AREALIS AREA INFORMATION SYSTEM

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AREALIS IN BRIEF

AREALIS is an initiative to establish a nation-wide Geographical Information System, making area, environment and planning data more accessible to the politicians, the public and the county and municipal administration. This again will lead to better area management and get an earlier warning of possible conflicting interests. Thematic information connected to map data gives new possibilities for comparing of area values, analysing of area conflicts and to present this in for an easy understanding.

AREALIS was initiated by the Norwegian Ministry of Environment in 1997. AREALIS is a collaboration between partners where 5 ministries, 20 governmental agencies, 100 county agencies and 85 municipalities today takes part. Statens kartverk (Norwegian Mapping Authority) has a central role in the co-ordination of the project.

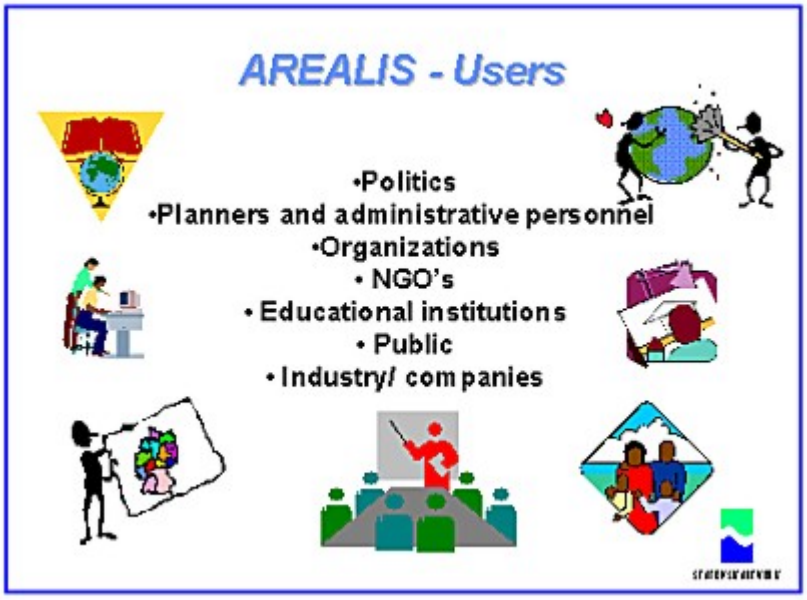
The information is shared by the parties, and are also spread for external use. AREALIS data presents the value and interest of different sectors. Such information is essential for land use management in the context of sustainable land use. A joint effort is very cost-effective. Other important aspects of AREALIS are very focused specifications, high diversity of topics, broad diversity of partners and users, joint management and the use of National Spatial Database infrastructure (NSDI).

BACKGROUND

Land use planning and other kinds of planning effecting the environment are carried out at both national, regional and local levels. The central government works out overall objectives for a sustainable development, and uses different means to direct the development. These include legislative measures such as the Planning Act, other kinds of regulations, detailed planning, major environmental impact assessments etc. Despite these measures we find many examples of land allocation and development not environmentally sound, irreversible land use changes, severe land use conflicts, severe pollution affection to neighbourhoods etc. The existing measures alone are inappropriate to cope with the problems regional and local planners are facing.

