

## **HUNGARY**



**Report based on Exchange Programme documents provided by**

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## 1. General Information



### Area:

total: 93,030 sq km

water: 690 sq km

land: 92,340 sq km

**Population:** 10,032,375 (July 2004 est.)

**Administrative divisions:** 19 counties, 20 urban counties, and 1 capital city

(Source: CIA Factbook, <http://www.cia.gov/cia/publications/factbook/geos/hu.html>)

### 2.1 Location

Hungary is located in Central Europe, in the Carpathian Basin surrounded by the Carpathians, the Alps and the Dinara Mountains, between northern latitudes of 45°44' and 48°35' and eastern longitudes of 16°07' and 22°54'. The territory of the country is 93,030 square kilometers, covering about 1 per cent of Europe.

The total length of the borders of the country is 2,216.8 kilometers, of which 655.1 kilometers is the common border with Slovakia, 136.6 kilometers is shared with the Ukraine, 448 kilometers with Romania, 621.1 kilometers with the successor states of Yugoslavia (165.8 kilometers with the Federal Republic of Yugoslavia, 355.3 km with Croatia and 100 km with Slovenia) and the border with Austria stretches on 356 kilometers.

(Source: <http://www.magyarorszag.hu/angol/orszaginfo/orszag>)

## 2.2 Relief

Almost three quarters of the territory of the country is a low plain, one fifth is hilly with the maximum altitude of 400 meters, and approximately 5% of the total territory of the country is mountainous, altitudes varying between 400-1000 metres.

The highest peak in the country is the Peak of Kékes in the Mátra Hills, rising to 1014 metres. The lowest part of the country is located in the valley of the River Tisza, south of Szeged, in Gyálarét (78 metres). The Great Plain (Alföld) and the Small Plain (Kisalföld) are flat, the Zala and Somogy hills, the Tolna saddles in Transdanubia are hilly areas, while the mountains are represented by the Sopron and the Kőszeg mountains, the Mecsek, the Transdanubia and the Northern mountain ranges .

(Source: <http://www.magyarország.hu/angol/orszaginfo/orszag>)

## 2.3 Climate

Hungary is situated in the temperate zone, on the borderline of, and affected by, three large climatic zones: oceanic, continental and Mediterranean. It is prone to rhapsodic weather changes and, due to the relative isolation of the Carpathian Basin, the climate has a tendency for droughts, especially on the Great Plain.

The annual average mean temperature is 9.7 °C in the whole of the country and 11.2 °C in Budapest. The mean temperature in the hottest month, July, is 20.0 °C, in the coldest month, January, 2.1 °C. On a hot summer day temperatures may reach 33-38 °C, while in cold winters temperature may drop to 25.0. -30.0 °C.

In the central part of the Great Plain the annual average rainfall varies between 470-550 mm, in the mountains, 700-800 mm. The number of days when the land is covered with snow is relatively few.

The number of hours of sunshine varies between 1700-2200 hours per year, the area between the rivers Danube and Tisza being the most sunny, while the regions with the least amount of sunshine are the Alpokalja (Lower Alps) and the Northern mountains. The annual average wind speed is 2.4 m/sec.

(Source: [http://www.magyarország.hu/angol/orszaginfo/orszag/eghajlat/klima\\_a.html](http://www.magyarország.hu/angol/orszaginfo/orszag/eghajlat/klima_a.html))

## 1.4 Population and language

On 1st February 2001, Hungary had a total population of 10,197,119 according to the preliminary results of the 2001 census (. On 1 January 2000, the population numbered 10,043,000 persons. With such a population size, Hungary is ranked 17th in Europe. The number of population has dropped by 178,000 (1.7 %) since 1 January 1990, the previous census as a result of natural decline. Compared to the previous year, the population of Hungary dropped by 48,000 in 1999 and by 38,000 people in the year 2000.

(Source: MTI Rt., Press Data Bank, Census 2001)

According to the data of the 1990 census, in Hungary 98.5 % of the population (10,222,529 persons) have Hungarian as their mother tongue, therefore the country can be considered as a single-language national state.

More than 3 million Hungarians live over the borders of Hungary, in the neighboring countries, since the Trianon Peace Treaty of 1920, the highest numbers living in Transylvania, which is part of Romania. Together with all the Hungarians living in other countries of the world, the number of Hungarians living abroad is estimated around five million. ([www.mti.hu/magyarsag](http://www.mti.hu/magyarsag))

The ethnics groups consist of:

- Hungarian 89.9%,
- Roma 4%,
- German 2.6%,
- Serb 2%,
- Slovak 0.8%,
- Romanian 0.7%

(Source: <http://www.cia.gov/cia/publications/factbook/geos/hu.html>)

### **1.5 Historical background**

Hungary was established as a Kingdom in 1000 and existed as an independent kingdom till 1521. Between 1521-1867 Habsburg kings ruled Hungary. Hungary was part of the German-Roman Empire. The Austrian-Hungarian Monarchy was established in 1867 and existed till 1918. Between the two world wars, Hungary was a democratic republic. Following World War II, the country was occupied by the Soviet army and was forced to form political dictatorship and command economy. The communist period was over in 1990, since then there has been political democracy and market economy. After World War I, two thirds of the country was joined to the surrounding states, which resulted in major Hungarian minorities there. Today about 4 million Hungarians live mainly in Romania, the Slovak Republic, Serbia, and Croatia.

