EUROPEAN COMMISSION
DIRECTORATE GENERAL JRC
JOINT RESEARCH CENTRE - ISPRA
Institute for Protection and Security of the Citizen
MARS Unit

Session 4: Presentation of the Vineyard Registers in the Candidate Countries

Session 4 – Presentation of the Vineyard Register in Hungary, by *Zoltán Harcz, Ministry of Agriculture and Rural Development & Lásló Martinovitch, FÖMI Remote Sensing Centre*

Abstract

In the first part of the presentation M. Harcz from the Ministry of agriculture of Hungary (MARD) presented the legislation which was harmonised with EU regulation: the Act CXLIII of December 2000 is harmonised both with (Council) 357/79 on statistical survey of vineyard and (Council) 2392/86 on Vineyard Register. A statistical survey of vineyards was carried out in June-October 2001, with identification of plantations, users, characteristics of vineyard, processing and storing capacity, production etc. a statistical register of vineyard plantation was therefore established, under the responsibility of the Central Statistics Office. From this survey, vineyards in Hungary cover 92,800 ha and 1710 ha new plantation. The average size of plantation is quite large and there is a majority of old plantation (20-30 years). To date vineyard plantations are submitted to authorisation from county officers or professional organisations (those have administrative competence). M. Harcz also informed that there was a twinning program and peer review program which raised some question from Hungary.

M. Martinovitch from FÖMI (Remote Sensing Centre) presented the GIS support activities to the MARD in the field of vineyard cadastre. He highlighted that FÖMI has been involved in GIS implementation for the MARD. A map of vineyards at 1/50,000 scale, covering the wine-growing communities, was established in 1998-99 using Remote Sensing (Landsat and Spot time-series images). Then FÖMI participated to the country-wide census of vineyard and orchards in 1999-2001 (as described by M. Harcz before). Now since 2001 until 2003 FÖMI provides support for the existing HEGYIR vineyard database to provide all vineyard communities with vineyard cadastre. There are 22 wine-growing regions in Hungary and they work on 4 at the moment. Maps will be produced from 3 GIS layers: (i) cadatral maps at 1/2000 to 1/4000, (ii) digital topographic maps at 1/10,000 scale (iii) vineyard parcels layer. Next year it is planned to have 45% of the wine-growing regions completed. In 2003 there will be also a full orthophotos

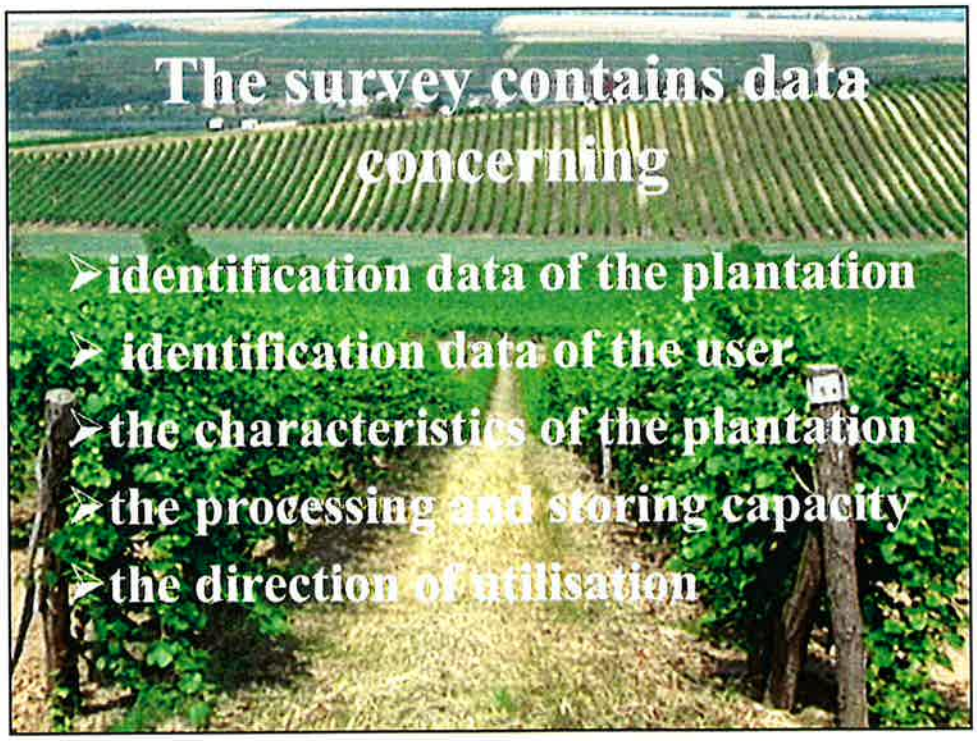
coverage of Hungary at 1/10000 scale (IACS); other data might be added in the future (DTM, exposure and slopes maps).

(Presentation Powerpoint)


Regulation of the production potential in Hungary

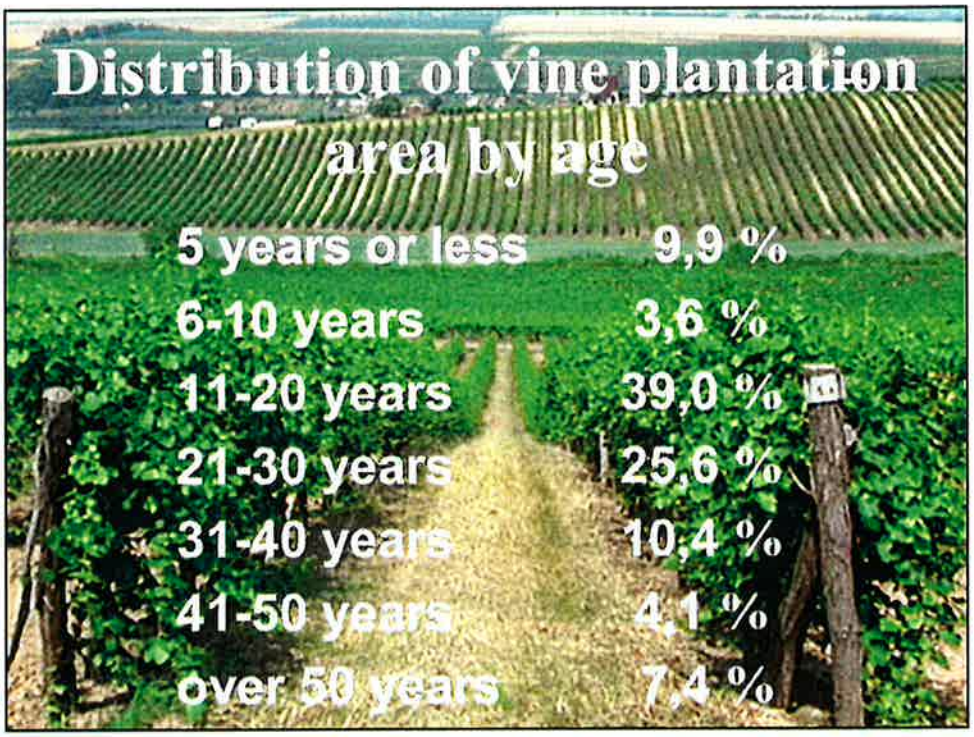

Statistical survey
Data
Organizations
Plantating and grubbing
Wine communities
Request for the official opinion of the EC

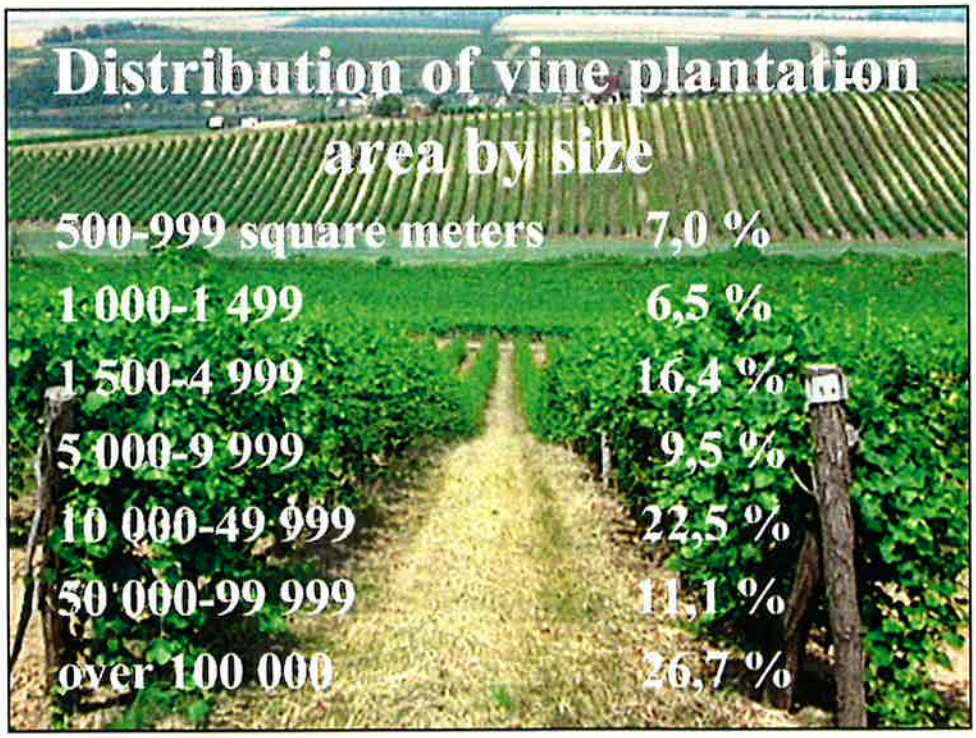

Statistical survey of areas under vines
Act CXLIII (19 December 2000)
1 June 2001 - 15 October 2001
Central Statistical Office
Scope


The survey contains data concerning
identification data of the plantation
identification data of the user
the characteristics of the plantation
the processing and storing capacity
the direction of utilisation


This Act contains harmonised regulations which are in accord with the following:
➢Council Regulation (EEC) No 357/79 on the statistical survey of areas under vine
➢Council Regulation (EEC) No 2392/86 on establishing a community vineyard register

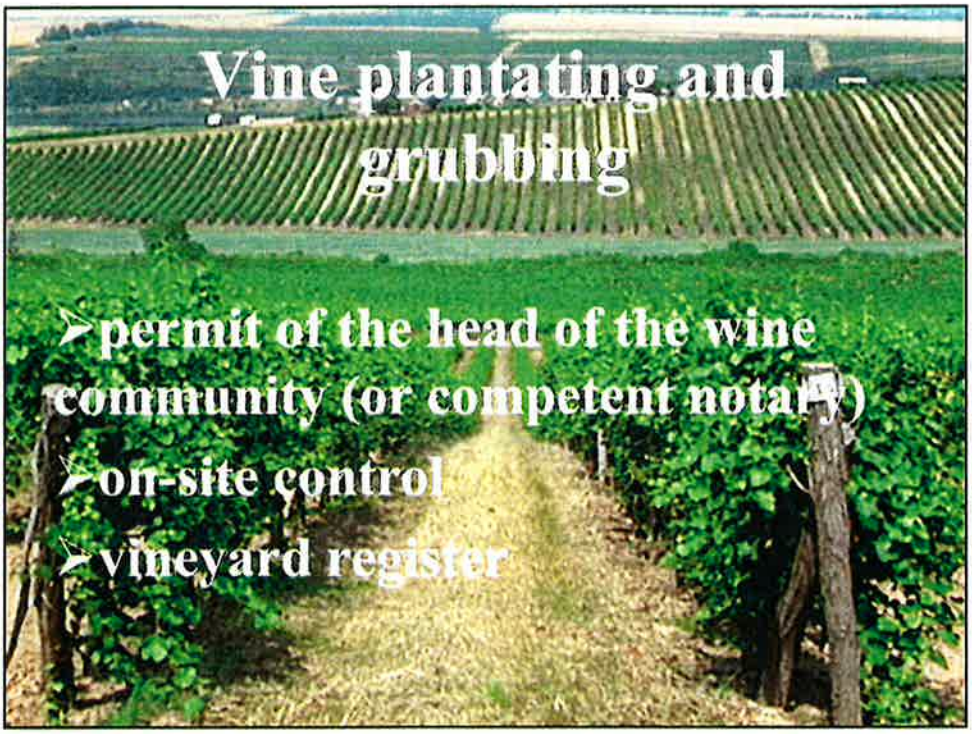

Specific data of the sector-
2001
Vineyard area
92 800 hectares
Quantity of grape produced
811 000 tonnes
New plantations
1710 hectares

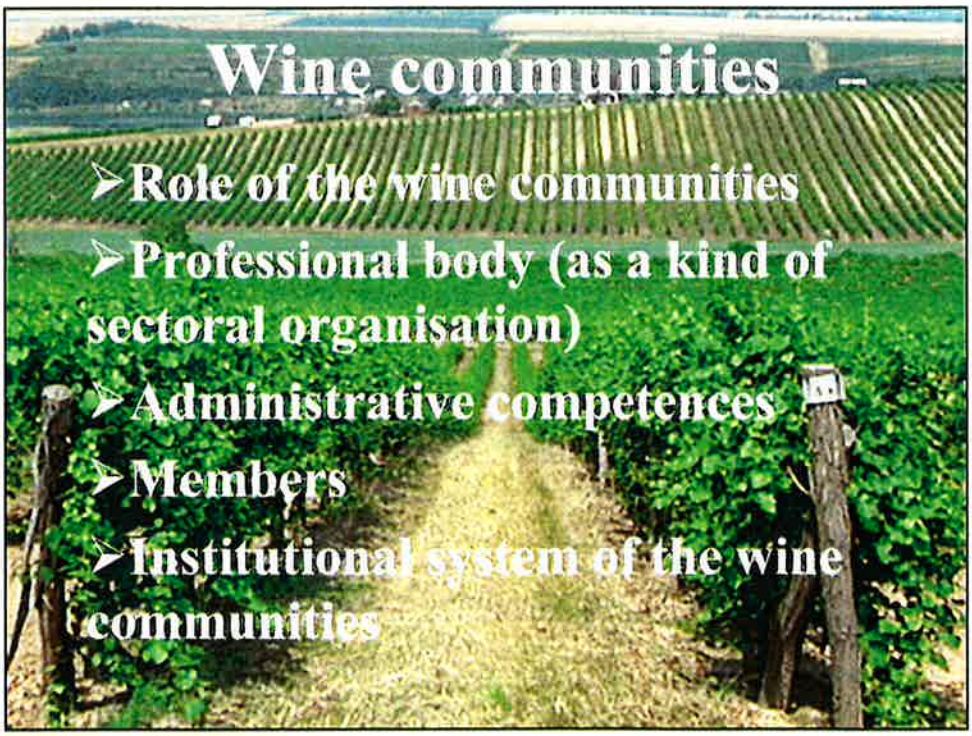

Distribution of vine plantation area by age
5 years or less 9,9 %
6-10 years 3,6 %
11-20 years 39,0 %
21-30 years 25,6 %
31-40 years 10,4 %
41-50 years 4,1 %
over 50 years 7,4 %


Distribution of vine plantation area by size
500-999 square meters 7,0 %
1 000-1 499 6,5 %
1 500-4 999 16,4 %
5 000-9 999 9,5 %
10 000-49 999 22,5 %
50 000-99 999 11,1 %
over 100 000 26,7 %


Main grape varieties
Main white varieties: Welsch-, Italian Riesling, Müller Thurgau, Furmint, Tausendgut , Izsáki, Perle von Zala, Chardonnay, Lindenblättliger
Main black grapes varieties: Blaufränkisch, Zweigelt, Blauer Portugieser, Kadarka, Merlot, Cabernet savignon


Organizations
Central Statistical Office
National Institute for Agricultural Quality Control (OMMI)
County agricultural offices
Wine communities


Vine plantating and grubbing
permit of the head of the wine community (or competent notary)
on-site control
vineyard register


Wine communities
Role of the wine communities
Professional body (as a kind of sectoral organisation)
Administrative competences
Members
Institutional system of the wine communities


Request for the official opinion of the European Commission
Hungary's questions:
• Person authorises planting and grubbing up wine
• Organisation to manage the register
• competent authority as far as the submission of the declarations (1282/2001/EC)

GIS support for vineyard cadastre of MARD by the Land Administration in Hungary

dr. MARTINOVICH, László
FÖMI Remote Sensing Centre

HARCZ, Zoltán
MARD

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Adoption of the Acquis Communautaire tasks of the Land Administration

Actions

- ***Land use/land cover*** (CLC, Lucas)
- ***ITT development at Land Offices*** (land registry, cadastre)
- ***Provision of application oriented products*** (e.g. orthophotos)
- ***Monitoring and control*** (crop, area-based)
- ***Land Consolidation/National Land Fund*** (land tenure)
- ***Support establishing National Vineyard Cadastre***
- ***Multipurpose use of the services and products in MARD***
- ***Internet based solutions*** (metadata)
- ***Links and networking*** (domestic, bilateral, international)

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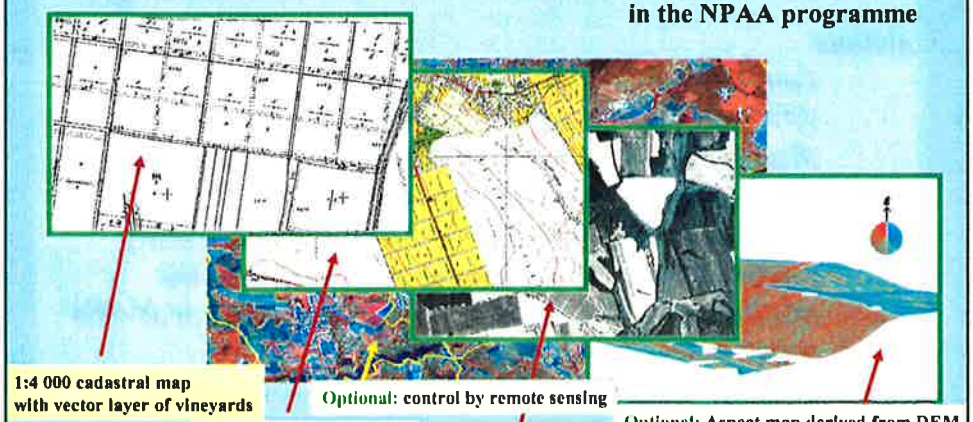
Content

The vineyard cadastre related tasks of the NPAA

- **The challenge and the answer**
- **1998-1999 Surveying of vineyards by Remote Sensing**
- **1999-2001 Spin-off task: participation in country-wide census of vineyards and orchards (contracted by CSO)**
- **2001-2003 On-going project: GIS support for the existing HEGYIR vineyard databases providing vineyard cadastre for all of the vineyard communities**
- **Conclusion**

Challenge: **under 1593/2000 EC regulation from 1st of January, 2005, agricultural parcels, including vineyards, should be registered in a GIS (digital map based) system**

Answer: **use of products and services by the vineyard communities as provided by the Land Administration as introduced by FÖMI in the NPAA programme**



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1.

1998-1999

Surveying of vineyards by Remote Sensing

(FÖMI Institute of Geodesy, Cartography and Remote Sensing)

WINEYARD MAPPING USING REMOTE SENSING

SPOT and Landsat imagery preprocessing

Workstation supported image interpretation of wineyard areas

Raster database of scanned and geometrically transformed topographic map

Field documents

Check using Landsat TM

Control

Corrections, final database

Results:
wineyard map
statistics
(by regions, villages)
change monitoring

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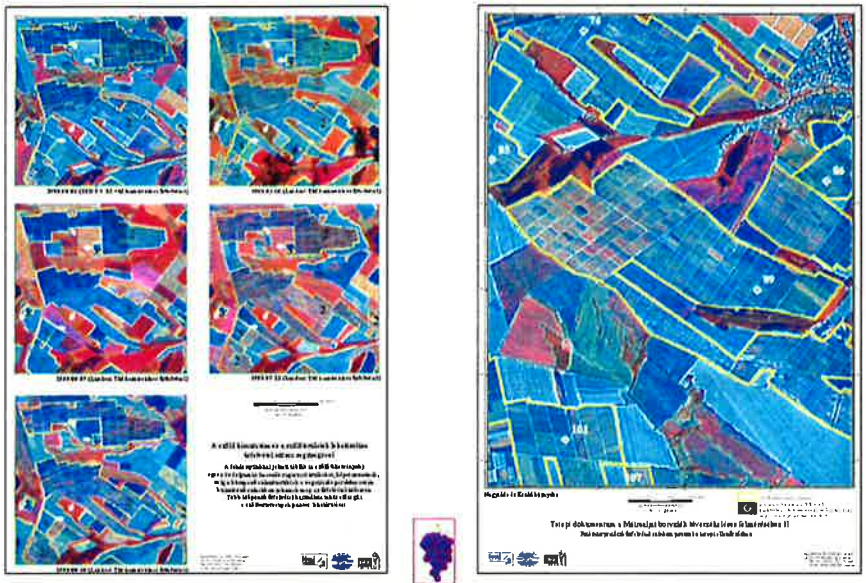
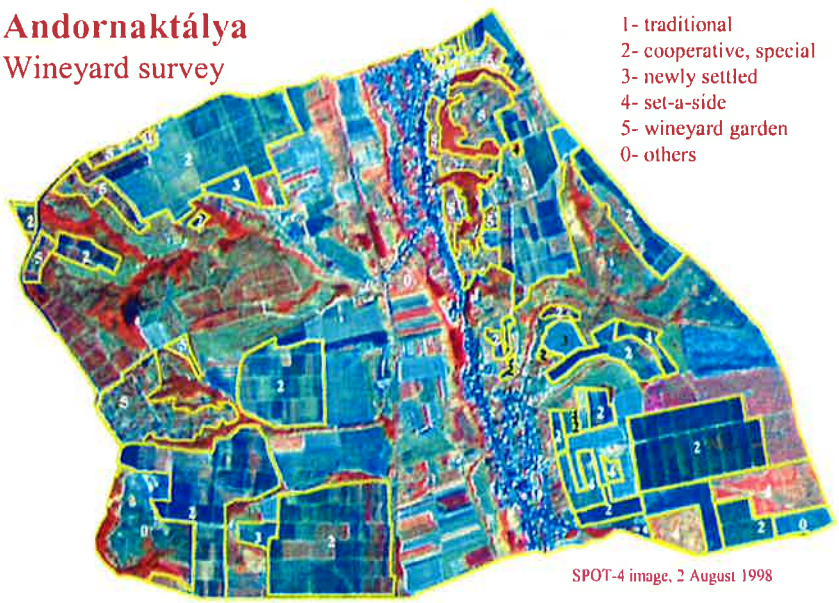
Methodology of the identification of vineyards is based on satellite data time series



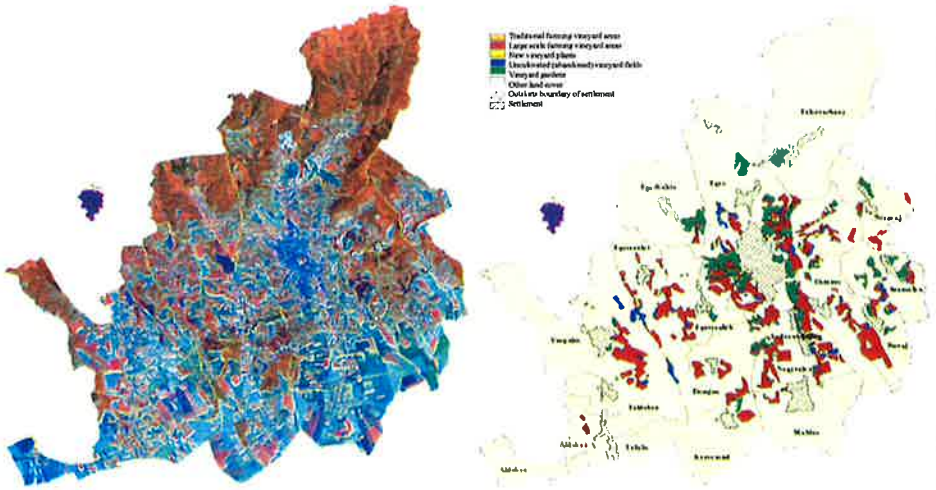
Andornaktálya
Wineyard survey



1- traditional
2- cooperative, special
3- newly settled
4- set-a-side
5- wineyard garden
0- others

SPOT-4 image, 2 August 1998

Wine-growing region of Eger mapped by Remote Sensing (1999)



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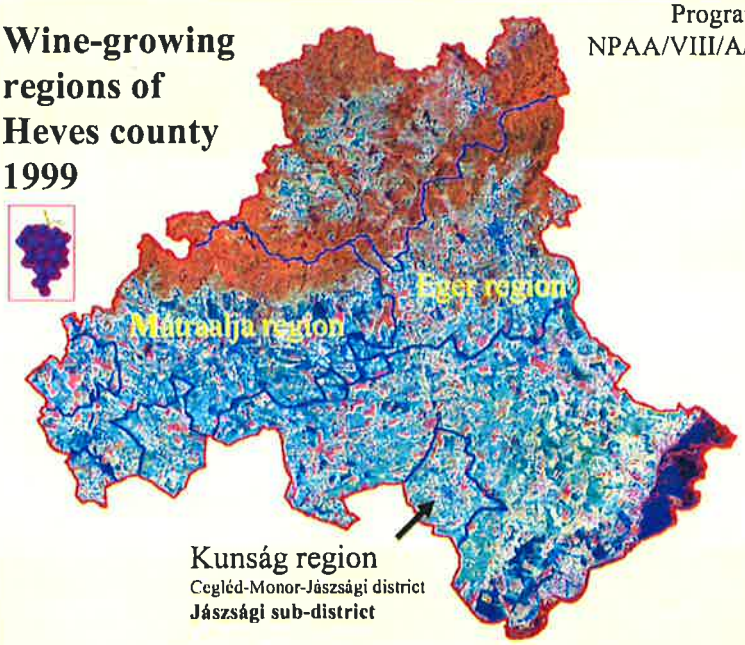
Wine-growing regions of Heves county 1999

Program
NPAA/VIII/A/6



Kunság region
Cegléd-Monor-Jászsági district
Jászsági sub-district

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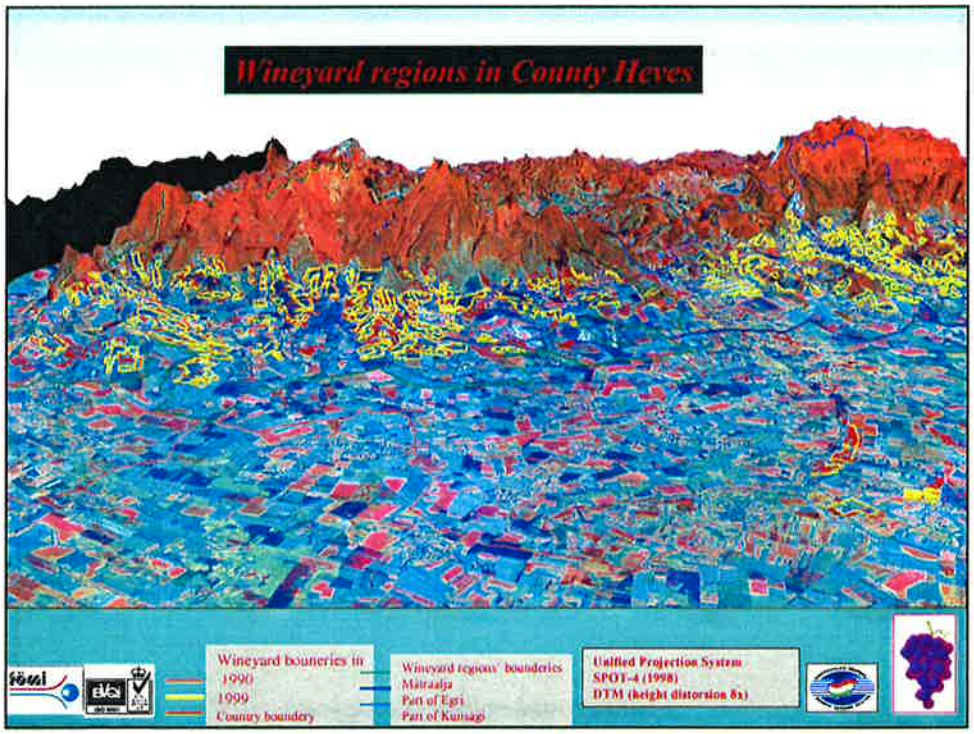

2.

