



# Summary of the Global Statistical Geospatial Framework proposal

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[www.abs.gov.au](http://www.abs.gov.au)



A recognised need to better integrate statistical and geospatial information:

“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.”

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

Integration is crucial to getting the most out of data:

- Decision making for smaller geographic areas
- Sustainable Development Goals
- Data sharing and new insights
- Investment in modernisation



UN Economic and Social Council  
(ECOSOC)

UN Statistical Commission  
(UNSC)

- Geospatial programme review – proposed a global framework

UN Committee of Experts on  
Global Geospatial Information  
Management (UN-GGIM)

- List of nine issues included 'linking of spatial to statistics'

UN Expert Group – Integration of  
Statistical Geospatial Information



# Introduction

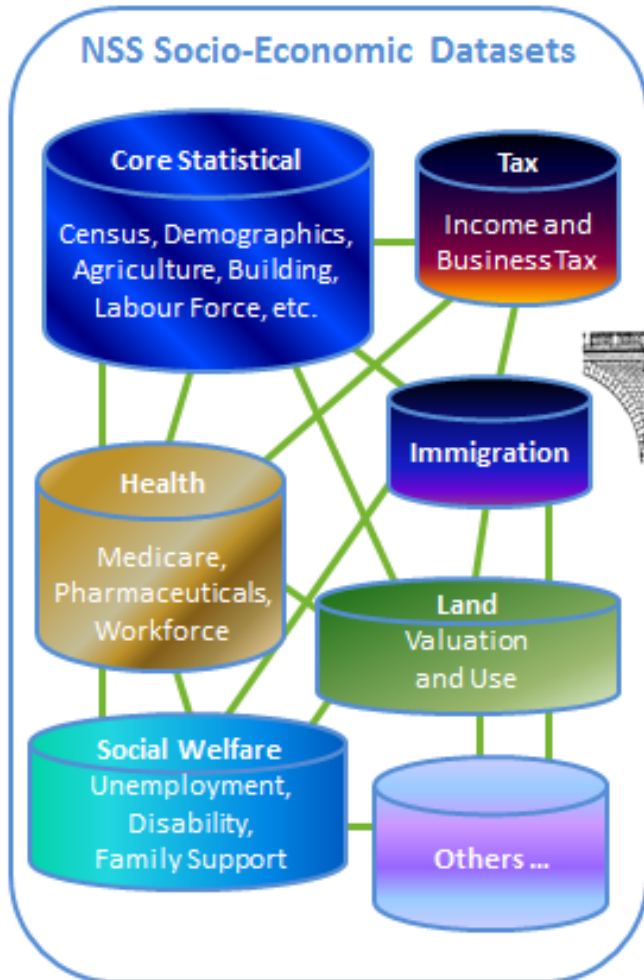


From the last Expert Group meeting in Lisbon, it was agreed that:

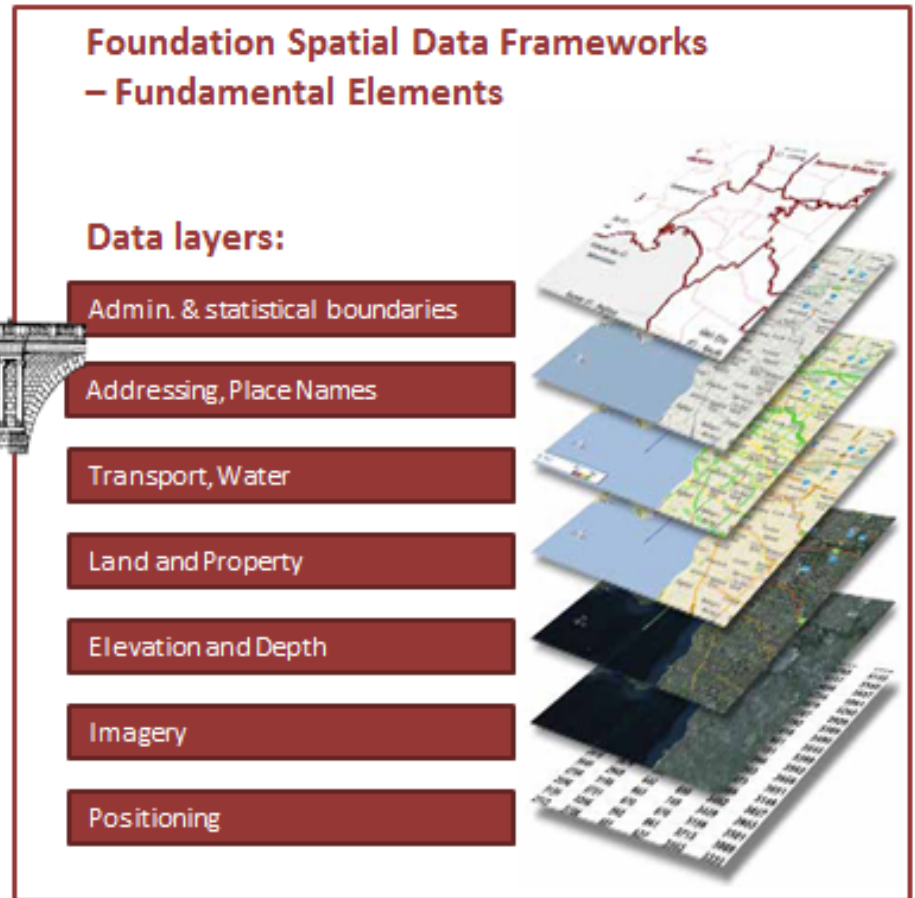
- The Statistical Spatial Framework developed by Australia is a high-level framework that permits the application of the framework principles to the local circumstance of individual countries.
- The practical application of the principles in countries such as Mexico provides a powerful demonstration of the benefits of these principles.
- The extension of the GSBPM model to the integration of geospatial information into the statistical production process provides a link to internationally agreed statistical processes and facilitates the communication between the statistical and the geospatial communities.



## Statistical Community



## Spatial Community



# Introduction



Property and Address Registers

Environment statistics

Earth observations

**Location**

Geospatial data

*Georeference*

*Georeference*

*Data Integration*  
*New Solutions*

Industry statistics

Demography

Tax data

**Business**

**People**

Census

*Personal/Business Identifiers*

Services data

Economic statistics

Transactions

Social statistics



# The Framework



Distinguishing between statistical and geospatial data – it's easy with words but in practice most data fits into both realms.

