Introduction to statistics production with the use of geographical information systems (GIS)

COURSE LEADER	**Svein Reid**
TARGET GROUP	Target group is persons with some practical experience in GIS/ GI/ cartography, which want to make use of GIS in producing statistics or analysis, using the open-source GIS-tools QGIS and Geopandas. The course is introductory.
ENTRY QUALIFICATIONS	▪ Course holders are English speaking. Although direct interpretation will be provided, some knowledge of English is an advantage. Course presentations and documents may also be translated to Arabic beforehand. ▪ Basic computer skills. Participants should be able to perform varied tasks using computer with some guidance or supervision. ▪ Some knowledge of GIS, but with plans to use GIS in their work.
OBJECTIVE(S)	▪ To provide the participants with basic understanding on how to produce statistics with the use of geocoded statistical registers and map databases. Emphasis is mainly on the use of Vector data and Vector tools, also getting to know GIS-tools QGIS and Geopandas.
CONTENTS	**Course 1 – Basic course** ▪ Introduction to geodata and GIS - What is GIS?, Spatial data models (Vector/Raster),Coordinate systems, Topology, Quality ▪ Getting to know QGIS ▪ Statistics and Geodata, the greater picture: - National frameworks - European framework (INSPIRE) - Global frameworks, SDGs ▪ Statistical mapping: - Map elements and cartographic theory - Creating statistical map in QGIS - interactive <> static maps ▪ Vector Grid statistics: - Basics and Production line for aggregated approach ▪ Introduction to Spatial Analysis: - Geoprocessing, Network analysis, etc. ▪ Introduction to Raster Analysis:

	Course 2 – Automating statistics production with GIS ▪ Revisiting learnings from course 1 ▪ Automating our GIS-processes in QGIS: - Graphic Modeller and scripting in Python ▪ Automating our GIS-processes in the Python packages Pandas and Geopandas
	The participants should have a good understanding on how to integrate geography in the statistical production.
TRAINING METHODS	▪ Lectures and presentations ▪ Hands-on exercises, some using pre-recorded video tutorials ▪ Assignments for participants to deliver on ▪ Exchange of views/experiences
SUGGESTED READING	▪ "A gentle introduction to GIS": chapters 2 - 11 - English version https://docs.qgis.org/3.16/en/docs/gentle_gis_introduction/ ▪ *Explore* http://www.efgs.info/ *and especially "information base"*
REQUIRED PREPARATION	▪ Participation in course 2 requires completion of course 1 ▪ All course data will be shared with the participants before the courses, and must be downloaded before course start. ▪ The participants are required to have the open-source software QGIS installed on their computer before start of course 1, - QGIS software is completely free - Download from https://qgis.org/en/site/forusers/download.html# - Choose the "stable" LTR versions (**L**ong **T**erm **R**elease), version 3.28 or newer. QGIS standalone Installer is sufficient.
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