

# Strengthening the geospatial dimension in the statistical production process in Statistics Norway

EFGS, Paris: 14.-17.november 2016



**Statistisk sentralbyrå**  
Statistics Norway

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## GIS trends in Statistics Norway

- Increased emphasis on the use of GIS

- Since the late 1990s, Statistics Norway has;
  - gradually integrated the use of geospatial information (GIS) in statistics
  - paralleled by organizing the statistics production along the Generic Statistical Business Process Model (GSBPM).
- Within the domain of land use statistics a number of regular official statistics have been developed. This is also the case within population area
- However, several statistical domains in SN have still not explored GIS as an analytic tool and as a tool for compiling statistics from various geo-referenced datasets.

- Increased cooperation between NMAs and NSIs

- Statistics Act - free access to all data in the country for SN
- NorgeDigitalt/GeoNorge – free access to public data to members



# Why this emphasis on GIS?

## SN have a unique:

- access to comprehensive national wide geographic mapping- and registry data in SSB
- the possibility of new information / "added value" with the expansion of existing statistics using GIS-tools and GIS-analyzes
- the possibility of visual representation of statistics on maps, both status and changes over time

## SN can by the use of GIS:

- Reduce the reporting burden and simplify / replace form surveys - Ex. Kostra KNNM engage in important natural areas
- meet national requirements and expectations by the Geodata Act



# The history related to GIS ..

- From 2007 it has been a growing supply of more and more advanced geographical data
  - ◊ New opportunities for more detailed statistics
  - ◊ Increase production of statistics and analyses in general
- 2012: Established the Geodatabase to ensure common and quality- assured data
- 2012: Establishment of a web map application - [www.kart.ssb.no](http://www.kart.ssb.no)
  - ◊ Users get a simple visual representation of the statistics on map made in SN, both status and changes over time
- 2014: Improved hardware and access to software for everyone in SN
- 2014: Increased demand for GIS products from the head in SN
  - ◊ Increased demand for GIS products national
  - ◊ Claims and investment in GIS International, EU and by the Geodata act



# Establishing GIS- resources center, 2015

## As a result of;

- No one in SN had the overall coordination or responsibility for an overview of the infrastructure, technical needs, GIS-expertise or user needs for GIS and geodata
- Failure to understand the informal – and formal responsibilities between the departments in SN concerning;
  - Obtaining, quality control and storage of spatial data
  - Operation and maintenance of the geodata base
  - Facilitating and improve infrastructure for GIS tools
  - Dissemination of the result as geographic mapping data
- There are in general little knowledge or interest in SN regarding the obligations according to the geodata Act with regulations, and the Inspire directive



# GIS- resources center's objective and service profile

## Contribute to increase the use of GIS;

- Integrate GIS in more statistics/ analyzes
  - Consider the possibilities for establishing new statistics and analysis by the use of GIS
  - Planning and constructing models/program
  - Assist with integrating of GIS in already establish statistics, where GIS is considered to be a central tool
- Increase the expertise in GIS
  - Survey the need for courses in GIS
  - Arrange basic and advanced courses in GIS
  - Individual training in GIS
  - Draw up guidelines “how to start” (Install the software, Access the geodatabase, Connect to the collective citrixs serve, Start up help“ – practice use of GIS)
- Provide support to common resources associated to GIS, including;
  - IT data collection and geodatabase
  - IT infrastructure, hardware/software
  - Dissemination of statistics on map, compiled using GIS and spatial data
  - Assist the Internal Agency school to increase competence/courses in GIS
  - International cooperation
  - GIS user forum
  - Assist with preparation of product specification, drawing rules, metadata for dissemination of spatial data



# Some lessons and achievements so far

GIS-resource center; completed hours allocated respectively following:

- 1/3 training and courses
- 1/3 preliminary works of infrastructure and cooperation
- 1/3 spatial database

Ensure access to spatial data (quality assured)

	2013	2014	2015	2016
Number of Spatial datasets	28	34	68	70+





# Management spatial data – Geodata base

- Conformal Basis for all statistics producers
  - Ensures comparable results
- Ensures use of quality assured data sets
- A good standard structure of the data
  - Ensures columns contain the same variables for all years
  - Increases the likelihood that annual passes will be carried out without repeated quality checks and changes to the program i.h.t. column and variable names
- Prevent needless time;
  - in search for the correct data set
  - that several do the same job
  - Easily accessible to all



# Annual workflow of the spatial database

National Mapping and Cadastral Authorities

FRIST

ansv

Desember

Januar

Februar

Mars

## Order and download

• Clarification of needs for spatial data in SN	220				
• The clarification of spatial data sent	810				
• Complete delivery received	810			(Medio) 15.februar	