1999-2001

Spin-off task:
participation in country-wide census of vineyards and orchards

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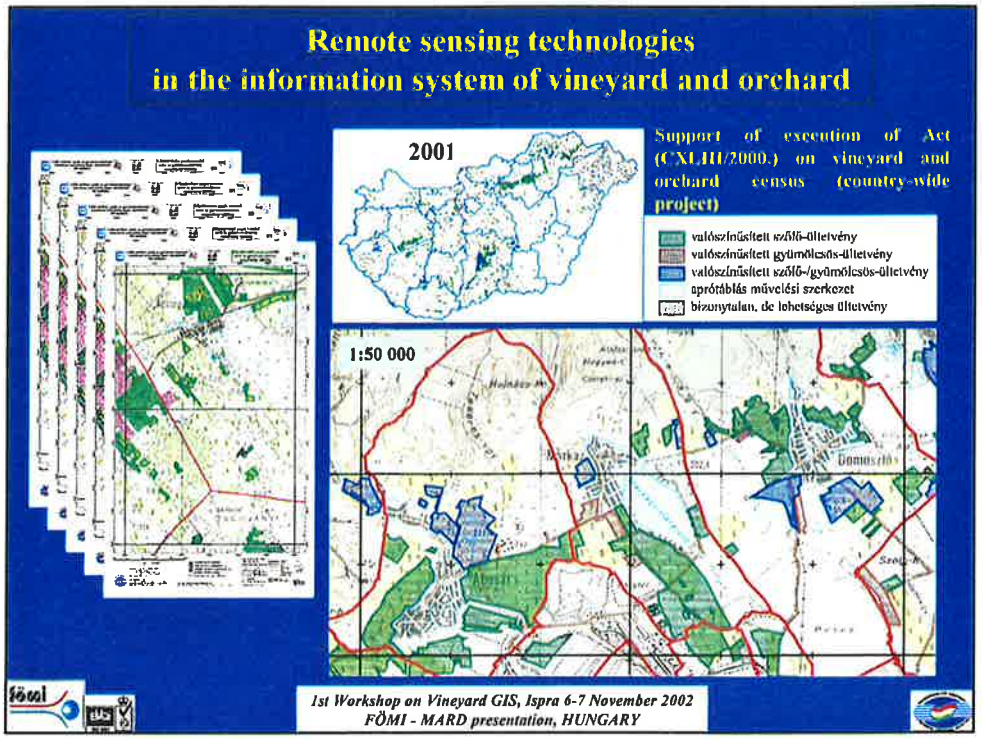
Remote sensing technologies
in the information system of vineyard and orchard
2001
Support of execution of Act (CXLIII/2000.) on vineyard and orchard census (country-wide project)
valószínűsített szőlő-ültetvény
valószínűsített gyümölcsös-ültetvény
valószínűsített szőlő-/gyümölcsös-ültetvény
aprótáblás művelési szerkezet
bizonytalan, de lehetséges ültetvény
1:50 000
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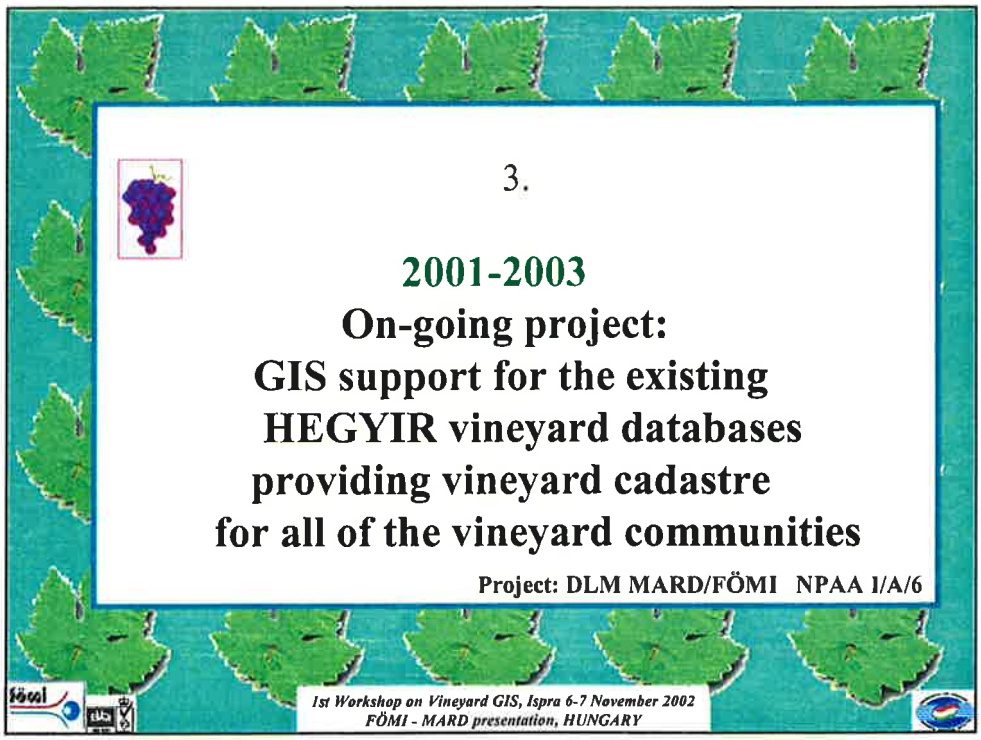
3.
2001-2003
On-going project:
GIS support for the existing
HEGYIR vineyard databases
providing vineyard cadastre
for all of the vineyard communities
Project: DLM MARD/FÖMI NPAA I/A/6
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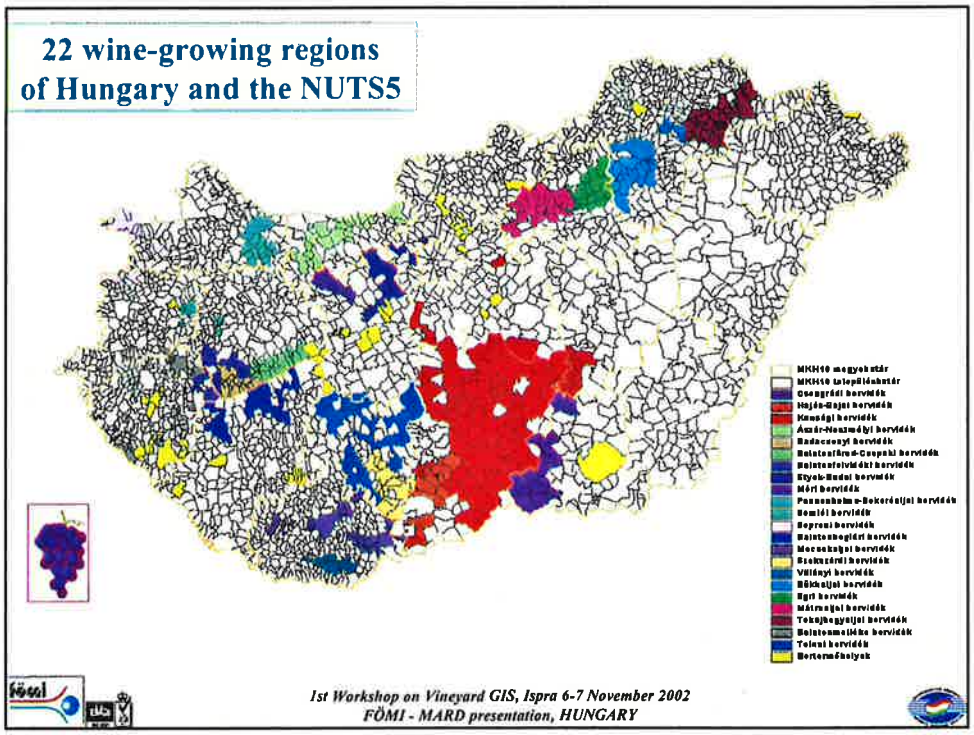
22 wine-growing regions
of Hungary and the NUTS5
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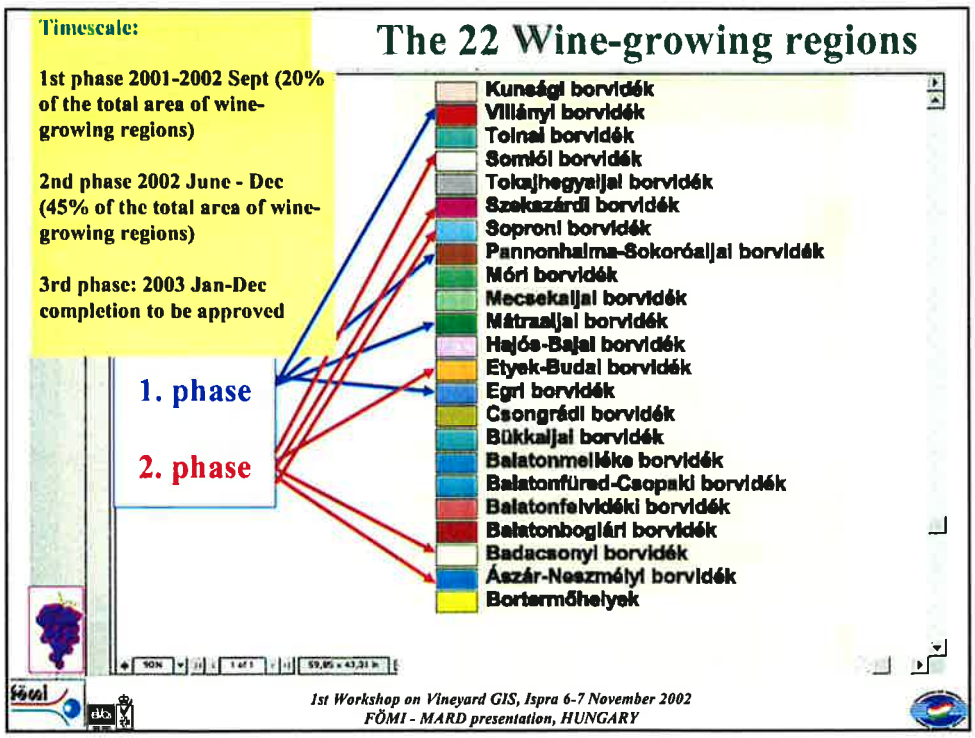
Timescale:
1st phase 2001-2002 Sept (20% of the total area of wine-growing regions)
2nd phase 2002 June - Dec (45% of the total area of wine-growing regions)
3rd phase: 2003 Jan-Dec completion to be approved
1. phase
2. phase
The 22 Wine-growing regions
Kunsági borvidék
Villányi borvidék
Tolnai borvidék
Somlói borvidék
Tokajhegyaljai borvidék
Szekszárdi borvidék
Soproni borvidék
Pannonhalma-Sokoróaljai borvidék
Móri borvidék
Mecsekaljai borvidék
Mátraaljai borvidék
Hajós-Bajai borvidék
Etyek-Budai borvidék
Egri borvidék
Csongrádi borvidék
Bükkaljai borvidék
Balatonmelléke borvidék
Balatonfüred-Csopaki borvidék
Balatonfelvidéki borvidék
Balatonboglári borvidék
Badacsonyi borvidék
Ászár-Neszmélyi borvidék
Bortermőhelyek
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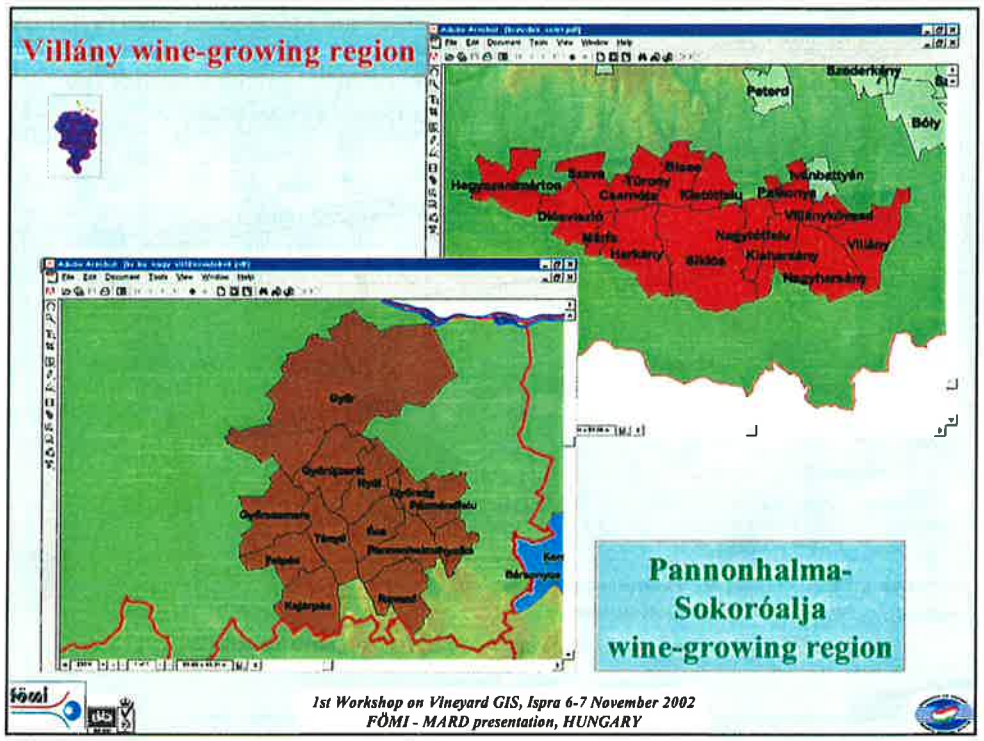
Villány wine-growing region
Pannonhalma-
Sokoróalja
wine-growing region
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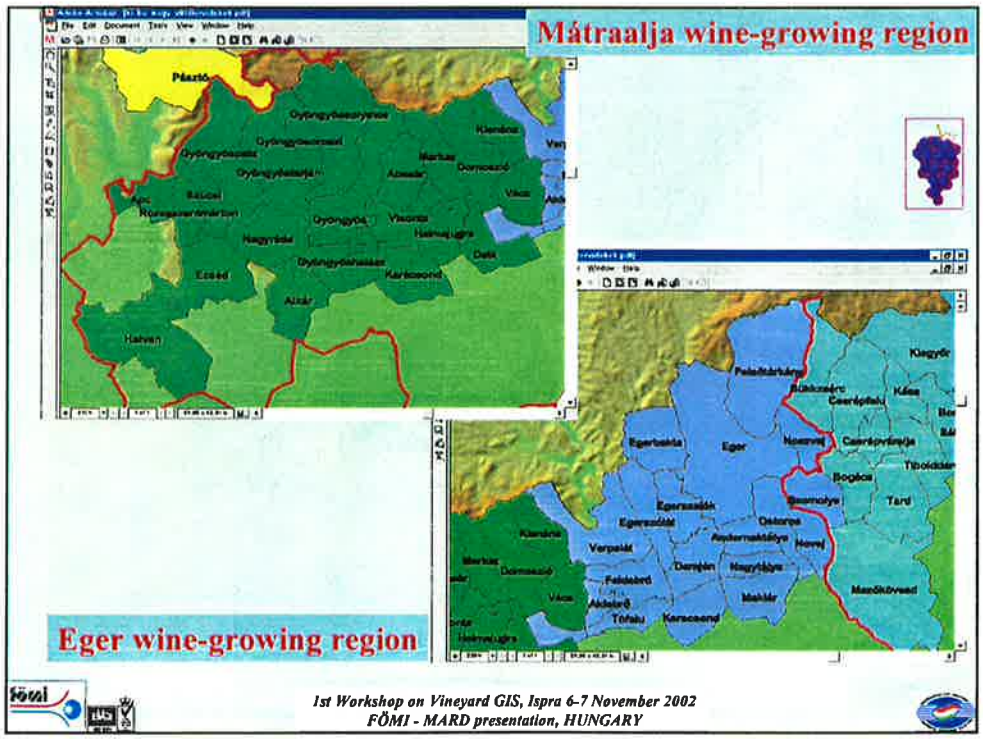
Mátraalja wine-growing region
Eger wine-growing region
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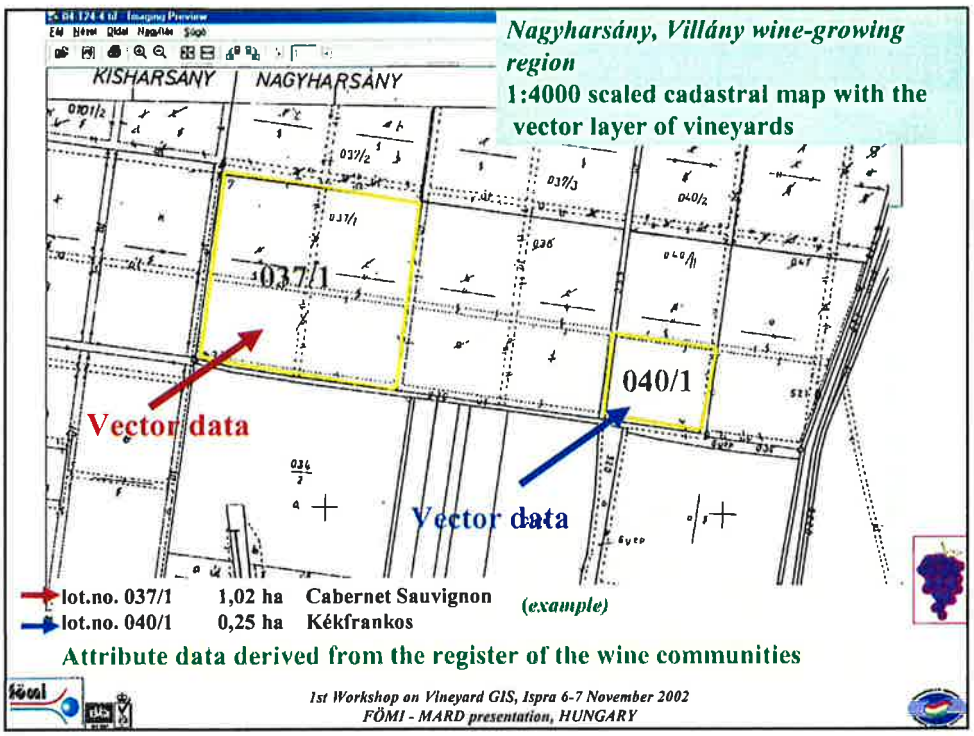
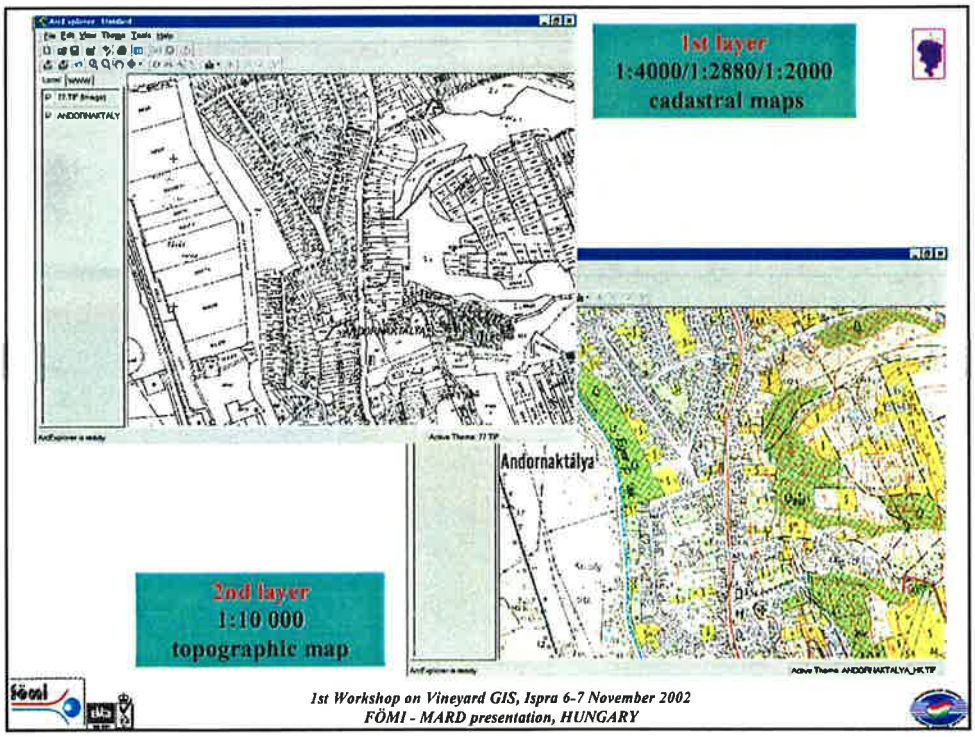


Nagyharsány, Villány wine-growing region

1:4000 scaled cadastral map with the vector layer of vineyards

Attribute data derived from the register of the wine communities



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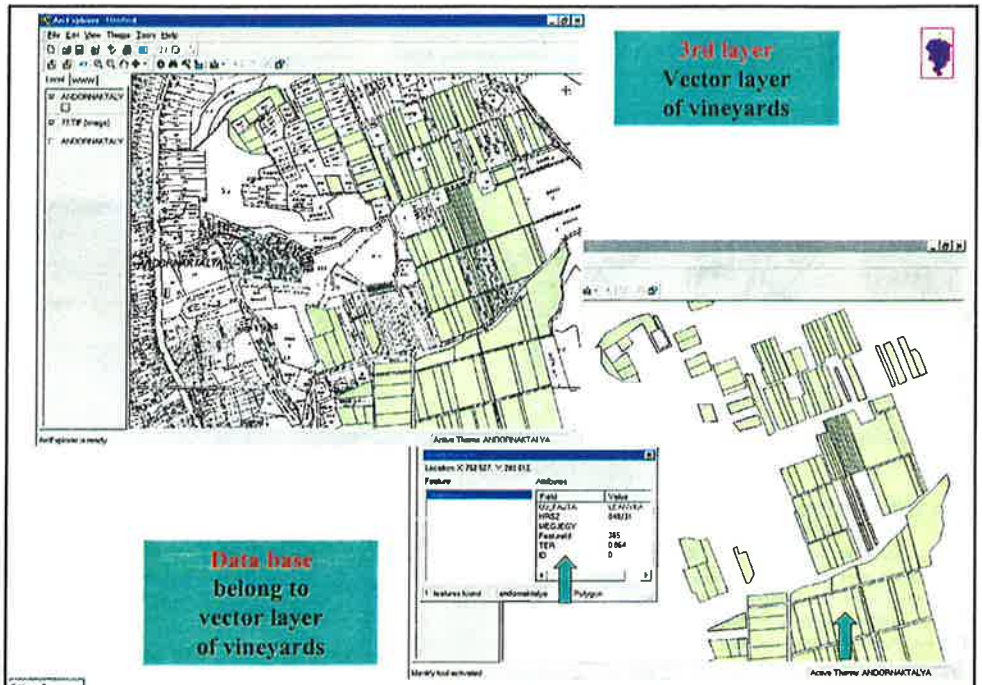

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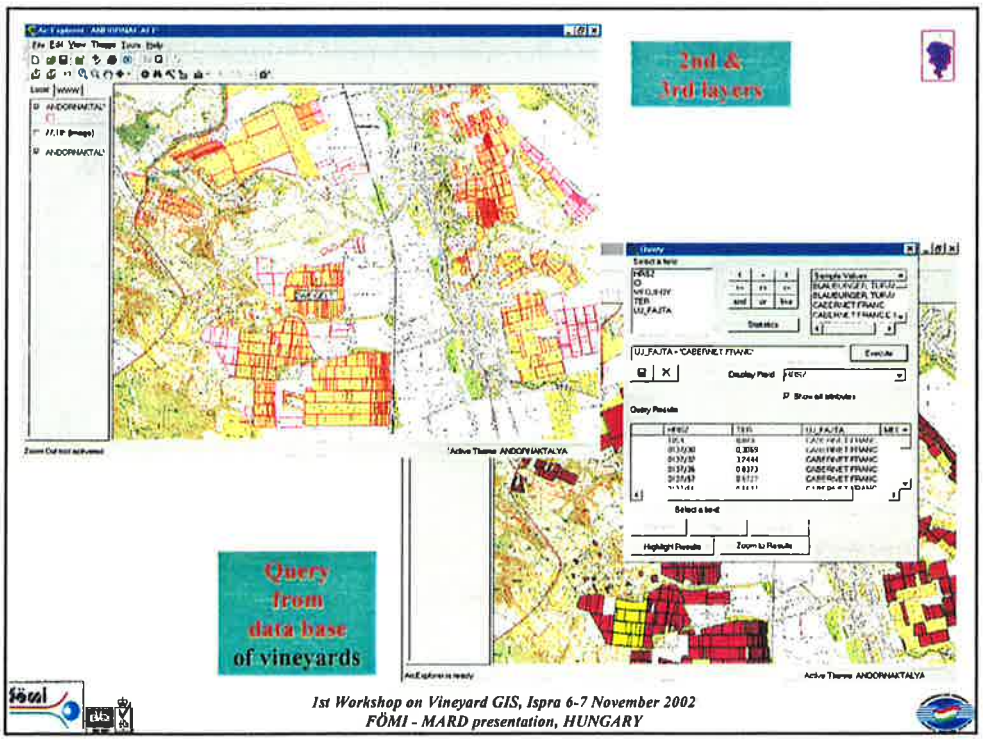

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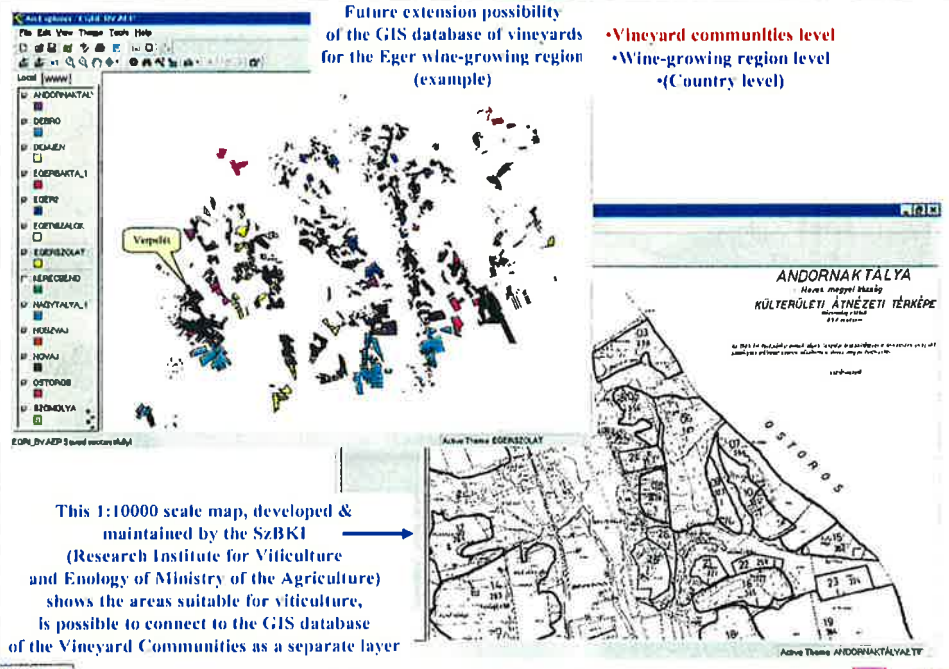
Future extension possibility of the GIS database of vineyards for the Eger wine-growing region (example)

- Vineyard communities level
- Wine-growing region level
- (Country level)



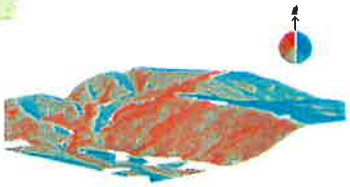
This 1:10000 scale map, developed & maintained by the SzBKI (Research Institute for Viticulture and Enology of Ministry of the Agriculture) shows the areas suitable for viticulture, is possible to connect to the GIS database of the Vineyard Communities as a separate layer

Optional extension of the GIS with different thematic data

Height-interval map

Slope-category map

Aspect map



Andornaktálya, Eger wine-growing region

Data derived from high-resolution DEM (5m)

Optional extension of the GIS with different thematic data

Vineyards on digital ortophoto

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Mandatory and optional part of the GIS data set to be settled at wine community level ensuring effective collection, geo-referencing, handling, control, visualisation, maintenance and reporting of thematic wineyard cadastre data for local, regional and MARD use

LAYERS

1:4000/1:2000 cadastral maps

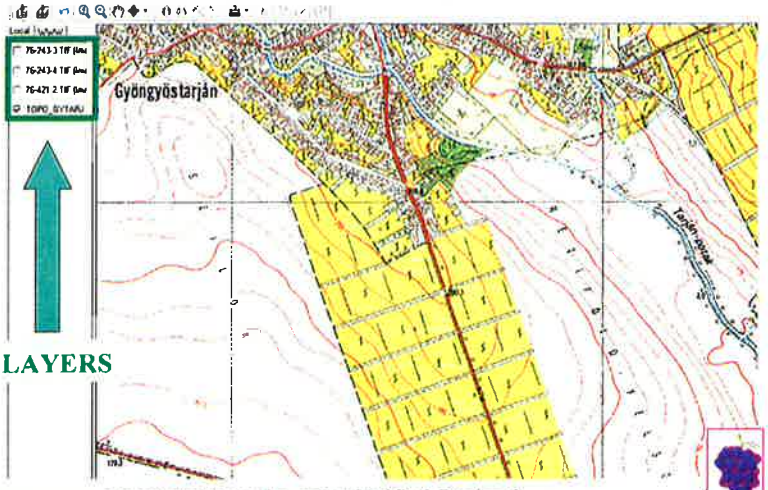
vector layer of vineyards

1:10 000 topographic map

Optional: 1:10 000 digital orthophoto

Optional: control by remote sensing

Optional: Aspect map derived from DEM



All the layers are integrated into the same Unified Projection System

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Conclusions

- **According to EC regulation vineyard cadastre should be based on the identification of parcels in GIS after Jan 2005**
- **For 45% of the area of wine-growing regions the introduced system and the mandatory part of the data set will be completed and installed at wine community level by the end of 2002**
- **In 2003 all wine-growing regions could be covered by the system in case of the approval of the 2003 NPAA action plan and related budget**
- **Land Administration can provide centralised update each of the systems, based on the annual change listings submitted by the vineyard communities**
- **Value-added products of Land Administration could increase the effectiveness of the wineyard registry and its use at local, regional and MARD level**

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Session 4 – Presentation of the Vineyard Register in Bulgaria, by *Evdokiya Krasteva, Executive agency for Vineyard and Wine & Ted Huberts, ILIS b.v.*

Abstract

The Executive Agency for Vineyard and Wine is in charge of the Vineyard implementation in Bulgaria. Mrs Krasteva first introduced the Phare project 'Integrated System for Vine and Wine (ISVV)' which has just been successfully completed within 9 months schedule (January-September 2002). The contractor was ILIS bv. (NL), which developed a turn-key IT system, with a sub-project 'vine cadastre'. This system is dedicated to the Bulgarian Ministry of Agriculture and Forestry, on one hand to the Executive Agency for Vine and Wine (EAVW) which has 1 headquarter office and 9 region offices, and on a second hand to the National Wine and vine Chamber which has 1 headquarter office and 5 region offices. The EAVW started to work with the system on 1/10/2002. It will be used to establish the Vineyard Register of Bulgaria in the next few years.

The second presentation was undertaken by Ted Huberts from ILIS bv (NL), the project manager of ISVV. He made a demonstration of the various modules of the system:

- *Register of Producers Chamber*
- *Vine Holdings Parcels Register*
- *Register of Grape & Wine production*
- *GIS/Cadastre*
- *Data entry / data capture.*

The application is based on Oracle / Bentley Microstation platform. There is a database server accessible by users with high security procedures. The Microstation GIS functionalities will be used to manage digitally the cadastre and it is planned to use orthophotos as well.