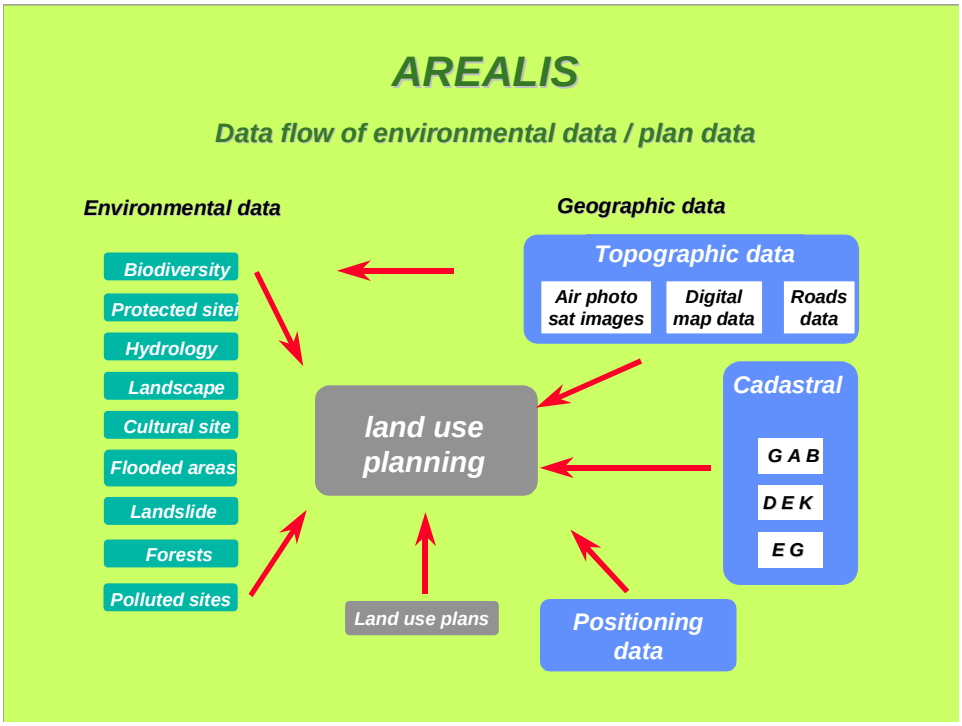
At the same time we find a vast spectrum of environmental information in different institutions, commonly scientific information with high accuracy, but too detailed to be informative and of value for planners. Often planners get hold of information late in a planning sequence resulting in reduced ability to adjust plans, making planning long-lasting and expensive, producing severe land use conflicts and result in-proper land use. By making existing environmental data and land use information from different sectors available at local and regional administrative levels (counties and municipalities) we hope to stimulate the work for environmentally sound land use, sustainable development and rational planning, minimising land use conflicts and resulting in shorter planning time and economic use of the planning force.

AREALIS is a very important project designed to solve some of these challenges concerning area management, and make planners and politicians able to cope with their day to day work on sustainable development planning together with their aim to carry out predictable planning operations. AREALIS is as such user-oriented, giving weight to the needs of local and regional planners and decision-makers.



The present situation for planners and decision makers is that actual information if it exists very often are stored away in drawers and shelves and in internal database and not accessible for external use. There is various competence in the municipalities for use of GIS. In many situations the users have to go to each data owner to get data. The data sets could be of various quality and format and there has been a problem to combine different data sets. Necessary standards and models are developed in the AREALIS programme to help the end user in his use of the information and the new tools.

DATA ELEMENTS



The items/categories of AREALIS are selected according to the needs defined within the environmental management and planning in municipalities and counties.
Within each data set there will be some main information, e.g for soil map it will be the soil type. There is also some more specific information and attribute data, e.g for soil types you can specify potential for ground water and infiltration capacity on drainage water.

Statens kartverks web site is used as an important information channel in the programme. Here the participants and potential users can find more information, guidelines, reports on problems, tips and correction. They can also report to the co-ordination institution via this web site. Some examples on information on the web site:

- Thematic map specification and fact sheets
- Guiding material for municipalities, counties and central institutions
- Qualification program
- Mapping and implementing guideline
- Tables and code value

On the web site there is also information on actual data sets within each county. Here is one example from the county of More and Romsdal

