

Workshop on Global Fundamental Geospatial Data Themes



UN-GGIM
EUROPE

UNITED NATIONS
COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

June 2018



Objectives of the Workshop

- Introduce you to the work and outputs of the Fundamental Data WG (FDWG)
- Consider how the themes apply to SDGs
- Consider how the work relates to existing work streams in Europe
- Consider how Europe can take the themes forward



Agenda for the Workshop

1	Context and FDWG Progress to date	Clare Hadley, Fundamental Data WG
2	Relating the themes to SDGs	Pier-Giorgio Zaccheddu, Data Integration WG
3	Relating the themes to European core data	François Chirié, Core Data WG
4	Taking the themes forward in Europe	Panel Sli.do Session
5	Workshop Summary	



On your laptop, tablet or phone,
please go to:

www.slido.com

and enter Event Code:

FDWS



The Global Fundamental Geospatial Data Themes Journey

June 2018



UN-GGIM

UNITED NATIONS
COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

Clare Hadley
WG Chair



The Road to here

- Why Global?
 - Why Geospatial?
 - Why Fundamental?
 - Why Themes?
-
- The route we took
-
- Where does the road go now?





Why Global?



UN-GGIM: | UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Global Development Agenda



TRANSFORMING OUR WORLD:



THE 2030 AGENDA FOR
SUSTAINABLE DEVELOPMENT



UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

ggim.un.org



Why Geospatial?



UN-GGIM: | UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Geospatial?

geospatial

/ˌdʒiːəʊˈspeɪʃ(ə)l/

adjective

GEOGRAPHY

relating to or denoting data that is associated with a particular location.

Source: Oxford English Dictionary



UN-GGIM: | UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Sustainable data for sustainable development

The monitoring of the MDGs taught us that data are an indispensable element of the development agenda:

- Despite improvement, critical data for development policymaking are still lacking.
- Real-time data are needed to deliver better decisions faster.
- Geospatial data can support monitoring in many aspects of development, from health care to natural resource management.
- New technology is changing the way data are collected and disseminated.
- Global standards and an integrated statistics system are key elements for effective monitoring.
- Data should be open, easily accessible and effective for decision-making.



<http://www.un.org/millenniumgoals/>



UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

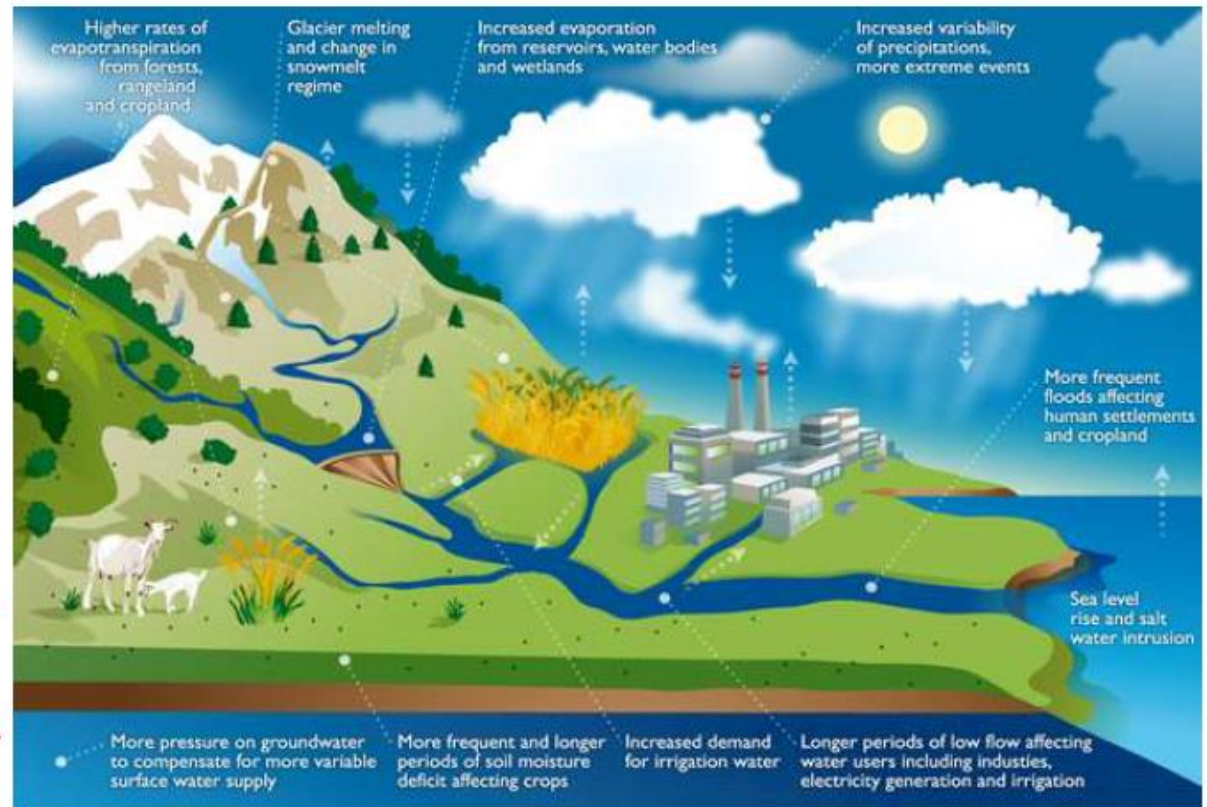
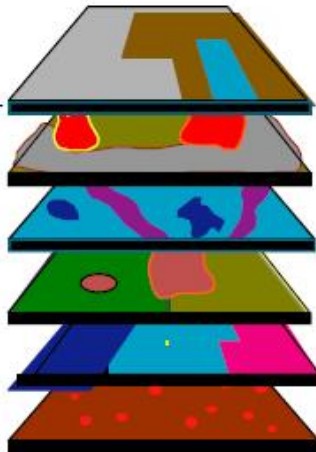
ggim.un.org

National Spatial Data Infrastructure



High quality, timely and reliable data

Geodetic
Elevation
Water/Ocean
Land use/cover
Transport
Cadastre
Population
Infrastructure
Settlements
Admin. Bdys.
Imagery
Geology/soils
Observations
etc.



UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

ggim.un.org

short-term debt) in
terest.
fun·da·men·tal /f
forming a foundation
as a starting-point
which must be lea

Why Fundamental?