(Presentation Powerpoint)

Overview & Progress: Vine & Wine Register of Bulgaria

Executive Agency on Vine & Wine
Ministry of Agriculture & Forestry
Sofia, Bulgaria

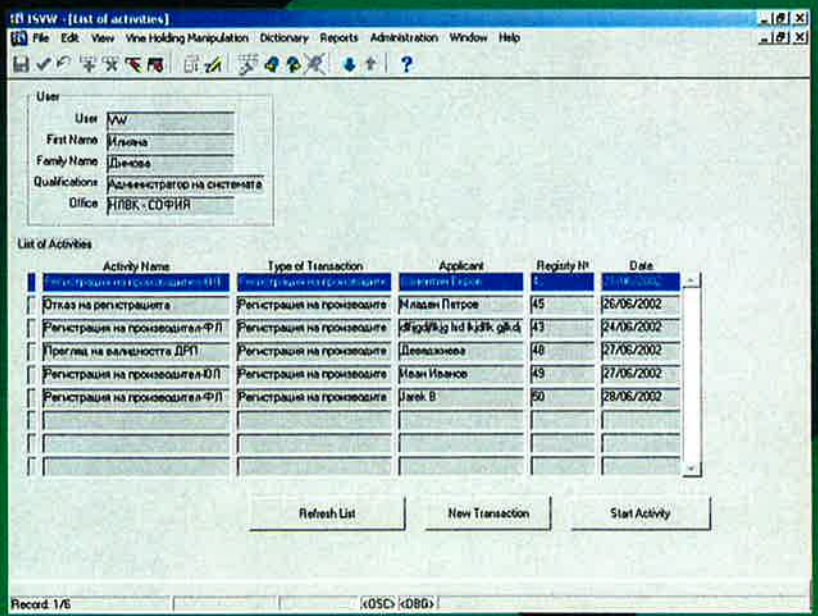
EU Directorate General Joint Research Centre,
Ispra, Italy, 6 – 7 November 2002

Outline

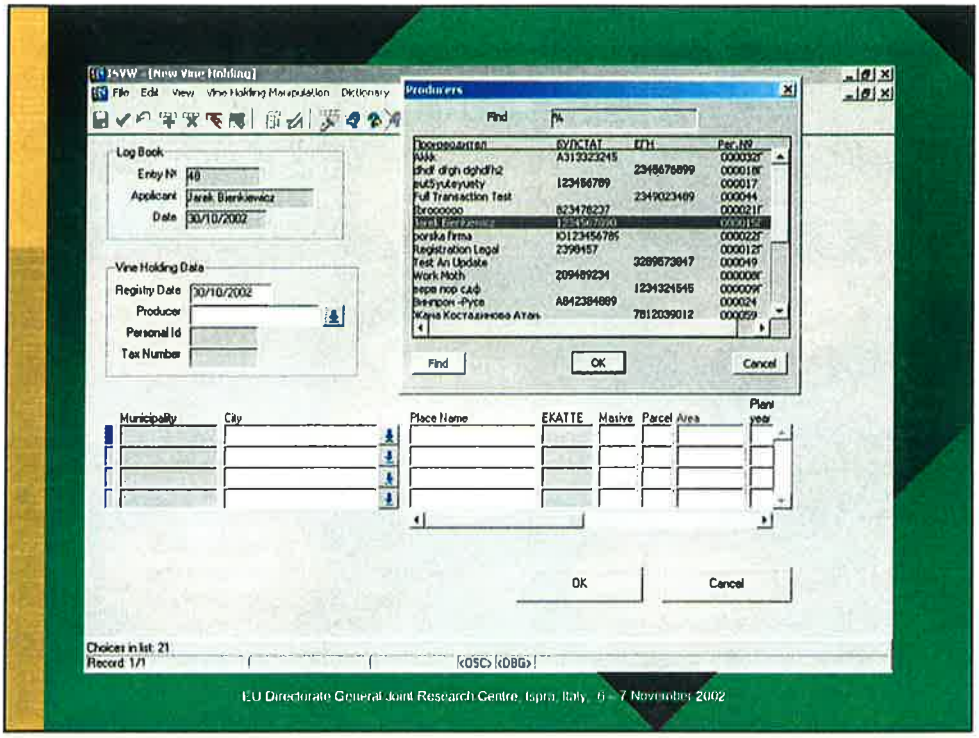
- Project Summary
- System Technical Overview
- IT Platform
- Key Design Features
- Issues in GIS/Cadastre Operations
- Lessons of Implementation

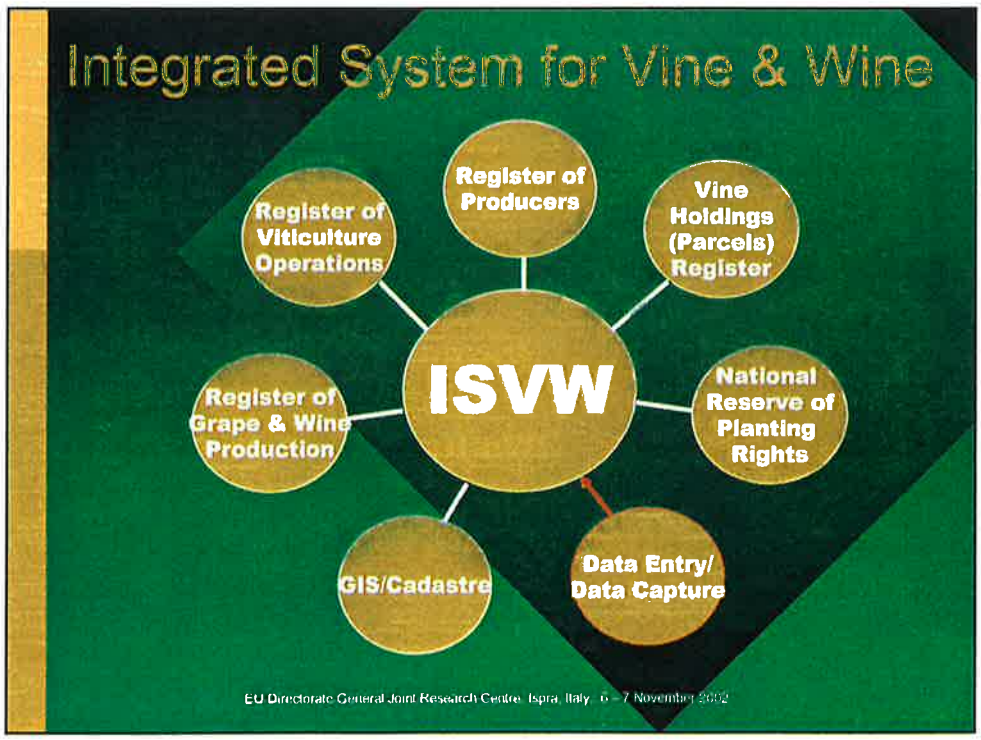
A Partnership—EU, MAF & ILIS

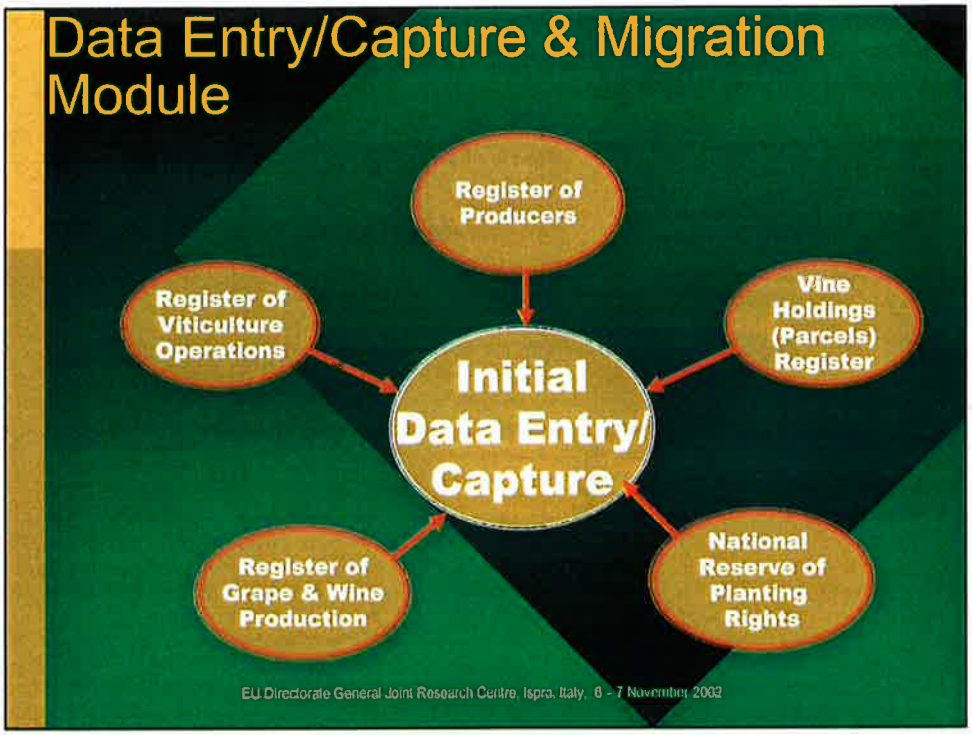
- Funding Agency: EU-PHARE
- Beneficiary: Bulgarian Ministry Agriculture & Forestry
  - Executive Agency on Vine and Wine
    - Headquarters Office and 9 Regions Offices
  - National Vine and Wine Chamber
    - Headquarters Office and 5 Regions Offices
- Supplier: ILIS bv
  - Systems Developer
  - Turn-key Supplier
- Timing: January-September 2002
- Status: EA started use 1 October 2002!!!!!!

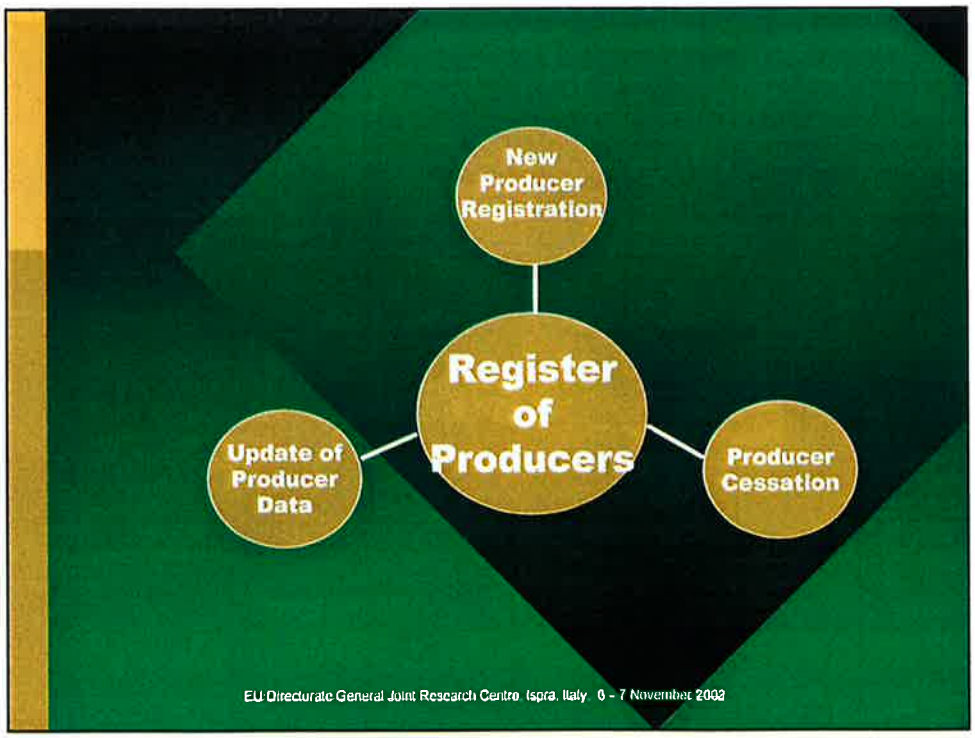


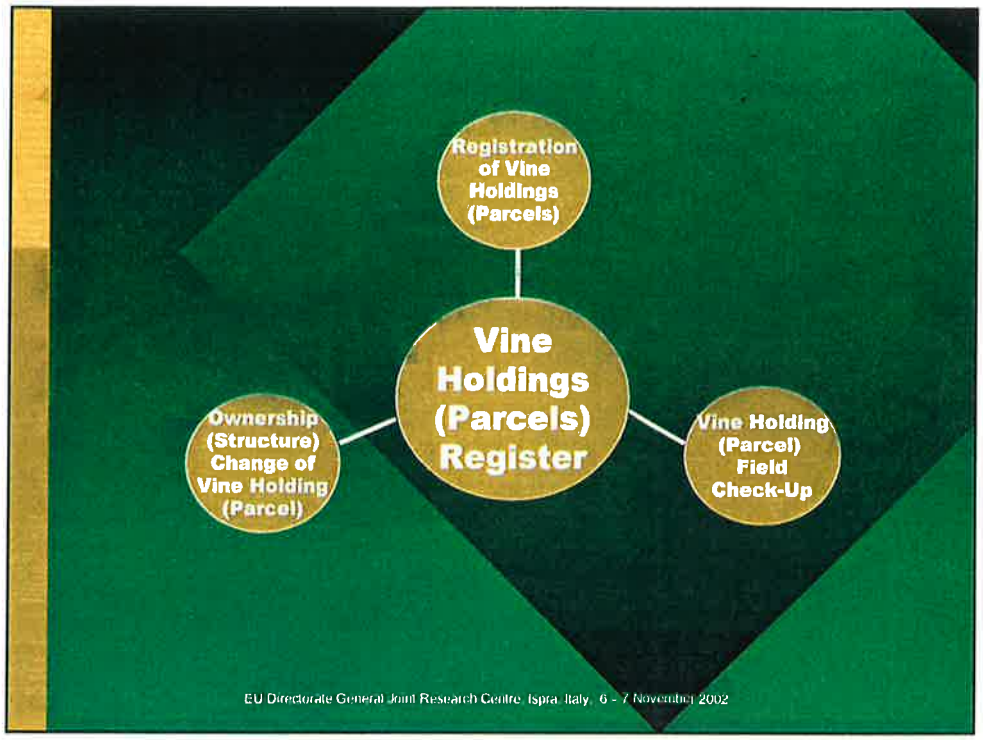
EU Directorate General Joint Research Centre, Ispra, Italy, 6 - 7 November 2002

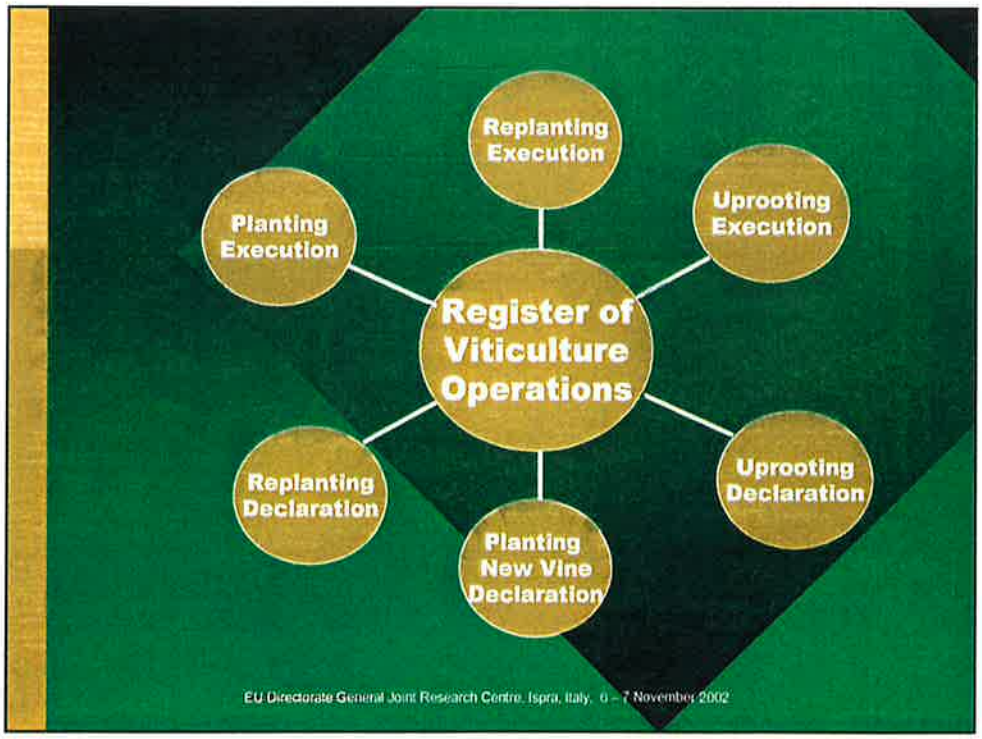

ISVW - [New Vine Holding]
File Edit View Vine Holding Manipulation Dictionary
Log Book
Entry N°
Applicant
Date
Vine Holding Data
Registry Date
Producer
Personal Id
Tax Number
Producers
Find
Find
OK
Cancel
Municipality
City
Place Name
EKATTE
Masive
Parcel
Area
Plant year
OK
Cancel
Choices in list: 21
Record: 1/1
EU Directorate General Joint Research Centre, Ispra, Italy, 6 – 7 November 2002

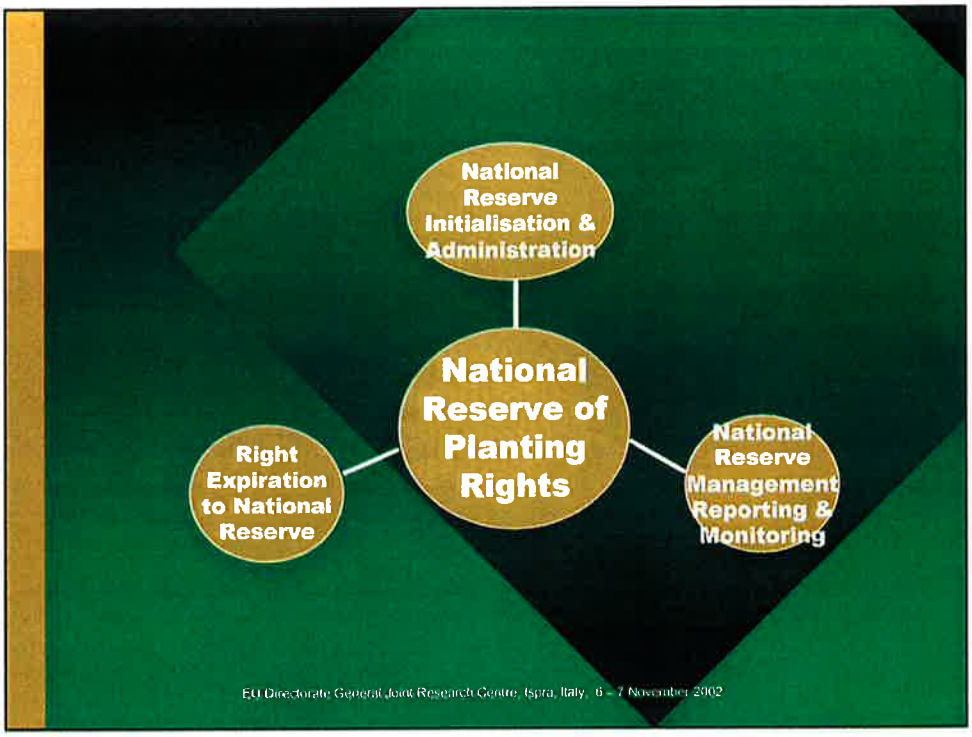

Integrated System for Vine & Wine
Register of Producers
Register of Viticulture Operations
Vine Holdings (Parcels) Register
ISVW
Register of Grape & Wine Production
National Reserve of Planting Rights
GIS/Cadastre
Data Entry/ Data Capture
EU Directorate General Joint Research Centre, Ispra, Italy, 6 – 7 November 2002

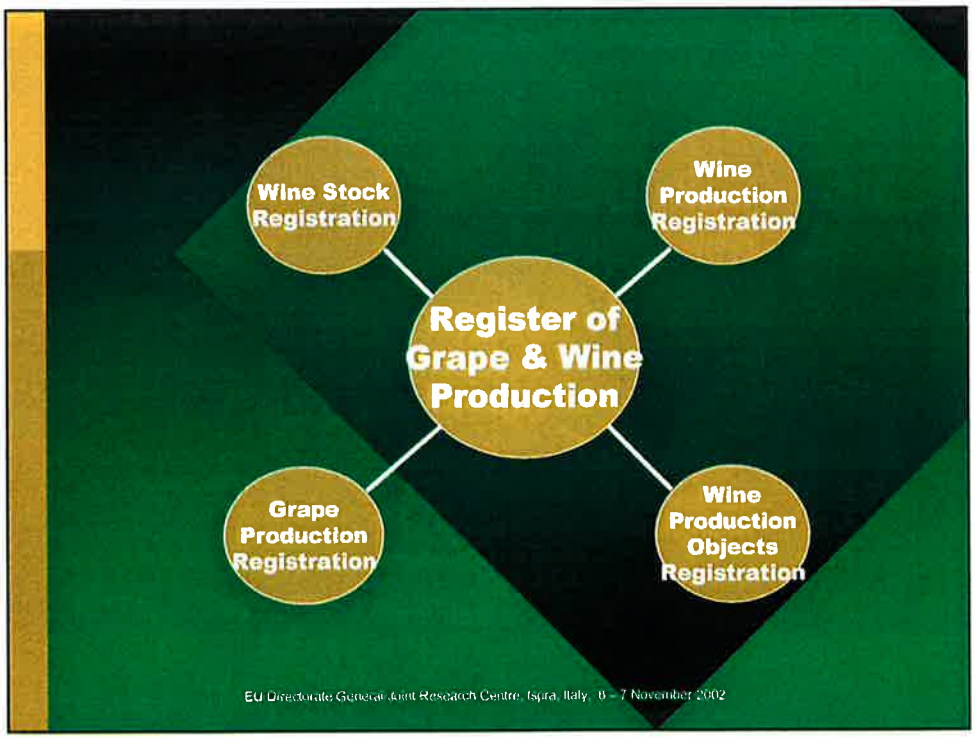

Data Entry/Capture & Migration Module
Register of Producers
Register of Viticulture Operations
Vine Holdings (Parcels) Register
Initial Data Entry/ Capture
Register of Grape & Wine Production
National Reserve of Planting Rights
EU Directorate General Joint Research Centre, Ispra, Italy, 6 - 7 November 2002

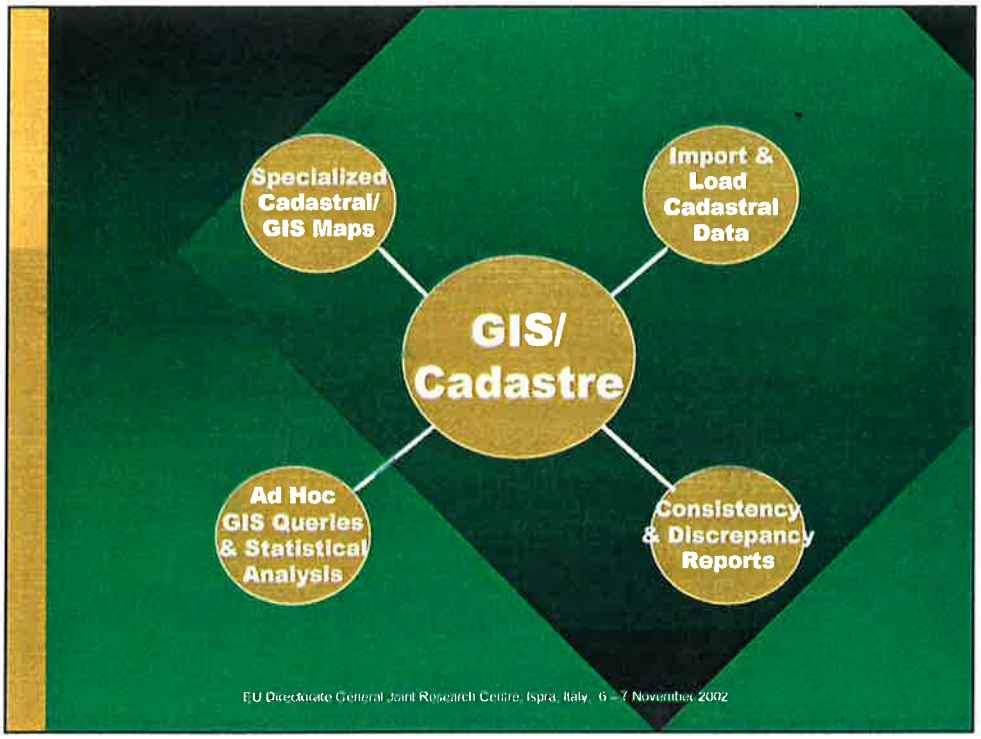

New Producer Registration
Register of Producers
Update of Producer Data
Producer Cessation
EU Directorate General Joint Research Centre, Ispra, Italy, 6 - 7 November 2002


Registration of Vine Holdings (Parcels)
Vine Holdings (Parcels) Register
Ownership (Structure) Change of Vine Holding (Parcel)
Vine Holding (Parcel) Field Check-Up
EU Directorate General Joint Research Centre, Ispra, Italy, 6 - 7 November 2002


Replanting Execution
Planting Execution
Uprooting Execution
Register of Viticulture Operations
Replanting Declaration
Planting New Vine Declaration
Uprooting Declaration
EU Directorate General Joint Research Centre, Ispra, Italy, 6 - 7 November 2002


National Reserve Initialisation & Administration
National Reserve of Planting Rights
Right Expiration to National Reserve
National Reserve Management Reporting & Monitoring
EU Directorate General Joint Research Centre, Ispra, Italy, 6 – 7 November 2002


Wine Stock Registration
Wine Production Registration
Register of Grape & Wine Production
Grape Production Registration
Wine Production Objects Registration
EU Directorate General Joint Research Centre, Ispra, Italy, 6 – 7 November 2002



ISVW Platform

- Oracle ®
- Bentley ® Microstation/Geographics
- MS Windows ®
- Intel®-based Computers
- 3-Tier Client/Server
  - Database Server
  - Application Server
  - Client

Key ISVW Design Features

- Model-Driven System Development
  - Total Integration Across Business Processes
  - All Vine/Wine Information is Entered Once
  - Enabled by Repository Approach to Design
  - VW Regulation Captured as Business Rules
  - Tool: Oracle Designer
  - Facilitate Change Control & Maintenance

Issues in GIS/Cadastre Operations of ISVW

- Import Data Periodically
- Compare and Produce Discrepancy
- Old Changes are not retained in data from Outside (ISVW data EA vs. other data not owned by EA!!!)
- Reason: efficiency, security, legal aspects, etc.
- Additional Products (e.g. Thematic maps)

Lessons of ISVW Implementation

- Requirements are Essential
- Stability of Forms
- Commitment by Beneficiary
- User-friendliness and documentation
- Availability of data

More Information

- MAF, EAVW, Sofia, Bulgaria
  - Tel. +359-2-9708111
- ILIS bv, Arnhem, Netherlands
  - See brochures

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Session 4 – Presentation of the Vineyard Register in the Czech Republic, by *Monika Brozova & Jaroslava Spalkova, Ministry of Agriculture*

Abstract

The Vineyard Register (defined by regulation act 115/195) is managed by the CISTA (Central Institute for Supervising and Testing in Agriculture) in Brno, which is part of the Czech Ministry of Agriculture. There are 2 wine-growing regions and 16 wine-growing areas in the Czech Republic. The VR is established by declarations of producers and information at parcel level is based on cadastre. There are 3 parts: (i) data per holding (ii) data per vineyard (including a vineyard code related to the producer) (iii) data for each cadastral parcel (including the vineyard estate number, the total area and the area of vineyard plantation) (iii) data per variety and age (which can be considered as sub-parcel information). It should be stressed that vineyard estate can be with or without plantation (e.g. plantation which was grubbed).

The IACS in CZ Republic is based on Physical Blocks which are divided in Land Parcels, which is different from the parcel identification system used in VR (cadastre). Therefore it is proposed to compare graphically the Vineyard cadastre boundaries with the Physical blocks of IACS to derive a correspondence table between Vineyard estate codes and Land Parcel codes. It is planned to use orthophotos (1/10,000 scale from IACS).

(Presentation Powerpoint)

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Vineyard register in the CR

Ministry of Agriculture of the Czech Republic

Status information of the vineyard registration in the Czech Republic

- Purposes of those presentation
  - Method of actual accounting
  - Corresponding accounting in the register physical blocks
  - Confrontation of both accountings, practical examples
  - Procedure of the connection

Vineyard registration and accounting in the CR is charged by law Central Institute for Supervising and Testing in Agriculture in Brno (CISTA).

Vineyard registration according to Act No. 115/1995 on Viticulture and Wine Making (§17 and 18) with its latest amendments.

- CR is divided in:
  - 2 wine-growing regions: Czech and Moravian
  - 16 wine-growing areas
  - wine-growing communes
  - cadastral territories
  - vineyard estates
  - vineyards

Producer fills file of evidence, which contains dates:

a) dates about grower
b) dates about vineyard
c) other dates

a) dates about grower

- surname, first name or business name
- personal identification number or identification number of citizen
- name of man responsible for accounting vineyard
- permanent address or firm domicile
- total area of agricultural land cultivated by producer (m^2)

b) dates about vineyard

- commune
- post code
- district
- cadastral territory
- number of territorial decision on the utilization territory
- names, address, personal identification number or INC of other users or owners of vineyard

c) other dates

Date for every cadastral parcel, where the vineyard is situated.

- name of the vineyard estates
- parcel number of the real estate register
- total area (m^2)
- planted area from the total area(m^2)
- proprietary relation
- possibility irrigation
- exploitation irrigation

For varieties and age structure of vineyard there is special register, with base dates:

- kind of variety
- year of outplanting
- area (m^2)
- number of plants
- system of vine cultivation

Registering of vineyard estates on CISTA

- ordinal number
- name of vineyard estates
- thereof vineyard area
- future description (localization)

Code of vineyard estates is in the form of AABBCCDD

- AA - number of the wine-growing area (1-16)
- BB - number of the wine-growing commune in the area
- CC - number of the cadastral territory in commune
- DD - number of the vineyard estate in the cadastral territory

Vineyard estates are

- existing (with plants)
- without plants

Vineyard register in the CISTA

- Registration number of vineyard
  XX XX XX/YYYY
  - XX XX XX code of cadastral territory
  - YYYY number of producer´s file of evidence on the cadastral territory - number of vineyard

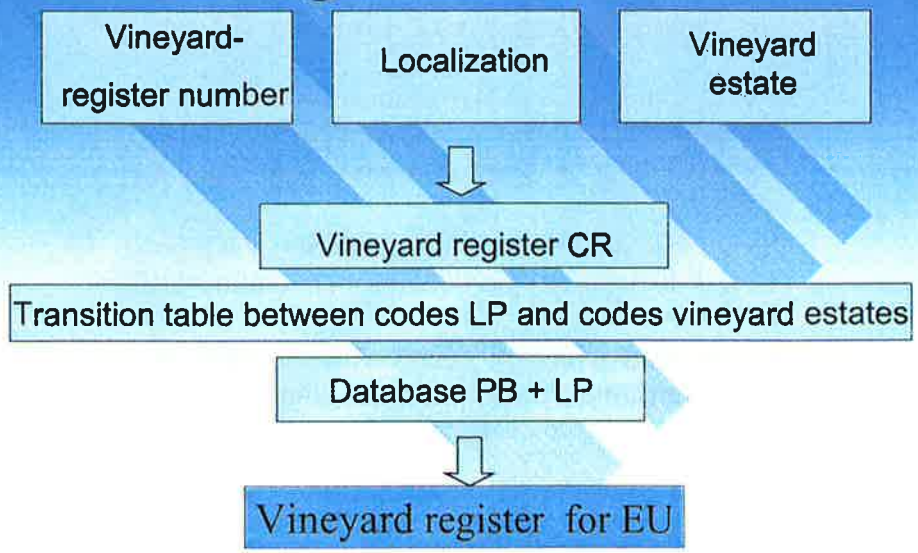
Vineyard accommodation in the physical blocks register of IACS

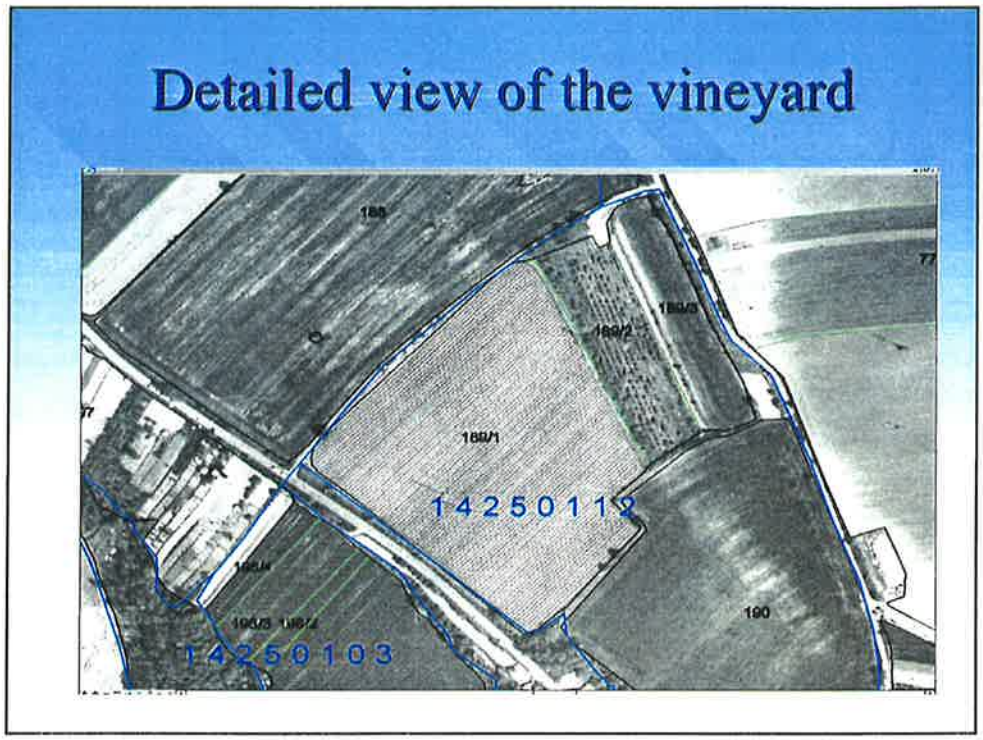
- Physical block (PB) is defined like continuous agricultural land, which is determinate by fixed cross-country borders (e.g . forest border, ditch, zone of bushes…)
- Physical block (PB) can be divided into land parcels (LP), if there are any borders for more cultures inside the block
- It is possible to pick all parcels with vineyards on chosen territory, by the help of the graphic database of PB.