(Source: A Worldwide Comparison of Cadastral Systems, Cadastral country reports based on a jointly developed PCGIAP/FIG template., Established under UN mandate by Resolution 4 of the 16th UNRCC-AP in Okinawa, Japan in July 2003., UN endorsement for cooperation with UN-ECE WPLA, UN-ECA CODI, and PCIDEA. Edited by András Osskó)

## 1.6 Governmental background

Country name

Conventional long form: Republic of Hungary

Conventional short form: Hungary

Local long form: Magyar Koztarsasag

Local short form: Magyarorszag

### Constitution

18 August 1949, effective 20 August 1949, revised 19 April 1972; 18 October 1989 revision ensured legal rights for individuals and constitutional checks on the authority of the prime minister and also established the principle of parliamentary oversight; 1997 amendment streamlined the judicial system

**Legal system:** Rule of law based on Western model

### Executive branch:

*Chief of state:* Ferenc MADL (since 4 August 2000)

*Head of government:* Prime Minister Ferenc GYURCSANY (since 29 September 2004)

*Cabinet:* Council of Ministers elected by the National Assembly on the recommendation of the president

*Elections:* president elected by the National Assembly for a five-year term; election last held 6 June 2000 (next to be held by June 2005); prime minister elected by the National Assembly on the recommendation of the president; election last held 29 September 2004

*Election results:* Ferenc MADL elected president; percent of legislative vote - NA% (but by a simple majority in the third round of voting); Ferenc GYURCSANY elected prime minister; percent of legislative vote - 197 to 12

*Note:* to be elected, the president must win two-thirds of legislative vote in the first two rounds or a simple majority in the third round

### Legislative branch

Unicameral National Assembly or Orszaggyules (386 seats; members are elected by popular vote under a system of proportional and direct representation to serve four-year terms)

*Elections:* last held 7 and 21 April 2002 (next to be held NA April 2006)

*Election results:* percent of vote by party (5% or more of the vote required for parliamentary representation in the first round) - Fidesz/MDF 48.70%, MSzP 46.11%, SzDSz 4.92%, other 0.27%; seats by party - Fidesz 164, MSzP 178, MDF 24, SzDSz 20

### **Political parties and leaders**

Alliance of Free Democrats or SzDSz [Gabor KUNCZE];

Hungarian Civic Alliance or Fidesz-MPP [Jozsef SZAJER, chairman];

Hungarian Democratic Forum or MDF [Ibolya DAVID];

Hungarian Democratic People's Party or MDP [Erzsebet PUSZTAI, chairman];

Hungarian Socialist Party or MSZP [Laszlo KOVACS, chairman];

Hungarian Workers' Party or MMP [Gyula THURMER, chairman]

(Source: <http://www.cia.gov/cia/publications/factbook/geos/hu.html>)

### **1.6 Economic situation**

Hungary has made the transition from a centrally planned to a market economy, with a per capita income one-half that of the Big Four European nations. Hungary continues to demonstrate strong economic growth and to work toward accession to the European Union in May 2004. The private sector accounts for over 80% of GDP. Foreign ownership of and investment in Hungarian firms are widespread, with cumulative foreign direct investment totaling more than \$23 billion since 1989. Hungarian sovereign debt was upgraded in 2000 to the second-highest rating among all the Central European transition economies. Inflation has declined substantially, from 14% in 1998 to 4.7% in 2003; unemployment has persisted around the 6% level. Germany is by far Hungary's largest economic partner. Short-term issues include the reduction of the public sector deficit to 3% in 2004 and avoiding unjustified increases in wages.

### **2.4 Economic characteristics**

**Population:** 10,032,375 (July 2004 est.)

**GDP: purchasing power parity** - \$139.7 billion (2003 est.)

**GDP - per capita:** purchasing power parity - \$13,900 (2003 est.)

**GDP - composition by sector:**

- agriculture: 4.3%
- industry: 28.4%
- services: 67.3% (2001 est.)

**Land use:**

- arable land: 52.2%
- permanent crops: 2.46%
- other: 45.34% (1998 est.)

**Irrigated land:** 2,100 sq km (1998 est.)

Source: <http://www.cia.gov/cia/publications/factbook/geos/hu.html> )

## **2. Administration and Management**

### **2.1 Land Registration**

(This content is mainly based on the Worldwide Comparison of Cadastral Systems, Cadastral country reports based on a jointly developed PCGIAP/FIG template. Established under UN mandate by *Resolution 4 of the 16th UNRCC-AP* in Okinawa, Japan in July 2003., UN endorsement for cooperation with *UN-ECE WPLA*, *UN-ECA CODI*, and *PCIDEA*. Edited by András Osskó)

#### **2.4.1 Historical Outline of Cadastre**

The first land cadastre was introduced during the reign of King II. Joseph. The land cadastre based on cadastral survey for the purpose of land taxation. The implementation of general land, taxation failed due to the opposition of the nobility. Finally the land cadastre was established in the Austrian-Hungarian Monarchy in 1875 based on detailed field survey. There were two parts of the cadastre: cadastral register and cadastral maps. The original scale, of cadastral maps 1:1440 in urban and 1:2880 in rural areas. The cadastre was established for fiscal purpose land taxation, based on the yielding capacity of the land. The cadastral system also supported the legal (Grundbuch) system. The descriptive part of the Grundbuch (parcel number, area, address, cultivation, value of agricultural land, etc.) based on cadastral mapping data. Legal registries (Grundbuch) were established at local courts for registration and updating of ownership data, mortgage, easements and other rights, facts related to land and real estate properties according to the law. In 1972 there was a decision to integrate the Cadastre and Legal Registry on legal basis and institutional level, forming the Unified Land Registry System. The integration procedure was completed in 1981. During the socialist period (1949-90) Hungary was the single socialist country operating the Land Registry without any gap. As a result of this there was a fully operational land registry system in 1990 when Hungary introduced the multi party democracy and the market economy.