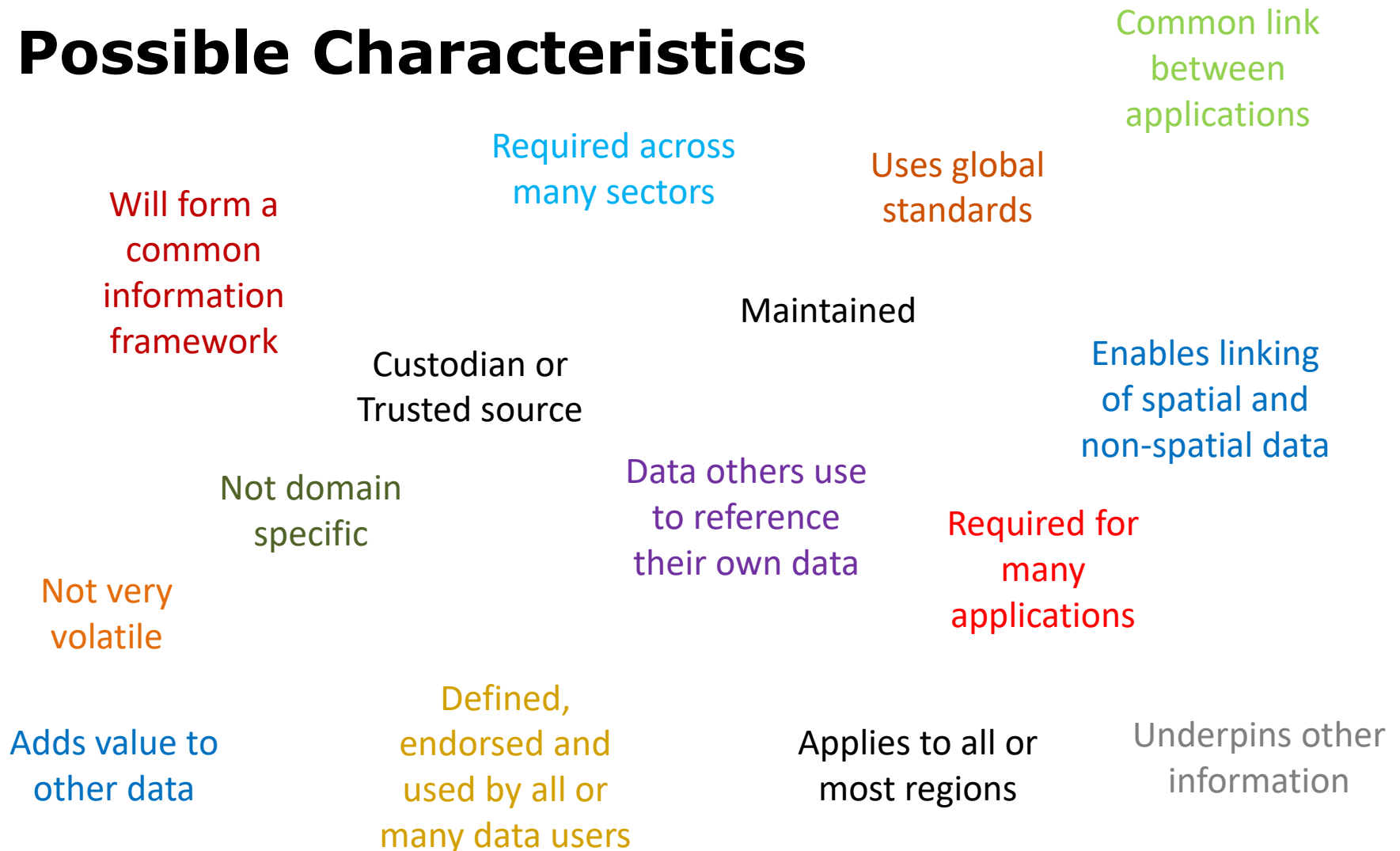


We all use different words ...

- Fundamental?
- Foundation?
- Basic?
- Reference?
- Core?
- Base level?
- Referential?
- Critical?



Possible Characteristics



Fundamental?

Conclusion:

'Fundamental' in this context does not have a definition, but a non-exclusive and non-exhaustive list of characteristics.

As such we cannot produce a definitive list of fundamental data themes – only a consensus view on what is important for the applications we have in mind – i.e. achieving the SDGs.



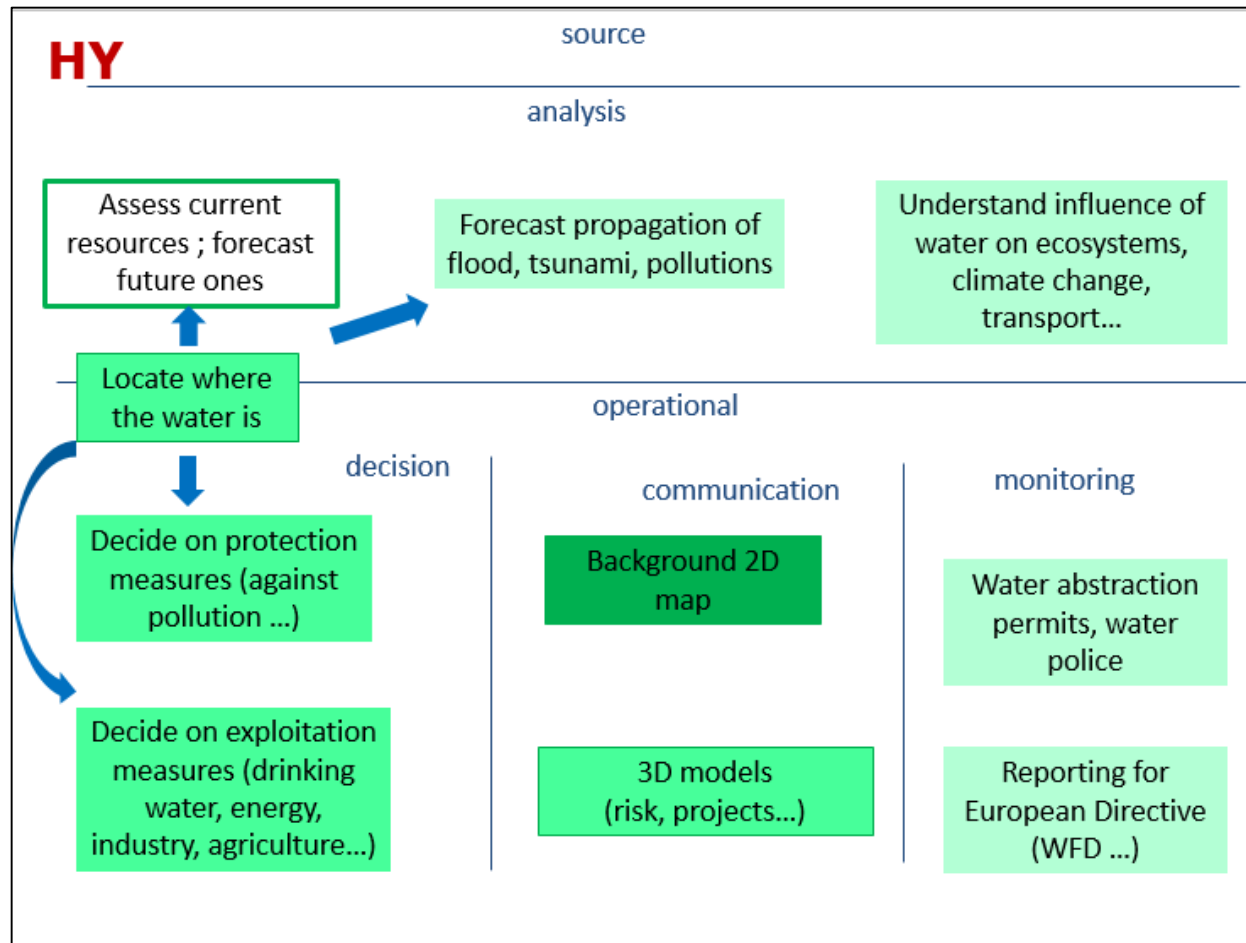
Fundamental for what?

SDG requirements:

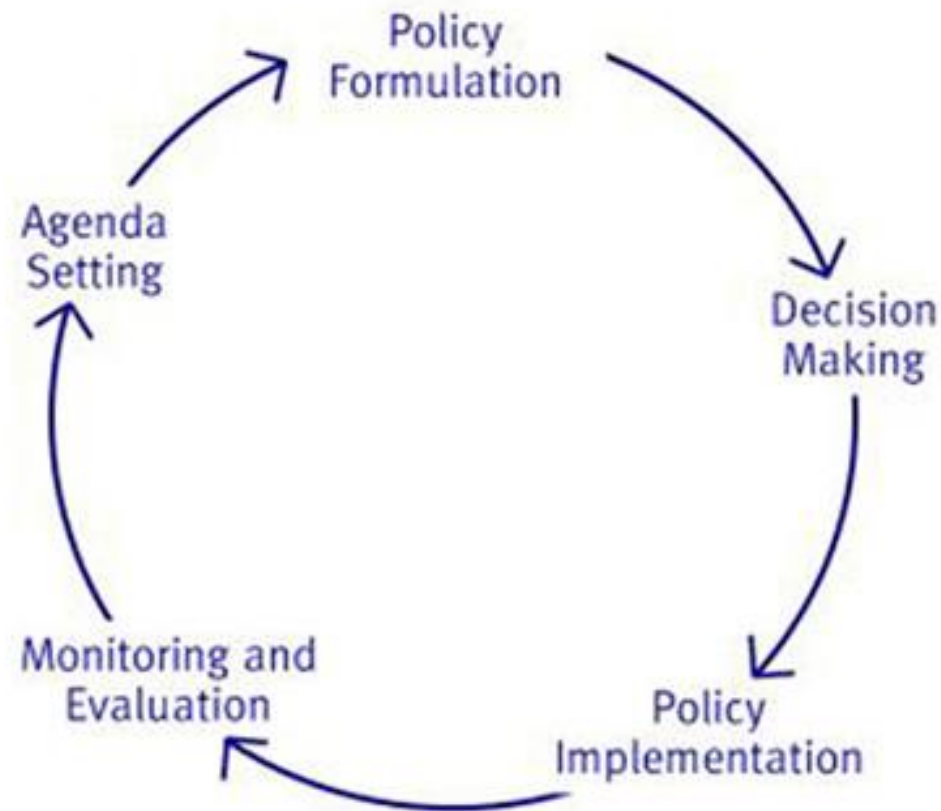
- ✓ Baseline measurement
- ✓ Evidence-based policy making
- ✓ Implementation of actions
- ✓ Monitoring and reporting