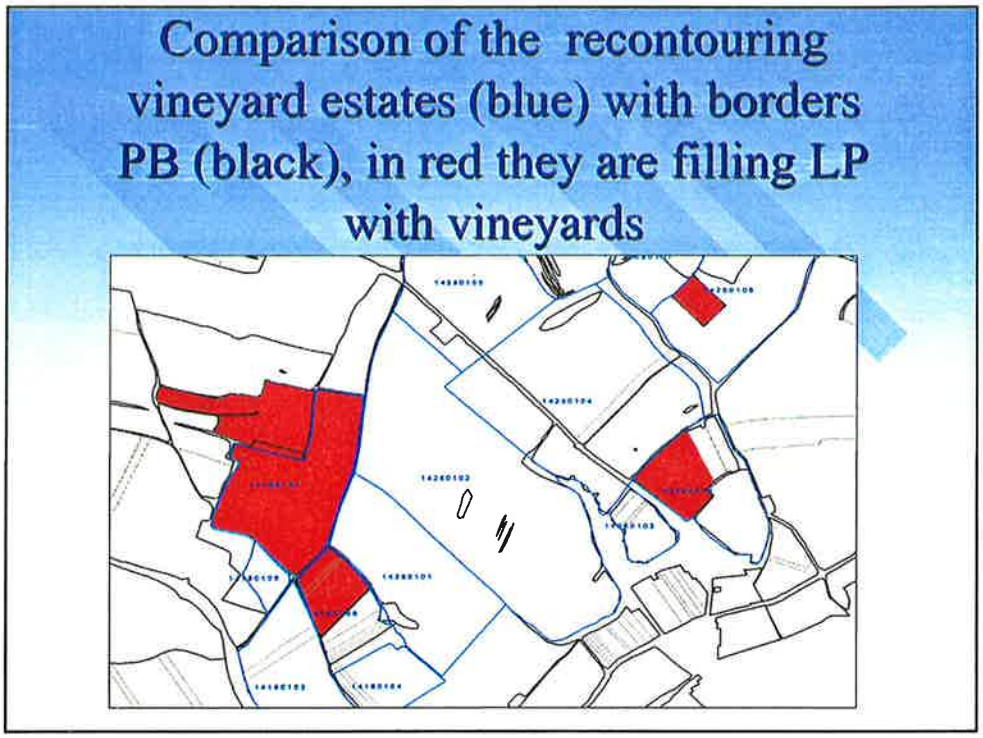
Proposal connection of register PB with accounting vineyards of CISTA

- enter dates from register PB
  - digital vector borders and codes PB and LP
  - database PB
  - database LP
  - transition table: code of LP / code of the vineyard estates
- enter dates from the accounting vineyards of CCEIA
  - vineyards database including codes of the vineyard estates

Progress connection




Detailed view of the vineyard
188
77
189/3
189/2
189/1
14250112
190
14250103


Comparison of the recontouring vineyard estates (blue) with borders PB (black), in red they are filling LP with vineyards


Thank you for your attention!

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Session 4 – Presentation of the Vineyard Register in the Slovak republic, by *Zuzana Vybohova, Ministry of Agriculture*

Abstract

Ms. Vybohova first presented legislation background and basic data on vineyard area which covers 22,230 ha (0.9% of total agricultural area of Slovak Republic). There are 6 wine-growing regions located in the Southern part. The CACTI (Central Agricultural Control and Testing Institute) of the Ministry of Agriculture is in charge of Vineyard Register. A Phare pilot project has been carried out on a vine community, based on cadastral maps and orthophotos (0.2m resolution). Wine-producers declared their parcels in the community offices (using 'request for registration of vineyard' form), confirmed on-the-spot by local delegates, and those information were cross-checked with field survey data (using differential GPS). Ms Vybohova stressed that the collaboration with vine-growers was low, some of them being afraid of registration.

It is planned to cover the whole Slovakia (by August 2003) based on this methodology, and using the orthophotos (probably 0.5 m) from the Soil Science and Science Research Institute (in charge of IACS implementation). In counterpart the CACTI will inform the SSSRI of any change of vineyards.

In the future it is planned to set up a new system based on Oracle 9i and ArcGIS 8.1. for the GIS part.

(Presentation Powerpoint)

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Presentation of the vineyard register creation in the Slovak republic

Actual case of the process

Legislative background

- ✓ Act on species and seeds No 291/1996, collection of laws (c.l.)
- ✓ Act on preservation rights to the new plant species and stud animals No 132/1989 c.l. as amended in the act No 22/1996 c.l.
- ✓ Act No 332/1996 c.l. on viticulture and winemaking

Act No 332/1996 c.l.
on viticulture and winemaking

- following the attestation it disburses in the time of vine collection nominal letter for the Tokaj vine-species for the production of the Tokaj wine in the Tokaj vineyard areas, showing name of the vineyard village, vineyard acre, registration number of the vineyard, where the vine was produced, vine species, quantity, sugar content and declaration about the health state of the collected vine

- on the basis of the vine proving, it types the vine and disburses an attestattion and appropriates state control stamp to the wine produced from the vine, whose sugar content and health state was approved by the date of collection by the vineyard inspector.

- executes vineyard registration and assignes registration number to the registrated vineyards. To the registration underlies every vineyard with at least 300 vine bushes or acreage greater than 500 square metres

- it administers national vine archive, where he centres wines and selected wines with attribute – made from home production for the purpose of systematic and long-term observation of their quality

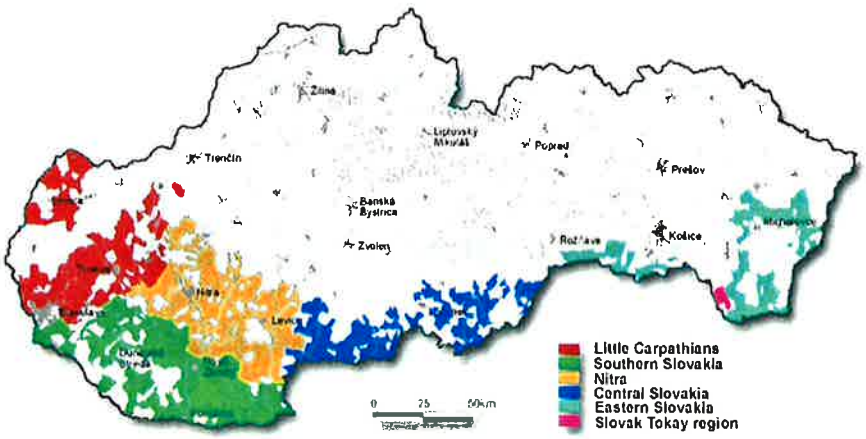
National coordination of vine regions

- total agricultural area of the Slovak republic is about 2 440 000 ha
- the vineyard area presents about 22 230 ha
- it is ca 0,9 % of the total agricultural area

The Slovak Republic has six wine regions:

- Little Carpathians
- Nitra
- Southern Slovakia
- Central Slovakia
- Eastern Slovakia
- Slovak Tokay region

The map of the vine regions in Slovakia



The authorities of the State Professional Supervision

- The Ministry of Agriculture (MoA SR)
- The Central Agricultural Control and Testing Institute
- The Slovak Agricultural and Food Inspection
- The Soil Science and Conservation Research Institute

♦

The State administration in viticulture and vinemaking is managed by the Ministry of Agriculture.

Central Agricultural Control and Testing Institute (CACTI)

- Creation of the vineyard register delegated by the MoA
- Pilot project (PHARE) in vine commune Sv. Jur

- based on orthophotomaps with pixel resolution of 0,2 m from Slovak land fund
- based on cadastral maps
- growers acquainted for registration per invitations and local announcement resources

- acquired data verified by the external fy with GPS

Based on this pilot project the whole Slovakia is processed.

CACTI processes in two synchronized ways:

1.

- the cadastre, which is based on declarations made by the growers and delivered to one of the CACTI offices

- when the service has acted upon this information it sends to the grower a letter confirming the new situation. That document includes all the information necessary to identify the vineyard.

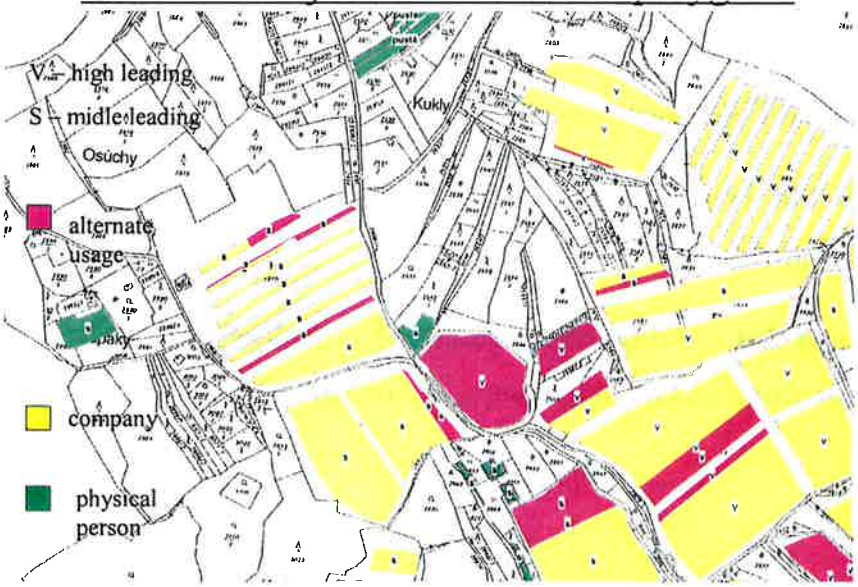
- the information enables everything related with the vineyard in question to be clearly known (including identification, the area of the parcel, and the variety that was implemented there)

2.

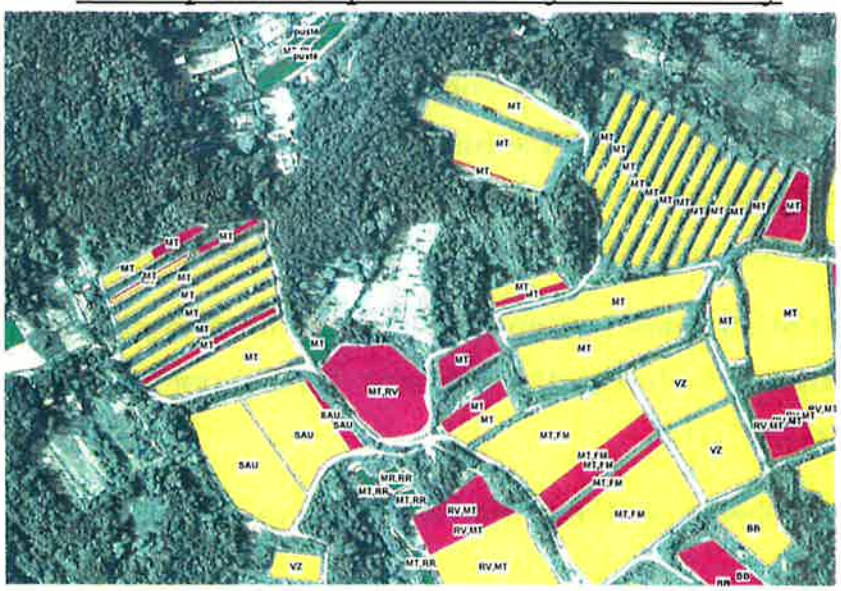
- GPS vineyards localization with postprocessing
- this system, in August 2003, would cover the whole country
- all this existing information allows a clear picture to be obtained of the situation at any time

- there is agreement about offering the orthophotomaps from The Soil Science and Conservation Research Institute to CACTI (SSCRI will have ortophotomaps of the whole Slovakia, expected is to offer only those, where the vineyards are anticipated)
- SSCRI would inform CACTI about the changes in land use with regard to vineyards (at maps not present at CACTI)
- probable pixel resolution will be 0,5 m

Cadastral layer with localised polygons



Orthophotomap with vineyards variety



Methodology for identifying vineyards

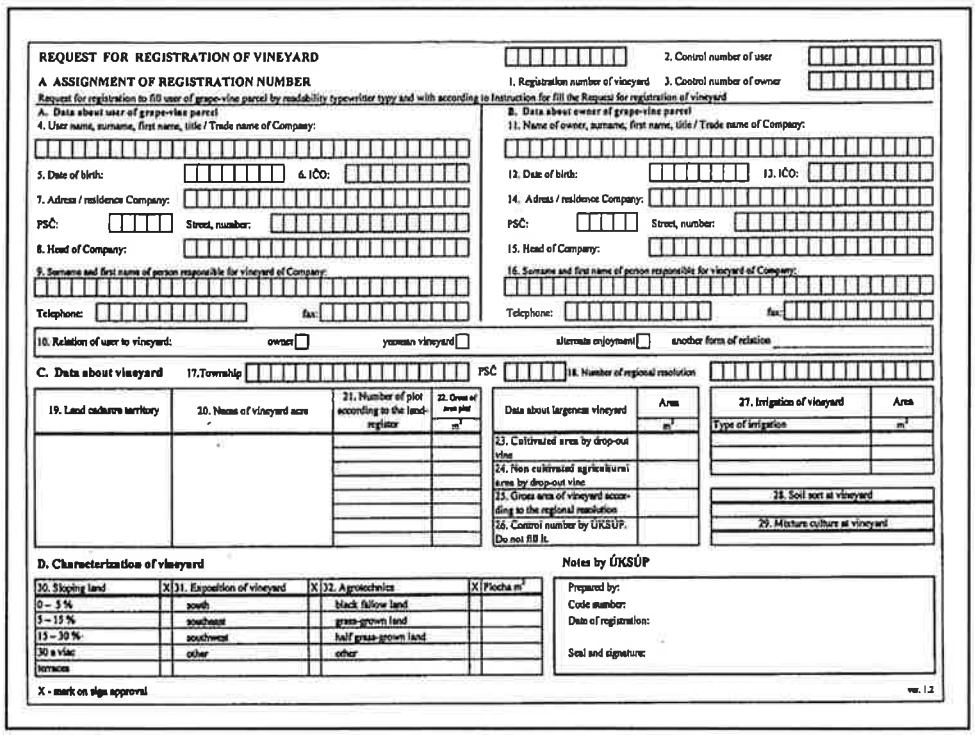
- local delegates in all winemaking communes

- local delegates confirm the situation *on spot,* collect the registration forms

- the measurements of the vineyard with the DGPS equipments is consequently made by the operators from external fy.

- the registration form contents especially:

  - data about user of the grape-vine parcel
  - data about owner of the grape-vine parcel
  - data about vineyard
  - characterization of vineyard
  - variety composition vineyard-monoculture



REQUEST FOR REGISTRATION OF VINEYARD

2. Control number of user

A ASSIGNMENT OF REGISTRATION NUMBER

1. Registration number of vineyard 3. Control number of owner

Request for registration to fill user of grape-vine parcel by readability typewriter typy and with according to Instruction for fill the Request for registration of vineyard

A. Data about user of grape-vine parcel

4. User name, surname, first name, title / Trade name of Company:

5. Date of birth: 6. IČO:

7. Adress / residence Company:

PSČ: Street, number:

8. Head of Company:

9. Surname and first name of person responsible for vineyard of Company:

Telephone: fax:

B. Data about owner of grape-vine parcel

11. Name of owner, surname, first name, title / Trade name of Company:

12. Date of birth: 13. IČO:

14. Adress / residence Company:

PSČ: Street, number:

15. Head of Company:

16. Surname and first name of person responsible for vineyard of Company:

Telephone: fax:

10. Relation of user to vineyard: owner ☐ yeoman vineyard ☐ alternate enjoyment ☐ another form of relation

C. Data about vineyard 17.Township PSČ 18. Number of regional resolution

19. Land cadastre territory	20. Name of vineyard acre	21. Number of plot according to the land-register	22. Gross of area plot m²

Data about largeness vineyard	Area m²
23. Cultivated area by drop-out vine	
24. Non cultivated agricultural area by drop-out vine	
25. Gross area of vineyard according to the regional resolution	
26. Control number by ÚKSÚP. Do not fill it.	

27. Irrigation of vineyard	Area m²
Type of irrigation	

28. Soil sort at vineyard
29. Mixture culture at vineyard

D. Characterization of vineyard

Notes by ÚKSÚP

30. Sloping land	X	31. Exposition of vineyard	X	32. Agrotechnics	X	Plocha m²
0 – 5 %		south		black fallow land		
5 – 15 %		southeast		grass-grown land		
15 – 30 %		southwest		half grass-grown land		
30 a viac		other		other		
terraces						

Prepared by:
Code number:
Date of registration:
Seal and signature:

X - mark on sign approval

ver. 1.2

Data processing (current and future systems)

Present system for connection between data from registration forms and GPS measurements is TOPOL.

In the near future, the all present data (DB and graphical layers) will be exported into new system environment.

Proposed is this environment:

- DB management system ORACLE 9i
- operational system Win2000 or Linux
- the GIS application will be ArcGIS 8.1 (ArcView)

Selected problems connected with the registration:

- in spite of validity of the Act on viticulture and winemaking No 332/1996 c.l., § 25 some growers ignored responsibility of registration

- low collaboration of the growers by the identification and localisation

- edgeways growers low knowledge about variety grown

- growers are affraid of registration

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Session 4 – Presentation of the Vineyard Register in Slovenia, by *Mojca Jaksa, MAFF, Slovenia*

Abstract

There are 3 wine-growing regions in Slovenia and 14 wine-growing districts, covering 25,000 ha but only 15,500 ha are registered in the Register for grape and wine growers (corresponding to 22,440 producers with 34,360 vineyards). This 'partial registration' is likely due to the fact that 32% of farms in Slovenia have vineyards, but usually very small one (0.28 ha/farm on average) which are often for family production.
At the moment, for historical reasons there are 2 co-existing systems: one Register of grapes and wine growers which was established in 1996-1999 and one Vineyard Register. However the 2 systems should be cross-checked and merged shortly into one single system. The Register of Grape and Wine Growers (RGWG) is handled in one Oracle database shared by the MAFF (central server) and 30 administrative units (in charge of management and updating of the Register).
The Vineyard Register contains both alphanumeric and graphical data for each wine-grower > 0.05 ha: grower data, vineyard data (i.e. each parcel cultivated by one grower and one variety), declaration in case of change and replanting rights (a plantation application has to be submitted between January and September of the year before plantation), harvest declaration, production declaration, stock declaration, and all accompanying documents and other evidence. The parcel identification in the VR is based on cadastre, each parcel also have the vineyard id from RGWG.

(Presentation Powerpoint)

VINEYARD REGISTER IN SLOVENIA

Mojca Jakša

WINE GROWING REGIONS OF SLOVENIA

3 wine growing regions:

-Podravje,

-Posavje and

-Primorska

and 14 wine growing districts, suitable for the production of quality wines PSR.

REGISTER OF GRAPE AND WINE GROWERS and VINEYARD REGISTER

Register of grape and wine growers:
-Numerical data
-Individual registrations
-Data about producers, vineyards and product
-Administrative units

Vineyard register:
-Numerical and graphical data
-DOP (Acquisition of land use) + DCM
-Determination of parcels, planted with vineyard
-MAFF

STATISTICS (vineyards)

⌘From the data from land survey areas under vines cover **25,000 ha**.

⌘Register of grape and wine growers: 15,500 ha or 22,440 producers with 34,360 vineyards.

⌘In all, 32% of farms in Slovenia also have vineyards. **On average**, a farm with a vineyard has 3.28 ha of agricultural land, but only **0.28 ha of vineyards**.

STATISTICS (production)

⌘Annual wine production amounts to approx. **95 million litres**, of which approx. 70% is quality wine PSR. The processing of grapes into other products is practically non-existent.

⌘In all, 85% of production takes place on family farms, the remaining production carried out by undertakings. Approximately half of the grape production is supplied to cellars which process it into wine. The remaining grapes are processed by producers themselves for sale or for own consumption.

⌘There are 15 large cellars in Slovenia with a capacity more than 1 million litres.

REGISTER OF GRAPE AND WINE GROWERS

Uniform computer application: 30 administrative units + MAFF + 5 authorised organisations for analysis of wine + wine inspectors

Administrative units:
-Keep the register
-Certify the declaration of harvest and stocks
-Issue accompanying documents

Authorised organisations issues:
-Decisions of the evaluation of wine; analysis reports

MAFF - central register

REGISTER OF GRAPE AND WINE GROWERS - PRODUCER

The producers who enter into register:

- ✘ Cultivate 0,05 ha or more of vineyards
- ✘ Cultivate less than 0,05 ha of vineyards if they place grapes, wine,… in trade
- ✘ Produce wine, …, from bought-in grapes, must, …

Data entered:

- personal data
- activities
- identification no.

REGISTER OF GRAPE AND WINE GROWERS - VINEYARD

Vineyard ID
Surface area
Incline
Exposure
Grass cover
Wine growing region
Agricultural holding

VINES
Variety
Root stock
Planting system
Planting distance
Year of planting
No. of plants

PARCELS
Cadastral community
Parcel number
% planted with vineyard

REGISTER OF GRAPE AND WINE GROWERS - REPLANTING RIGHTS

Declaration of replanting : 1.1. – 1.9. of the year before planting

Issue of a decision about the replanting:
-absolute vineyard area
-recommended wine varieties

Replanting declarations are entered into register of grape and wine growers.

REGISTER OF GRAPE AND WINE GROWERS – HARVEST DECLARATIONS

Producers whose harvest (in whole or part of it) has been or will be marked.

29. November

GRAPE
Producer
Geographical origin
Variety
Harvest date
Quantity
Sugar level
Grape_id

REGISTER OF GRAPE AND WINE GROWERS – PRODUCTION DECLARATIONS

WINE	**MUST**	**OTHER GRAPE AND WINE PRODUCTS**
Producer	Producer	Producer
Geographical origin	Geographical origin	Geographical origin
Variety	Variety	Quantity
Quantity	Quantity	Used Grape_id, Must_id, Wine_id
Used Must_id	Used Grape_id	Product_id
Enological procedures	Enological procedures	
Evaluation data	Evaluation data	
Wine_id	Must_id	

29. November

REGISTER OF GRAPE AND WINE GROWERS – STOCK DECLARATIONS

Producers who declare production are oblight to declare stocks of wine, **held by them at 31.8., until 7.9.** :

-quality/table wine

-bottled/bulk

-Slovene/imported

-quantity by vintage

REGISTER OF GRAPE AND WINE GROWERS – ACCOMPANYING DOCUMENTS

- For any product in transport accompanying document is required.
- Exception: less than 20 litres of wine per vehicle.

Accompanying documents for bulk wine, must and other grape and wine products are **issued by administrative unit**.

REGISTER OF GRAPE AND WINE GROWERS – ACCOMPANYING DOCUMENTS

It shall include:

- -Data about the producer
- -Wine_id/must_id
- -Vintage
- -Quantity
- -Origin
- -Variety
- -Quality level
- -Alcohol/sugar level
- -No. of container
- -No. of vehicle
- -Date of transport
- -No. of evaluation decision

Any product in transport has to be accompained by **evaluation decision / analysis report, issued by authorised organisation.**

REGISTER OF GRAPE AND WINE GROWERS – ACCOMPANYING DOCUMENTS

5 authorised organisations for analysis of wine

Phisycal and chemical evaluation
Organoleptic evaluation

Verify the origin of products

Evaluation decision
Analysis report

→ CERTIFYING:
-DESIGNATION OF ORIGIN
-QUALITY OF WINE

OTHER RECORDS

Cellar evidence:

-data about the producer

-data about the bought in grapes, wine, …

-data about the wine (quantities by quality, variety,…)

-data about oenological practices, tending of wine

-data about selling

VINEYARD REGISTER

DOF → Acquisition of land use + DCM

Determination of parcels, planted with vineyard

- Parcel no., Cadastral community
- Parcel area
- Area and % planted with vineyard
- Wine growing region
- Vineyard ID (from RGWG)

REGISTER OF GRAPE AND WINE GROWERS IN CONJUNCTION WITH THE VINEYARD REGISTER

Register of grape and wine growers	Vineyard register
Individual registrations	DOP + DCM
Data on vineyards per parcel	Data on vineyards per parcel

Comparison of data and a call to individuals to officially register as producers of grapes and wine

CONNECTION WITH SUBSIDIES

Subsidies are granted to vineyard ID; data are checked against data from the register of grape and wine growers.

CURRENT PHASE OF THE PROJECT

Register of grape and wine growers:
-application made from 1996 to 1999
-part of application for evaluation data concluded in 2000

Vineyard register:
- Land use is covered through DOP, which is linked to DCM
- Comparison of data and a call to individuals to officially register as producers of grapes and wine is in the testing phase

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Session 4 – Presentation of the Vineyard Register in Malta, by *Randall Caruana, Viticulture and Oenology Unit, Ministry of Agriculture and Fisheries, Malta*

Abstract

Mr Randall Caruana first presented the various steps of collection of information about vineyard in Malta. A National Survey was carried out in 1999 to collect wine-growers information, as well as detailed information on variety, area, production and agronomic practices. Then the Vineyard Register was set up on this basis and is updated by yearly declarations. M. Caruana presented the contents of the Vineyard Register 2002 form, with very detailed information on water resources, soil characteristics etc.
A Vineyard GIS is already implemented, locating vineyard parcels identified in the VR, using survey of land use in April 2000, colour aerial photos and topographic base maps, field controls. IT is planned to link it to IACS and to MALSIS (Malta Soil Information System).

(Presentation Powerpoint)

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The Vineyard Register

Malta

Randall Caruana
Viticulture & Oenology Unit
Ministry Of Agriculture & Fisheries

ISPRA 2002

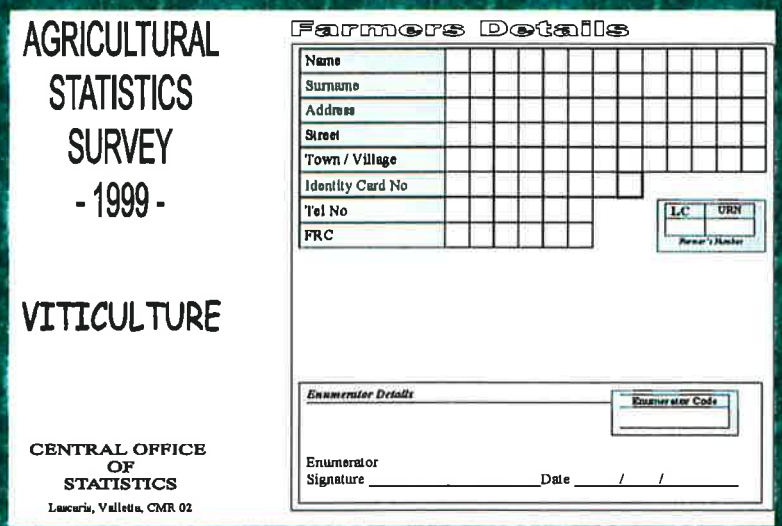
Geographical Position

The Maltese Islands

Collection of Information

- National Viticulture Survey 1999
- Vineyard Register
- National Census 2001
- Yearly Declarations

Viticulture Survey 1999



AGRICULTURAL STATISTICS SURVEY - 1999 -

VITICULTURE

CENTRAL OFFICE OF STATISTICS
Lascaris, Valletta, CMR 02

Farmers Details

Name	
Surname	
Address	
Street	
Town / Village	
Identity Card No	
Tel No	
FRC	

LC | URN

Enumerator Details — Enumerator Code

Enumerator Signature _____ Date ___/___/_____

B. Red Varieties

AGE	VARIETIES	AREA in Ha	LC	DENSITY	PRODUCTION	UTILIZATION			
				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Under 2 years									
[illegible] - 10 years									
10 – 20 years									
20 – 30 years									
Over 30 years									

TABLE A:
Red Varieties:

11. Gellewza
12. Cabernet Sauvignon
13. Merlot
19. Other

TABLE B:
Tomna = 0.112 Ha
[illegible] = 0.029 Ha
[illegible] = 0.002 Ha

TABLE C:
QANTAR(1) = [illegible] KILOS

Expences

1. Fertilizer/Manure used last year? Base _____________ Kilos

   Liquid feed_______________ Kilos

2. Water reservoir? Y/N If YES Capacity _____________ Litres

3. Borehole? Y/N If YES Extraction __________________ Litres

TABLE D:
1 GALLON = 4.546 LITRES

4. Irrigation:
   - ☐ Nil
   - ☐ Flood Irrigation
   - ☐ Lay flat Tubing
   - ☐ Nozzle Drip
   - ☐ Automatic
   - ☐ Manual Drip

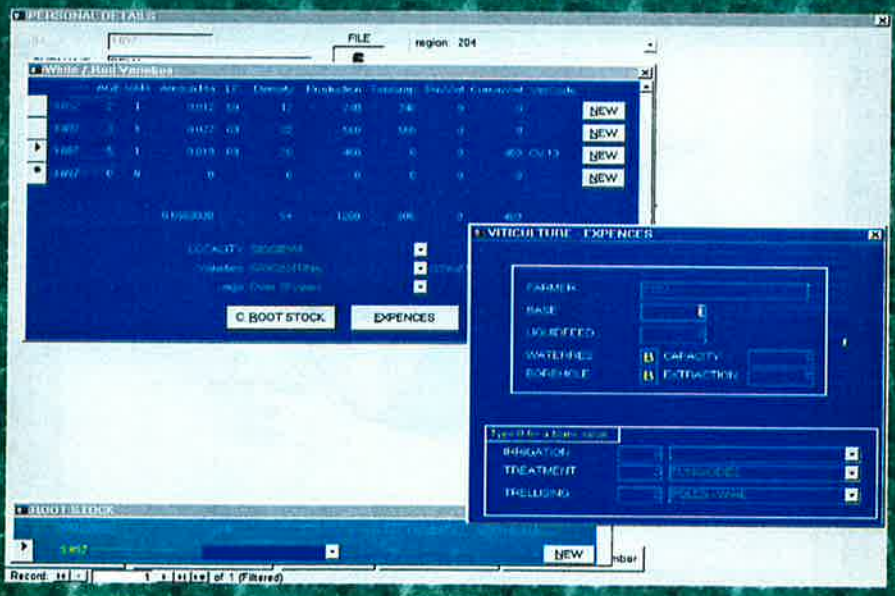
5. Treatment (Disease & Pest Control During Season):
   - ☐ Nil
   - ☐ Fungicides
   - ☐ Insecticides
   - ☐ Herbicides