## Statistical

Survey or admin  
unit record data

People and  
businesses

Population  
Grids

Environmental  
Accounts

## Geospatial

Earth  
observations

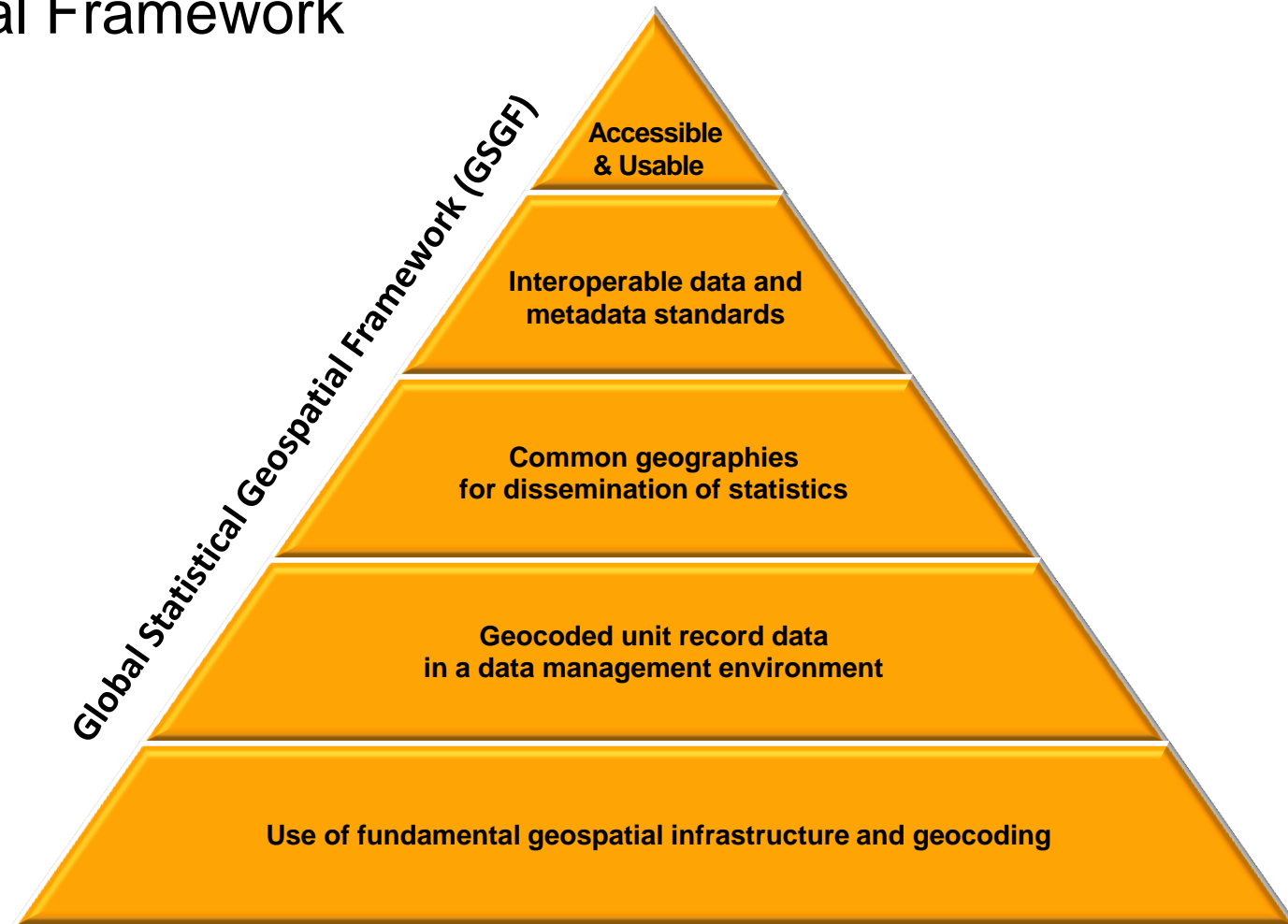
Infrastructure/  
Biophysical  
Environment



# The Framework



Five principles of the proposed  
Global Statistical  
Spatial Framework





# National examples



- The Framework is driven by strong principles, but remains broad enough that countries can fit it around their local needs.
- Some fantastic examples have emerged from:
  - Mexico
  - New Zealand
  - United Arab Emirates