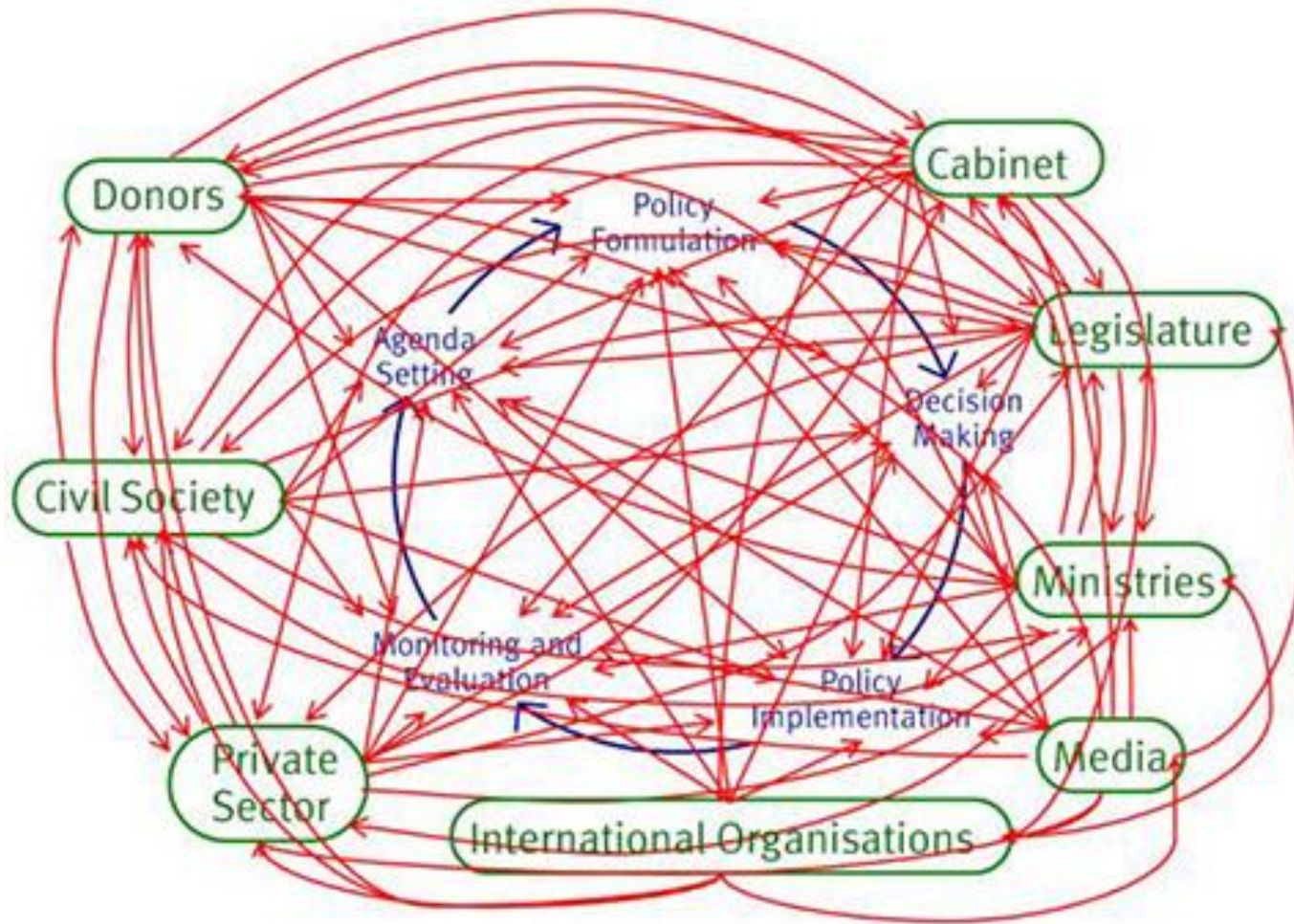
As we know in Europe...

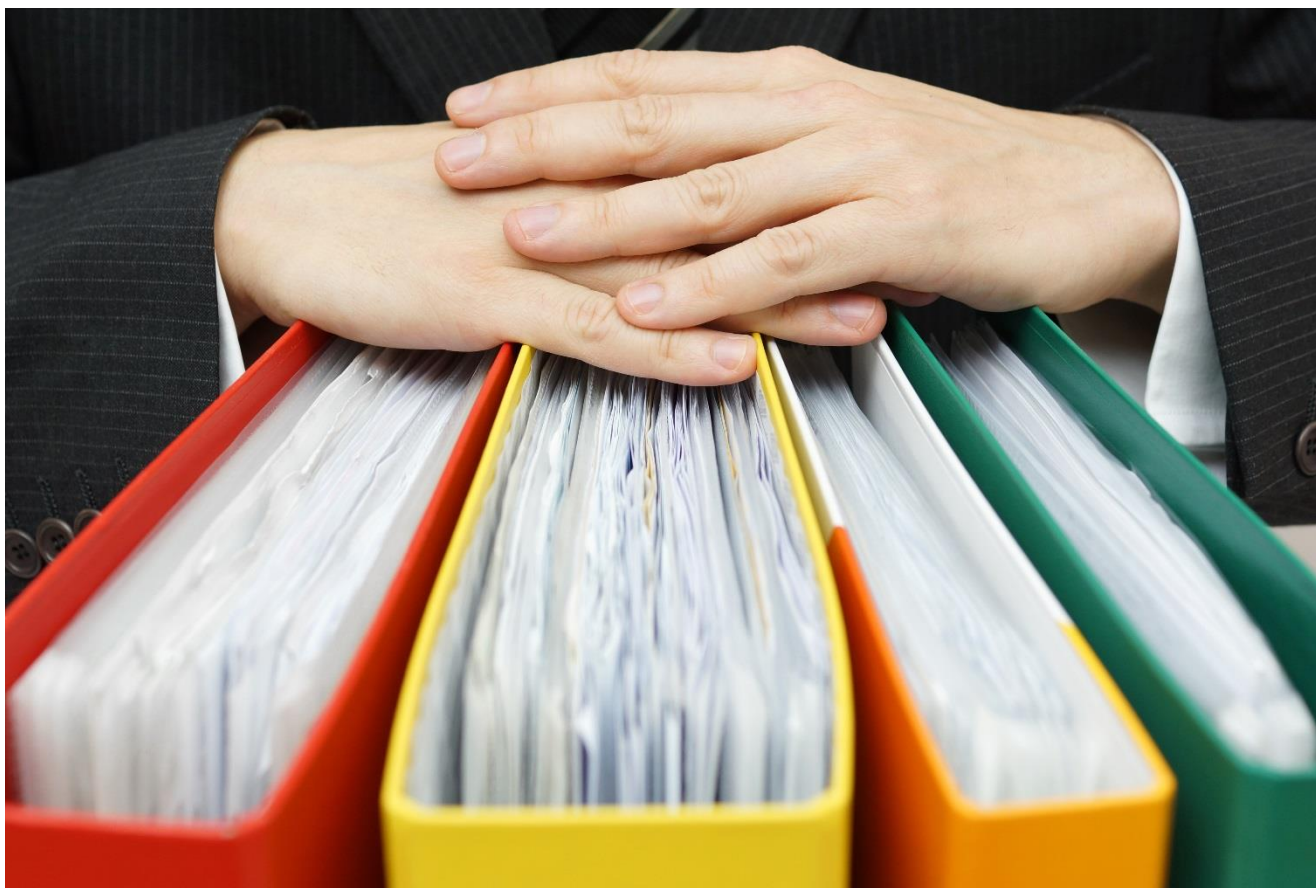


Policy Cycle



Policy Cycle





Why Themes?