6. Trellising:
   - ☐ Traditional
   - ☐ Poles - Wire

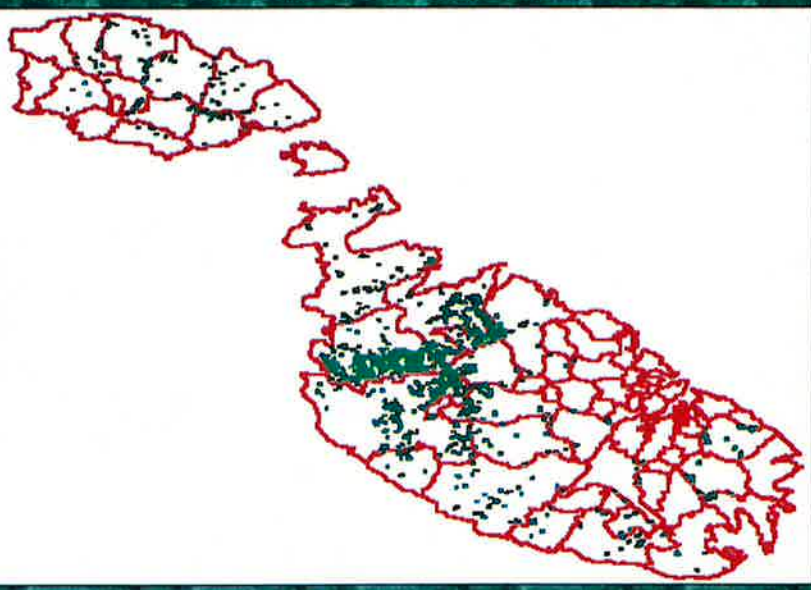
Set up

- Database
  - Searchable – queried
  - Updatable

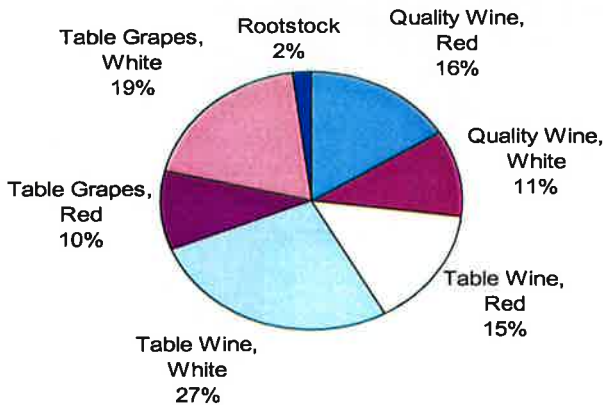
Vineyard Register



Vine Distribution



% Land Cover Distribution By Type Of Grape

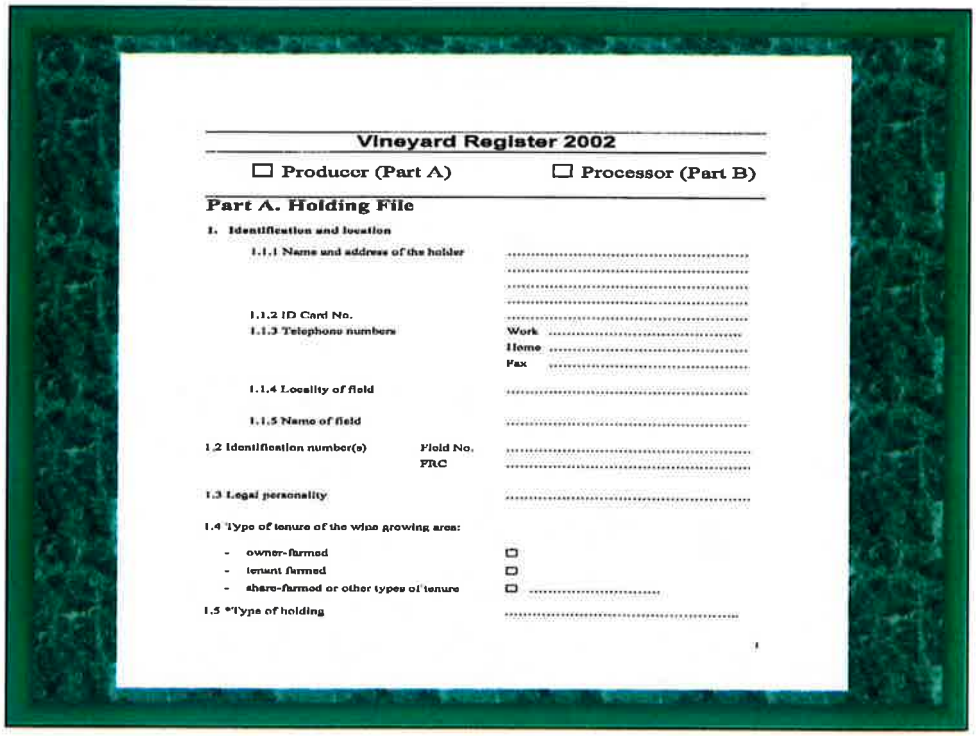


Vineyard Register Updates

- Yearly Producer Declarations – Harvest, production & stock
- Yearly Winery Declarations – Production & stock
  - Article 28 Regulation (EC) 337/79

Vineyard Register Questionnaire

- Based on Annex I of Commission Regulation (EC) 649/1987
- Compulsory and Optional items of information referred to in Article 2 of Regulation (EC) 2392/1986
- Technical Viticulture Information
- Linked to grape-grower declarations
- Linked to winery declarations



Vineyard Register 2002

☐ Producer (Part A) ☐ Processor (Part B)

Part A. Holding File

1. Identification and location

1.1.1 Name and address of the holder .....
.....
.....
.....

1.1.2 ID Card No. .....

1.1.3 Telephone numbers Work .....
Home .....
Fax .....

1.1.4 Locality of field .....

1.1.5 Name of field .....

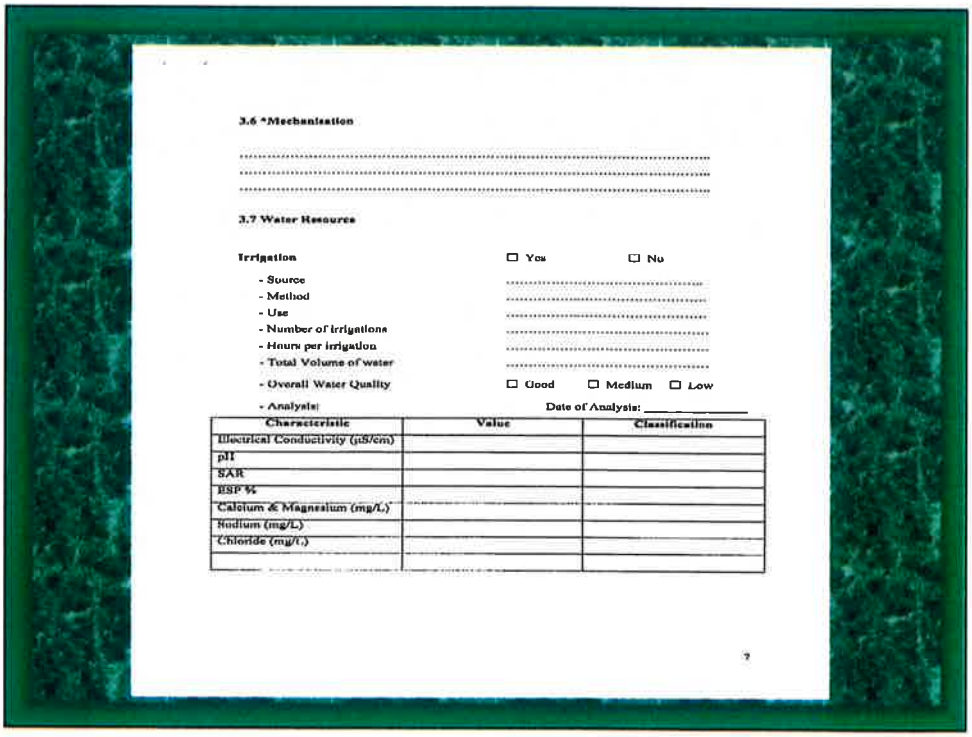
1.2 Identification number(s) Field No. .....
FRC .....

1.3 Legal personality .....

1.4 Type of tenure of the wine growing area:

- owner-farmed ☐
- tenant farmed ☐
- share-farmed or other types of tenure ☐ .....

1.5 *Type of holding .....



3.6 *Mechanisation

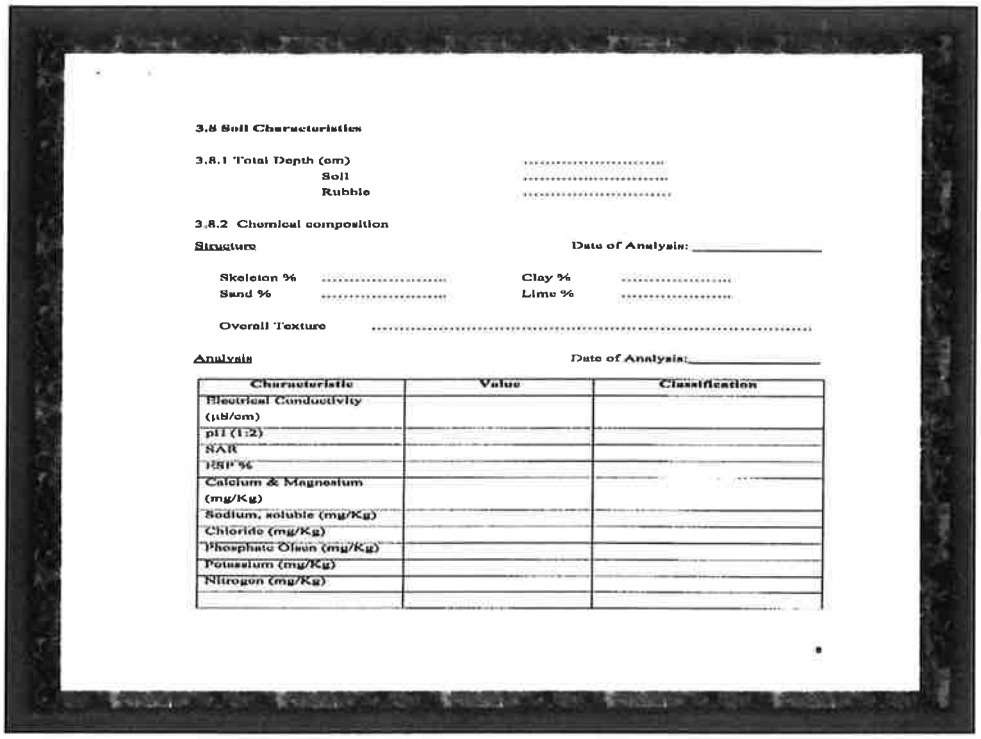
.....
.....
.....

3.7 Water Resources

Irrigation ☐ Yes ☐ No

- Source .....
- Method .....
- Use .....
- Number of irrigations .....
- Hours per irrigation .....
- Total Volume of water .....
- Overall Water Quality ☐ Good ☐ Medium ☐ Low
- Analysis: Date of Analysis: _____

Characteristic	Value	Classification
Electrical Conductivity (µS/cm)		
pH		
SAR		
ESP %		
Calcium & Magnesium (mg/L)		
Sodium (mg/L)		
Chloride (mg/L)		



3.8 Soil Characteristics

3.8.1 Total Depth (cm) .....
Soil .....
Rubble .....

3.8.2 Chemical composition

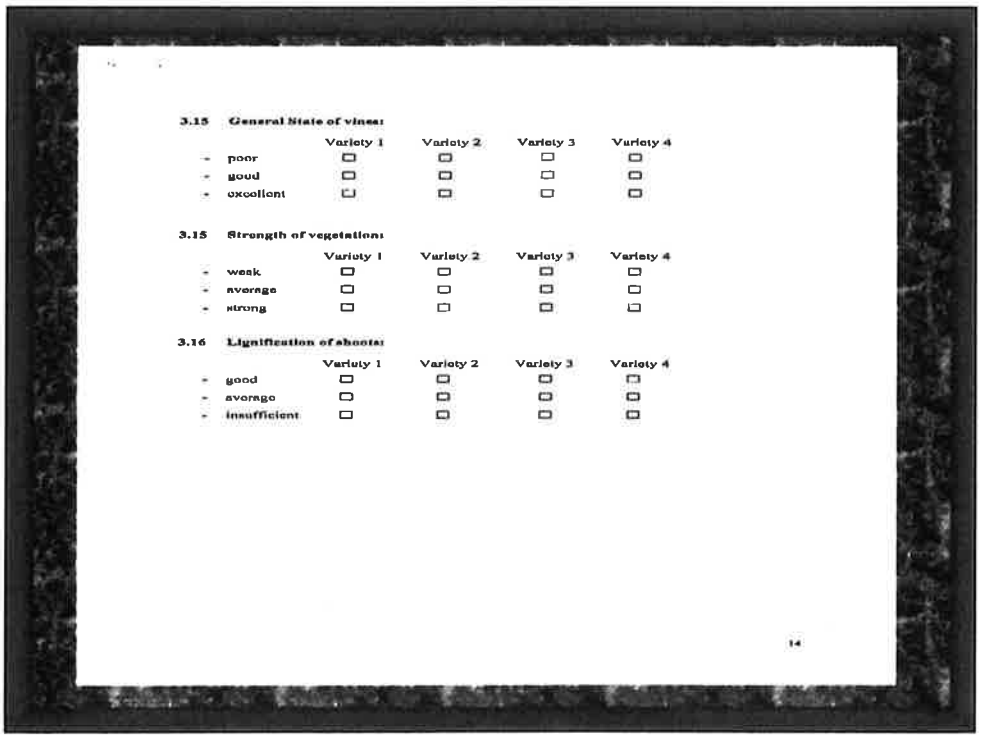
Structure Date of Analysis: _____

Skeleton % ..... Clay % .....
Sand % ..... Lime % .....

Overall Texture .....

Analysis Date of Analysis: _____

Characteristic	Value	Classification
Electrical Conductivity (µS/cm)		
pH (1:2)		
SAR		
ESP %		
Calcium & Magnesium (mg/Kg)		
Sodium, soluble (mg/Kg)		
Chloride (mg/Kg)		
Phosphate Olsen (mg/Kg)		
Potassium (mg/Kg)		
Nitrogen (mg/Kg)		



3.15 General State of vines:

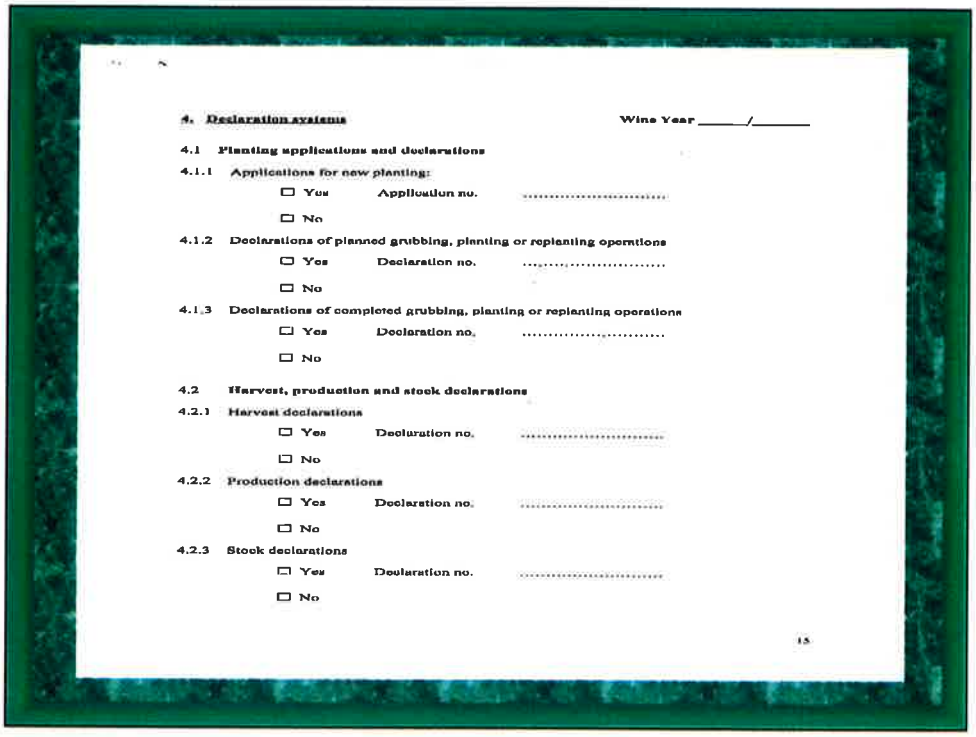
	Variety 1	Variety 2	Variety 3	Variety 4
- poor	☐	☐	☐	☐
- good	☐	☐	☐	☐
- excellent	☐	☐	☐	☐

3.15 Strength of vegetation:

	Variety 1	Variety 2	Variety 3	Variety 4
- weak	☐	☐	☐	☐
- average	☐	☐	☐	☐
- strong	☐	☐	☐	☐

3.16 Lignification of shoots:

	Variety 1	Variety 2	Variety 3	Variety 4
- good	☐	☐	☐	☐
- average	☐	☐	☐	☐
- insufficient	☐	☐	☐	☐



4. Declaration systems — Wine Year _____/_____

4.1 Planting applications and declarations

4.1.1 Applications for new planting:

☐ Yes Application no. .....

☐ No

4.1.2 Declarations of planned grubbing, planting or replanting operations

☐ Yes Declaration no. .....

☐ No

4.1.3 Declarations of completed grubbing, planting or replanting operations

☐ Yes Declaration no. .....

☐ No

4.2 Harvest, production and stock declarations

4.2.1 Harvest declarations

☐ Yes Declaration no. .....

☐ No

4.2.2 Production declarations

☐ Yes Declaration no. .....

☐ No

4.2.3 Stock declarations

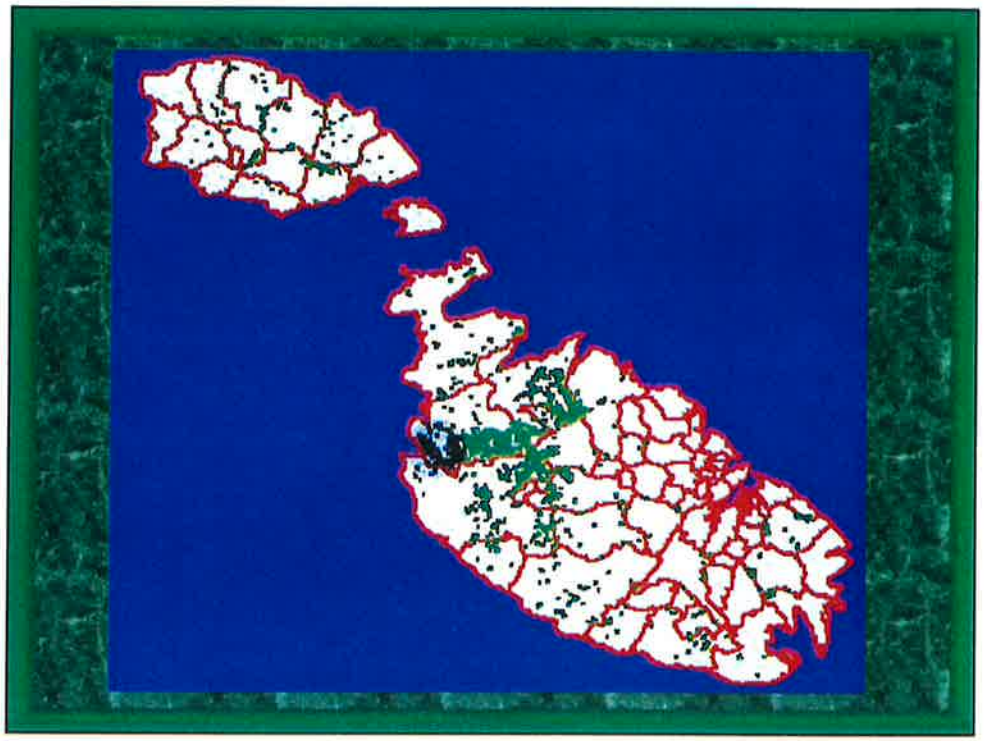
☐ Yes Declaration no. .....

☐ No

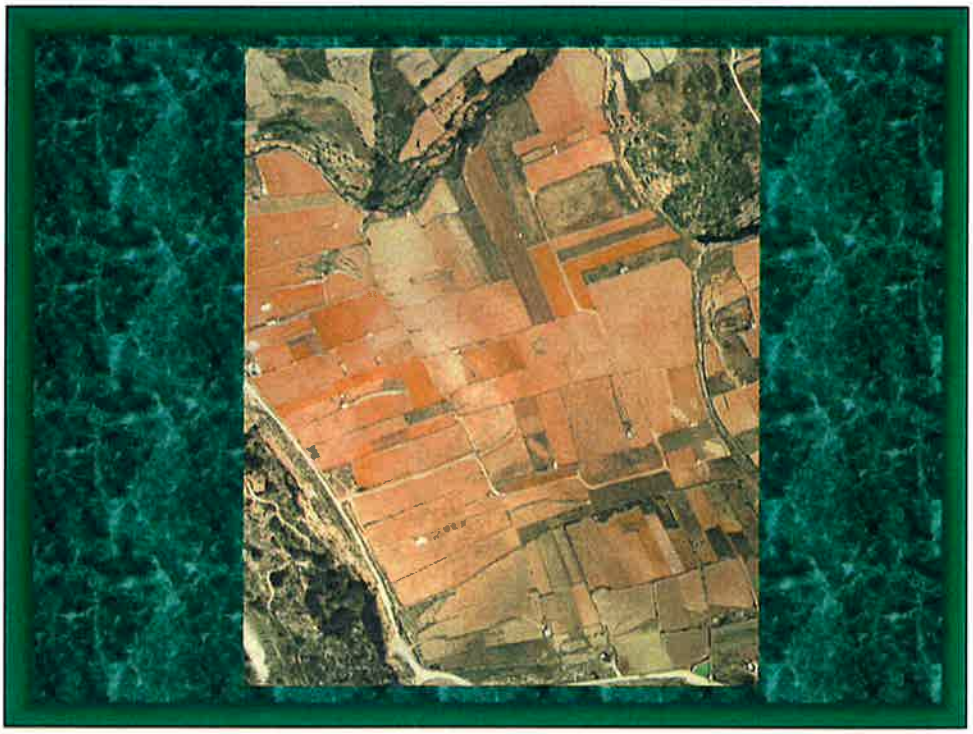
15

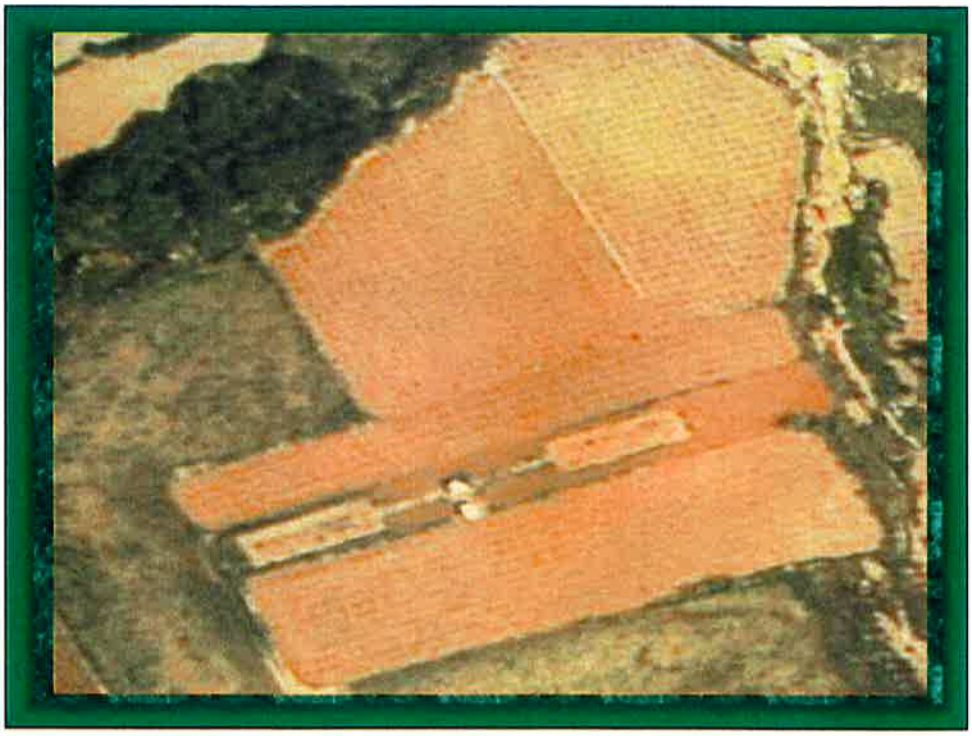
The Vineyard Register and GIS

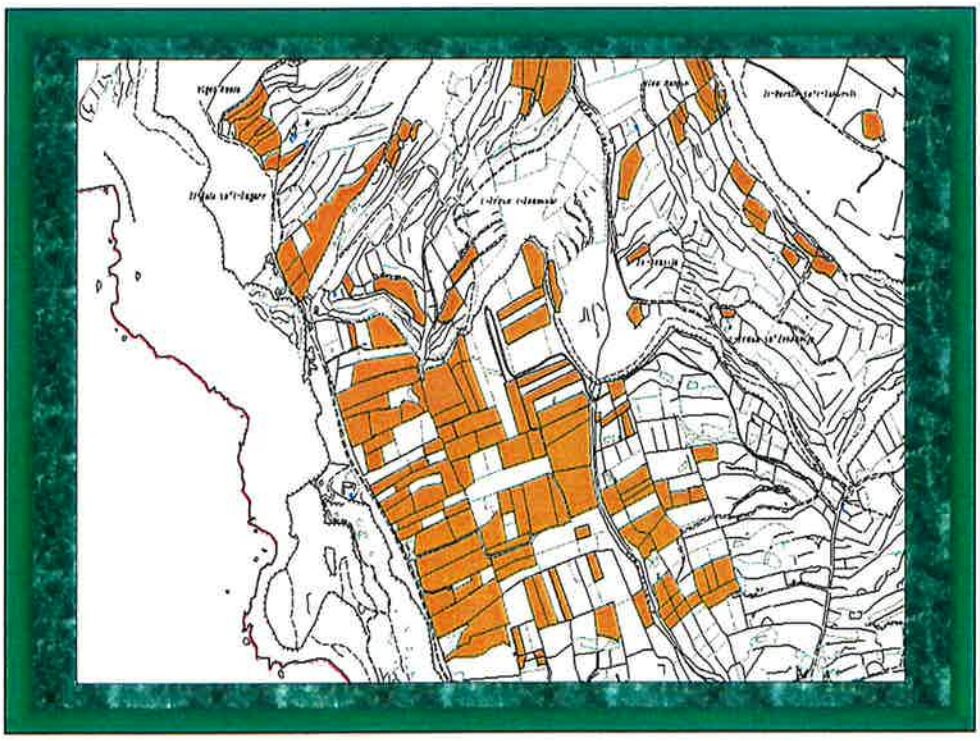
- Survey of Land Use – April 2000
- Aerial Photos
- Digitisation of Photos
- On Site Confirmations
- Base Maps / Orthophotos



Mgarr Area

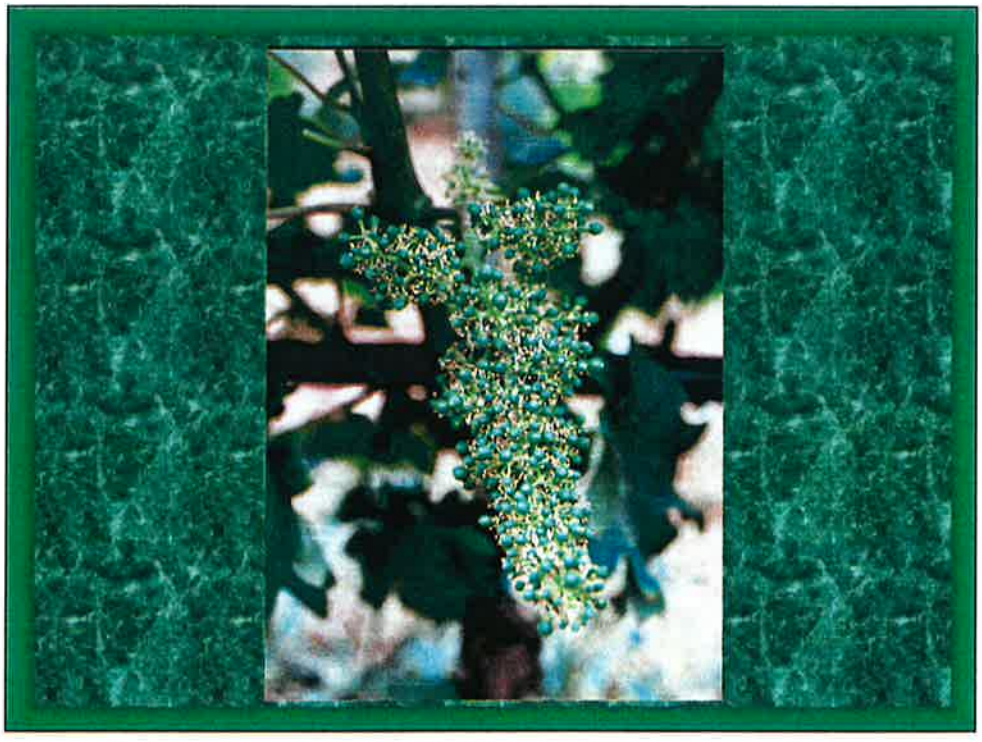


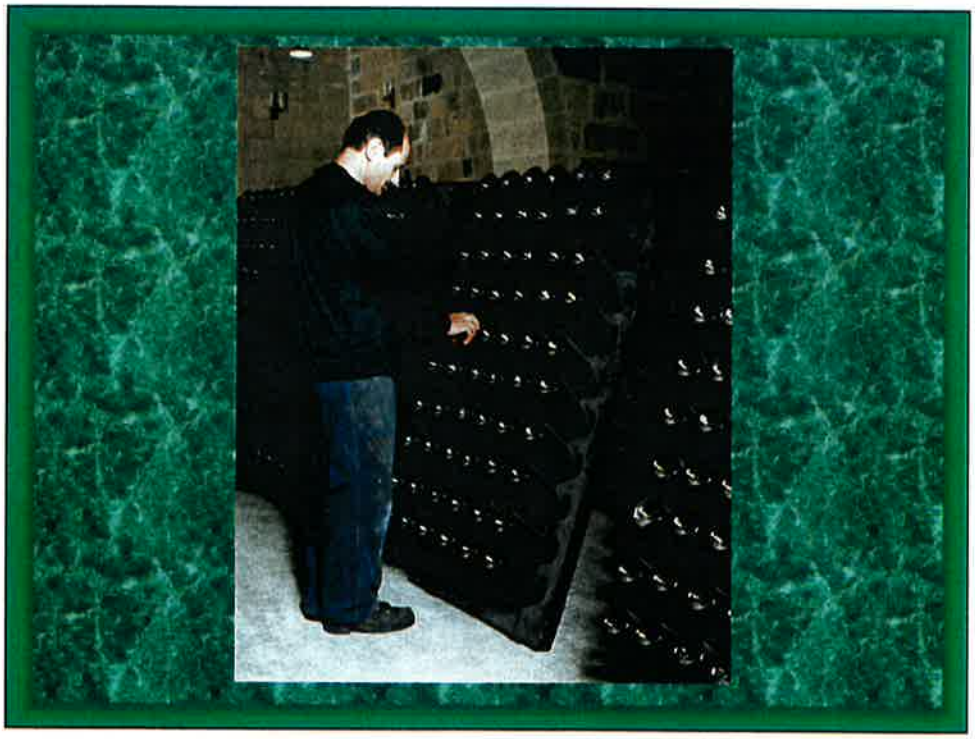




GIS Developments

- ✓ Training of Personnel
- ✓ Integrated System
  - ➢ Layers of Information
  - ➢ Links to other systems
- ✓ Link to IACS
  - ➢ Integrated Administration Control System
- ✓ Link to MALSIS
  - ➢ Malta Soil Information System





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Session 4 – Presentation of the Vineyard Register in Romania, by *Mircea Petrescu, Ministry of Agriculture, Food and Forestry, Romania*

Abstract

M. Petrescu is the Head of Vine and Wine office in the Ministry of Agriculture, Food and Forestry of Romania. He first presented the general situation of vineyard in Romania which covers 267,400 ha, i.e. 1.8% of Utilizable Agricultural Area. It is now mostly a private vineyard (96.3% of vine area) and wine-growing properties have been 'fragmented'. There are 8 wine-growing regions and 37 areas of production in Romania, but some 'isolated vineyard' can be found in other regions.
M. Petrescu then presented the legal framework and the program for introduction of Vineyard Register in Romania. It is planned to carry out an inventory of vineyards per parcel and vine-stock, a declaration of vineyards and to achieve cadastral mapping at the level of vineyard parcels as well as setting up the Register of vineyard planting. The Vineyard Register should be set up at 3 levels: local, department, national).
However Romania has to face major problems with the cadastre updating, due to the privatisation of land. Therefore a transition period of 4 years after accession of Romania has been required (2007-2010).