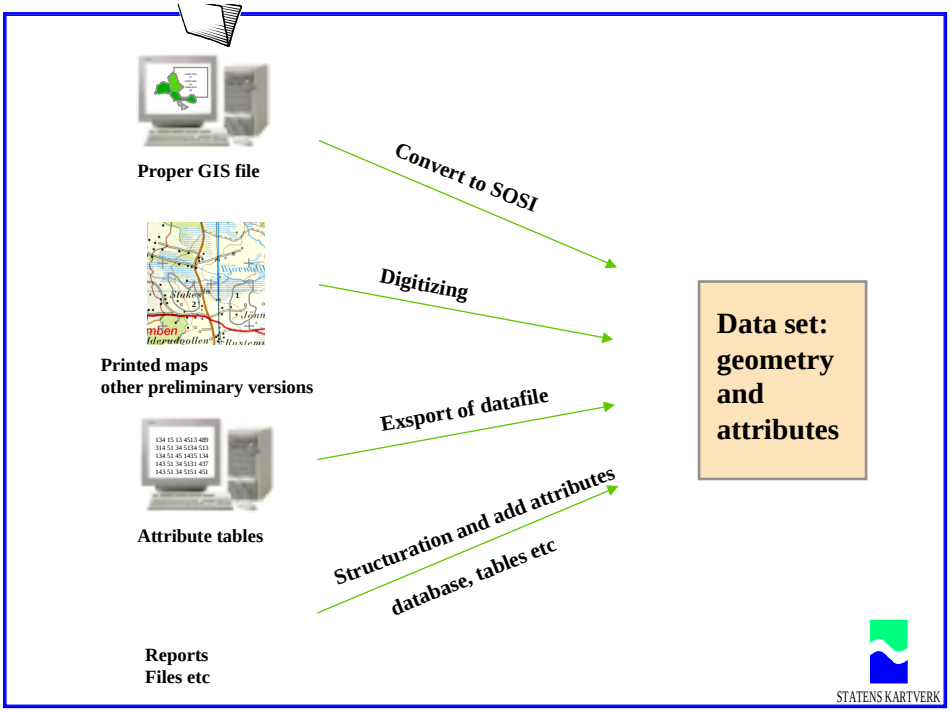
County covering data set

Name	Number	Main Item	File name	Copy right	Scale
Population data nuts 4	1500-2	Population	Bef01500	SSB	1:5000
Harbour	1500-23	Cruisal Issues	HAN01500	FK Industries and environment	1:250000
Recreation areas	1500-27	Recreation	Sfr01500	FM environment	1:50000
Buildings in SEFRAK	1500-8	Cultural heritage	Unknown	RA	1:5000
Fishery companies	1500-11	Coastal/fishery	FIB01500	FD	1:50000
Sea food sites	1500-10	Coastal/Fishery	OPP01500	FD	1:50000
"Tare" areas	1500-9	Costal/Fishery	TAR01500	FD	1:50000
Sheep Pasture	1500-14	Agriculture	Sau01500	FM Agriculture	1:50000
Cultural landscape	1500-3	Landscape	NKU01500	FM Environment	1:50000
Landscape regions	1500-5	Landscape	LAN01500	FM Environment	1:250000
Nature Geographic regions	1500-4	Landscape	Unknown	FM Environment	1:250000
Other important nature areas	1500-19	Nature	ANA01500	FM Environment	1:50000
River basins	1500-15	Nature	DEL01500	FK Industries and environment	1:50000
Wilderness	1500-17	Nature	FRI01500	FM Environment	1:50000
Red list species	1500-16	Nature	ROD01500	FM Environment	1:50000
Protected areas	1500-18	Nature	VER01500	FM Environment	1:50000
Wild animals	1500-20	Nature	VIL01500	FM Environment	1:50000
Corridors for wild animals	1500-21	Nature	VIL01500	FM Environment	1:50000
Accident points	1500-1	Transportation	Uly01500	Road Authority	1:5000
Drinking water resourts	1500-22	Water	HRK1500	FK Industries and environment	1:50000

Municipal covering dataset

Name	Number	Municipality	Main Item	File name	Scale
Protected buildings	1502-6	Molde	Cultural Heritage	Vernhus0	1:5000
Protected forests	1502-12	Molde	Agriculture	Ves01500	1:50000
Planning data	1502-26	Molde	Plan	KPA01500	1:10000
Harbour data	1548-24	Fræna	Cruisal Issues	HAV01500	1:5000
Protected bulidings	1548-7	Fræna	Cultural Heritage	Vernhus	!:5000
Protected forests	1548-13	Fræna	Agriculture	Ves01500	1:50000
Areas for regulation	1548-25	Fræna	Plan	KPL01500	1:50000

