanoes, mountains, seamounts) | Description, Area, Height |               |                                                                                                                                                                                                                                               |
|                                                                 |    | 8. <i>Area by rock types</i>                                                                                   | Area                      |               |                                                                                                                                                                                                                                               |
|                                                                 |    | 9. <i>Length of fault lines</i>                                                                                | Length                    |               |                                                                                                                                                                                                                                               |
|                                                                 | b. | <b>Coastal waters</b> (including area of coral reefs and mangroves)                                            | Area, Description         |               |                                                                                                                                                                                                                                               |
|                                                                 | c. | <b>Length of marine coastline</b>                                                                              | Length                    |               |                                                                                                                                                                                                                                               |
|                                                                 | d. | <b>Coastal area</b>                                                                                            | Area                      |               |                                                                                                                                                                                                                                               |

| Topic                   | Statistics and Related Information                                                    |                                  | Category of Measurement | Potential Aggregations and Scales                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Methodological Guidance                                                                                                                                                                                                                        |
|-------------------------|---------------------------------------------------------------------------------------|----------------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | (Bold Text - Core Set/Tier 1; Regular Text - Tier 2; <i>Italicized Text</i> - Tier 3) |                                  |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                |
| Topic 1.2.1: Land cover | a.                                                                                    | Area under land cover categories | Area                    | <ul style="list-style-type: none"><li>▪ By location</li><li>▪ By type of land cover (e.g., artificial surfaces including urban and associated areas; herbaceous crops; woody crops; multiple or layered crops; grassland; tree-covered areas; mangroves; shrub-covered areas; shrubs and/or herbaceous vegetation, aquatic or regularly flooded; sparsely natural vegetated areas; terrestrial barren land; permanent snow and glaciers; inland water bodies; and coastal water bodies and inter-tidal areas)<sup>(a)</sup></li><li>▪ National</li><li>▪ Sub-national</li></ul> | <ul style="list-style-type: none"><li>▪ FAO Land Cover Classification System</li><li>▪ System of Environmental-Economic Accounting (SEEA) Central Framework (2012) land cover categories</li><li>▪ European Environment Agency (EEA)</li></ul> |

About a quarter of all BSES statistics have geospatial element, e.g. 85 statistics measured by area, 5 by length



# Geographic and geological statistics in the manual of the BSES

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Manual on the Basic Set of Environment Statistics  
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Geological and geographical information and  
Statistics  
(Topic 1.1.3. of the Basic Set of Environment Statistics of the FDES 2013)

Elaborated by the Environment Statistics Section  
of the United Nations Statistics Division,  
in collaboration with the  
Expert Group on Environment Statistics

Version 3.0  
23 September 2022

Methodology sheet of the Basic Set of Environment Statistics of the FDES  
[http://www.unstats.un.org/esa/secretariat/2013/Manual\\_2013.htm](http://www.unstats.un.org/esa/secretariat/2013/Manual_2013.htm)  
[http://dx.doi.org/10.18160/2013/Manual\\_2013.htm](http://dx.doi.org/10.18160/2013/Manual_2013.htm)



# Examples of definitions

## 1.1.3.a. Geological, geographical and geomorphological conditions of terrestrial areas and islands.

### 1.1.3.a.1 Length of border

Length of border is defined as the border line that divides two countries. Total length of the country border and length of segments bordering other countries or entities are relevant. Border or boundary concept is defined as a line marking the limits of a unit of land, often a geographical region, but also of economies or societies, <sup>[1]</sup>**Remarks:**

- This information may be obtained from data or maps in official national/international sources.
- National borders are delimited in accordance with national and international organizations legal backing.
- Statistical information of the length of the border, can be represented by geographical location of border, total length as well as length of separate bordering entities, e.g. countries.