#### **2.4.2 Purpose of Cadastral System**

The Hungarian Unified Land Registry System is the integration of Cadastre and Legal Registry (Grundbuch) on legal basis and institutional level, and serves different purposes. Legally guarantees the security of ownership and other rights related to land and property in the same time supporting the land market providing statistical data to the government and decision makers for economic planning. The multipurpose nature of the Unified Land Registry System is the basic information for external users as local governments, banks, public utilities, lawyers, surveyors etc. The cadastral map is compulsory to use for spatial planning and any land information system.

### 2.4.3 Types of Cadastral Systems

There is only one type of Unified Land Registry System in Hungary. All state, private, cooperative land and real estate properties have been registered including condominium units (apartments).

### 2.4.4 Cadastral Concept

In the Hungarian Unified Land Registry System two different types of real properties can be registered:

- 1) land parcel,
- 2) other independent property.

All types of properties have a unique identity number and are registered separately:

Land parcel can include buildings (the owner(s) of the land is the same as the building);

There are three different types of other independent property:

- Building, cellar, underground garage, structure, if the owner of the property is not or only partially owner of the land parcel;
- Freehold condominium unit (apartment, shop, garage etc) The land is common property, the unit is independent property;
- Cellar, underground garage, construction with direct access to public domain (street, road).

The cadastral maps show all land parcels with boundaries and buildings. Boundaries based on direct survey, creation of new parcel boundaries-subdivision, road alignment, etc. require cadastral survey, and legal procedure. All types of real properties can be mortgaged and are transferable. If a land parcel or part of it is occupied undisturbed for a continuous period of 15 years a person(s) may apply at the court for adverse possession. For changing of title legal court decision is needed.

### 2.4.5 Content of Cadastral System

All land parcels and real properties have been registered in Hungary and cadastral maps cover the whole country. There are 7,3 million land parcels and about 2 million other independent properties (condominium units and others). There are two components of the Unified Land Registry System to be maintained:

#### ***I. Legal part – property sheets***

Each land parcels and other independent properties have property sheet containing three parts:

- a) *Descriptive part:* Parcel number, address of the property, area, status of the property (urban, rural, built in or vacant) building information, in case of rural area different cultivation, quality of soil, value of land;
- b) *Ownership information:* Owners name, address, personal id. number, title, etc.;
- c) Mortgage, restrictions, easements and other rights, facts according to law.

## ***II. Mapping part***

The cadastral map consists of parcel boundaries, parcel numbers, buildings and other construction, control points, easements, in rural area sub parcel boundaries with cultivation.

Both the legal and mapping part are updated daily and simultaneously to guarantee the data consistency required by the nature of Unified Land Registry System. The mapping and property sheet data must be consistent. Control points are registered and maintained in land offices. There are 58,100 control points (I-IV) and 71,076 analogue cadastral map sheets covering the whole country. The majority of analogue cadastral maps are still in use. All the survey plans, measurements must be archived.

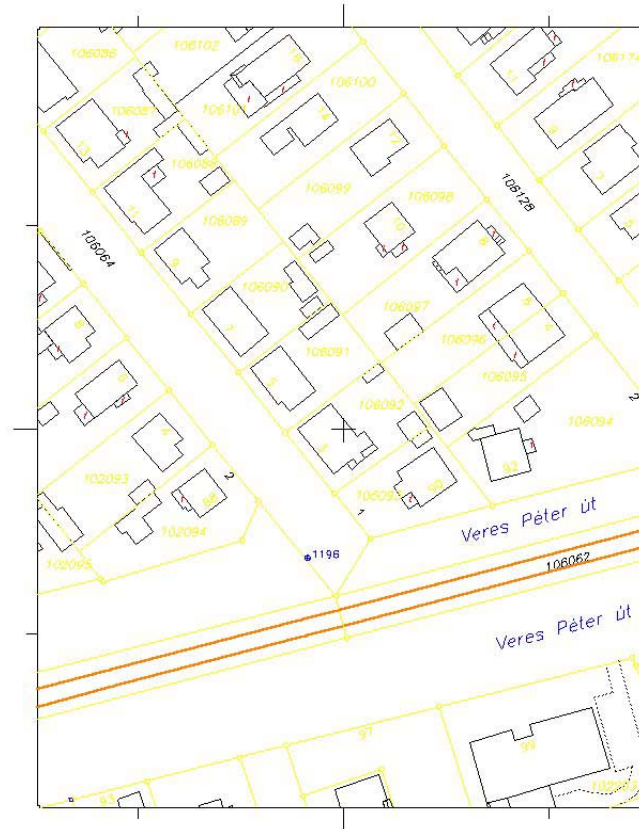
For the legal part, property sheets are digital, the 15% of cadastral maps is digital only.