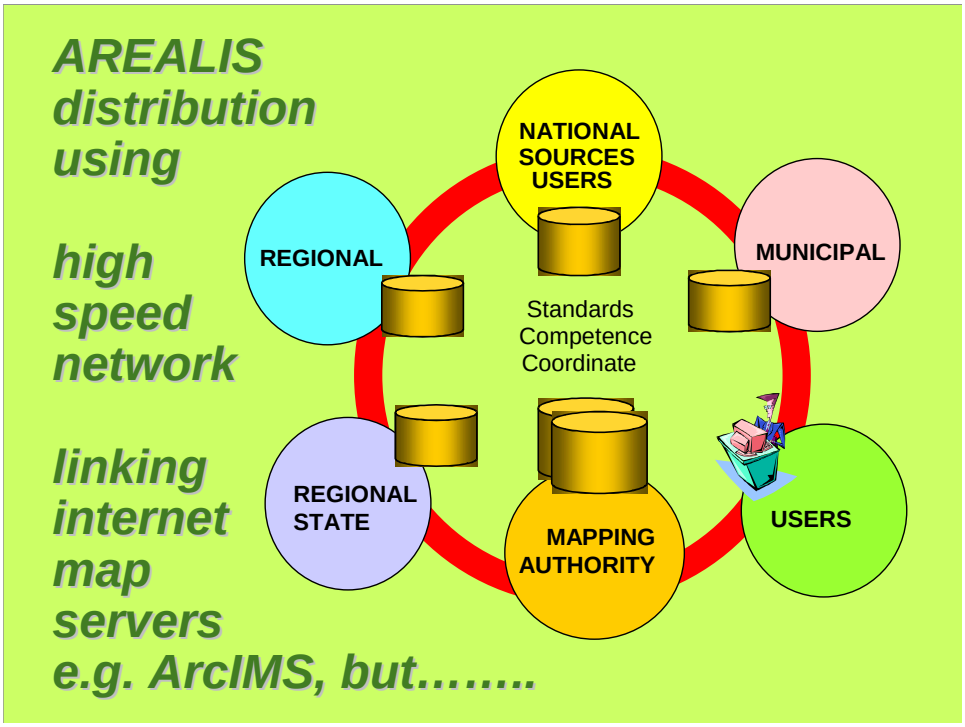
DATA MANAGEMENT AND DISTRIBUTION



The first need is to have a good metadata service that can give information about the datasets you can find in AREALIS. The Norwegian GEODATA CATALOGUE, which is accessible on internet will be used for this purpose. This is a part of NGIS (Norwegian Geographic Information Centre) the same framework where AREALIS data will be stored and maintained. Various data owners will have the option to put their own information in the Catalogue. The system will give information on which data is available where by referring to the outspread of the actual data as a map picture. The user can get information on date of mapping, storage, data owner, restriction in distribution etc. With the complexity of AREALIS data and attached documents, pictures it is a challenge to make a user friendly and quick system for search on information.

AREALIS uses NGIS as management and distribution system. Each municipality, county and other partners in AREALIS deliver quality controlled data to Statens kartverk who establish the data in the system. NGIS is a distributed solution with storage and management in each county, by servers in a network between the management systems by each data owner. Responsibility on administration and updating of information in NGIS will still be on the county and municipal level.

Distribution of data can be done by CD. However in the future more and more will be distributed via Internet. The geodata co-operation in the future will be based on a strong co-operation and use of network technology. Basic data and the most important technical components is mow available. However the communication speed is still a problem to achieve an efficient information exchange. Statens kartverk and Norwegian Land Use Mapping Agency are now testing the benefit of high speed communication on distribution of geodata.



COUNTY PROJECTS

On the web site there is also some examples on solutions by using AREALIS in various counties;

- Map visualising recreation areas in Grimstad Municipality. The map diversify between areas that are a part of the "Skjærgårdsparken" and areas owned by the City council.
- Map visualising rest areas within the 100 meter zone in Arendal municipality. The map shows an area that is suggested to be used for housing. The map shows the conflicts.
- Map visualising areas planned for recreation houses in Tvedestrand municipality and recreation houses that are built in this areas. The map gives an indication on how well the restrictions in the plan is followed in the period.
- Map visualising a selection of items in Risørs coastal zone. The data sets established as a part of the coastal Zone project in Aust-Agder. The data will also be used in Arealis and the data has to be adjusted to the Arealis standard.

In the end I would like to demonstrate how this system can be used by an example from a local municipality.