(Presentation Powerpoint)

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ROUMANIE

Situation de l'introduction
du cadastre viticole
et du registre des plantations viticoles

Patrimoine agricole: 14852,3mille ha (100%)

- Arable 9401,5mille ha (63,3%)
- Viticole 267,4mille ha (1,8%)
- Arboricole 251,9mille ha (1,7%)
- Pâturages naturales 4931,5mille ha (33,2%)
- **Patrimoine viticole**: 267,4 mille ha (100%)
- Domaine privée 257,5 mille ha (96,3%)
- Domaine publique 9,9 mille ha (3,7%)

Repartition territoriale du patrimoine viticole

- Dans aires viticoles:
  - 8 régions viticoles
  - 37 vignobles
  - 170 centres viticoles, dont:
    - 125 en vignobles
    - 45 indépendents
  - En dehors des aires viticoles:
    - vignes solitaires

Cadre juridique

1. Cadastre générale:

- La loi nr.7/1996 du cadastre et de la publicité immobilière.
- L'ordre nr.534/2001 du MAP pour l 'approbation des Normes méthodologiques pour l'introduction du cadastre générale.

Cadre juridique

2. Cadastre viticole

- La loi de la vigne et du vin en système d'organisation commune du marché vitivinicole nr.244/2002 - R(EC)nr.1493/99.
- Decision de Gouvernement nr.1134/2002 pour l'approbation des Normes méthodologiques d'application de la Loi nr.244/2002 - R(EC) nr.1227/2000, R(EC) nr.1622/2000 et R(EC) nr.1623/2000

- L'ordre nr. 34/2000 du MAA pour l'approbation des Normes méthodologiques de realisation et gestion du cadastre viticole - R(EC) nr.2392/1986 et R(CE) nr.649/1987.

Programme d'introduction du cadastre viticole

- Engagements assumés par le Document de position:
  - Inventaire des plantations viticoles par parcelles et cepages.
  - Promotion de l'ordre MAAF concernant "La Declaration d'assortiment viticole".
  - Realisation de l'infrastructure pour l'inventaire des plantations viticoles.

- Réalisation des plans et cartes cadastrales jusqu'au niveau de l'exploatation viticole, par parcelles et cepages.
- Organisation du registre des plantations viticoles.
- Sollicitation d'une periode de transition de 4 ans dans la periode 2007-2010.

Cadre juridique en perspective pour le cadastre viticole

- Elaboration de projets des actes normatifs:
  - Déclaration d'assortiment viticole
  - Registre des plantations viticoles.
- Actualisation des actes normatifs:
- L'ordre nr. 97/PT/1990 du MAA sur l'encadrement des localités par aires viticoles.
- L'ordre nr.34/2000 du MAA pour approbation des Normes méthodologiques de réalisation et gestion du cadastre viticole.

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Session 4 – Presentation of the Vineyard Register in Cyprus, by *Xyriacos Alexandrou, Department of Agriculture*

Abstract

*Vineyards in Cyprus cover **18 058 ha, 22,672 wine-growers and 61,397 cadastral parcels (0.294 ha per plot on average**) and they are mostly located in the South-West part. The Cyprus Government established a Vineyard Register since 1980. The identification of vineyard parcels is based on cadastre for the moment, it should move to the Block System which will be set up for IACS. The VR system is based on Oracle database with 9 tables.*

A Vineyard GIS will be implemented; during a 3 years transition period, it is planned to use digital cadastral maps (there are 60 cadastral sheets with 64 sub-sheets at 1/5000 scale and also maps at 1/2500 scale). VHR satellite images will be acquired on the whole territory for IACs purpose to create block based LPIS. Those data (block maps and orthoimages) will be shared with VR. The JRC is directly involved in the production of orthoimages of Cyprus, some tests have already been achieved.

(Presentation Powerpoint)

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Vineyard registry Implementation in Cyprus

- Cyprus Government established vineyard registry since 1980.
- Collected information's stored in a database and been updated yearly.
- Identification and location of plots is based on cadastral reference system.
- Eventually the mmethodology to be used will focus on the unique identification of agricultural parcels based on the combination of cadastral and satellite imagery (Block System)

1st workshop on the LPIS in the context of Vineyard
Geographical Information System

CYPRUS REGISTER OF VINES SYSTEM

The Register of Vines Database is drawn in Oracle. It consists by four (4) main tables and other five (5) secondary tables.

1. *Main tables of the System*
   - *Owner (contains owners data)*
   - *Area (contains plots data)*
   - *Variety (contains data about the varieties cultivated in each plot)*
   - *Cultivator (contains cultivators data)*
2. *Secondary tables of the System*
   - *Occupcode (contains occupation codes)*
   - *Varcode (contains varieties codes)*
   - *Areacode (contains Cyprus geographical codes)*
   - *Vinezone (contains Cyprus viticulture zones)*
   - *Illegality (contains illegality codes)*

Cyprus Vineyard Registry

CYPRUS VINE AREA AND OWNERSHIP DATA

Area	18058,48 Ha
Number of Plots	61397 (Cadastral)
Average Plot Area	0,294 Ha
Number of Farmers	22672
Average Number of Plots per Farmer	2,71
Average Area per Farmer	0,797 Ha

1st workshop on the LPIS in the context of Vineyard
Geographical Information System

Cyprus Vineyard Registry

WHITE TABLE GRAPE VARIETIES	
SOULTANINA	1142,12 Ha
ROZAKI	0,88 Ha
PERLETTE	68,08 Ha
GOLD	19,42 Ha
SUPERIOR	4,34 Ha
TOTAL	1234,84 Ha

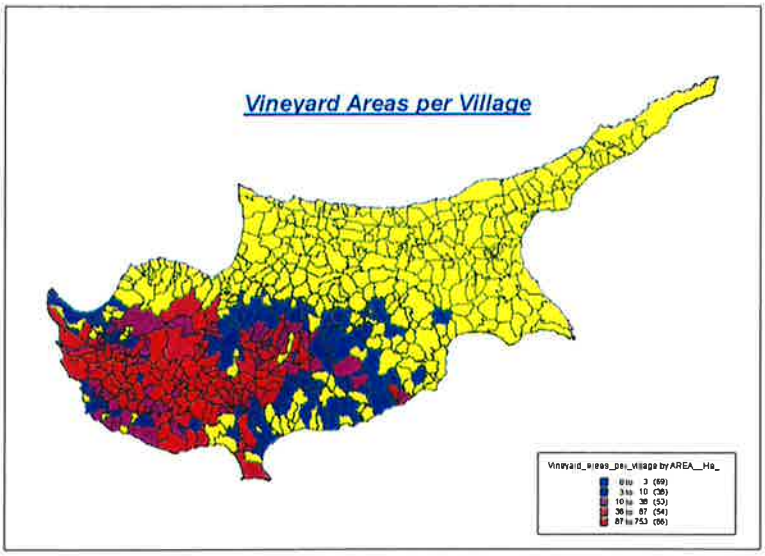
WHITE WINE GRAPE VARIETIES	
CHARDONNAY	62,21
JAEN	1,05
MALAGA	391,95
MALVASIA GROSSA	10,29
MALVASIA LUNGA	17,11
MOSCHATO	1,48
PALOMINO	184,32
PEDRO XIMENEZ	1,34
PLANT X	22,76
PROMARA	0,67
RIESLING	27,56
SAUVIGNON	9,45
SEMILLON	31,22
UGNI BLANC	16,09
XYNISTERI	2699,82
TOTAL	3477,32

Cyprus Vineyard Registry

RED WINE GRAPE VARIETIES	
ALICANTE BOUSCHET	143,50
CABERNET FRANC	413,17
CABERNET SAUVIGNON	314,81
CARIGNAN NOIR	910,35
GRENACHE NOIR	176,09
KANELLA	0,02
LEFKADA	61,66
LOCAL BLACK	10544,95
MARATHEFTIKO	50,11
MATARO	220,10
MERLOT NOIR	22,54
MOSHATO HAMBURG	4,02
OEILLADE	127,38
OFTHALMO	151,92
SHIRAZ	93,72
COLLECTION	7,76
MOTHER VINES	14,02
TOTAL	13256,12

1st workshop on the LPIS in the context of Vineyard Geographical Information System

Cyprus Vineyard Registry



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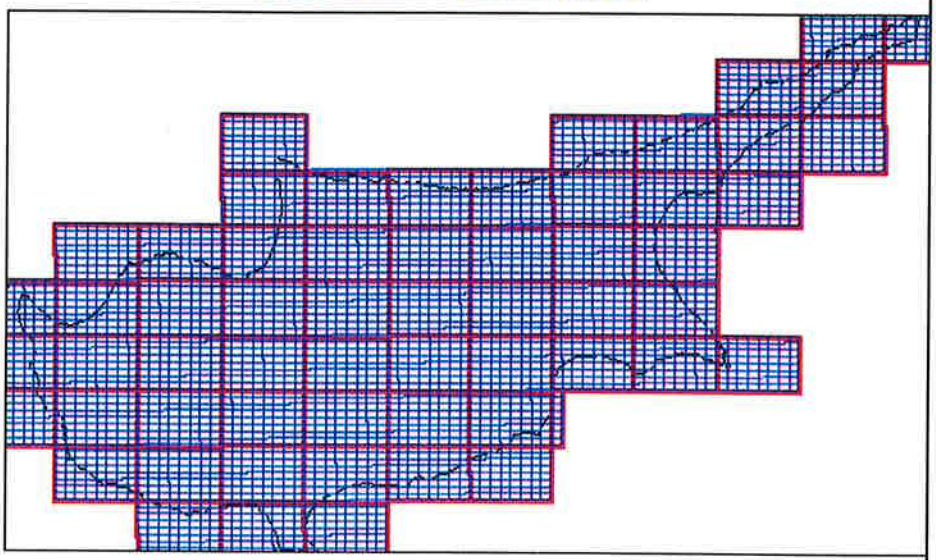
Cyprus Cadastral System



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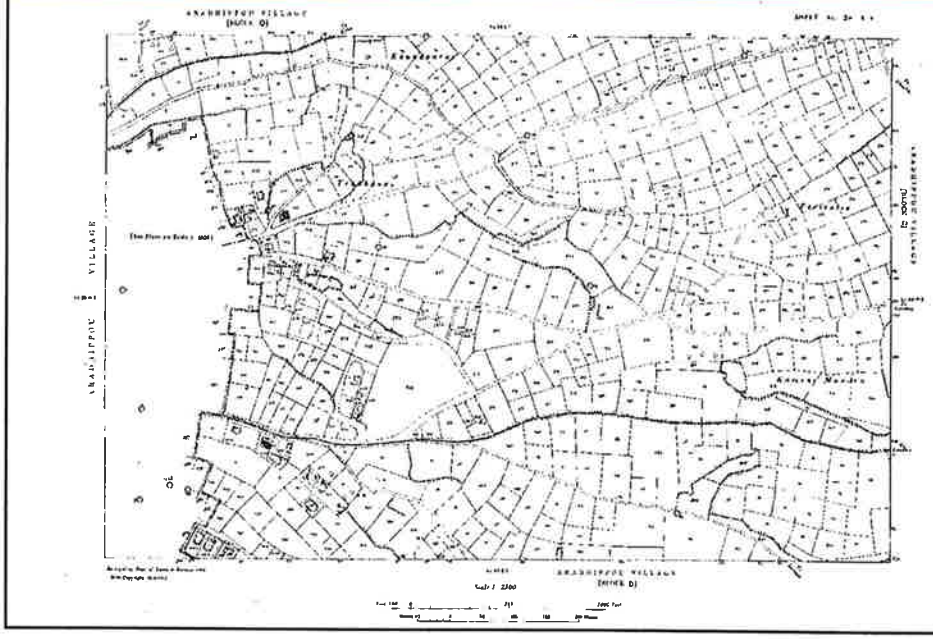

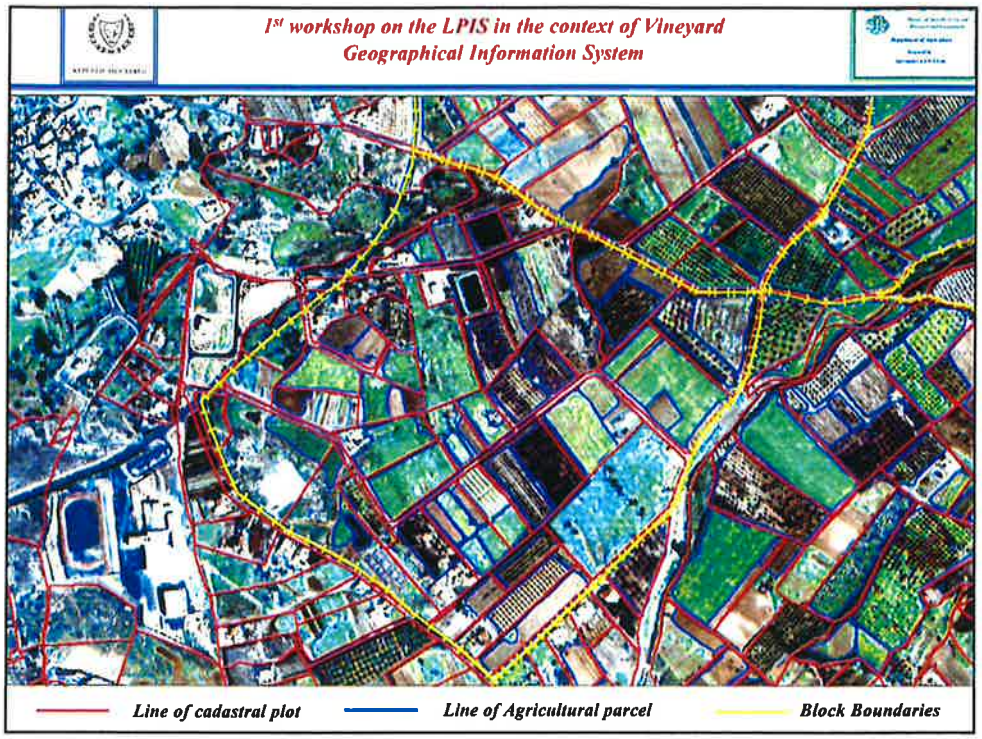
1st workshop on the LPIS in the context of Vineyard Geographical Information System
Line of cadastral plot
Line of Agricultural parcel
Block Boundaries

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Session 5: Future of activities on Vineyard Registers

Session 5 – Strategy for the future on vineyard registers, by *Jacques Delincé, MARS Unit (IPSC, JRC Ispra)*

Abstract

The future activities on Vineyard Register depends on regulation issues and the present situation. J. Delincé recalled the regulation background both on Wine sector and IACS sides, as well as the objective of VR which is both a management and control instrument. He stressed that the regulation is not very recent but reg. 2392/86 is still applicable and there is a clear statement in the reform regulation for updating the VR. The use of VR for both statistics purpose and control of the production potential is also crucial. The reference charts are particularly useful to check the prohibition of new plantation.

Then JD presented s summary of the VR implemented in MS and CCs. As far a the compatibility with IACS is concerned, the position of the JRC is that there should be a common parcel identification system. In countries with cadastral references on both sides (Luxemburg, Spain, Italy) it should not be a problem. Austria and Germany will have to manage the links between blocks and cadastral references, which has to be monitored. The main problem will be for France which will drop cadastre. In UK the identification of vineyard parcels should be also improved. For countries which opted for reference chart VR, a Vineyard GIS is already in place, similar or already integrated with IACS (Spain, Italy, Greece..). A technical upgrade is required to integrate the sectors. It is also recommended to use orthophotos which fit to 1/5000 scale mapping standards in vineyard areas, that is a minimum (some countries already use 20-25 cm). In addition 50cm resolution orthophotos should be available soon from IACS side. It is also essential that graphic data are provided to wine-growers and used for control purpose as well. A periodical check of illegal plantation should be undertaken.

The last point presented by J. Delincé concerned the JRC initiatives, which may cover (upon request of national administrations): writing technical documents, technical assistance, follow-up mission in the CCs, pilot projects on new sensors and small parcel

registration. From his point of view there is also a requirement for modification of Commission Regulation in the field of Vineyard register.

(Presentation Powerpoint)

Strategy
on
the Vineyard Registers

J. Delincé, MARS Unit, IPSC

Outline:

- Boundary Conditions: Regulations
- Present situation
- Future evolution

Strategy on the Vineyard Registers

Present regulations:

Register Council:	2392/1986
Register Commission:	649/1987
Wine market Council:	1493/1999
Wine market Commission:	2729/2000
IACS Council:	1593/2000

Strategy on the Vineyard Registers

Vineyard Register GOALS

Administration and Control instrument

- Provide informations on potential production and evolution for market management
- Tool for Controls

Strategy on the Vineyard Registers

Controls on the Potential: art 5 - 2729/2000

1. For the purpose of compliance with the provisions on production potential laid down in Title II of Regulation (EC) No 1493/1999 Member States shall make use of the vineyard register or reference charts, as applicable, in accordance with Council Regulation (EEC) No 2392/86(14).
   Permanent abandonment and restructuring and conversion receiving a contribution from the Community shall be systematically verified on the spot. The plots checked shall be those which are the subject of an application for aid.

Strategy on the Vineyard Registers

Controls on the Potential: art 5 - 2729/2000

2. Compliance with the prohibition on new planting laid down in Article 2(1) of Regulation (EC) No 1493/1999 shall be verified by means of the reference chart drawn up in accordance with Article 4(4) of Regulation (EEC) No 2392/86.
   The Member States where no reference chart is available shall notify the Commission before 1 January 2001 of the measures introduced to ensure compliance with the prohibition on new planting.

Strategy on the Vineyard Registers

Art 20 1493/1999

The rules governing the Community vineyard register shall be those set out in regulation (ECC) N°2392/86

Strategy on the Vineyard Registers

IACS regulation 3508/92 art 9a:

For the purposes of applying Community aid schemes listed in the Annex and which are not referred to in Article 1, the Member States shall ensure that the administration and control systems applied to them are compatible with the integrated system in the following respects:
(a) the computerised data base;
(b) the parcel and animal identification systems;
(c) administrative checks.
In order to be 'compatible' within the meaning of the first subparagraph, the administration and control systems applied to the Community aid schemes concerned have to be set up so as to allow, without any problems or conflicts, a common functioning of, or the exchange of data between the systems.

Annex: Wine art 11-15 reg 1493/1999 restructuring aid

Strategy on the Vineyard Registers

Classical register: census if over 0.1ha

Luxemburg, Germany, Austria, France, United Kingdom

- Use of cadastre/land register references
- Holding dossier: Identification(7), parcels characteristics (16), planting rights, varia (8)
- Production dossier: declarative data (harvest, production, stocks).

Strategy on the Vineyard Registers

Reference chart: covering the entire area under vine.

Countries: Italy, Spain, Portugal, Greece and CC's

- Content defined in doc VI/694/96 (working paper)
- Database with production dossiers expected
- GIS similar to IACS expected

Strategy on the Vineyard Registers

Classical approach: Maintenance, update, evolution

Updated exhaustive database should exist, allowing:

- •Administrative IT cross checks with IACS
- •Verification of the eligibility of any vine area
- •Historical traceability of origin of the rights and payments
- •Dates and output of controls (100%)
- •Derivation of inventory data

Strategy on the Vineyard Registers

Classical approach: Maintenance, update, evolution

- •IACS ID (Producer/field) system should be adopted
  - •Luxembourg, Germany, United Kingdom: no change
  - •Austria, Germany: Block system linked to cadastre
  - •France: ID drops cadastre,
- •GIS management of the cartography welcome (all).

Strategy on the Vineyard Registers

Simplified register: Maintenance, update, evolution

- IACS ID system should be adopted
  - Spain: cadastre (SIGPAC)
  - Italy: cadastre (common SIG)
  - Greece, Portugal: integrated approachs
  - CC's: Bulgaria, Slovenia, Cyprus : cadastre
    Hungary, Malta, Slovak R, Czech R, Romania,
    Turkey: Integrated approach
- GIS management of the cartography.

Strategy on the Vineyard Registers

What should be done?

Technical upgrade:

- Data structure: integrate or link VR & IACS databases
- Data quality: ensure DB update (declarations)
- Manage planting rights
- ID compatibility with IACS
- GIS management: recommanded
- Ortho update

Strategy on the Vineyard Registers

What should be done?

Technical upgrade:

- Arable zones: stick to IACS standards
  - use of full resolution ortho welcome (FR)
  - graphical localisation of fields limits welcome
- Urban, Permanent crop zones:
  - use 5.000 scale ortho & map standards
  - representation of parcel above 5 ares welcome

Strategy on the Vineyard Registers

What should be done?

Use for admin and on the spot control, distribution

- Distribute the graphical data in support to declarations (restructuration, grubbing)
- Perform 100% of IT admin control (eligibility, cross checks)
- Locate eligible vines & planting rights
- Use graphical data for field control
- Periodical check for illegal plantations.

Strategy on the Vineyard Registers

JRC Initiatives

- Synthesis of MS work plans (?)
- Proposal for modification of Commission regulation (?)
- Proposal of technical documents (?)
- Follow-up missions in CC's and MS(?)
- Technical work on GIS integration, Photointerpretation, new sensors, small parcels registration.
- Integrated (IACS, OII, VITI) Field ID system and Control Worshop in Nov 2003.

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Session 5 – Future activities of the JRC on Vineyard Registers, by *Josiane Masson, MARS Unit (IPSC, JRC Ispra)*

Abstract

After few years less active on Vineyard Register issues, the JRC will restart some activities. However the human resources are limited and at the beginning the JRC will mostly maintain the network of contacts with Member States and Candidate Countries. For that Josiane Masson is updating completely the JRC Website on Vineyard Register and Olive Sector activities. She presented the prototype to the participants. A series of documents, summary of activities per country etc, will be available from this Website quite shortly, including the Proceedings of the workshop. The participants will be informed once it is available on Internet.

(Presentation Powerpoint)

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MARS Unit

Vineyard registers

Home
Vineyard registers
OLISTAT
OLIAREA
OLICOUNT
OLIGIS
DOCUMENTS & SOFTWARES
SEARCH
CONTACTS

Work in progress, sorry for the inconvenience

This page contains information on Vineyard registers:

- Links to the regulation and other documents available
- Information on the activities of the MARS Unit related to Vineyard registers
- A brief description of the Vineyard registers in the Member States
- List of contact points for Vineyard registers in Member States and in the PECO countries. From here you can send e-mail to those contact points.
- Useful links

Purpose and contents of Vineyard registers and Vineyard GIS

The Vineyard register is a tool for the management and control of the CMO (Common Organisation Market) whic

Council and Commission regulation in 1986-87. The data contained in the vineyard registers should provide Member States and EU authorities with information to better manage the Wine market:

- Estimates of the production potential
- Estimates of the actual production
- Estimates of the current stocks of wine
- Keep records of the declarations and controls of measures

There are three types of data in the Vineyard register which are detailed in the Regulation:

- Holding data including very detailed data at parcel level
- Production data
- Distillation data

Vineyard registers purposes:

- Management of subsidies eligibility
- Management of average per ha
- Management of the distillery Commitment
- Basis for applying Quality Control criteria
- Assistance to control authorities
- Control of vineyard planting and uprooting

The vineyard register should be maintained and regularly updated to be used for:

- Control of consistency between vineyard register data and:

  Harvest declaration:

  - *consistency of volume harvested vs. area*
  - *eligibility of designation of origin*
  - *Vine-stock variety, yield level, quality level...*

  Product declaration:

  - *consistency harvest/product declarations*

Control of vineyard planting, new planting and uprooting ('restructuration' measures)

- Statistics

  per holding

  per parcel: area, number of vineyard parcels, average size per parcel, age of vineyard, statistics on uprooting and planting

  on production

Unlike the Olive sector for which the implementation of an Olive GIS (Geographic Information System) is compulsory under Regulation (CE) 2366/98 and replaced the olive register, the implementation of a Vineyard GIS is not compulsory. However the graphic part of the vineyard register became more important with the 'Simplified register' (Reg. (council) 1549/95). In order to better identify the vineyard parcels, some MS decided quite early to use aerial photos in addition to the existing cadastre or land registry maps. With the 'Simplified register' some Member States (Portugal, Greece), decided to set up a Vineyard GIS similar to the Olive GIS.

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Activities of MARS Unit in the field of Vineyard registers

Since 1989 the JRC has been involved in Vineyard register activities, providing technical support and undertaking a series of methodological studies:

- Technical support to DG AGRI and the Member States (specially for the definition of technical specification for the simplified register and Vineyard GIS.
- Pilot studies on the 'simplified' register in Greece and Portugal, 1992
- Study on the use of Remote Sensing images for vineyard registers, 1993
- Studies on cadastre and land register in 8 countries, 1991-92
- Evaluation studies of the Vineyard register in 4 countries (carried out by 4 contractors in France, Italy, Spain and Germany), 1993
- VINIDENT Study, 1996-97: 4 methodological tests (carried out by 4 contractors) for the identification and mapping of Vineyard using aerial photos at various scale and various emulsion (in France, Spain, Italy). The detection of vineyard using automatic recognition techniques was also addressed in this study.

In parallel to these activities it should be stressed that the JRC was also involved in large agro-meteorological studies on Vineyard (Vineyard Zonage, OLIWIN1 and 2 for the estimates of yields...).

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Regulation

The present regulation on vineyard registers are the following:

- Reg. (Council) 2392/86 and Reg. (EC) 649/87 defining Vineyard Register
- Reg. (council) 1549/95 specifying (Article 4, par. 4) a 'Simplified Register' (or *'base graphique de reference'*) for the Member States which do not have a complete register in place which reinforce the mapping part and harmonize the methodology with IACS (Integrated Administration and Control System).
- The deadline for the simplified register was then amended by Reg. (CE) 1596/96 (postponed until 31/12/97) and then by Reg. 1631/98 (postponed until 31/12/99 in Spain and 31/12/2000 in Greece).

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Documentation

The JRC has a lot of documents related to the Vineyard theme, some of them being accessible ON LINE:

- Statistics of Vineyard area per country

- Pilot study on simplified register

  in Greece: *'Vineyard register pilot project Greece, Final report contract PVIN/FR/1937'*, Sysame and Organotecnica, September 1992

  in Portugal: *'Opération Pilote casier viticole au Portugal, rapport final'*, by AgriPro Agrisystems Profabril Consultores, Mai 1992

-

'Possibilités de Réalisation et de Mise à jour du Casier Viticole à l'aide d'images satellite', L. Bories, J.M. Terres, JRC, IRSA, MARS project, April 1994

- *'Casier viticole, document de synthèse'*, Laurence Bories (JRC, MARS sector), Janvier 1991
- Vineyard Register reliability tests:

  'Vineyard register reliability tests in Spain', by Trabajos Catastrales S.A., September 1993, ref. 15.01.93/VI/002567

  'Evaluation du casier viticole communautaire en France, rapport final', by Sysame-Geosys, September 1993

  'Test de fiabilité du casier viticole italien, Rapport final', by RSDE, October 1993

  'Vineyard register reliability study in Germany, Final report', EFTAS Fernerkundung Technologietransfer GmbH, October 1993

  'Synthesis study of the evaluation studies of the vineyard registers in 4 countries of the European Community, Final report issue 1.0', by Trabajos catastrales S.A., June 1995, ref. 10450-94-09 F1ED ISP E

- Vinident study on the evaluation of Vineyard Identification using aerial photos

  'Vinident study - final report to the European Commission, JRC, SAI, MARS project' by GEOSYS and TRAGSATEC, November 1997

  'Vinident study - final report', European Commission, JRC, SAI, by Aquater, November 1997

  'Vinident study - Theme D Detection automatique de la vigne - Final report to the European Commission, JRC, SAI, MARS project', ARMINES Ecole des Mines de Paris, October 1996

  'An Automatic Method for Vine Detection in Airborne Imagery using Wavelet Transform and Multiresolution Analysis', Thierry Ranchin, Bernard Naert, Michel Aubuisson, Gilbert Boyer & Pär Åstrand (JRC, MARS Unit), in Photogrammetric Engineering & Remote Sensing, Vol. 67, N°1, January 2001, pp 91-98

  The results of this study are summarized in this Powerpoint Presentation (4.2 Mb)

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Information on vineyard registers, by country:

UE:

- Austria
- France
- Germany
- Greece
- Italy
- Luxembourg
- Portugal
- Spain
- United Kingdom

PECO countries:

- Bulgaria
- Hungary
- Czech Republic
- Slovakia
- Romania
- Malta
- Cyprus

Austria

Status of Vineyard register

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Session 5 – Demonstration of the Intranet/Internet application developed for the management of Wine register in Spain, by *David Plaza Plaza, INYPSA*

Abstract

M. Plaza presented the application developed for the management and updating of Vineyard Register (RVE) in Spain. The software is based on Oracle Servers and MapGuide Viewer on the Clients side. The end users in the Autonomous Communities can access to alphanumeric and graphic data via Internet or Intranet with strictly limited access rights.

(Presentation Powerpoint)

M.A.P.A.

APPLICATION FOR THE MANAGEMENT OF VINEYARD REGISTER

M.A.P.A.

TITLE

Development and implementation, in a central server, of the Vineyard Register management and update computer system.

M.A.P.A.

Application

Alphanumeric and graphical element updating

Index

1. Scope of Work
2. Characteristics
3. Network server topology
4. System utilities
5. System requirements
6. Presentation

M.A.P.A.

Application

Alphanumeric and graphical element updating

1. Scope of Work

M.A.P.A.

Application

Alphanumeric and graphical element updating

1. Scope of Work

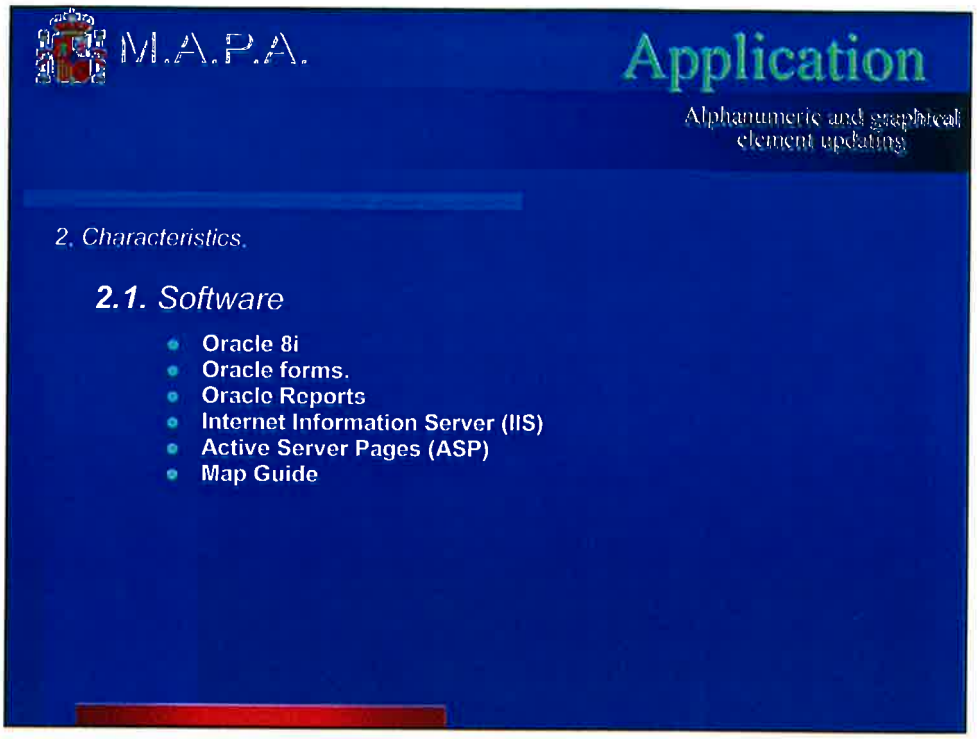
1.1 Alphanumeric data base processing module
1.2 Graphic database processing module
1.3 Management Module of National-Regional Rights of Plantation, Replantation or New Plantation.
1.4 Rights Transference Management Module
1.5 Training Courses and Guidelines.