### **The Cadastral Map**

The old analogue cadastral maps (many of them are still in use) are varying in scale and accuracy. The scale is 1:1000, 1:2000 in urban and 1:2000, 1:4000 in rural areas but we still have 1:1440, 1:2880 scale maps. The majority of cadastral maps have been graphical but there are many numeric maps in urban areas (Budapest and other cities). In case of numeric maps, boundary points have co-ordinates based on field survey, boundary points shown by circles. Originally cadastral mapping was carried out in different projection systems. The national projection and grid system was introduced in 1980. Since then the national grid system is compulsory to use in new cadastral mapping. In 1990 there were no digital cadastral maps in Hungary. The National Cadastral Program started in 1994, supporting the new digital cadastral mapping. The majority of digital cadastral mapping in urban area is based on field survey and less in digitalizing old cadastral maps. Using field survey the quality of digital cadastral maps is good but very expensive and time consuming. In 2002 only 15% of cadastral maps were in digital form. It is important to accelerate the progress of digital cadastral mapping. At the end of 2002 it was decided to introduce a new approach digitizing graphic cadastral maps in rural area. The digital cadastral mapping in rural areas, about 80% of the country, will be completed by the end of 2004.

The content of cadastral map: The cadastral map shows parcel boundaries, boundary points, parcel numbers, street names and address, horizontal control points, height points, buildings and other constructions, boundary of cultivation in rural area.

### *An Example of a Cadastral Map*



### Role of Cadastral Layer in SDI

The cadastral mapping information is the mapping part of the Unified Land Registry System. The common data of cadastral map (parcel number, address, area, etc. must be consistent with the descriptive data of the property sheet. This is one of the basic requirements of the Unified Land Registry System. The updating and maintenance of common data is a simultaneous task of the mapping and legal part. Before Hungary introduced the Unified Land Registry System the Cadastre also supported the legal registry and cadastral map served information to the economy. Today digital or analogue cadastral maps (land registry map) are the basic information to establish different database supporting development and environmental interests. The land registry map, according to law, is compulsory to use for spatial, town planning, building regulations and basic map for public utility companies. For local governments, municipalities land registry map is basic layer managing their activities. Extracts of land registry map (cadastral map) are widely used for different purposes by the public.

## Ongoing developments

There are four main problems to be solved very soon:

- 1) Accelerate the completion of digital cadastral mapping in the Framework of the National Cadastral Program;
- 2) Fully operational on line data service of the land registry data base;
- 3) Final development of the countrywide TAKAROS digital cadastral map management system;
- 4) Development of market driven data services.

### **2.4.6 National Cadastral Programme**

After the political and economical changes the land privatization affected more than half part of the country (5.6 out of 9.3 million hectares). A nation-wide map renewal (data capture) program was worked out to realize the unification and updating the existing systems within framework of the National Cadastral Programme (NCP). New, EU-conform professional standard and instructions prepared by FÖMI ( <http://www.fomi.hu> ) for digital mapping were issued by the Hungarian Body of Standardization and the MoARD ( <http://www.fvm.hu/> ).

Hungarian seated professionals, surveying and mapping companies are contracted by the National Cadastral Programme Public Benefit Co. (directed by the Department of Lands and Mapping of the MoARD) to carry out the digital cadastral survey in standardized form and the digitisation for rural areas.

During the last year, NCP has successfully performed digitalization of cadastre maps of rural areas in a pilot project to support the Integrated Administration and Control System (IACS) to be introduced at the time of the EU-accession of Hungary. The results of large amount of digital cadastral maps are integrated with land registry data in the database of the Land Office IT-systems called TAKAROS to make the cadastral system alive in computerized form. The physical network was set up in 1998. The latest, improved software was installed mid 2002.

### **2.4.7 Current Initiatives**

Under the National Cadastral Program the digital cadastral mapping in the rural area will be completed before end of 2004.

(Source: the Worldwide Comparison of Cadastral Systems, 2003)

### **2.4.8 Land use**

In Hungary, the property reform – started in 1990 – has resulted in a great increase in the number of properties and parcels. From the previously homogeneous large estates, hundreds of thousands of small parcels were created. The use of the arable lands mostly does not coincide

with the proprietary rights. For that reason, the most important provision of the amendment to the Act on Arable Land was the introduction of the land use registration on 1st January 2000.

The main ordering principle of the land use registration and that of the land registration is different. In land registration, the property is the basic item – it means that all additional data are gathered into groups around these items. The land use registration is managed in each District Land Office for its territorial competence. The land use sheet contains all the parcels of a land user on the territory of the given Land Office. The land use sheet consists of two parts. The first part contains the land user's data, the second part contains the used land's data.

No registration of land use is required for a land property with a size less than 1 hectare.

The land use registration system called FÖNYIR has been elaborated and installed at the District Land Offices by FÖMI in 2000. From this year the land users have been registered at the District Land Offices.

The tasks of the Land Office network are as follows:

- to register the changes continuously,
- to detect those who failed to register and
- to increase the correctness of the registration.

Further tasks are: optimize the computer programs that maintain the land usage announcements in order to accelerate the processing and to enlarge the range of queries and make them more comfortable for users.

(Source: Report of the Hungarian Land Administration and Mapping Agencies, UNECE Working Party and Land Administration, Third Session, 17-18 November, 2003, Geneva)

## **2.2 Land Taxation**

Land taxation is in force in Hungary, although its rate is 0%! It means that the rate might be increased by a simple ordinance and there is no need for law amendment.

Taxation of the yield coming from the rent is the responsibility of local governments and local tax offices. All land-related tax income is coming to the local government's budget. Income tax return must be completed until 20th March.