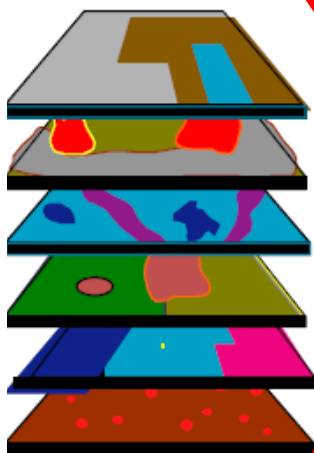
UN-GGIM: | UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT





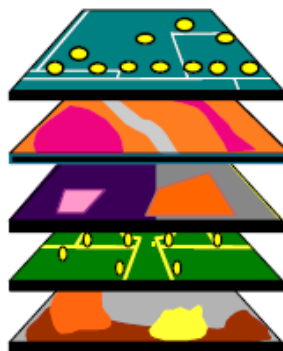
High quality, timely and reliable data

Geog Names
Addresses
Functional Areas
Settlements
Land parcels
Transport Networks
Elevation/Depth
Popn distribution
Land Cover/Use
Geology/Soils
Physical infrastructure
Imagery
Water



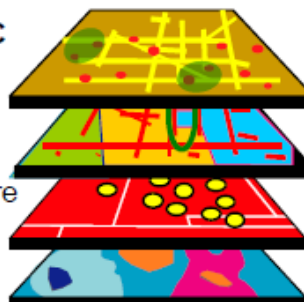
SOCIAL

Society
Poverty
Education
Health
Population
Employment
Water
Sanitation
Equality
Gender
Governance



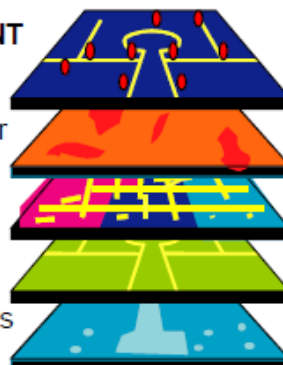
ECONOMIC

Well-being
Cities
Water
Energy
Infrastructure
Industry
Sanitation
Economy



ENVIRONMENT

Water
Seas/oceans
Land use/cover
Ecosystems
Forests
Agriculture
Climate
Biodiversity
Natural hazards
Pollution



UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

ggim.un.org

Themes – or datasets?

Subject matter	something about which data can be collected
Theme	a high level categorisation of subject matter which can be further broken down into sub-themes
Dataset	a collection of data about specific features

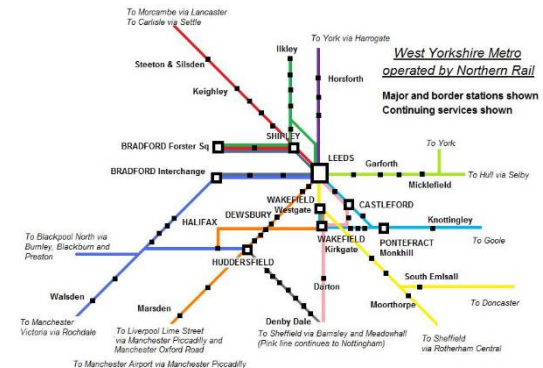


Example 1

Theme: Transport Network

Sub-theme: Road, Water, Rail ...

Dataset: Rail Network,
Bus stops,
Road surface



Example 2

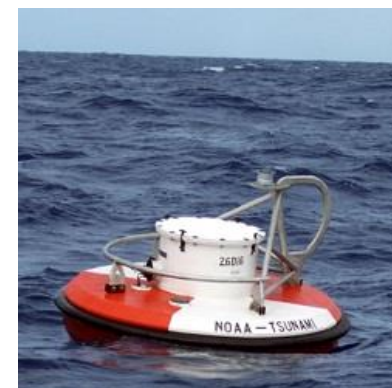
Theme: Water

Sub-theme: Rivers, Sea,
groundwater ...

Dataset: Water quality
(data integration)

Wave height
(sensors)

Sea ice (imagery
interpretation)



CC BY 2.0 NASA Ice



We need fundamental geospatial data about:

People

Built Environment

Natural Environment

To locate this subject matter we need data which:

- can be about the actual subjects, and/or
- use proxies for them e.g. an address as a proxy for a person or a phone track as a proxy for a road





The route we took ...



UN-GGIM: | UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Background to the FDWG

GGIM 5 – A report on fundamental data themes prepared by GGIM:Europe.

GGIM5 agreed that there is:

*'an urgent need for a set of **global fundamental geospatial data themes** that could be harmonized in order to enable the measurement, monitoring and management of sustainable development in a consistent way over time and to facilitate evidence-based decision-making and policy-making'*



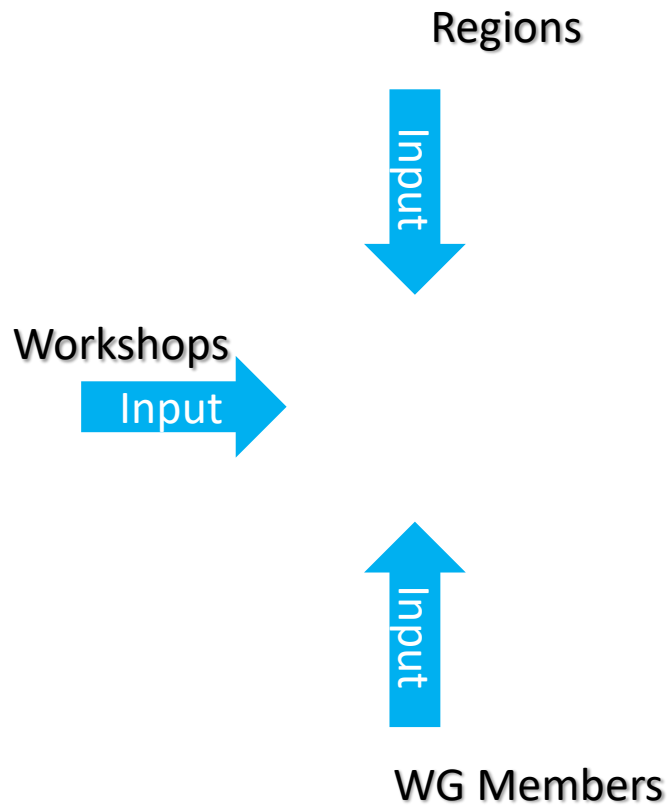
UN GGIM: Europe asked to take lead to:



- Produce a recommendation for a minimum list of **global fundamental geospatial data themes**. Each data theme should be supported by a description and guidelines.
- Take account of **existing activity** being undertaken by UN-GGIM regional committees, ensuring that where possible **existing resources** are used.
- Consider the prioritisation of the data themes and how they **link to other data needs** within the UN-GGIM programme of work.
- Consider the specific needs and vulnerabilities of small island developing States.
- Ensure that the data themes should be technical in nature so as not to raise political concerns.



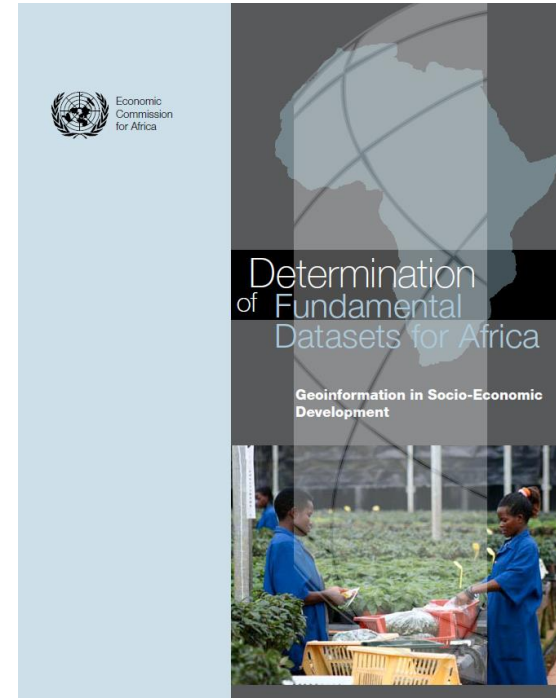
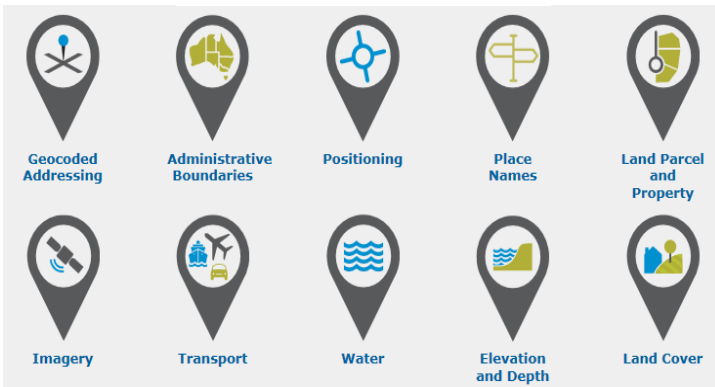
Methodology



It's not difficult to find existing work ...