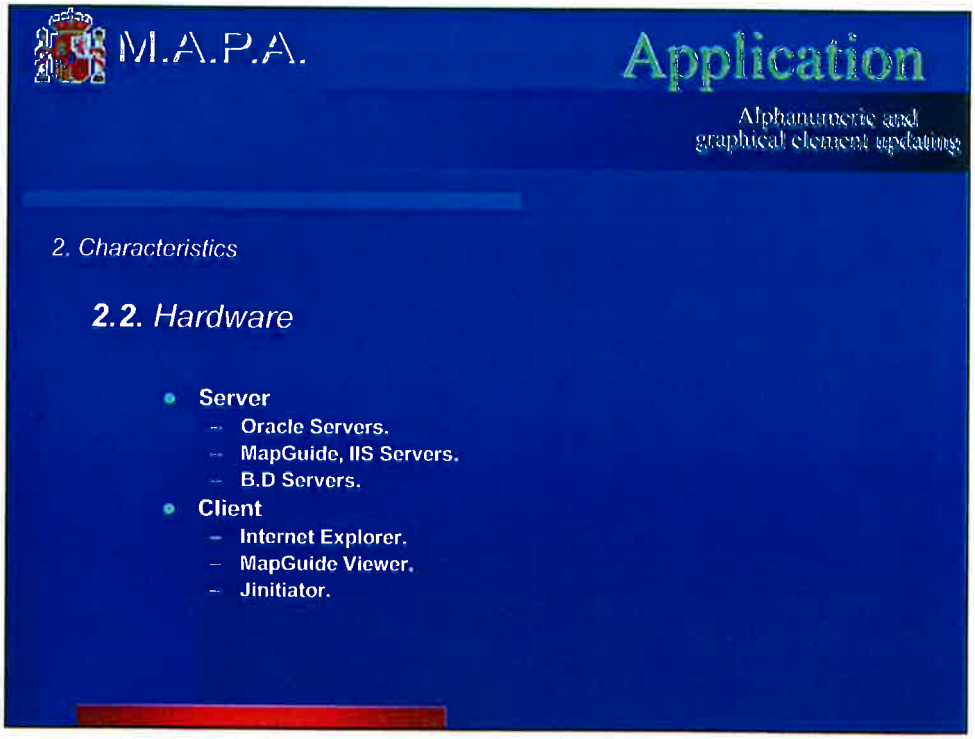
M.A.P.A.

Application

Alphanumeric and graphical element updating

2. Characterics


M.A.P.A.
Application
Alphanumeric and graphical element updating
2. Characteristics.
2.1. Software
Oracle 8i
Oracle forms.
Oracle Reports
Internet Information Server (IIS)
Active Server Pages (ASP)
Map Guide


M.A.P.A.
Application
Alphanumeric and graphical element updating
2. Characteristics
2.2. Hardware
Server
Oracle Servers.
MapGuide, IIS Servers.
B.D Servers.
Client
Internet Explorer.
MapGuide Viewer.
Jinitiator.

M.A.P.A.

Application

Alphanumeric and graphical element updating

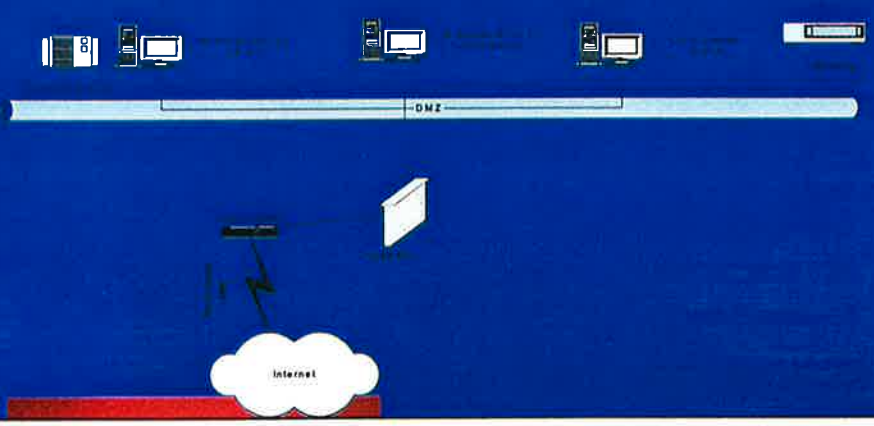
3. Server Network Topology

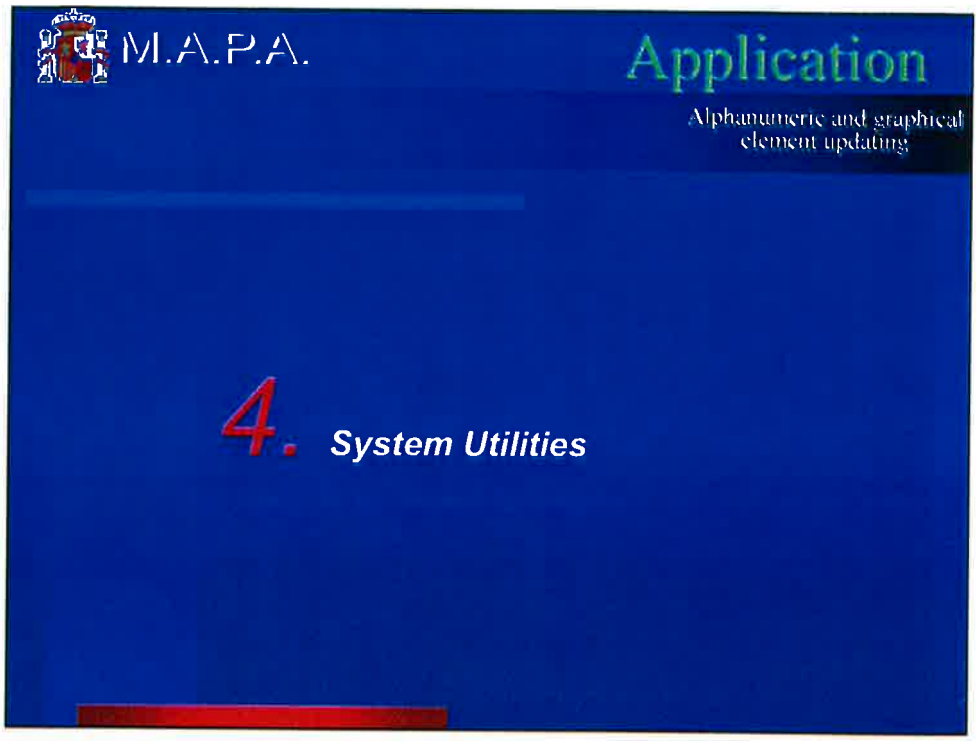
M.A.P.A.

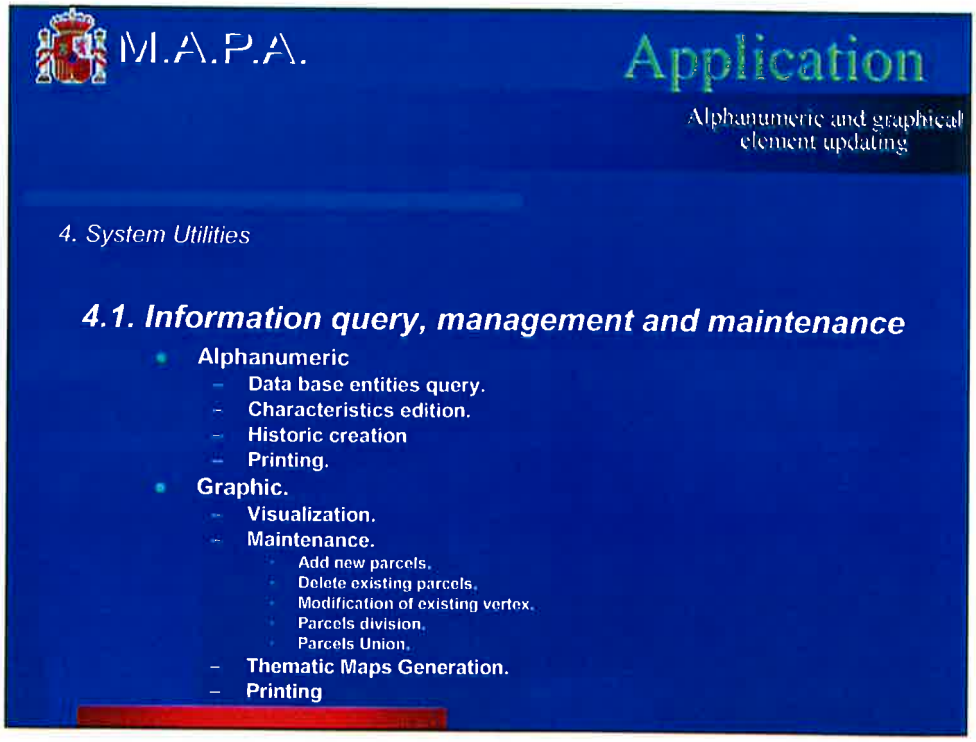
Application

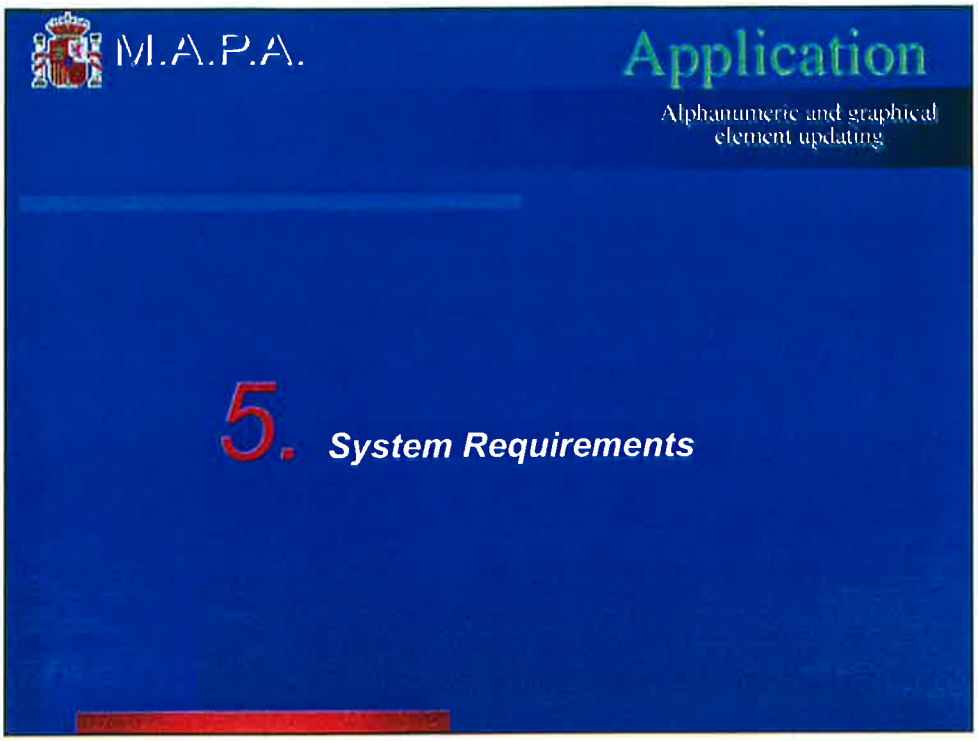
Alphanumeric and graphical element updating

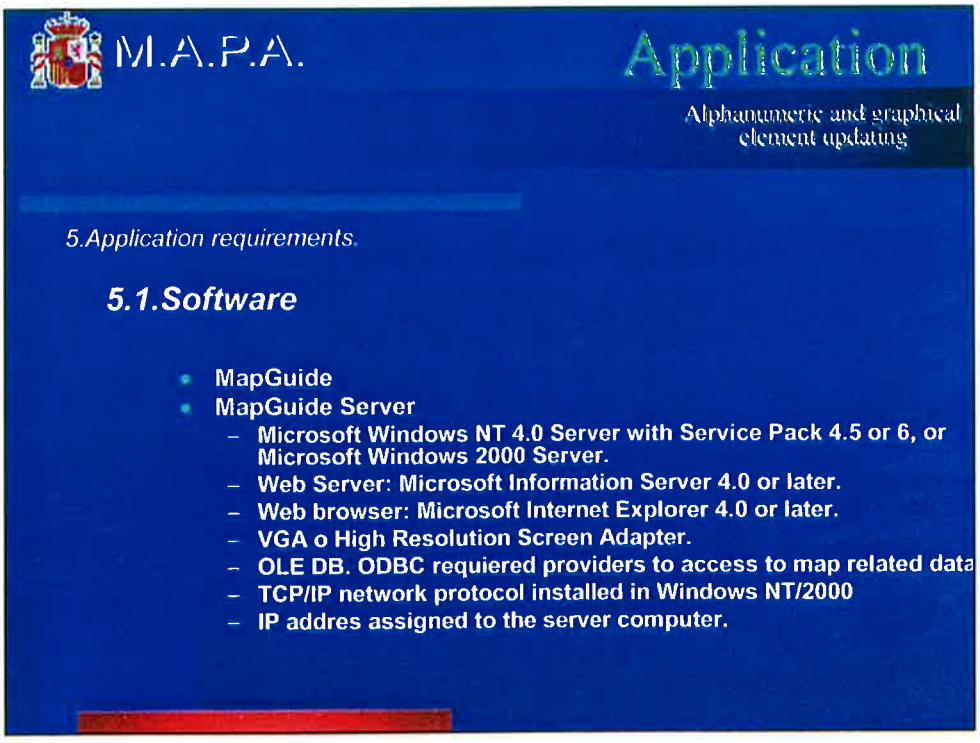
3. Server Network Topology

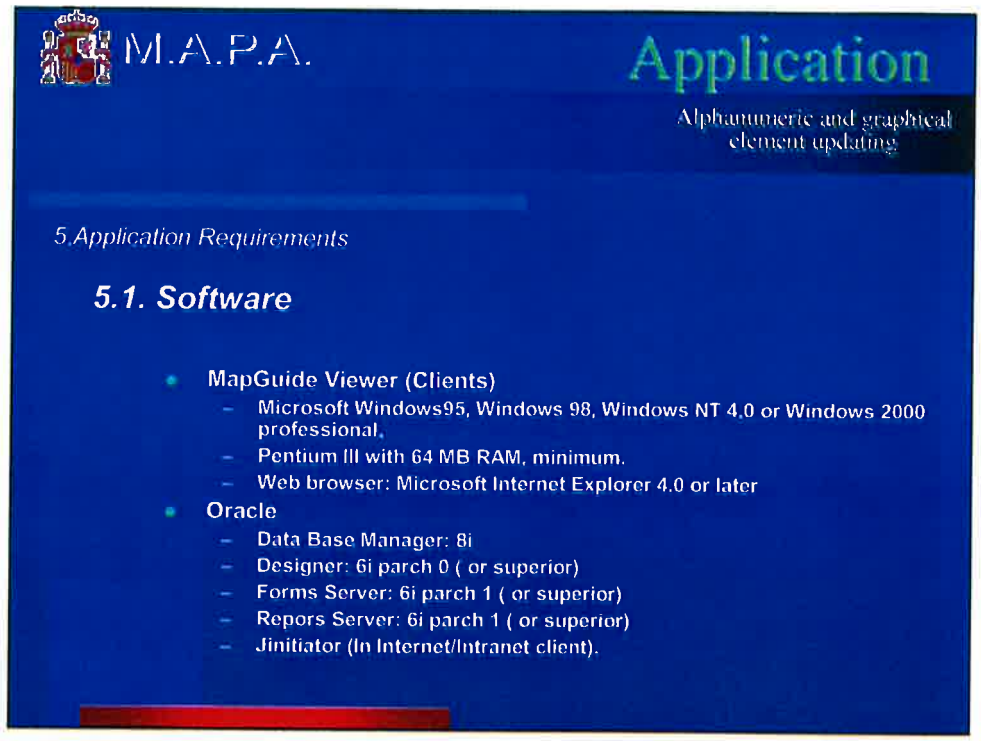


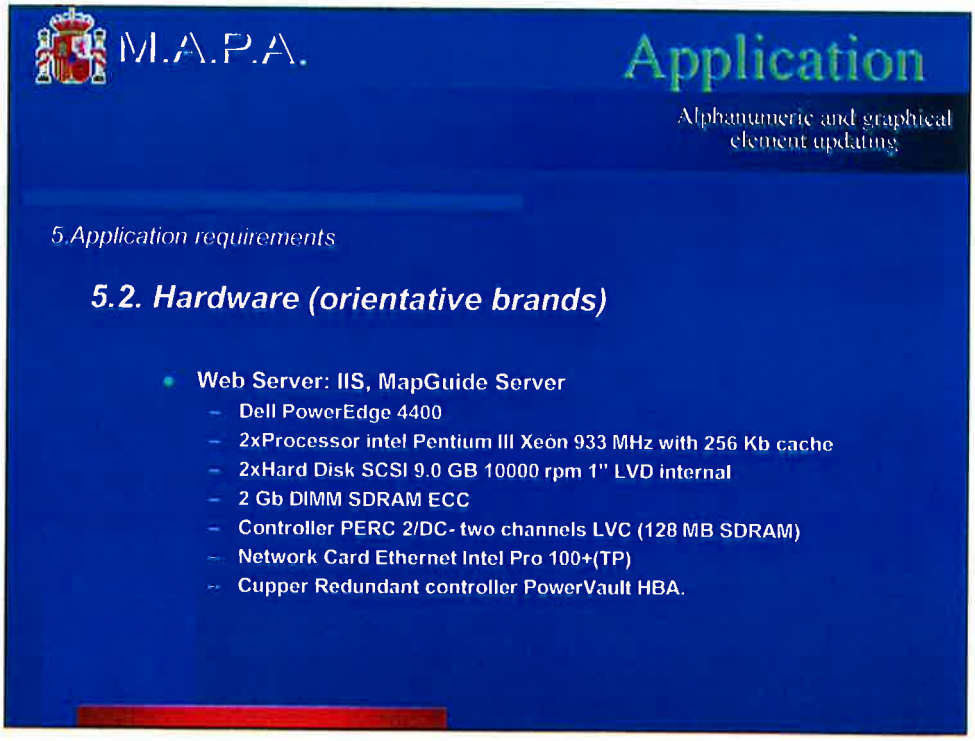

M.A.P.A.
Application
Alphanumeric and graphical element updating
4. System Utilities


M.A.P.A.
Application
Alphanumeric and graphical element updating
4. System Utilities
4.1. Information query, management and maintenance
Alphanumeric
Data base entities query.
Characteristics edition.
Historic creation
Printing.
Graphic.
Visualization.
Maintenance.
Add new parcels.
Delete existing parcels.
Modification of existing vertex.
Parcels division.
Parcels Union.
Thematic Maps Generation.
Printing


M.A.P.A.
Application
Alphanumeric and graphical element updating
5. System Requirements


M.A.P.A.
Application
Alphanumeric and graphical element updating
5.Application requirements.
5.1.Software
MapGuide
MapGuide Server
Microsoft Windows NT 4.0 Server with Service Pack 4.5 or 6, or Microsoft Windows 2000 Server.
Web Server: Microsoft Information Server 4.0 or later.
Web browser: Microsoft Internet Explorer 4.0 or later.
VGA o High Resolution Screen Adapter.
OLE DB. ODBC requiered providers to access to map related data
TCP/IP network protocol installed in Windows NT/2000
IP addres assigned to the server computer.


M.A.P.A.
Application
Alphanumeric and graphical element updating
5.Application Requirements
5.1. Software
MapGuide Viewer (Clients)
Microsoft Windows95, Windows 98, Windows NT 4.0 or Windows 2000 professional.
Pentium III with 64 MB RAM, minimum.
Web browser: Microsoft Internet Explorer 4.0 or later
Oracle
Data Base Manager: 8i
Designer: 6i parch 0 (or superior)
Forms Server: 6i parch 1 (or superior)
Repors Server: 6i parch 1 (or superior)
Jinitiator (In Internet/Intranet client).


M.A.P.A.
Application
Alphanumeric and graphical element updating
5.Application requirements
5.2. Hardware (orientative brands)
Web Server: IIS, MapGuide Server
Dell PowerEdge 4400
2xProcessor intel Pentium III Xeón 933 MHz with 256 Kb cache
2xHard Disk SCSI 9.0 GB 10000 rpm 1" LVD internal
2 Gb DIMM SDRAM ECC
Controller PERC 2/DC- two channels LVC (128 MB SDRAM)
Network Card Ethernet Intel Pro 100+(TP)
Cupper Redundant controller PowerVault HBA.

M.A.P.A.

Application

Alphanumeric and graphical element updating

5.Application Requirements

5.2. Hardware (Orientative Brands)

- Oracle Forms Server, Report Server.
  - Server Hardware Characteristics
    - Del Power Edge 2400
    - 1 x Intel Pentium III Processor 966 MHz with 1 MB cache
    - 2 x Hard Disk SCSI 9.0 GB 7200 rpm 1" LVD internal
    - SCSI Ultra2 Controller (AIC 7890)
    - 1 GB DIMM SDRAM ECC
    - Network Card Ethernet Intel Pro 100+(TP)
    - PERC2/DC Controller – Two Channels LVD - (128 MB SDRAM)

M.A.P.A.

Application

Alphanumeric and graphical element updating

5.Application Requirements

5.2. Hardware.

- Relational Oracle Server.
  - Sun Ultra 10 System (or similar)
  - 1 x CPU 440 MHZ UltraSParc-II, 2 MB E-cache
  - 256 MB memory (2*128 MB DIMMS)
  - 2x200GB 7200 RPM EIDE
  - 48XCD-ROM
  - 1.44MB Floppy
  - 4 memory slots
  - 4 PCI I/O slots
  - 17 inches monitor
  - Solaris 8 Operating System (english)
  - Solaris PC NetLink 1.2

M.A.P.A.

Application

Alphanumeric and graphical element updating

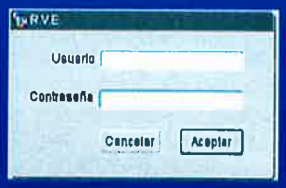
6. Presentation.

M.A.P.A.

Application

Alphanumeric and graphical element updating

6. Presentation



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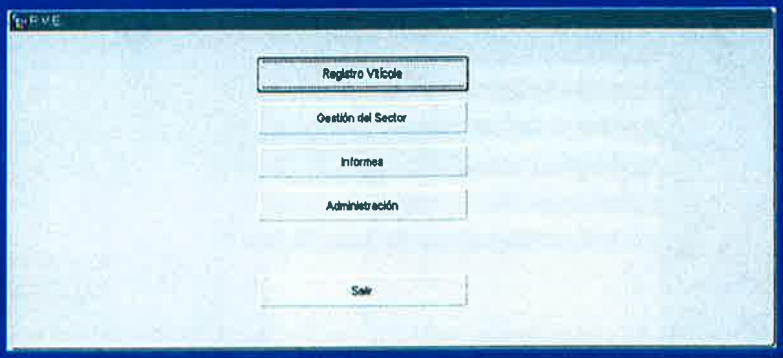
Alphanumeric and graphical element updating

6. Presentation



M.A.P.A.

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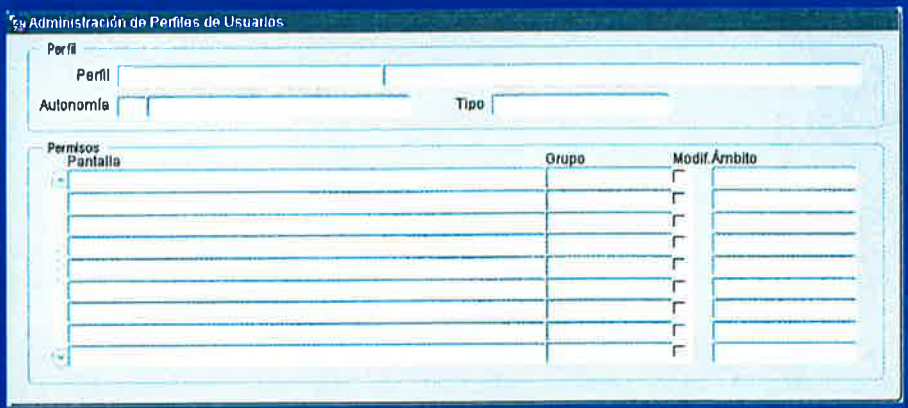
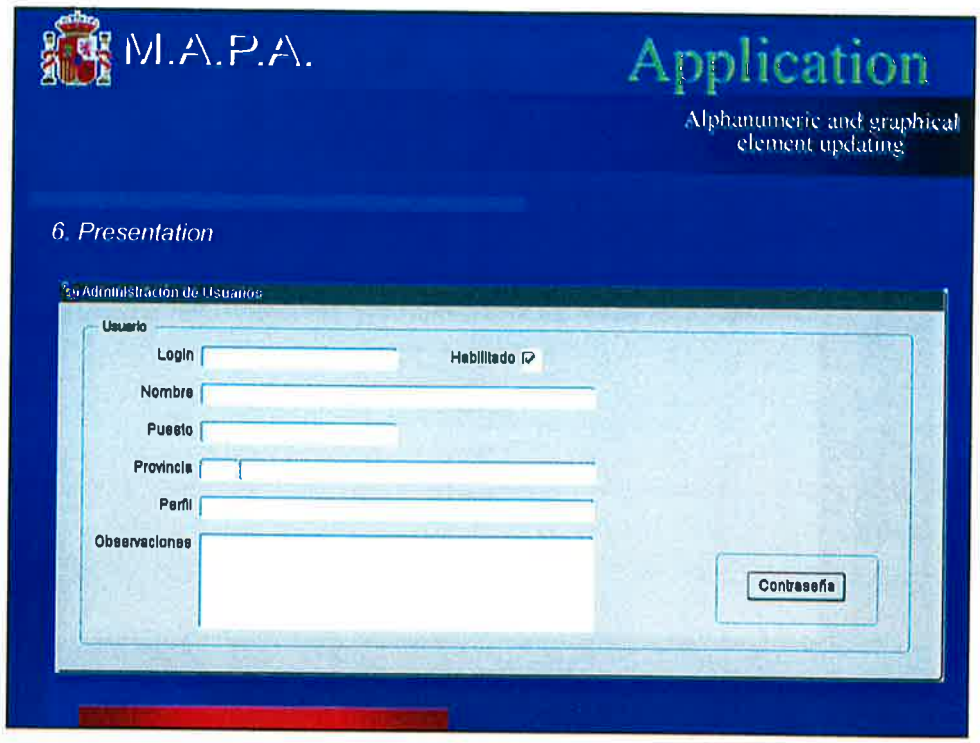
Alphanumeric and graphical element updating

6. Presentation




M.A.P.A.
Application
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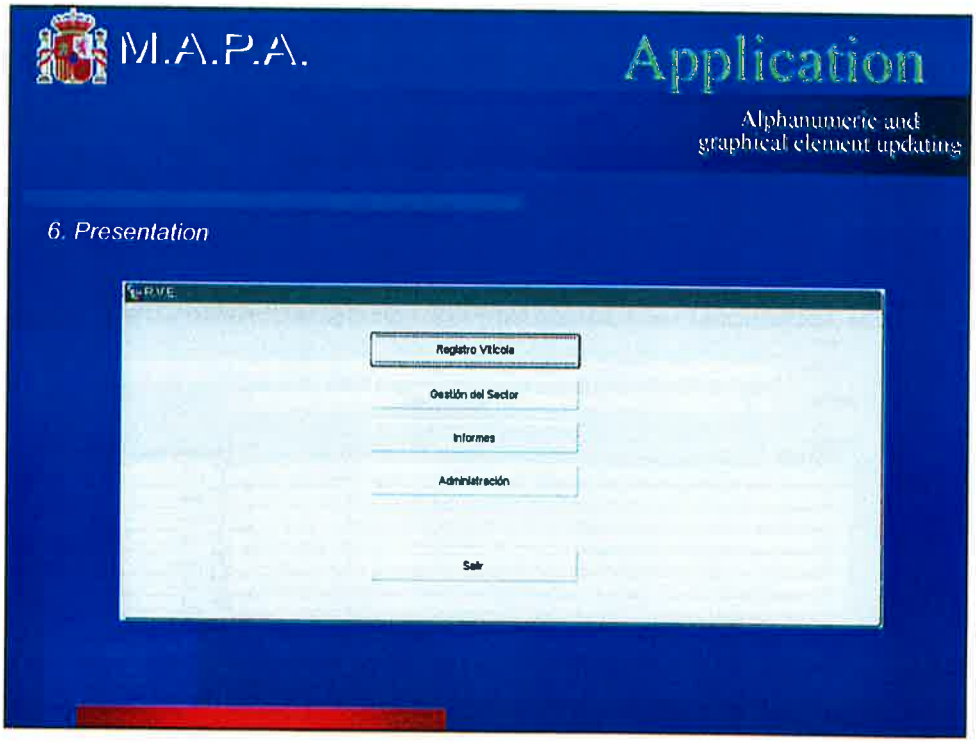
6. Presentation
Administración de Usuarios
Usuario
Login
Habilitado
Nombre
Puesto
Provincia
Perfil
Observaciones
Contraseña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6. Presentation
R.V.E.
Registro Vitícola
Gestión del Sector
Informes
Administración
Salir

M.A.P.A.

Application

Alphanumeric and graphical element updating

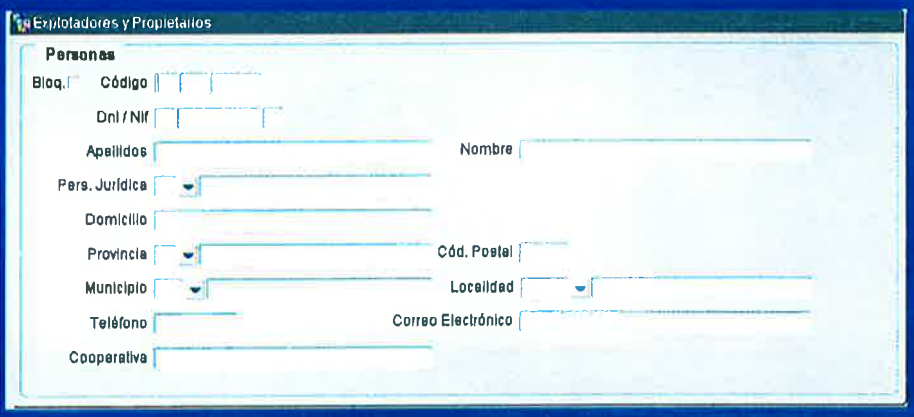
6. Presentation

M.A.P.A.