### 2.3 Land Valuation

In Hungary, the land value system introduced in the second half of the 19th century called Golden Crown system is still in power. At the time of its introduction, this system had served for its original purpose. Recently, the system and its method became old fashioned, however, it is still in power and use. The land parcels are registered by District Land Offices, using the Golden Crown system. Its survival might contribute to the fact that the arrangement of land ownership conditions, the compensation by land and, in general, the privatization needed the value of lands in old Golden Crown system, since it is operating as a connecting tie between the past and present times. The system analyses two factors - ecological and economical - to estimate the return of a certain plot. The net yield per hectare is counted by the analyses of costs and prices of the product and the way of cultivation. The plots are categorized into 8 different classes of quality depending on regions and township. The valuation (the so-called Aranykorona 'Golden Crown' value) takes account of the net yield and the quality mentioned above as well as the size of the plot. Adding 45 points to the GC value of a certain plot may approximate the land evaluation system used in the EU (e.g. 25 GC= 70 points).

#### The quality of land by GC

Under 15 GC	Bad
15-25 GC	Average, good
25-35 GC	Good, very good
Over 35 GC	Extra

#### The attributes of plots by regions

Regions	Value (GC)	Accessibility	Economic background
Dél-Alföld (South-East)	15-40	Average	Average
Észak-Alföld (East)	15-40	Average	Average
Észak-Magyarország (North-East)	5-15	Average	Poor
Közép-Magyarország (Centre)	15-25	Good	Good
Közép-Dunántúl (North-West)	15-25	Good	Average/Good
Nyugat-Dunántúl (West)	15-25	Good	Good
Dél-Dunántúl (South-West)	15-30	Average	Average/Poor

(Source: János Eliás: A jelzáloghitelezés szerepe a mezőgazdaság finanszírozásában, Phd értekezés, Budapesti Közgazdaságtudományi Egyetem, 2000)

## 2.4 Institutions

### 2.4.1 Governmental Organizations

(Source: Report of the Hungarian Land Administration and Mapping Agencies, UNECE Working Party and Land Administration, Third Session, 17-18 November, 2003, Geneva)

#### **The civil land and mapping administration**

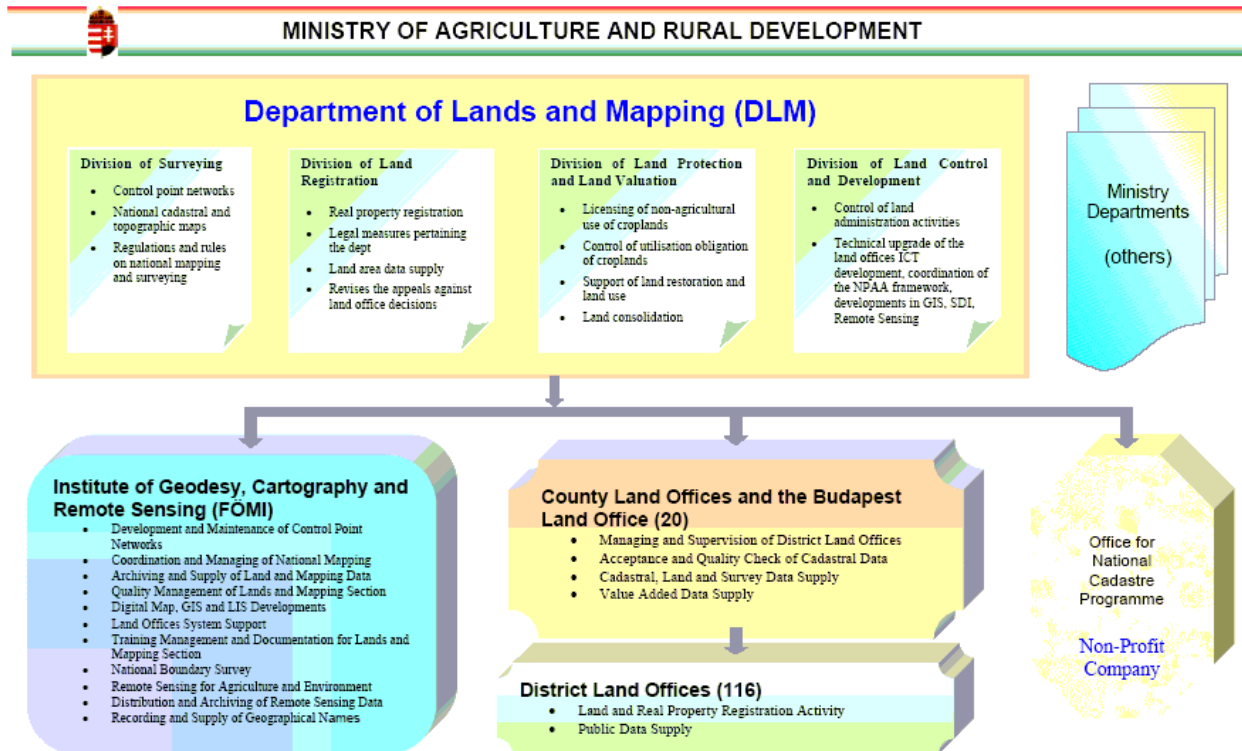
The civil surveying and mapping activities and the land affairs are administered by a governmental institutional network (consisting of one institute with nationwide competence and 136 land offices with territorial competence) and a public benefit company, all being supervised by the Department of Lands and Mapping at the Ministry of Agriculture and Rural Development (DLM/MARD). This administration is responsible for establishing, maintenance and supplying of the geodetic control networks, the large scale base maps including the cadastral ones, the land registry, land protection and valuation, the topographic maps of selected scales and remote sensing. Special emphasis is given to the tasks related to the implementation of the National Programme for the Adoption of the Acquis Communautaire (NPAA).