### 1.1.3.a.2 Area of country or region

An area of land that forms an independent political unit with its own government. <sup>[2]</sup>

#### **Related definitions:**

- **Land area** is a country's total area, excluding area under inland water bodies, national claims to continental shelf, and exclusive economic zones. In most cases the definition of inland water bodies includes major rivers and lakes. <sup>[3]</sup>
- **Total surface area** refers to the total area of the country which comprises land area and inland waters. <sup>[4]</sup>

<sup>[1]</sup> Oxford dictionary of Geography, <https://ia801908.us.archive.org/34/items/geography-encyclopedia/Oxford%20Dictionary%20of%20Geography.pdf> (accessed 23 September 2022)

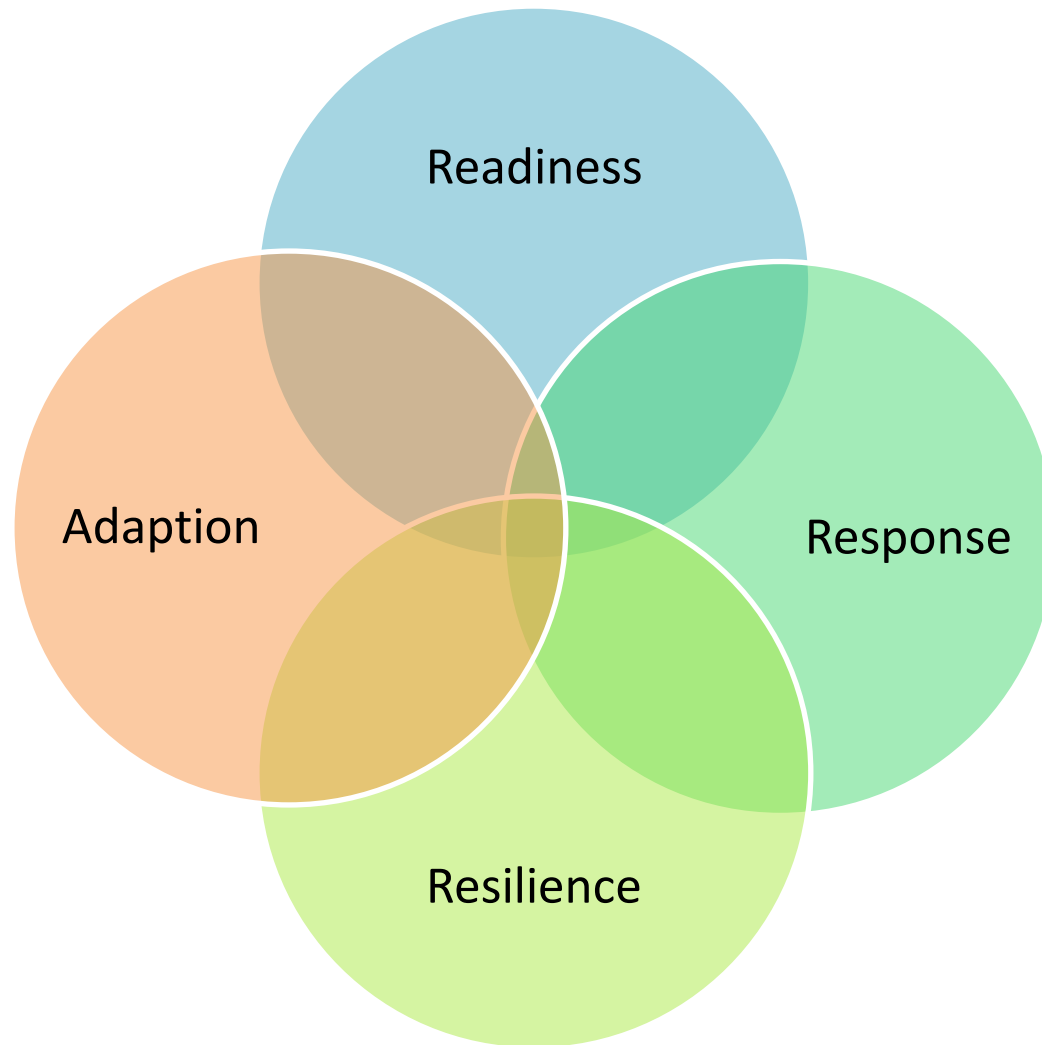
<sup>[2]</sup> Cambridge dictionary, <https://dictionary.cambridge.org/us/dictionary/english/country> (accessed 23 September 2022)