Fundamental Geospatial Data



UN-GGIM NIA
Working Group on Trends in National Institutional Arrangements



UN-GGIM: | UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



'Common Denominator' approach

UN-GGIM: Europe	GGIM: Africa (UNECA and GSDR)	GGIM: AP (ANZLIC)	UN-GGIM: Arab States	UN GGIM: Americas (PAIGH)	WG - NIA
Geographical names	Geographic names	Place names	Names	Geographic names	Geographical names
Administrative units	Boundaries	Administrative boundaries	Administrative Boundaries	Administrative Units	Administrative units
Transport networks	Transportation	Transport	Transport Networks	Communications networks	Transport networks
Hydrography	Hydrography Drainage	Water	Hydrography	Hydrography	Hydrography
Orthoimagery	Imagery	Imagery	Imagery	Images	Imagery
Elevation	Hypsography	Elevation and depth	Elevation	Relief	Elevation
Land cover	Natural environment	Land cover	Land cover	Land cover	Land Cover
Cadastral parcels	Tenure/parcels (part of land management theme)	Land parcel and property	Land parcels	Cadastral records	Cadastral parcels
Addresses	Street addresses (part of land management theme)	Geocoded addressing	Addresses	Addresses	
Buildings	Populated places (part of Boundaries theme)			Population	Settlements
Utilities and government services	Utilities and services		Utilities		
Area Management	Land management units/areas				
Statistical Units					
Land Use					

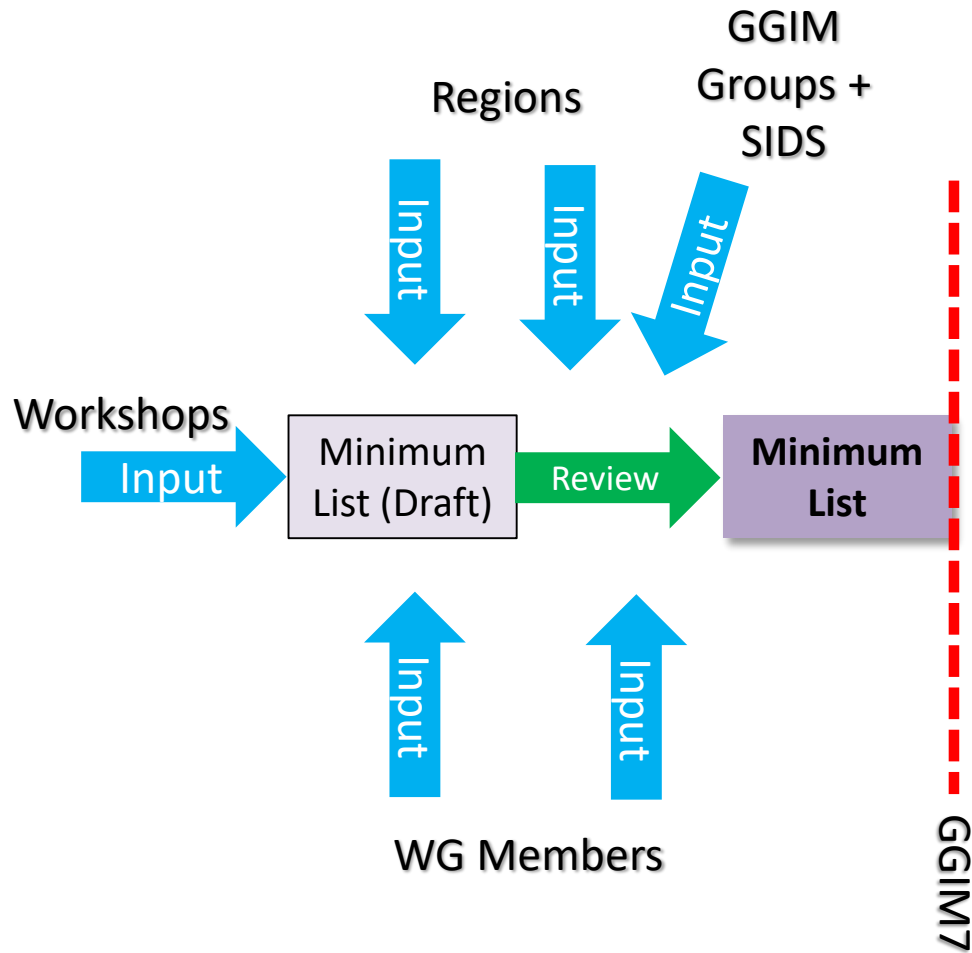


SDG Requirements approach

INSPIRE Theme	Sustainable Development Goal													
	1	2	3	5	6	7	8	9	11	12	13	14	15	
Address														
Administrative units														
Cadastral parcels														
Geographical Names														
Hydrography														
Transport networks (road, rail, water, air, cable)														
Protected sites														
Elevation														
Land cover														
Ortho-Imagery														
Geology														
Buildings														
Land use (existing , planned)														
Soils														
Human health														
Governmental services and utilities														
Environmental Monitoring facilities														
Production facilities														
Agricultural facilities														
Population distribution/ Statistical Units														
Area management - Regulated areas														
Natural risk zones														
Sea regions														
Oceanographic features														
Atmospheric conditions – meteorologic features														
Biogeographical regions														
Habitats and biotope														
Species distribution														
Energy resources														
Mineral resources														



Methodology

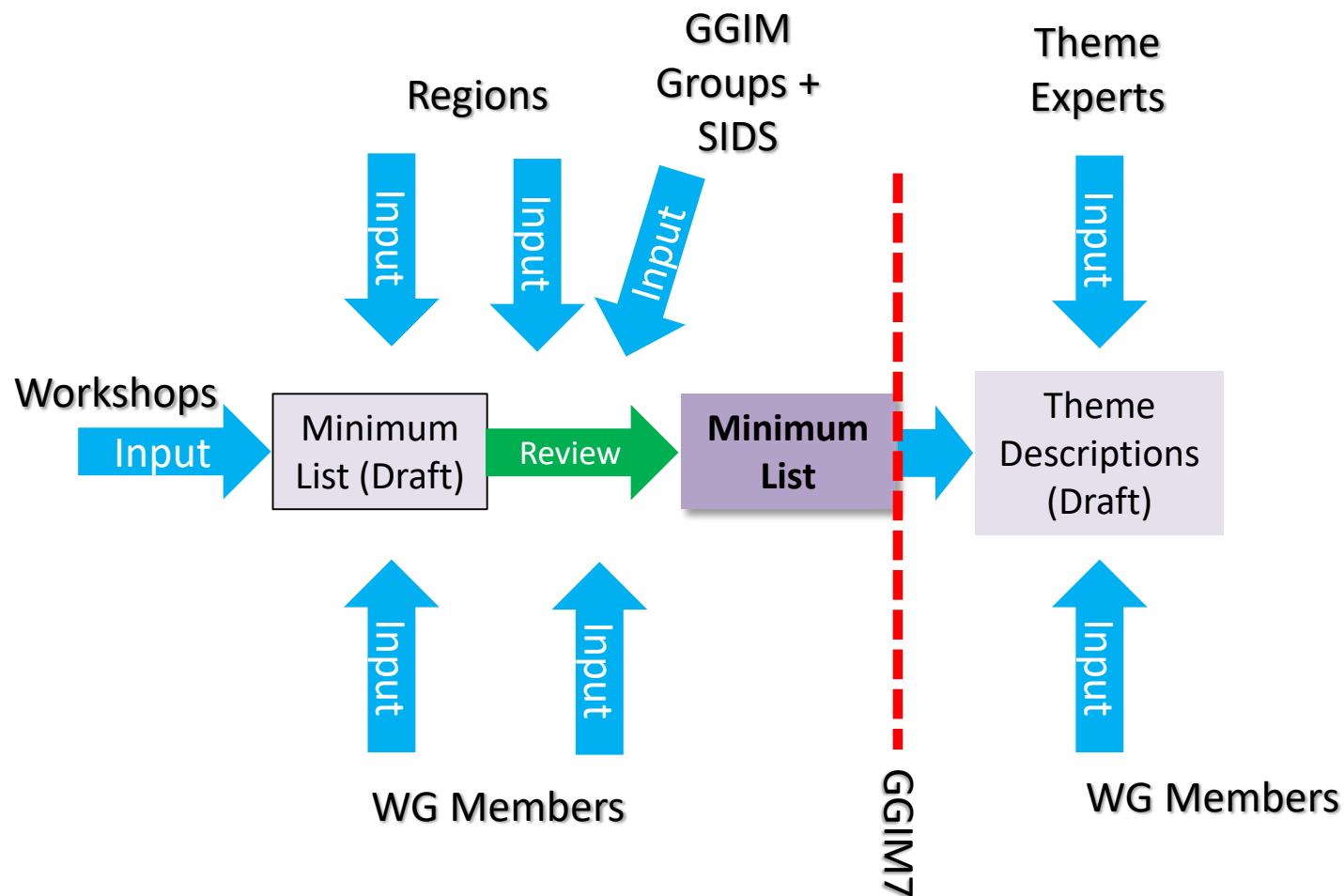


Data Themes and Reference Frame

- Addresses
- Buildings and Settlements
- Elevation and depth
- Functional Areas
- Geographical Names
- Geology and Soils
- Land Cover and Land Use
- Land Parcels
- Orthoimagery
- Physical infrastructure
- Population distribution
- Transport Networks
- Water
- Reference Frame: Global Geodetic Reference Framework