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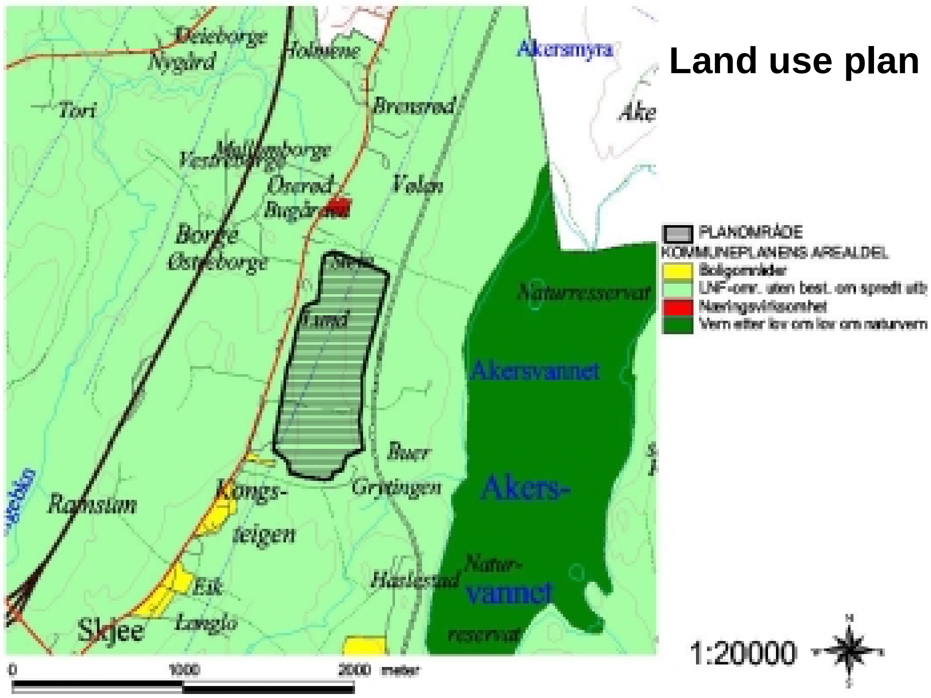
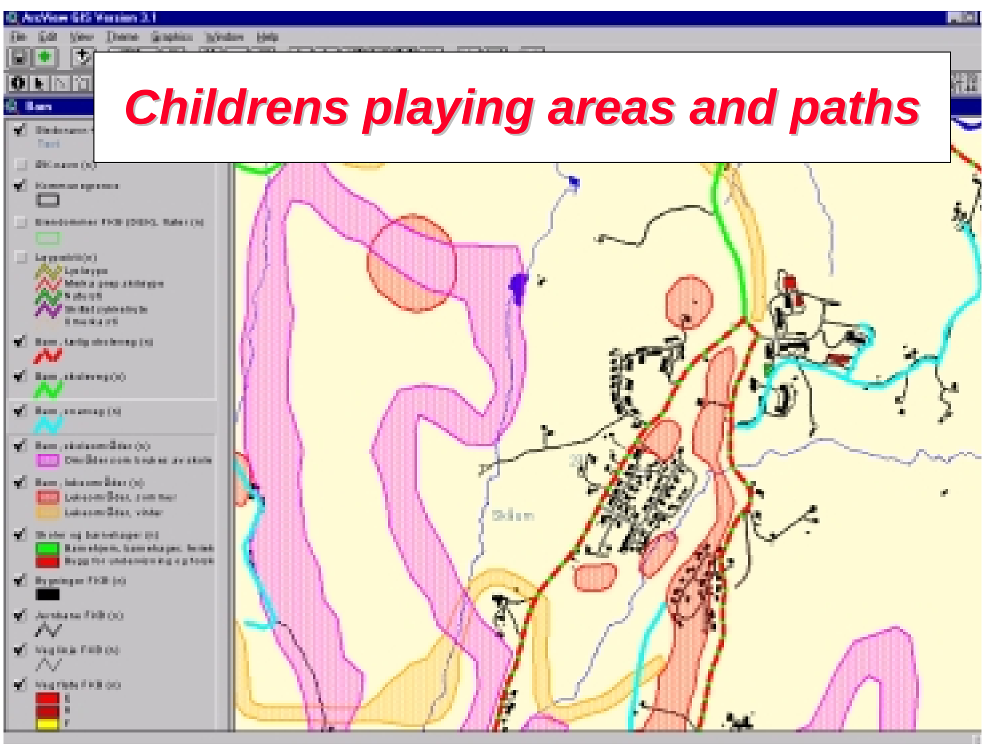

Land use plan
PLANOMRÅDE
KOMMUNEPLANENS AREALDEL
Boligområder
LNF-omr. uten best. om spredt utb
Næringsvirksomhet
Vern etter lov om lov om naturvern
Akersvannet
Naturreservat
Skjee
1:20000
0
1000
2000 meter


Childrens playing areas and paths