## Prepare

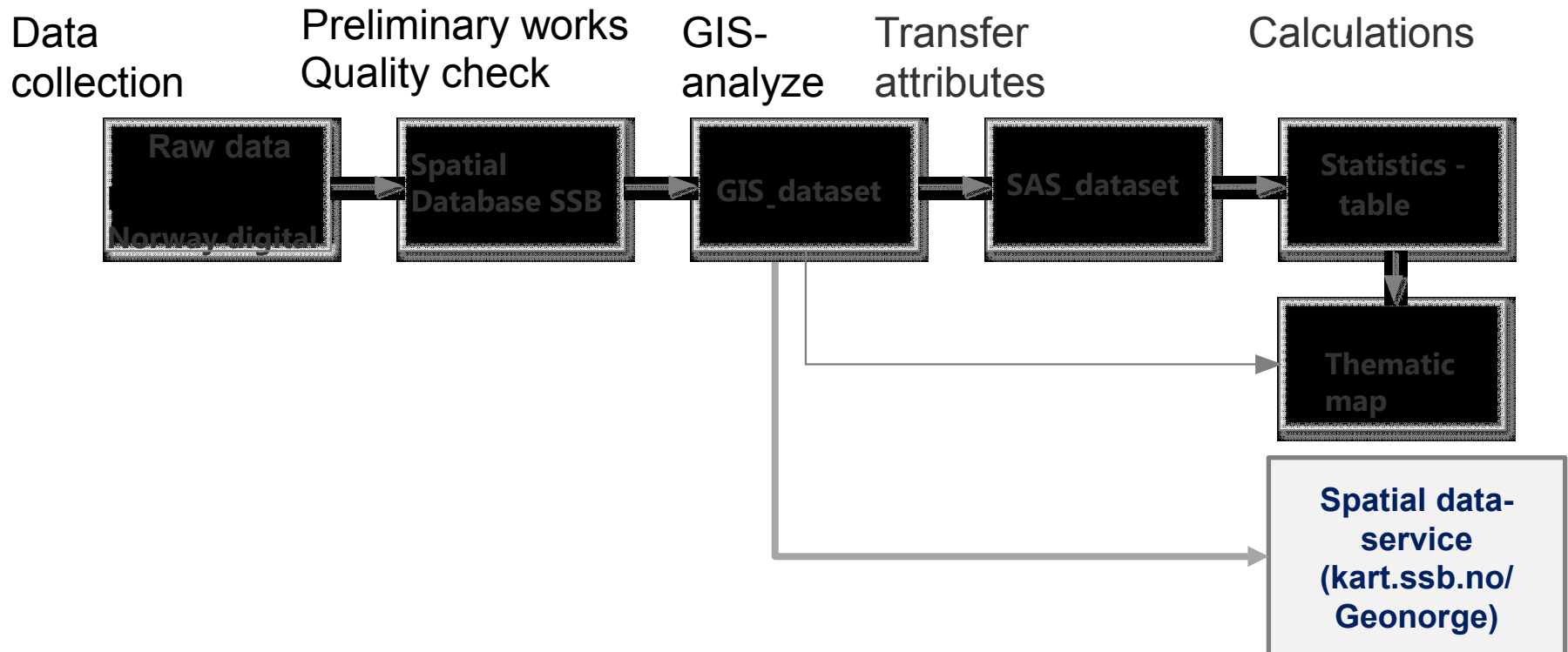
Quality check/Compile to country datasets	220				
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## Spatial database

• Reload new annual sets of spatial data into the spatial database	220				15.mars
• Quality check	220				20.mars
• Information at the internal web over new available annual datasets	220				20.mars



# Dataflow in SSB



# Status, results and objectives

## Increased integration of GIS in the statistics/analyze production process

GIS- tool	Starting point / Number of employee	Starting point / Number of Sections that produce Statistics
Number of users and access to tool and Citrix server	12 / 47	4 / 15 of total objectives 24
Number with access to the spatial Geodatabase	4 / 51	1 / 12 of total objectives 24
GIS-user forum participation	7 / 15	2-3 / 5-6

Thematic, GIS- produced map	Status	Plan goal 2016
Number of geospatial data on Kart.ssb.no	10	12
Delivery to NorgeDigitalt		



# GIS- resources center and the Generic Statistical Business Process (GSBPM)

(UN's model for production of statistics)

<b>(How it used to be)</b>						
1. Clarification of need/demand	2. Plan and design	3. Build	4. Collect	5. Prepare	6. Analyze	7. Disseminate
			Data acquisition	Data acquisition		Disseminate
Sections that produce Statistics	Sections that produce Statistics	Sections that produce Statistics		Sections that produce Statistics	Sections that produce Statistics	Sections that produce Statistics
GIS-resource center	GIS-resource center	GIS-resource center	GIS-resource center	GIS-resource center	GIS-resource center	GIS-resource center
<b>(How it is to day)</b>						

Fargenes betydning

**Grønn:** Det foreligger retningslinjer for standardisert gjennomføring av prosessen, og bruk av ett eller flere standard verktøy. Retningslinjer og verktøy er i utstrakt bruk i organisasjonen

**Gul:** Det foreligger retningslinjer for standardisert gjennomføring av prosessen og bruk av ett eller flere standard verktøy. Retningslinjer og verktøy er i liten grad i bruk, eventuelt i ferd med å bli utviklet.

**Rød:** Det foreligger ikke retningslinjer for standardisert gjennomføring av prosessen, eller bruk av standard verktøy. Det foregår heller ikke utvikling av slike retningslinjer/verktøy.

# Dissemination of GIS- analyzes and statistics

- **Web Application for illustration of results on map: Kart.ssb.no**  
(spatial data/ open data)
  - A web map application with wms and wfs services for data sharing has been established.
  - The number of statistics available for map display is limited, but gradually increasing.
- **Kart.ssb.no**
  - fulfills commitment to disseminate spatial data on web by Geodata Act. And Inspire
  - Further work is needed ....



# Cooperation between National Mapping NMAs and National Statistical Institutes (NSIs)

- Collaboration with the National Mapping Authority, other mapping agencies and entities responsible for national registers is crucial in terms of access;
  - to national map data
  - cadastral information and
  - geocoded national registers
- The way to harmonization data
  - Standard exchange format
  - Standard projection
- Dissemination
  - The datasets with metadata has an access solution from a common portal at NMAs website
  - NMAs working with a new web-access solution from a common portal, where all the spatial data from all members will be displayed and disseminated