Methodology



Theme Description – One side A4 only

Theme title
Description
Why this theme fundamental?
Which sustainable development goals (SDGs) will it help to meet?
Geospatial data features in more detail
Possible sources of geospatial data
Existing geospatial data standards



Example - Addresses

Theme title:

Addresses

Description

An address is a structured label, usually containing a property number, a street name and a locality name. It's used to identify a plot of land, a building or part of a building, or some other construction, together with coordinates indicating their geographic position. Addresses are often used as a proxy for other data themes such as Land Parcels.

Why is this theme fundamental?

Addresses underpin government administration at all levels; and good administration is a prerequisite for achieving sustainable development goals. An address is often the unit to which a public service, such as water, is provided. Addresses also enable effective communication with citizens; informing them of policies applying to them, and notifying them of relevant incidents. The theme also helps in managing buildings and properties, and supports social surveys. Datasets relating to individuals or households are often linked to addresses, which can therefore play a role in connecting otherwise-unrelated information. Geocoding addresses relates such information to geographic location. This allows for location-based data analytics and data mining.

Which sustainable development goals (SDGs) will it help to meet?

Addresses have been identified as playing a key role in the achievement of SDGs 4,6,7, 9 and 11.

Geospatial data features in more detail

The addresses theme comprises a single feature type, address, to which a variable number of attributes may be attached. Typically, in urban areas these comprise at least one locator (building, floor or apartment number and/or name), a two-dimensional geographic position and a number of address components which place the address within other features such as a road, a locality, an administrative unit or postal code. In rural areas the locator may be less precise.

Possible sources of geospatial data

Address datasets are usually maintained by public authorities. While data may be created and maintained at local level, it should ideally be compiled into a single national register.

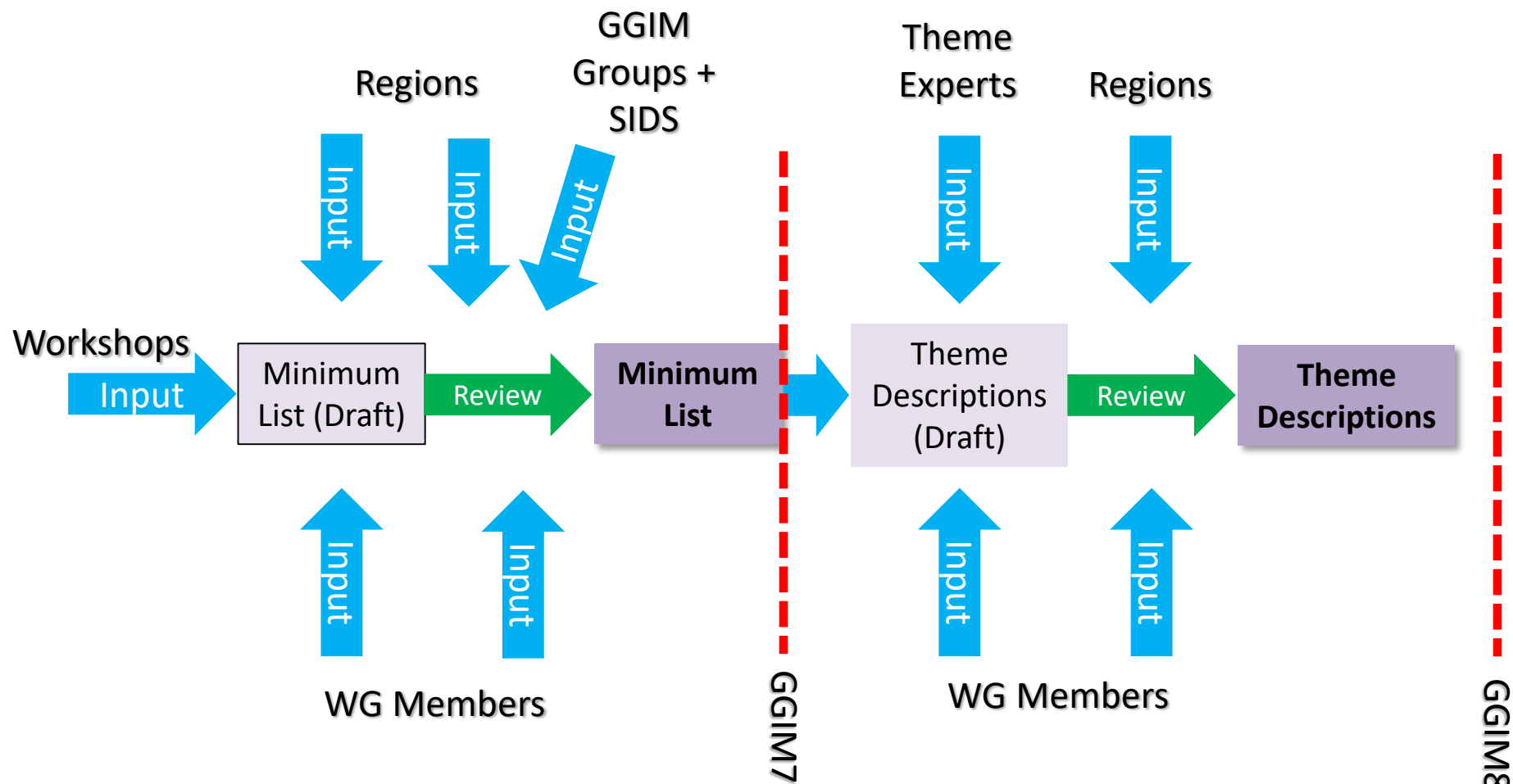
Existing geospatial data standards

Note: This is indicative. Other lists of standards exist and UN-GGIM will seek to work with thematic experts to develop a list of relevant data standards.

- INSPIRE Data Specification on Addresses – Technical Guidelines 3.1
- ISO 19160-1:2015 Addressing -- Part 1: Conceptual model
- ISA Programme Location Core Vocabulary
- ISO 19160-4(UPU, Universal Postal Union) Addressing--Part4: International postal address components and template language



Methodology





Where does the road go now?



UN-GGIM: UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Where does the road go now?

- Promotion and awareness raising



Icons



Global Geodetic
Reference Frame



Geographical
Names



Addresses



Functional Areas



Buildings and
Settlements



Land Parcels



Transport
Networks



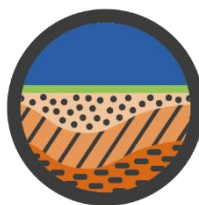
Elevation and
Depth



Population
Distribution



Land Cover
and Land Use



Geology and
Soils



Physical
Infrastructure



Water



Orthoimagery



Data Themes Storyboard

Created by the GGIM Secretariat:

[Story Map Cascade](#)



UN-GGIM: | UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Where does the road go now?

- Promotion and awareness raising
- Inclusion in the Geospatial Framework



Integrated Geospatial Framework



UN-GGIM: | UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Where does the road go now?

- Promotion and awareness raising
- Inclusion in the Geospatial Framework
- Regional and national implementation ...



Workshop on implementation in Africa



UN-GGIM: | UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Relationship between Global Themes and European Core Datasets?

- FDWG has determined a minimum set of themes with high level descriptions which has global consensus.
- Core Data WG has used INSPIRE themes and developed 'Core' data specifications
- Core Data WG has contributed to the FDWG
- The global themes are the wider context into which the European work can fit
- Europe Region is well ahead of other Regions in developing fundamental datasets



Thank you!