The Department of Lands and Mapping as supervising body is organized into four divisions with the following main responsibilities:

- Division of Surveying: tasks relating to control point networks, national cadastral and topographic maps as well as regulations and rules on national mapping and surveying.
- Division of Land Registration: real property registration, land area data supply, legal measures pertaining to the Dept. that revises the appeals against land office decisions.
- Division of Land Protection and Land Valuation: tasks relating to licensing of non-agricultural use of croplands, control of utilization obligation of croplands, support of land restoration and land use as well as supervision of measures on land consolidation.
- Division of Land Control and Development: control of land administration activities, technical upgrade of the land offices IT development, co-ordination of the NPAA framework, developments in GIS, spatial data infrastructure (SDI), remote sensing.

The above-mentioned works are carried out by the following organizations (See the organigram below):

- Institute of Geodesy, Cartography and Remote Sensing (FÖMI) as governmental organization with nation-wide competence,
- 19 County Land Offices (CLO) and the Budapest Land Office as governmental organisations with territorial competence,
- 116 District Land Offices (DLO) and the Capital Districts Land Office as governmental organisations with territorial competence,
- Office for National Cadastral Programme, as non-profit organisation.



### The military mapping agencies

The independent Hungarian military mapping dates back to 4 February 1919. Since January 2001, the military mapping tasks are implemented by two organizations. The basic mission of the Mapping Service of the Hungarian Defense Forces (MS HDF) is to plan and to have implemented state base mapping tasks and work in the responsibility of the Minister of Defense as well as doing state jobs in its sphere of authority. The Mapping Service of the Hungarian Defense Forces provides for the execution of the tasks necessary for defense map supply and professionally co-ordinates other sectors' defense related surveying and mapping activities including standardization and regulation issues.

In connection with the above listed ones, MS HDF:

- Plans and organizes mapping and military geographic provision of the armed forces;
- Elaborates professional standards and regulations;
- On special rule, provides for the authorization and professional supervision of survey camera aerial photography;
- operates military geographic and digital topographic databases, provides for the continuity of map update and the filing of the changes on the maps;
- Represents defense interests in determination of medium and long term mapping tasks of the country's map supply within the Co-ordination Committee on Map Supply established for scheduling and co-coordinating the tasks;
- Fulfils the tasks arising from international obligations;

- Directs and supervises the professional activities of MoD Mapping Non-profit Company (NPC).

The basic mission of MoD Mapping Non-profit Company (NPC) is to implement and have implemented state basic tasks and works in the responsibility of the minister of defense as well as custody, handling and providing state base data and maps at scales from 1:25 000 to 1:250 000. The tasks of MoD Mapping NPC are as follows:

- Doing and having done surveying and mapping works in the scope of state surveying and mapping tasks – first of all in order to the map supply of the defense forces – with national competency;
- Custody and handling national base geodata, base maps and state topographic maps arising from the activities prescribed in the previous paragraph;
- Map supply of the Border Guards, the Civil Protection and the defense administrative and law enforcement bodies against payment;
- Producing military thematic maps (among other things, with conversion of state topographic maps according to NATO prescriptions), military control point catalogues and other special mapping products in compliance with the demands of MS HDF in analogue and digital form;
- Storing and providing state topographic maps, mapping products and state base data for utilization of national economy in analogue and digital form;
- Implementing and having implemented aerial photography and other remote sensing tasks;
- Implementing tasks in connection with geodetic provision of military engineering and other weapon systems;
- Field examining and maintaining state control points for areas in MoD administration, preserving control points in control point catalogue as well as replacing destroyed control points;
- Operating an aerial film archive and providing remote sensing materials;
- Activities in connection with the technical servicing the 'Open Skies Programme'.

#### **2.4.2 Private Sector Involvement**

Cadastral survey for legal purpose and preparing survey documents of changes in cadastral map data is the licensed surveyor responsibility. There are 1700 licensed surveyors. Many of them run private business others are employed by bigger survey firms producing new digital cadastral maps, which are checked and certified by Land Offices. In the legal part lawyers, notaries responsible to prepare and counter sign deeds, legal documents of ownership changes and other documents for transactions related to land and real estate properties.

(Source: The Worldwide Comparison of Cadastral Systems, Cadastral country reports based on a jointly developed PCGIAP/FIG template., Established under UN mandate by Resolution 4 of the 16th UNRCC-AP in Okinawa, Japan in July 2003., UN endorsement for cooperation with UN-ECE WPLA, UN-ECA CODI, and PCIDEA. Edited by András Oskó)

#### **2.4.3 Professional Organizations and Associations**

The Hungarian Society of Surveying Mapping and Remote Sensing (MFTTT) represents all kind of surveyor profession. Private surveyors have a section in the association. There are 1200 members of the society, the total number of surveyors is approx. 5000 in Hungary.

(Source: The Worldwide Comparison of Cadastral Systems, Cadastral country reports based on a jointly developed PCGIAP/FIG template., Established under UN mandate by *Resolution 4 of the 16th UNRCC-AP* in Okinawa, Japan in July 2003., UN endorsement for cooperation with *UN-ECE WPLA, UN-ECA CODI, and PCIDEA*. Edited by András Oskó).

