



IST-2001-34281

Geographical traceability in agriculture

Introduction

With the globalisation of trade, consumers have become increasingly concerned to know much more about the origins of their food and about the way agricultural land is used. This is reflected in the demand for improved traceability from “farm to plate”. Thus, the objective of the project is to find out how and to what extent we can trace the geographic origin of food at all the stages of production, storage, processing and distribution.

Based on the example of agricultural geomatics applied to precision farming, the GeoTraceAgri project consortium proposes developing the relevant indicators, tools and methods for geographic information that will provide credible information for:

- Anyone concerned about food security and environmental protection.
- Farmers who are striving to farm sustainably to ensure that their farms remain viable and profitable.
- Middlemen who want to secure their supplies.

The purpose of the GeoTraceAgri project, then, is to define a methodology for the sampling, acquisition, utilization and processing of georeferenced data that will be used to generate agro-environmental indicators at various geographical scales.

The first will be to define the indicators and determine the indicator classes that are relevant to geographical traceability in agriculture. The various geographical scales to be considered are: the plot; the field; the catchments and the region for which the origin of the product is certified (Region d'Appellation Contrôlée or AOC).

In the second stage, a reference system for geographical traceability will be constructed for selected agricultural sectors.

The third stage will involve the development of the computer infrastructure that will ensure the geographical traceability of the agricultural products.

Finally, the results will be disseminated and the way in which the GeoTraceAgri approach could be transposed to all agricultural sectors will be studied.

The research team already has access to a wide range of data which could improve rural environmental management. These relate to land use and cover, topography, climatology, soil type, hydrographic network, yields, etc. These characteristics, combined with the cropping practices used between and within plots (variety, fertilization, harvest date, etc), are key elements for describing agricultural produce and its environmental impact.

However, recent technological advances (development of remote aero-spatial or built-in sensors, yield sensors, Global Positioning Systems or GPS, etc) are having a major impact on how geospatial data is acquired, processed and represented. In order to maximise the benefits of these advances a method for obtaining, integrating and analysing geospatial data from these sensors must be developed. In addition, the data obtained by the different advisers and farmers should be compatible. It is also essential that the appropriate scales for sampling should be defined, as should the procedures to combine and aggregate the different scales of the geospatial data.

In summary, there is a huge amount of data from numerous sources (field and sensor information, maps, yield, soil properties, aerial photography, GPS etc), and this is presented in a large number of different formats (point, raster and vector format as well as metadata – table, graph, report etc).

If the method and format used for obtaining data were standardized, this would greatly encourage exchanges between the users, whether they be farmers, advisors, agronomists, distributors or others. To aid this process, GeoTraceAgri proposes to develop a structured methodology for sampling, applying and processing georeferenced data which will provide georeferenced agro-environmental indicators at different scales.

GeoTraceAgri will also take the human dimension into account by giving priority to a participative approach and to interaction between all the stakeholders in the agricultural sector. The approach will be validated and demonstrations will be held which should help to raise awareness among farmers and the public. The project should also aid people's understanding of the rural heritage by improving the use, access and management of geographic information.

Objectives and methods

The GeoTraceAgri programme has four objectives:

1. To define the indicators and determine the classes of georeferenced indicators relevant to traceability. This will be done in terms of the different agricultural sectors and as a function of the different scales of the spatial reference (plot, field, catchment area and the region of guarantee of origin). Using the plant sector as a pilot, this will involve:

- Selecting criteria or classes of criteria which would allow adequate traceability and would benefit from georeferencing in terms of the interoperability of tools and data.
- Developing standards for data collection, processing and representation in order to structure information taken from different sources and scales within a geospatial database for traceability.

2. To set up a geomatic data set for agricultural traceability (SIGTA) for each of the chosen sectors in the pilot agricultural regions. The data set will be presented in the form of a geographic information system (GIS). This will include a cadastral or plot database, land use and its physiographic characteristics, maps of the pilot farms and information on the relevant agricultural practices.

Setting up the GIS with the help of matrices with a graphic (cadastral) and geographic reference (land use, Digital Elevation Model or DEM, farm map, etc), implies:

- Qualifying the georeferenced agricultural information as an essential tool for identifying and developing all the products and services from the different plant sectors.
- Developing tools to integrate visualize and diffuse geospatial traceability data and metadata from the SIGTA.
- Setting up geo-data bases on a regional and local scale.

3. To develop the computerised infrastructure for geographic traceability. In particular, this would mean that a geographic search using intranet, extranet or internet sites would provide secure communication reserved for all the stakeholders in the traceability chain and public communication for the consumers.

4. To determine whether the approach is transferable to animal and marine sectors with the help of users representing these other sectors.

Image



Logo



Results

Unfortunately, at the time of going to press, no projects results were available.

Project Facts and Consortium Information

Project No:	IST-2001-34281
Start Date:	01/04/2002 DD/MM/YYYY (Use <i>Info</i> style)
End Date:	30/09/2004 DD/MM/YYYY (Use <i>Info</i> style)
Key Action 3 Area:	(Use <i>Info</i> style)
Total Cost:	euro 3.392793
EC Contribution:	euro 1.230.000
Project Type:	Shared-cost RTD
Project Objectives:	<p>To select and define a set of georeferenced indicators relevant to geographical traceability in agriculture.</p> <p>To define a system for geographic traceability.</p> <p>To develop tools to facilitate secure visualization and communication between the stakeholders in the chain and to provide a user-friendly communication service for consumers.</p> <p>To diffuse the GeoTraceAgri approach to other agricultural sectors.</p> <p>The project is relevant to consumers, food producers, food processors and food suppliers.</p>
Keywords:	<p>Interoperability</p> <p>Standards and metadata</p> <p>Visualisation</p>

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