UN-GGIM

UNITED NATIONS
COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT



Relating the themes to the SDGs



**UN-GGIM
EUROPE**

UNITED NATIONS
COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

Pier-Giorgio Zaccheddu



Relating the themes to Europe's core data



UN-GGIM
EUROPE

UNITED NATIONS
COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

François Chirié



Introduction – Reminder



UN-GGIM: EUROPE

UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT



UN-GGIM: Europe Core Data WG «A»

What is Core Data?

- Core data is **priority data**
 - Geospatial data
 - The most useful to analyse, achieve or monitor the SDGs
 - Directly or indirectly



UN-GGIM: EUROPE

UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT



Objectives of the Working Group “A” on European Core Data

- **Define Core Data** and encourage UN European Member States to produce and supply it
 - Common requirements → common (minimum) content
- **Define priorities** for producing new data or for improving existing data
 - Recommendations for Content: meant for decision-makers and data providers



The Two Steps of the Working Group “A” on European Core Data

- **First Step**
 - Selecting Core Data Themes
- **Second Step**
 - Defining Content of Core Data Themes



1st Step: Selecting Themes **Relation between European Core Themes and Global Fundamental Themes**



UN-GGIM: EUROPE

UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT



Methodology

1) Delimiting Themes

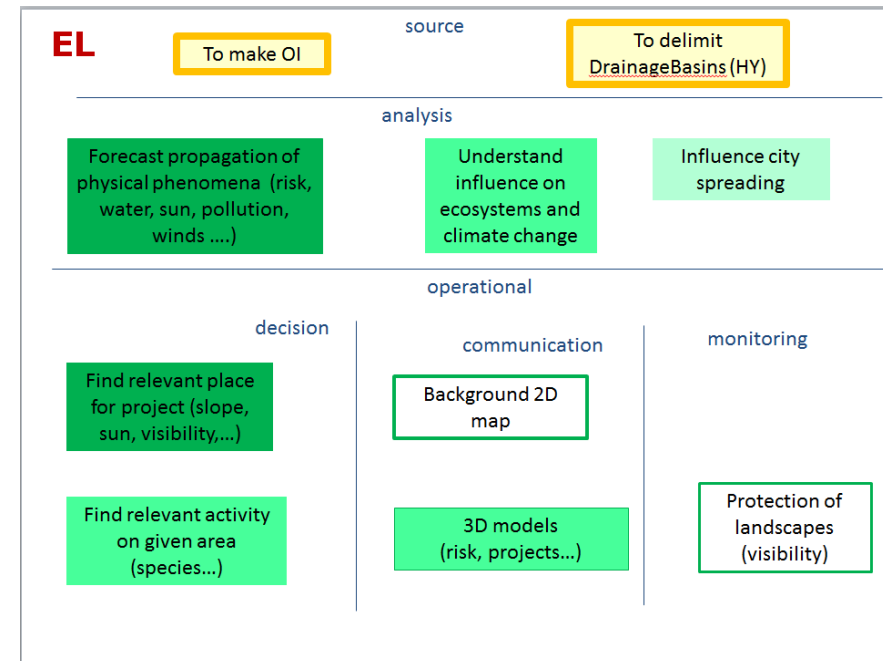
- Core data
 - European context
 - Used INSPIRE terminology as starting point
 - Tried to stay as close as possible to it
- Fundamental data
 - International context:
no obligation to “stick to” INSPIRE
 - Has not been so close to INSPIRE
 - e.g. functional areas, buildings and **settlements**,
land parcels, water



Methodology

2) Theme Selection Process

- Both working groups
 - **Selection process based on user requirements with focus on SDGs**
- European core data
 - Detailed analysis of SDG requirements
- Global fundamental data
 - High level investigation of SDG requirements
- Collaboration between the two working groups



Selected Themes

- Lots of commonalities in selected themes
- Global Fundamental WG
more ambitious than
European Core Data WG



UN-GGIM: EUROPE

UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT



Selected Themes

European Core Data

Annex I

Coordinate Reference Systems

Geographical Grid Systems

Geographical Names

Administrative Units

Addresses

Cadastral Parcels

Transport Networks

Hydrography

Protected Sites

Annex II

Elevation

Land Cover

OrthoImagery

Geology

Annex III

Statistical units

Buildings

Soil

Land use

Human health and safety

Utility and governmental services

Environmental monitoring facilities

Production and industrial facilities

Agricultural and aquaculture facilities

Population distribution - demography

Area management/restriction/regulation

Natural risk zones

Atmospheric conditions

Meteorological geographical features

Oceanographic geographical features

Sea regions

Bio-geographical regions

Habitats and biotopes

Species distribution

Energy resources

Mineral resources

Commonalities in Selected Themes

Eur. Core Data Themes	Global Fundamental Data Themes
	Global Geodetic Reference Frame
Geographical Names	Geographical Names
Addresses	Addresses
Administrative Units + Statistical units + Area management	Functional areas
Buildings	Buildings and Settlements
Cadastral Parcels	Land parcels
Transport Networks	Transport Networks
Elevation	Elevation and depth
	Population demographics
Land Cover & Land use	Land Cover and Use
	Geology/Soils
Basic services	Physical infrastructure (Utility and Governmental Services + Production Facilities)
OrthoImagery	Imagery
Hydrography	Water (Hydrography + Oceanography + Sea regions)

Selected Themes

Global Fundamental Data WG

More ambitious than

European Core Data WG “A”

Global WG selected more themes:

- **Reference Frame**

- WG A: Important theme, but not a “**data**” theme

- **Population Distribution**

- WG A: Important theme, but not **geospatial** theme

→ **2 important themes, but not in core data scope**



UN-GGIM: EUROPE

UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT



- Global WG selected more themes (cont.)
 - Geology-Soils
 - Water (incl. **marine** water)
 - European WG dealing with themes Geology, Oceanography, Meteorology
 - Many discussions
 - Well scored during selection process
- Agreement:
- First stage: not core
 - Subsequently: to re-consider (**core themes in future?**)
 - UN-GGIM being a young initiative, don't do everything at once
 - To be done later by relevant communities
 - Should not be on NMCA-NSI responsibility to decide for these themes



- Global WG selected more themes (cont.)
 - Physical Infrastructure
(incl. **industrial production facilities**)
- Main disagreement with European WG view:
 - Industrial facilities:
 - not core
 - geocoding Business Registers may be sufficient
 - theme Address as a proxy for production facilities
- Conclusion
 - European WG Workplan
 - ⊃ « recommendations for content »
 - Incited more modest choices



Second Step: Defining Content **of** **Global Fundamental Data Themes** **&** **European Core Data Themes**



UN-GGIM: EUROPE

UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT



Respective Objectives

- WG European Core Data
 - Detailed « recommendations for content »
 - Features and Attributes
 - Quality, Level of Detail
- WG Global Fundamental Data
 - High level (one-pagers) theme descriptions



Cooperation between the two working groups

- Common participants in the two 2 WGs
- Global Fundamental Theme Descriptions were reviewed by WG A



UN-GGIM: EUROPE

UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT



Commonalities

- Global WG: Structure of One-Pagers
 - Theme title
 - Description
 - **Why is this theme fundamental?**
 - Which SDGs will it help to meet?
 - **Geospatial data features in more detail**
 - Possible sources of data
 - Existing data standards