# NATIONAL GEOSTATISTICAL FRAMEWORK

## DESEGREGATION CURRENT LEVELS



32 State  
Geostatistical  
Areas



2,457 Municipal  
Geostatistical Areas



4,546 Geostatistical  
Urban Localities



49,681 Geostatistical  
Rural Localities



10'922,312  
Total Roadways



1,451,922  
Urban localities  
blocks



841,672  
Rural localities  
blocks



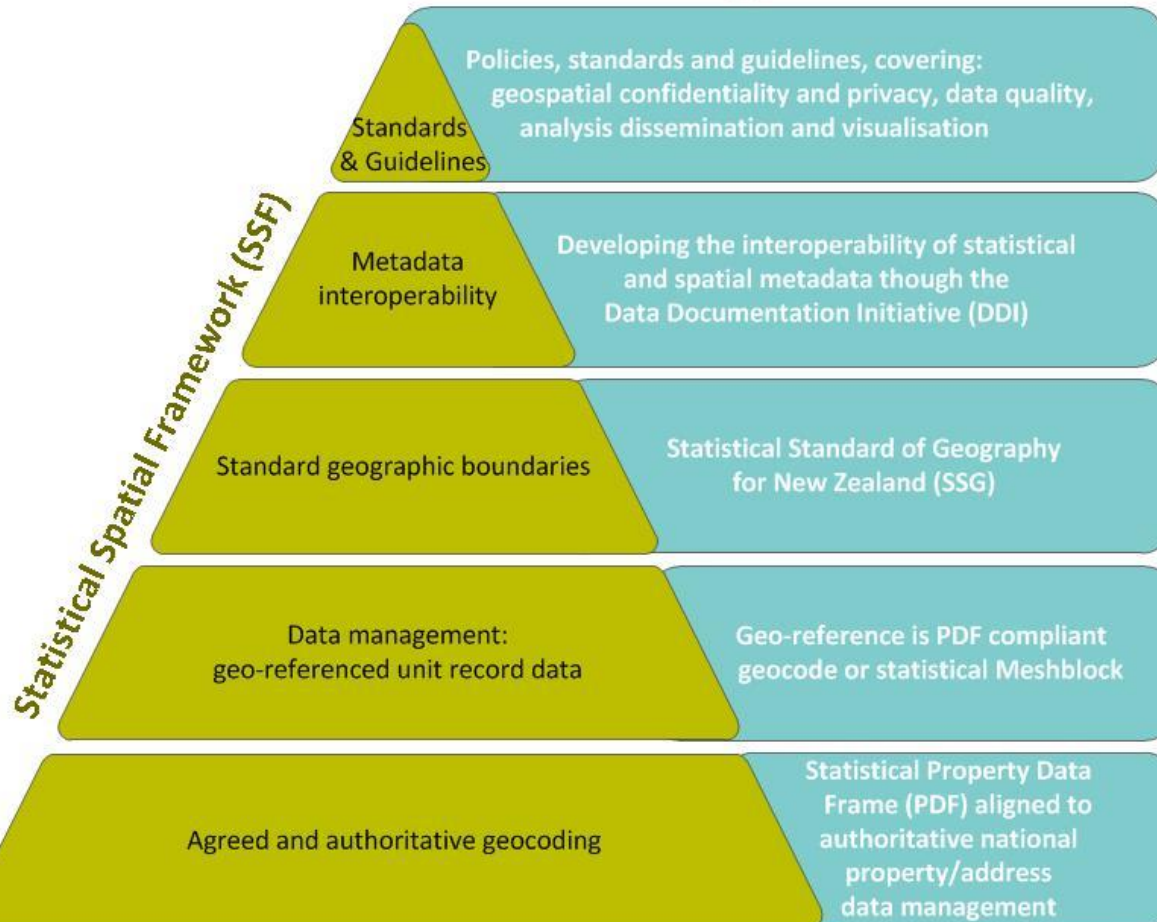
38'010,866  
Total Exterior Numbers



# Statistical Spatial Framework (SSF)

## *Integration of statistical & geospatial information*

### New Zealand application of SSF



- ⊙ Geospatial infrastructure is in place
- ⊙ Core geospatial capability
- ⊙ Getting our house in order
- ⊙ Building geo-statistical infrastructure – the elements of the SSF
- ⊙ Collaborating with national mapping agency – taking a standards based approach



# Statistical Geospatial Framework

Statistical data sets



GeoSpatial Data Sets:

Demographic and Social Statistics

## Social Statistics

Health, Labor Force, Education, Security and Justice, Employment, Wages and Hours of Work

## Demographic

Births and Deaths, Marriage and Divorce

## Censuses

Population by Age Group and Urban/Rural

Others ...