<sup>[3]</sup> The World Bank, data, <https://data.worldbank.org/indicator/AG.LND.TOTL.K2> (accessed 23 September 2022)

<sup>[4]</sup> UNSD, Environmental Indicators, <https://unstats.un.org/unsd/environment/totalarea.htm> (accessed 23 September 2022)



# Why Integrate Statistical and Geospatial Information for Climate Change and Disaster-Related Statistics...?



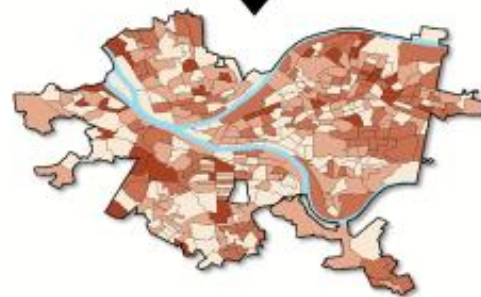
# Addressing Recognized Needs – Ensuring Comparable, Interoperable, and Integrable Data

- Integration of information from statistical and geospatial domains.
- Establishes “where?”
- Creation of **nationally** and **globally** comparable datasets.

Statistical Data

|      |     |       |      |       |      |
|------|-----|-------|------|-------|------|
| 207  | 22  | 8324  | 222  | 2.289 | 1.28 |
| 84   | 242 | 8770  | 189  | 2.892 | 1.28 |
| 12   | 18  | 1323  | 1    | 1.242 | 1.28 |
| 12   | 18  | 1427  | 1    | 1.242 | 1.28 |
| 249  | 894 | 14280 | 242  | 2.428 | 1.28 |
| 218  | 706 | 15287 | 279  | 2.828 | 1.28 |
| 288  | 832 | 20288 | 6182 | 3.022 | 1.27 |
| 89   | 147 | 21818 | 1    | 2.818 | 1.28 |
| 207  | 201 | 24818 | 1    | 4.812 | 1.28 |
| 12   | 18  | 2892  | 18   | 1.289 | 1.28 |
| 84   | 67  | 14278 | 242  | 1.289 | 1.28 |
| 178  | 678 | 8888  | 2887 | 2.878 | 1.27 |
| 18   | 178 | 1808  | 1    | 1.282 | 1.28 |
| 1478 | 227 | 27822 | 178  | 4.428 | 1.28 |
| 178  | 12  | 27842 | 842  | 2.788 | 1.28 |
| 178  | 18  | 27842 | 1    | 1.282 | 1.28 |
| 178  | 18  | 27842 | 228  | 2.842 | 1.28 |
| 178  | 18  | 27842 | 1    | 1.888 | 1.28 |