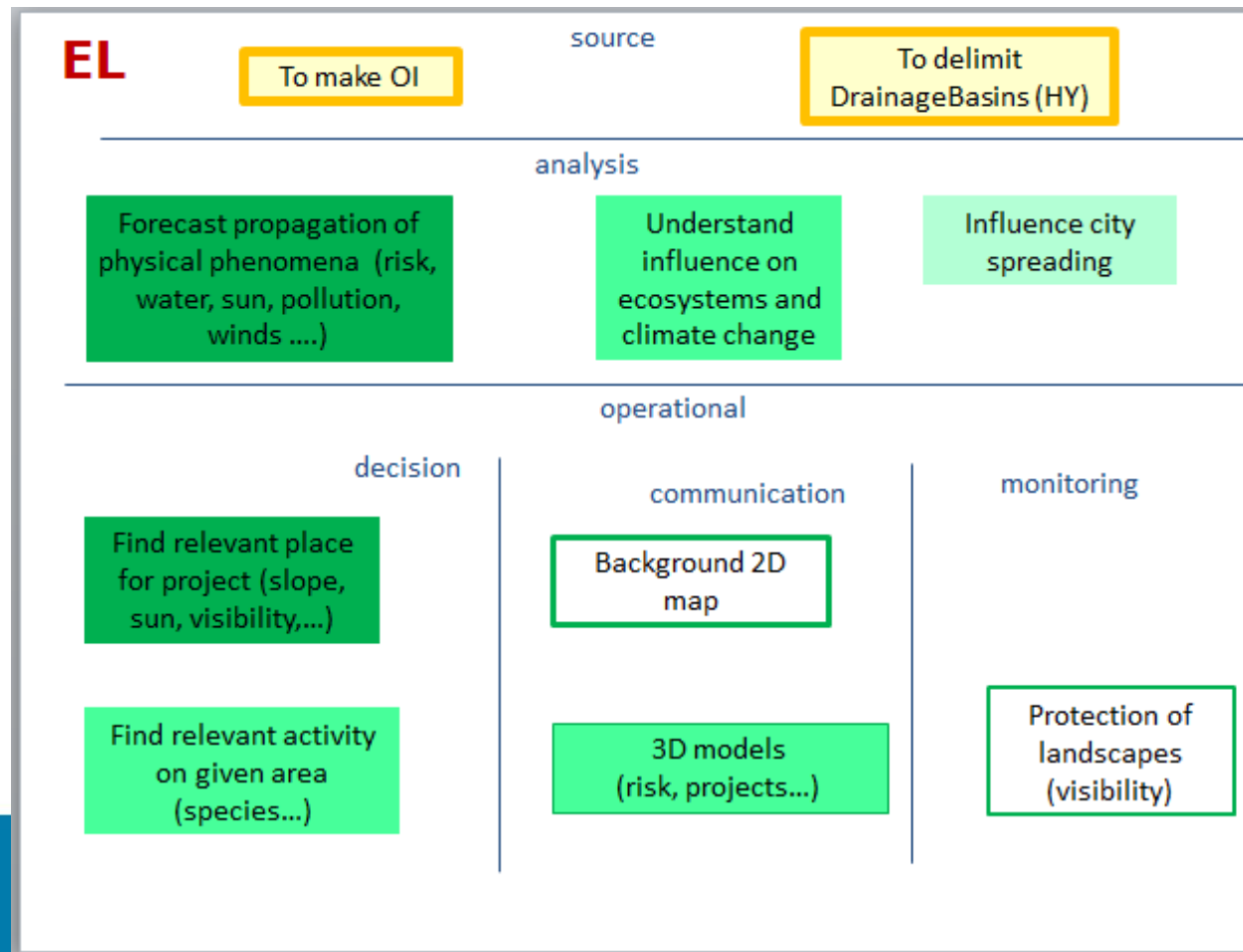
European WG outputs widely used by Global WG



Examples of Commonalities (1)

Why is **Elevation** theme fundamental / Map of use cases for **Elevation core theme**

Elevation is essential to help determine **appropriate places for human developments and activities**, to map relief in **2D maps** and to build **3D models**, to delimitate **drainage basins** in hydrology, to map floodplain areas, to support national forest inventories, to forecast the **propagation of physical phenomena** (such as pollution, flooding, landslide risks, etc.), to understand **ecosystems, climate change**.



UN-GGIM: EUROPE

UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

Examples of Commonalities (3)

Address fundamental data features in more detail / List of attributes of **Address core theme**

The addresses fundamental theme comprises a single feature type, address, to which a variable number of attributes may be attached. Typically, in urban areas these comprise at least one **locator** (building, floor or apartment number and/or name), a **two-dimensional geographic position** and a number of **address components** which place the address within other features such as a road, a locality, an administrative unit or postal code.

Core data should comprise feature type Address with at least the following attributes: one **two dimensional geographic position**, one **locator** (e.g. number or name) if available, and such other **address components** as are in current use.



Examples of Commonalities (4)

Land Parcel fundamental data features in more detail / List of attributes of Cadastral Parcel core theme

The Land Parcels fundamental theme mainly comprises the feature land parcel with three basic attributes:

- The **geographic location**
- A **unique identification** of the parcel
- The type of parcel (may be implicit)

Core data should include feature type **Cadastral Parcel** with following attributes:

- **geometry** (as surface or as multi-surface);
- national cadastral **reference**.

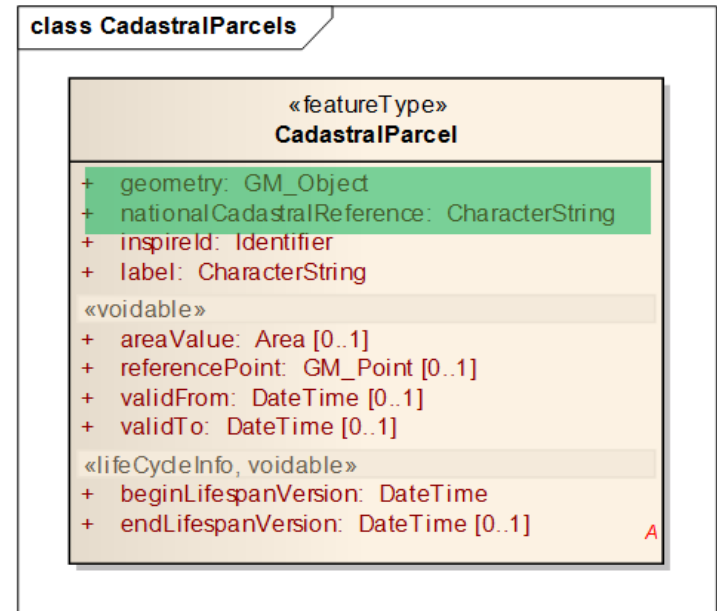


Examples of Commonalities (4)

Land Parcel fundamental data features in more detail / List of attributes of Cadastral Parcel core theme

The Land Parcels fundamental theme mainly comprises the feature land parcel with three basic attributes:

- The **geographic location**
- A **unique identification** of the parcel
- The type of parcel (may be implicit)



Core attributes are **geometry**
and **national cadastral**
reference



Examples of Commonalities (5)

Land Parcel fundamental theme recommendations / Cadastral Parcel core theme recommendations

- Land parcels may be **associated with land registries**.
- Cadastral parcels allowing easy and reliable **link to cadastral registry**.
- It is recommended managing the land parcel's **temporal information**.
- It is recommended to manage the **history of features**, using the mechanism provided by the INSPIRE data specifications: versioning and life-cycle attributes.



Examples of Commonalities (6)

Geographical Names

Fundamental Theme / Core Theme

Recommendations

- Many named features have indeterminate boundaries but, where feasible, their **delineation** should be included.
- Capture the “**true**” **geometry** of named places.



Conclusions



UN-GGIM: EUROPE

UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT



Conclusion

- **Different Contexts and Targets**

- Europe: Detailed recommendations
- Global: High level recommendations

- Results are overall **consistent**

→ **Implementation** can be **unified**
in European UN Member States



UN-GGIM
UNITED NATIONS INITIATIVE ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

Taking the themes forward in Europe



UN-GGIM
EUROPE

UNITED NATIONS
COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

Panel Session



From Addis Workshop:

1. Situation Analysis - Themes

Theme related analysis. For each theme:

- What laws exist in relation to this theme?
- What institutional arrangements exist in relation to this theme?
- **Data gap analysis**



UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

ggim.un.org



UN-GGIM: EUROPE

UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



From Addis Workshop:

Data Gap Analysis – an audit

- What datasets are required within this theme?
- What datasets already exist?
 - Is there a custodian? Who?
 - What quality are they? Content, currency etc
 - What standards are used?
 - What plans are there for this data?
 - Are there any issues relating to this data which require action?
- What datasets do not exist?
 - Is the source identified?
 - How can sources be identified? To include non-traditional sources.
 - Real world object or proxy data?
 - Are additional laws or institutional arrangements needed?



UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

Positioning geospatial information to address global challenges

ggim.un.org



UN-GGIM: EUROPE

UNITED NATIONS COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL INFORMATION MANAGEMENT



Some questions to ask

- How should Europe respond to the global themes?
- Do we, as a Region, have any feedback?
- Do we need to do a data audit/gap analysis against the themes?
- Does our current work on core data fit? Are any changes required?
- How can we raise awareness and promote the themes?
- As a Region what do we want to do next?



On your laptop, tablet or phone,
please go to:

www.slido.com

and enter Event Code:

FDWS



Thank you for attending this Workshop!



**UN-GGIM
EUROPE**

UNITED NATIONS
COMMITTEE OF EXPERTS ON
GLOBAL GEOSPATIAL
INFORMATION MANAGEMENT