Application

Alphanumeric and graphical element updating

6. Presentation

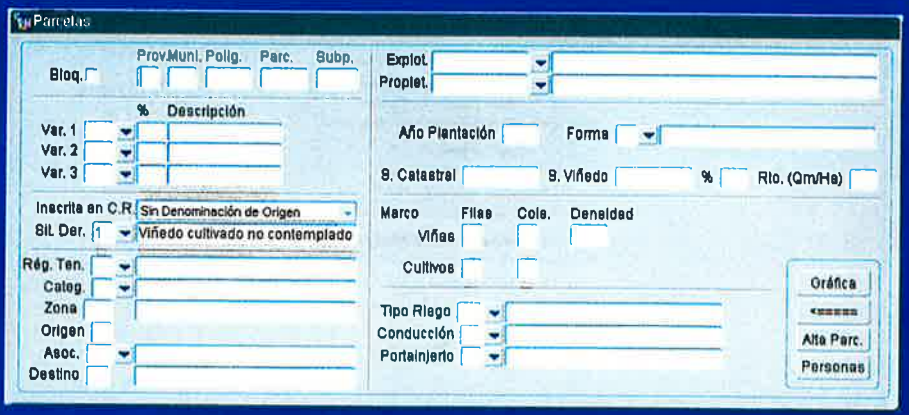


M.A.P.A.

Application

Alphanumeric and graphical element updating

6. Presentation

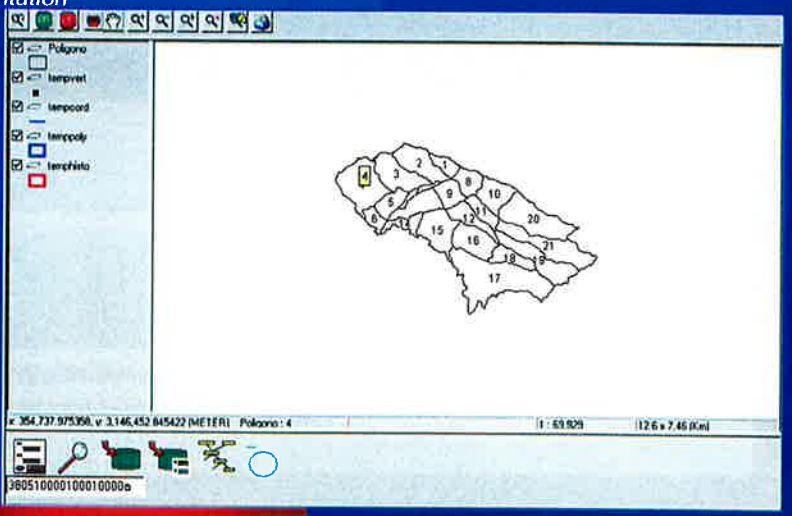


M.A.P.A.

Application

Alphanumeric and graphical element updating

6. Presentation

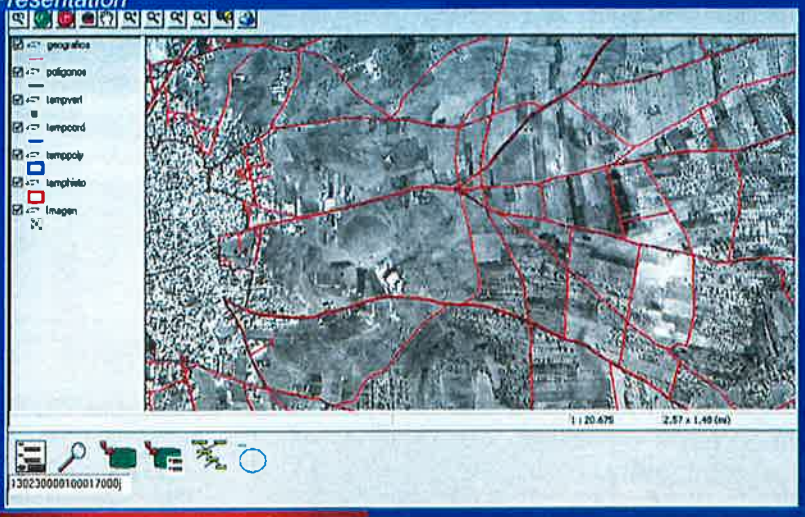


M.A.P.A.

Application

Alphanumeric and graphical element updating

6. Presentation

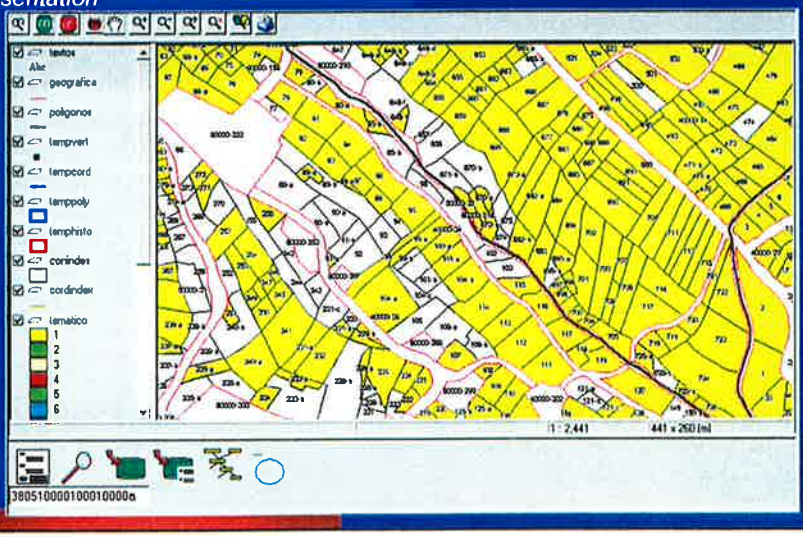


M.A.P.A.

Application

Alphanumeric and graphical element updating

6. Presentation

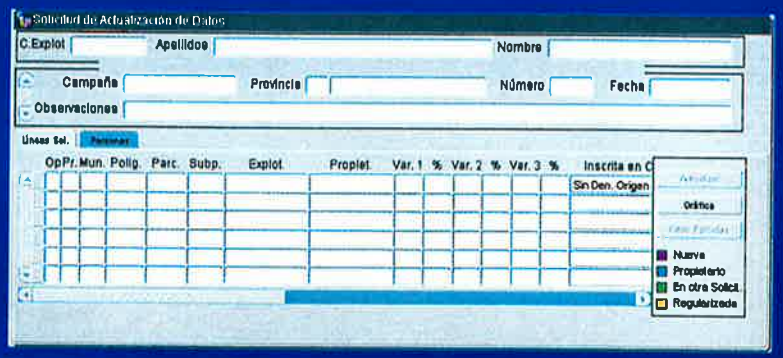


M.A.P.A.

Application

Alphanumeric and graphical element updating

6. Presentation

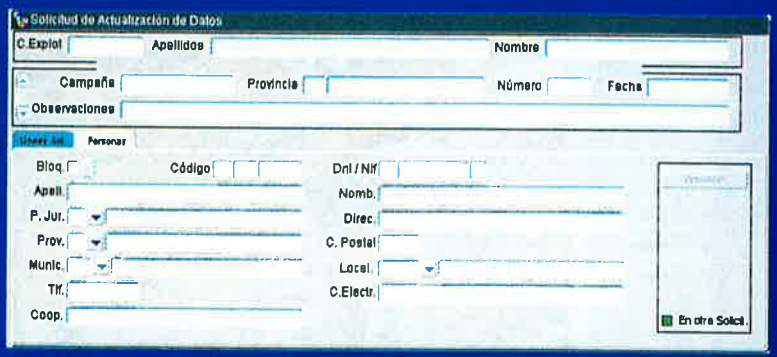


M.A.P.A.

Application

Alphanumeric and graphical element updating

6. Presentation



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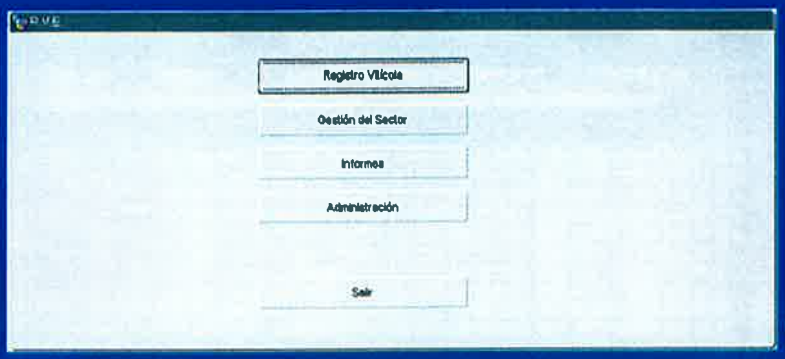
Application

Alphanumeric and graphical element updating

6. Presentation



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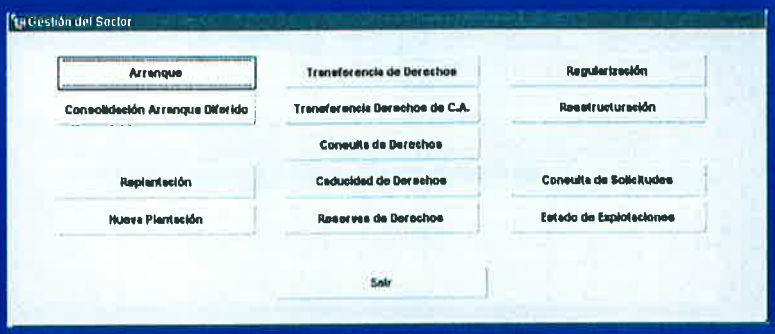
Application

Alphanumeric and graphical element updating

6. Presentation



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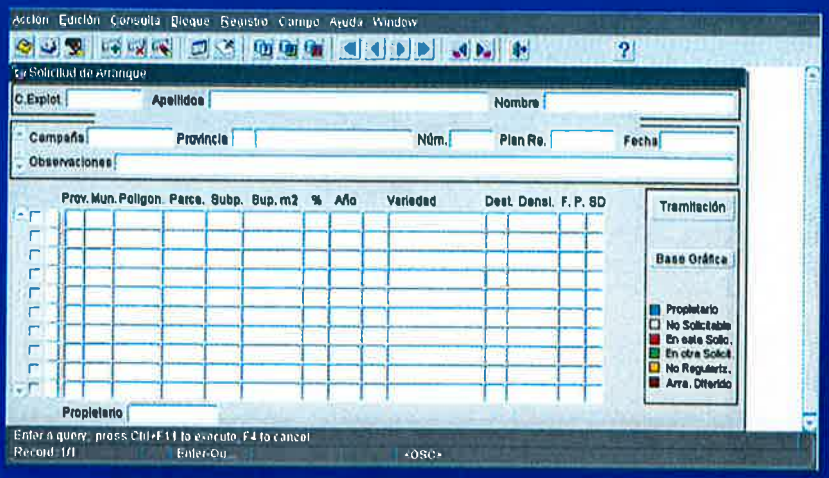
Application

Alphanumeric and graphical element updating

6. Presentation



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Application

Alphanumeric and graphical element updating

6. Presentation

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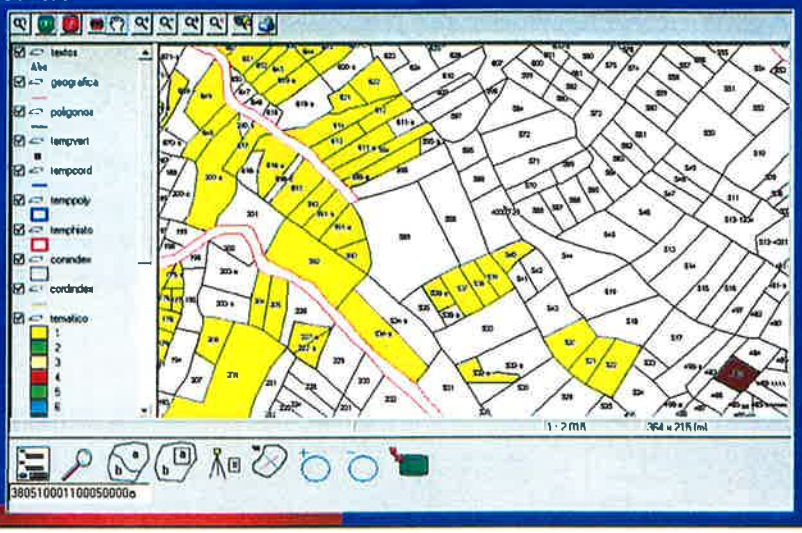
Application

Alphanumeric and graphical element updating

6. Presentation



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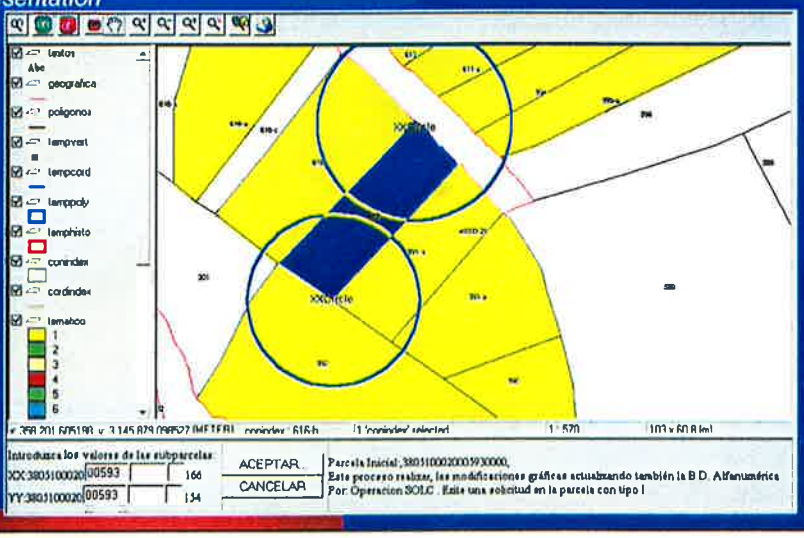
Application

Alphanumeric and graphical element updating

6. Presentation



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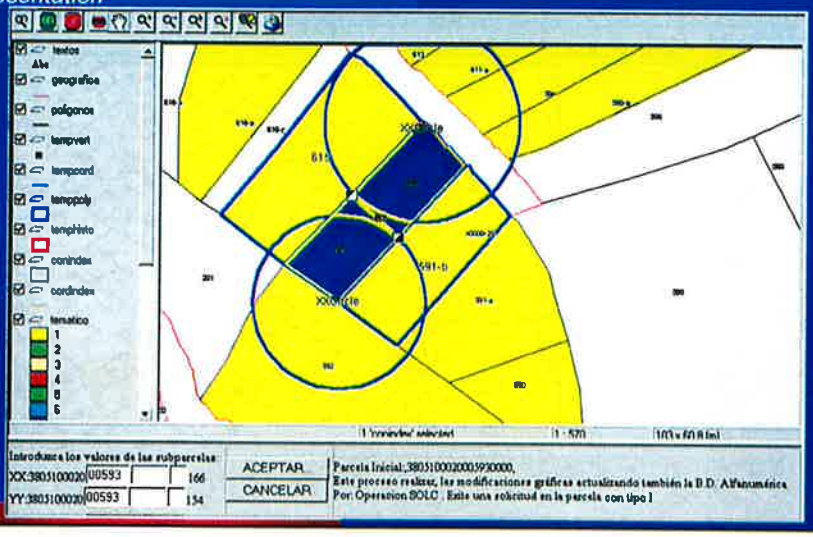
Application

Alphanumeric and graphical element updating

6. Presentation



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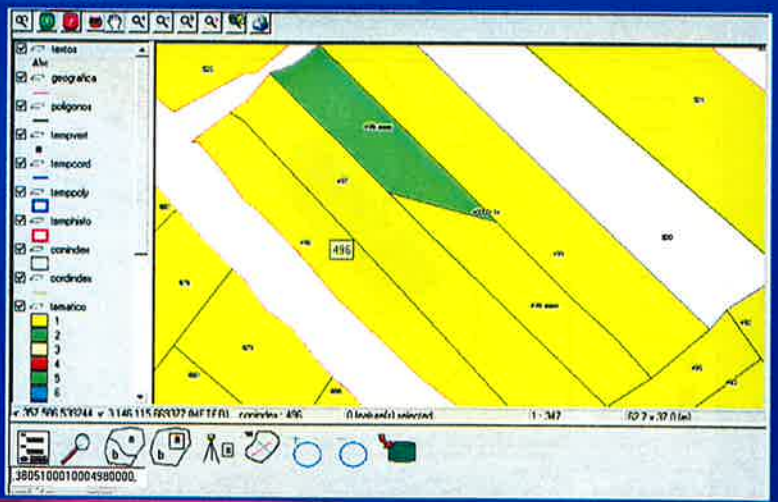
Application

Alphanumeric and graphical element updating

6. Presentation



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Application

Alphanumeric and graphical element updating

6. Presentation

M.A.P.A.

Application

Alphanumeric and graphical element updating

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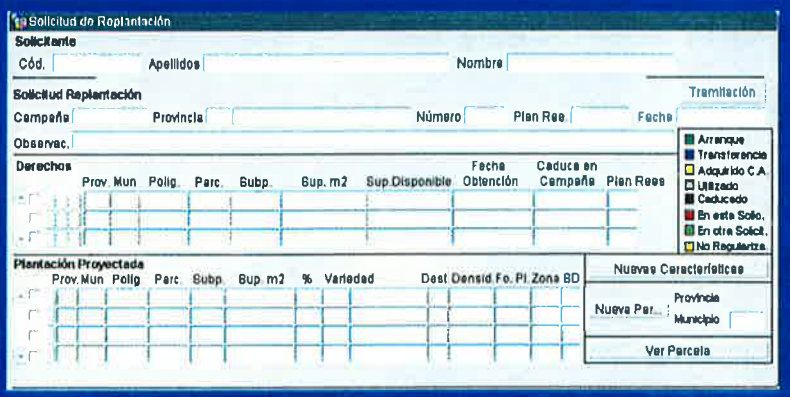

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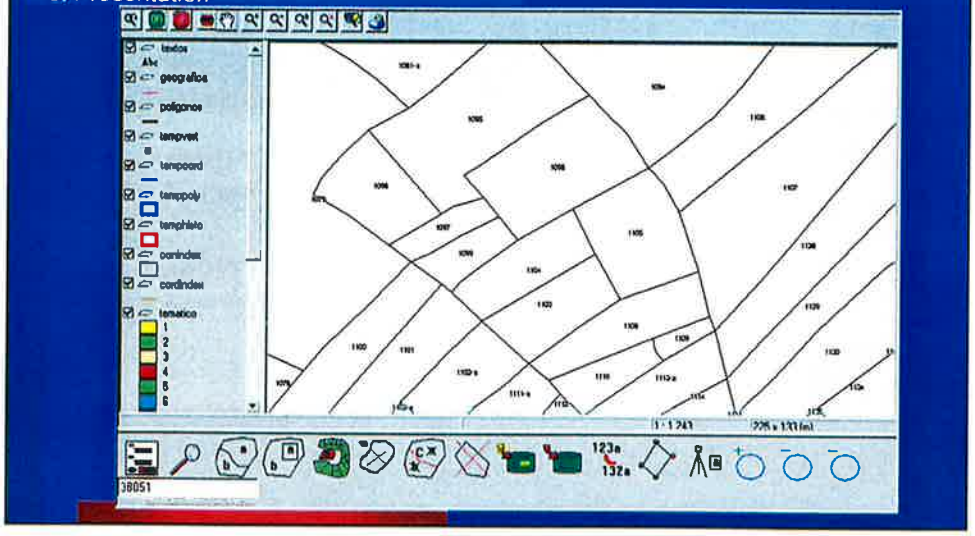
Application

Alphanumeric and graphical element updating

6. Presentation



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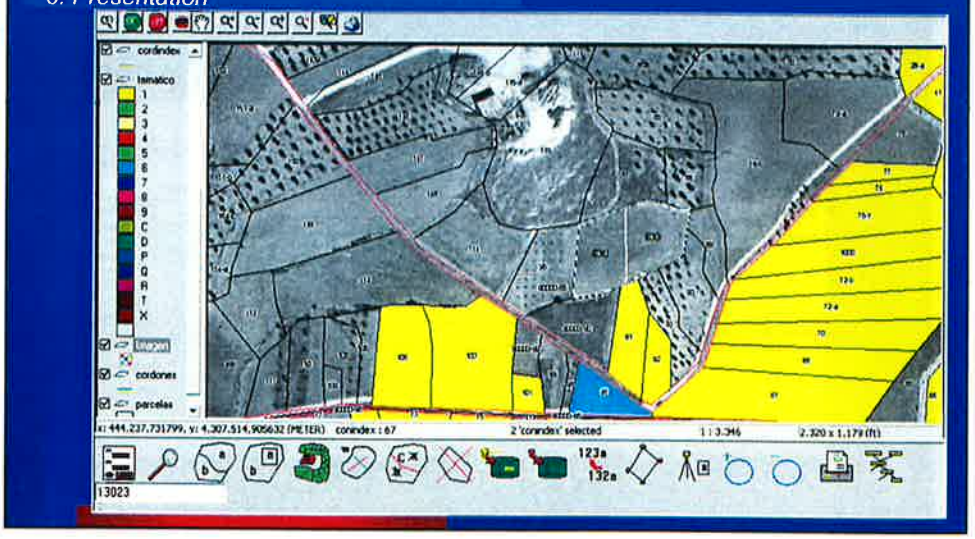
Application

Alphanumeric and graphical element updating

6. Presentation



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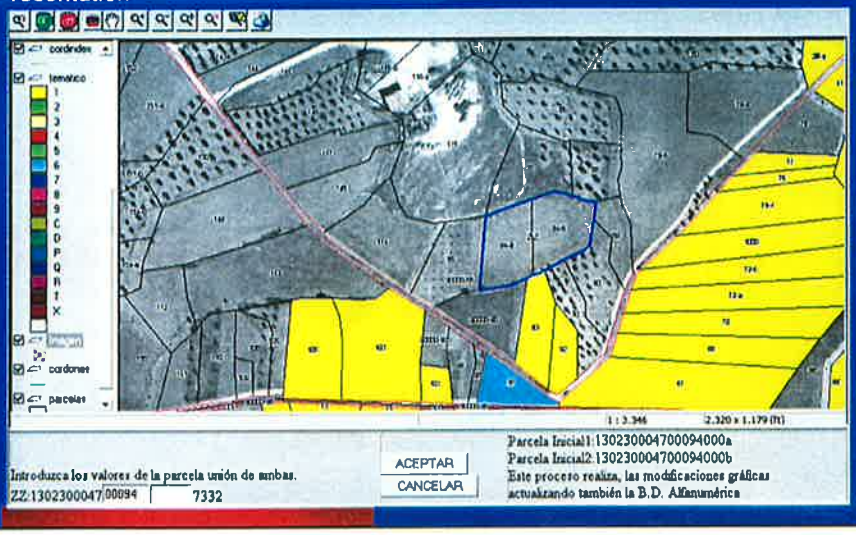
Application

Alphanumeric and graphical element updating

6. Presentation



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Application

Alphanumeric and graphical element updating

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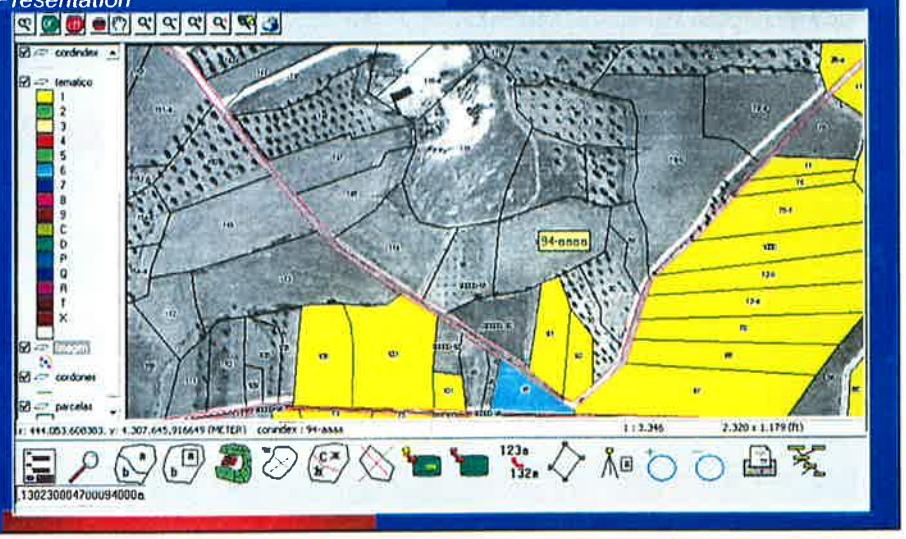

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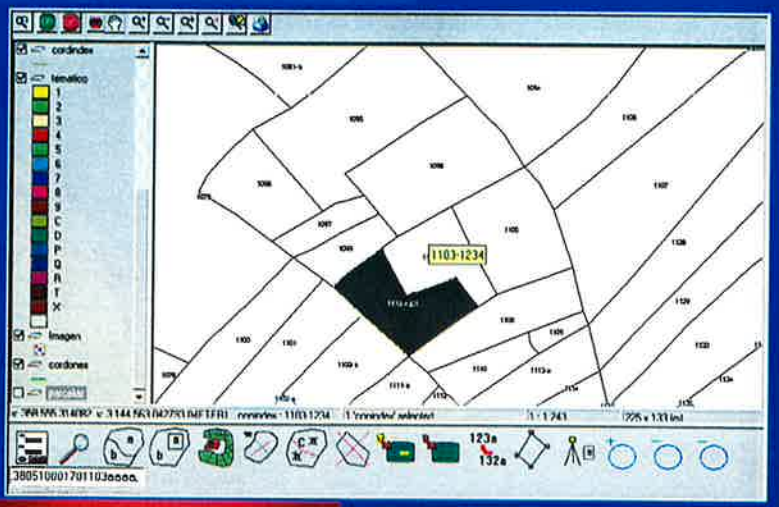
Application

Alphanumeric and graphical element updating

6. Presentation

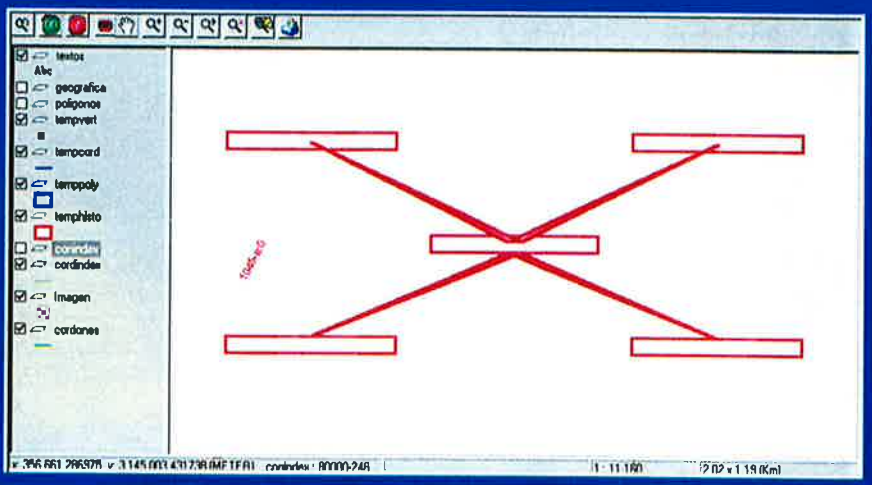


M.A.P.A.

Application

Alphanumeric and graphical element updating

6. Presentation



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Application

Alphanumeric and graphical element updating

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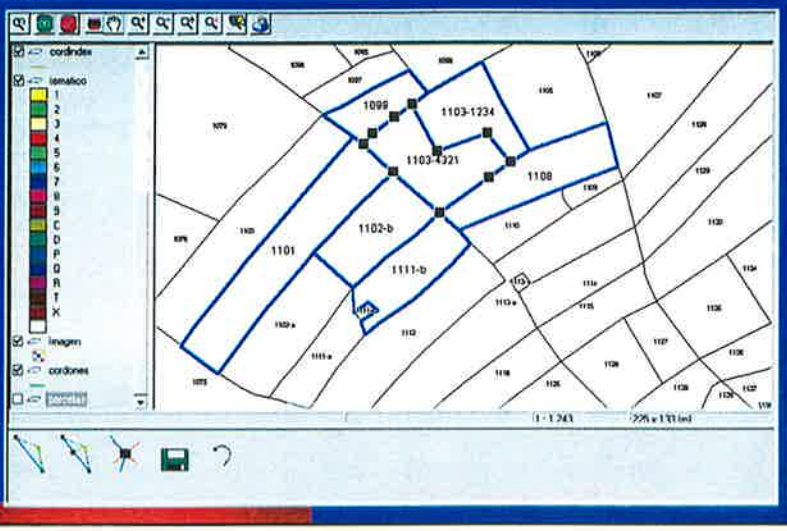

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Application

Alphanumeric and graphical element updating

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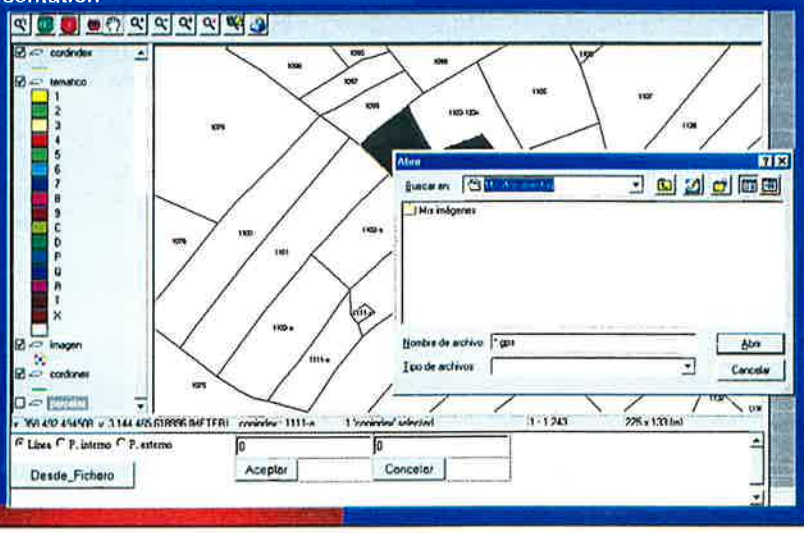

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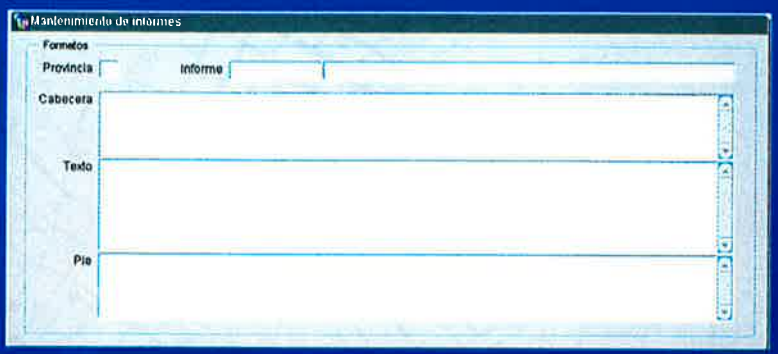
Application

Alphanumeric and graphical element updating

6. Presentation



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Alphanumeric and graphical element updating

6. Presentation