Geospatial Data



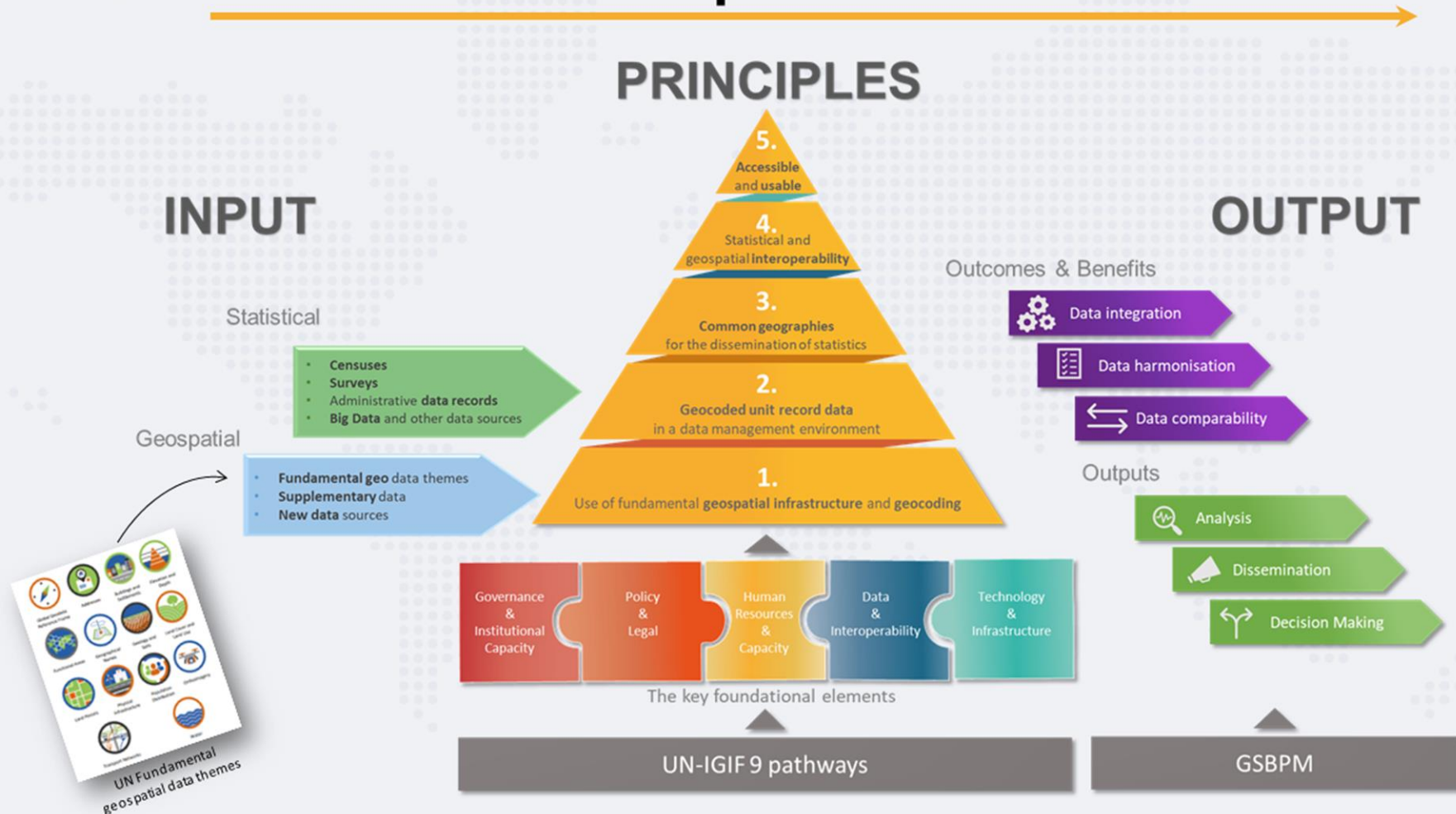
*“There is an urgent need for a mechanism, such as a global statistical-spatial framework, to facilitate consistent production and integration approaches for geo-statistical information.”*

*The Global Forum on the Integration of Statistical and Geospatial Information, New York 2014*



# How to build geo-statistical capacity? Through Implementing Globally Agreed frameworks that help build capacity:-

## The Global Statistical Geospatial Framework



Discuss with me after the break for more information and resources





# Thank you for your attention!

For more information please contact the Environment Statistics Section  
at the UN Statistics Division:

E-mail: [envstats@un.org](mailto:envstats@un.org)

website: <http://unstats.un.org/unsd/ENVIRONMENT/>