#### **2.4.4 Licensing**

Cadastral surveying, cadastral work for legal purpose is the monopoly of licensed surveyors in Hungary. The majority of cadastral surveys, mapping have been carrying out by the private sector. The Institute of Surveying Cartography and Remote Sensing (FÖMI) under the Ministry of Agriculture and Rural Development issues the license to surveyors.

(Source: The Worldwide Comparison of Cadastral Systems, 2003)

#### 2.4.5 Education

There are two universities providing education and diploma in surveying. The Budapest Technical University has a five years course of study for MSc in Surveying and IT knowledge. The course is rather theoretical teaching traditional subjects and IT, GIS knowledge. About 30 students graduate annually. The West Hungarian University College of Geoinformatics in Székesfehérvár has three years course of study gives BSc graduation. There are three faculties: land surveying, land consolidation, land registry matters. About 40-50 students graduate in regular course and 20-30 in correspondence course annually.

(Source: The Worldwide Comparison of Cadastral Systems, Cadastral country reports based on a jointly developed PCGIAP/FIG template 2003)

#### 2.4.6 Institutional involvement

Institution	Abbreviation	Role	Further contacts
Ministry of Agriculture and Rural Development	<b>MoARD</b>	See above at 2.4.	1055 Budapest, Kossuth Lajos tér 11. Postacím: 1860 Budapest, 55. Pf. 1. Telefon: 06-1-301-4000 Fax: 302-0408 www.fvm.hu
Capital Districts Land Office County Land Offices District Land Offices	<b>CDLO</b> <b>CLO</b> <b>DLO</b>	See above at 2.4.	<a href="http://www.takarnet.hu/pls/tknet/hivatalok_p.hivatallista">http://www.takarnet.hu/pls/tknet/hivatalok_p.hivatallista</a>
Institute of Geodesy and Cartography and Remote Sensing	<b>FÖMI</b>	See above at 2.4.	<i>Address:</i> H-1149 Budapest, Bosnyák tér 5. <i>Tel:</i> 36-1-222-5101, <i>More information:</i> Organization, Employees <i>Fax:</i> 36-1-222-5112, <i>Postal address:</i> 1592 Budapest, Pf. 585. Hungary  <i>web:</i> <a href="http://www.fomi.hu/honlap/angol/Default.htm">http://www.fomi.hu/honlap/angol/Default.htm</a>

Agrárgazdasági Kutató és Informatikai Intézet (Agricultural Economics Research Institute)	<b>AKI</b>	AKI has a double role. On the one hand, the research supports the decisions that government bodies and businesses need to make in the field of agricultural policy, on the other hand - as a research institute carrying out independent scientific research - produces and disseminates scientific research information for clients and other stakeholders concerned.	Budapest, IX. Zsil u.3-5 Mailing address: 1355Budapest Pf.:5. Telephone: 36-1-217-1011 Telefax: 36 1 217 7037 e-mail: akii@akii.hu web: www.akii.hu
Megyei Földművelésügyi Hivatalok (County Agricultural Offices)			<a href="http://www.fvm.hu/doc/upload/200411/02010001_2.pdf">http://www.fvm.hu/doc/upload/200411/02010001_2.pdf</a>
Falugazdász hálózat (Local Farming Expert Network)			<a href="http://www.fvm.hu/doc/upload/200411/02010002_2.pdf">http://www.fvm.hu/doc/upload/200411/02010002_2.pdf</a>
Nemzeti Földalapkezelő Szervezet (National Land Fund)	<b>NFA</b>	Pursuant to the Government Programme adopted by the Parliament <i>"it is necessary to lay down the principles of Land Policy and define the legal and institutional background of its implementation. The reorganized National Land Fund shall operate under social control."</i> In accordance with the Government Programme the Ministry of Agriculture and Rural Development started legislative and institution development activities under the direction of the Government Commissioner	Address: 1055. Bp. Kossuth Lajos tér 11. Mail: 1355. Budapest, Pf: 8 Tele: 06-80 204-266 Fax: 301 4624 Web: <a href="http://www.nfa.hu/home/kapcsolat.php">http://www.nfa.hu/home/kapcsolat.php</a>

		for Land Policy with the aim of creating developed tools for the management of state owned land with a view to meet the requirements of the European Union.	
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## 2.5 Land Conversion

Arable lands can be used for purposes different from that of agriculture only by leave of authority. For the utilization of arable lands for industry, mining, water conservancy, transport, community development and/or other purposes permission has to be granted by the Land Offices. When transforming land status a “land protection” fee has to be paid for the state. The amount of the fee depends on the quality of land and is between 4000 to 92000 times the GC value of the land. However, the utilization of arable land under permission does not provide preventing force all by itself and further, the areas should be compensated which inevitably have to be used to investments. Therefore, in case of non-agricultural utilization of arable land, besides the permission, the user should pay a land protection fee as well.

## 2.6 Transaction

In Hungary, land only became alienable in 1996. The demand for agricultural land is weak, thus land prices are low and owners with hold land from the market to wait for higher prices before selling. The lack of realistic real estate prices complicates the pricing of mortgage loans and mortgage bonds. Current land prices are multiples of the prices sold in the auctions for compensation vouchers, but they still cannot be compared with land prices in the rest of Western Europe, and amount to only one-tenth of those in the neighboring countries. However, since 1999 agricultural land prices increase quickly.