## Economic Statistics

### Economic Sectors

Foreign Trade  
Prices and Indices, National Accounts, Foreign Investment

### Agricultural and Environmental Statistics

#### Agriculture

Crop, Livestock, Fisheries, Agricultural Economic

Energy

#### Environment

Waste, Climate, Water, Air

## Geospatial Data Model

Admin. & statistical boundaries

Addressing, Place Names

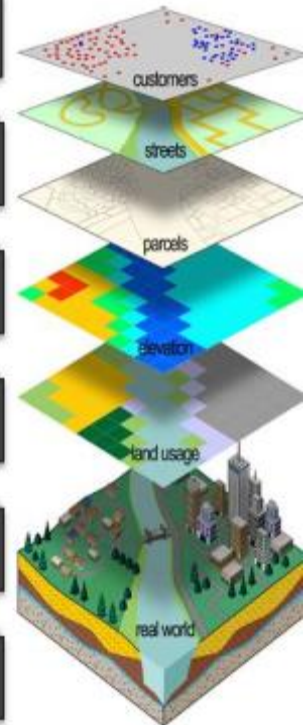
Transportation

Land use and land Cover

Elevation and Depth

Imagery

Topography



# 6 key issues raised in consultation



## 1. *Expectation that GSGF should be a standard.*

- GSGF is a principles framework.
- Some questions were raised about the completeness of the GSGF as a standard, this is not its intention.



*2. Location references and geocoding too focused on address, not applicable to some developing countries.*

- Location references broadened to other location descriptions, including enumeration geographies.
- Address or property is a preferred model wherever applicable or attainable.



### *3. GSGF needs to be extended to environmental data.*

- GSGF is currently limited to socio-economic data, including traditional NSO Environmental statistics.
- There are many types of environmental data, the Framework does not attempt to account for all of these!



## 4. *“Authoritative” data changed to “fundamental” data*

- to reflect the need to access the most current and up to date data, and
- to align with UN-GGIM.





## 5. *“New data” sources identified*

- as an area that could benefit from application of GSGF principles – eg mobile phone datasets.



6. *Open data policies and principles are not universally agreed on.*

- The GSGF proposal has included reference to International principles or agreed National policies on open data.

# Recommendations for adoption of a Global Framework



## Recommendation 1

- The UNSC endorse the Global Statistical Geospatial Framework as an International Statistical Framework.

## Recommendation 2

- The UNSC and the UN Committee of Experts on GGIM support the ongoing work of the Expert Group to further pursue areas of detail requiring further work.

**Does the Expert Group support these  
recommendations?**





Endorsement of the Framework is important.

It will enable us to promote use of the framework in:

- Sustainable Development Goals,
- The 2020 Round of Population Census',
- The Committee of Experts on Global Geospatial Information Management (UN-GGIM), and
- Statistical modernisation programs.

# Existing work program

Endorsement will allow the Expert Group to focus on already identified areas of further work:

- Build capability through the application of the Framework and geospatial technologies to the 2020 Round of Population Censuses;
- Enhance collaboration and partnership between statistical and geospatial organisations;
- Work towards consistent terminology internationally and across communities;
- Protect confidentiality within statistics released for small geographic areas and across different geographies;



# Existing work program

- Ensure data interoperability between statistical and geospatial domains;
- Investigate the application of statistical, administrative and grid geographies to data release;
- Develop and share methods for ensuring effective and authoritative geocoding; and
- Contribute to the broader discussion on the use of Big Data in official statistics and geospatial information.



## For consideration in future work program

- Develop methods to track changes over time for geometries (Germany).
- Define data assets in a "service oriented architecture" construct (USA).
- Develop "channel management standards" (USA).
- Develop best practices for maintaining data over time (USA).
- Work towards establishing the Global Statistical Geospatial Framework into a formal standard (New Zealand).
- Agree to a system of unique identifiers for all geospatial features, including an appropriate time and version control mechanism (Eurostat).
- Promote favorable access and use conditions for geospatial data relevant for geocoding and use within the context of framework purposes (Eurostat).
- Work to harmonize the geographic and geospatial objects used by the statistical and geospatial communities as their geographic reference framework (Poland).