

FARM-MAP ON INTERNET GEOSPATIAL INFRASTRUCTURE AND WEB MAP SERVICES – A STATE OF THE ART FOR THE AGRICULTURAL SECTOR.

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ABSTRACT:

“The Norwegian Ministry of Agriculture and Food” places emphasis particularly on a national food security, viability of rural areas and environmental protection. Important parts of the agricultural policy are at a yearly basis laid down in the Agricultural Agreement, negotiated between the farmers’ organizations and the Government and approved by the Parliament. To reach the goals agreed upon in the Agricultural Agreement, each year the Government pays each year a large amount of support and subsidies to farmers. One element of the support is related to the productive area of each farm, the other element is in the form of an Agro-Environmental Scheme. The General Accounting Office in Norway demands a better control system for these disbursements. This paper will describe how maps and statistics are available through Internet with data collected from distributed databases and calculated in real time. In this way detailed geographical information is clearly and easily available for both farmers and local and central government administration. Using distributed databases the master data are available for all public authorities at any time. Databases from a number of public authorities are available on the Internet through the national geospatial data infrastructure called Norway Digital. Based on this infrastructure, the Norwegian Forest and Landscape institute (Forest and Landscape) has launched “Farm-maps on Internet”. The Internet application downloads, calculates and displays geodata on-the-fly from databases stored and located at different authorities in Norway, in order to produce maps and statistics documenting the land use for each agricultural property. This practical example of e-government gives the farmers geographical information needed in real time. The improved public access to data has also increased the demand for standardisation, documentation and regular and systematic maintenance of public spatial data repository. Interaction and cooperation between public authorities is a precondition for attaining these demands.

Farm maps on the Internet

“Farm-maps on the Internet” uses Web Map Services (wms) and Web Feature Services (wfs) technology. Using property information from the Cadastre database located at the Norwegian Mapping and Cadastre Authority, Land use information located at the Norwegian Forest and Landscape Institute and information from the agriculture register located at the Norwegian Agricultural Authority, the overlay and the calculation is done on-the-fly. All the information is collected from the sources where data are updated and maintained by the responsible Authorities. The application produces thematic maps and statistics information for each property combined with thematic maps and orthophotos. Experience so far shows that the geographical infrastructure works well and that the results in most cases are most reliable and applicable for many users, both from private and public sectors.

Norway Digital

Norway Digital is the Norwegian government's initiative to build the national geographical infrastructure. The aim is to enhance the availability and use of high quality geographic information among a broad range of users, primarily in the public sector. Norway Digital is a working co-operation and infrastructure with reference and thematic data available and has more than 200 operational Web Map Services, geoportals and other services in operation. Norway Digital is a nation-wide programme for co-operation on establishment, maintenance and distribution of digital geographic data.

All institutions participating in Norway Digital are participating in the infrastructure with their own data making it available for

the other partners. The geographical data are divided in two main categories, reference and thematic data.

Large effort has been made in working out specifications of several geographic and thematic data sets. The specifications have been developed based on the principles of the national de facto standard for geographic information (SOSI). We are well prepared to meet Inspire requirements and obligations. A national database for digital orthophotos is established, “Norway in Pictures”. The orthophotos are now available through the Internet. Authorized users and partners in “Norway digital” can access the orthophotos in most formats, both for local use and based on WMS services. The infrastructure also includes a gateway for distributing the information to non-partners and to the private sector.

Geographical information through the Internet

Today, main access to map information is through the Internet. Through Internet technology map information is more easily accessible and available to users. Due to this increased use errors and lack of maintenance in the available map information will be detected earlier and reported at a larger extent. By establishing user friendly dialogue procedures and increased efforts and activities to correct and update map information more regularly, the results will be high quality map information to the best for public and private sector. A logic consequence is a reduced need of local copies of databases. Instead central data suppliers update and maintain the data and make them online available through the national geoportal. Consequently, the user agencies are relieved of many tasks and they are ensured they have the best available, best updated information at any time.

Many nations are now providing geoportals, but mostly with information from a single agency, e.g. the mapping agency.

Updated and standardized information

Standardization is an important request to achieve a national and functional information flow in a good functioning e-

Government. Routines and work procedures must be based on an understanding on how information and databases can be utilized to have optimal working services. In their application for support the farmers need to have updated and standardized information. This requires that updated information in one or more of decentralised databases should be available instantly.