## 2.7 Lease market

In Hungary, the land lease market is well developed and is one of the primary ways farms have consolidated holdings, with a significant proportion of land being concentrated into very large holdings. A 1998 PHARE/ACE survey in Hungary reported that the land leasing market has been dynamic over the past years. Among surveyed households, 16% leased land to others, and 8% leased land from others. Other surveys conducted by the World Bank and Phare/ACE have also shown that individual farms with leased land are significantly larger than farms using only their own land. The lease system is imperfect too however, and may not promote long-term investment in farms. Many of the leases are short-term. The minimum lease term is not regulated by the law, and in 95% of cases, the lease is for less than 5 years. While short-term leases do not encourage long-term investment, Hungary's agriculture is still dominated by large cooperatives, and short-term leases allow landowners the flexibility of leasing to more productive farms or selling their land as the market improves. Long-term leases at artificially low rentals to inefficient successors to collective farms would probably be a near-worst-case scenario for virtually any of the countries dealt with in the present report. ([www.fao.org](http://www.fao.org))

### **3. Financial Framework**

#### **Mortgage**

The growing popularity of Covered Mortgage Bonds is closely related to their prudential legislative framework. The Hungarian Parliament adopted the Mortgage Banking Act regulating the activity of mortgage banks, as well as the issuance of mortgage bonds in 1997.

FHB, the first mortgage bank was established in 1998. Two other mortgage banks operate in Hungary at present: the HVB Bank focused its initial activities on corporate financing and the OTP bank. HVB currently doesn't accept agricultural land as collateral.

The mortgage bank is a specialized credit institution in Hungary, whose operations and legislative regulation vastly differs from that of other credit institutions. The most distinctive feature of a mortgage bank is that it may grant credit only on registered mortgage or state surety as collateral. Contrasting the regulation of commercial banks, mortgage banks are entitled and obligated to register the prohibition of alienation at the land registry upon the hypothecation of a real estate. Its loan portfolio must consist of mainly long, at least 5 year term loans. The basic stipulation of lending is that any pledged real estate must be negotiable and appraisable, with ownership rights and deeds to title in order.

#### **Financing Sources**

The main source of financing mortgage-lending activities in Hungary is the issuance of Covered Mortgage Bonds (CMB). This type of fixed income instrument was introduced into the Hungarian capital market by the FHB in 1998. CMBs are mainly purchased by domestic institutional investors, though the involvement of foreign accounts is becoming increasingly important. Due to the rapid development and growth of mortgage lending, CMBs already represent the second largest segment of the fixed income market in Hungary.

## **Banking**

Despite of the high number of banks and financial institutes (36 banks and 27 credit cooperatives) in Hungary only a few of them offers financial instruments for agriculture. The average interest rate is around 13-14%.

### **OTP Bank**

OTP bank (<http://www.otp.hu>) offers mortgage loans and accepts agricultural land as collateral since 2003. The minimum land area accepted by the bank as collateral is 5 ha in one plot. The plot has to be in the unencumbered possession of the applicant. The maximum amount of the loan for agricultural land as collateral is 70% of its market value or 30 Million HUF (120 000 Euros). Furthermore the bank carries out an income check as well to assure the payment of monthly installments. The duration of the credit is maximized in 15 years; the annual rate of interest was 18% in October 2004.

### **FHB Bank**

FHB bank (<http://www.fhb.hu>) offers mortgage loans and accepts agricultural land as collateral since 1998. The minimum land area accepted by the bank as collateral is 5 ha in one plot. The plot has to be in the unencumbered possession of the applicant. The minimum loan granted is 1 Million HUF (4000 Euros); the maximum is 50 million HUF (200 000 Euros) depending on the value of the property and the annual income of the applicant. Agricultural land is accepted as collateral for up to 70% of its market value. The annual interest rate of the mortgage loan is around 17%. Furthermore the bank invoices a handling fee of 2% every year. The duration of the credit might be between 2 and 20 years.

### **Szentes Credit Cooperative**

Szentes Hitelszövetkezet (Szentes Credit Cooperative, <http://www.szehitel.hu>) accepts agricultural land as collateral for up to 50% of its market value. The plot has to be in the unencumbered possession of the applicant. The minimum loan granted is 100 000 HUF (400 Euros); the maximum is 42,5 million HUF (170 000 Euros) depending on the value of the property and the annual income of the applicant. The duration of the credit is maximized in 5 years. The annual interest rate is 14-23%.

## **Collateral**

Currently there are three financing institutes accepting land as collateral. The banks may grant credit amounting to maximum 70% of the collateral value (as appraised by the bank) of the real estate. The basis for the appraisal of the collateral value of any real estate is its fair market value, minus its measured risk expressed in monetary terms. (Appraisal principles and techniques are determined by decree 24/1997 (VIII.1.) from the Ministry of Finance, which states the methodology for determining the loan collateral value of non-agricultural land, and decree 54/1997 (VIII.1.) from the Ministry of Agriculture and Rural Development, which states the methodology for determining the collateral value of agricultural land.)

### **3.4. State Funding**

Currently it is the FHB Bank, partly owned by the state (50%), in the field of agriculture dealing with mortgages and credits to the private sector. The EU provides assistance for agriculture under the frame of EAGGF. This assistance currently provides limited financing, and it is often criticized for bureaucratic procedure.

## **4. Legal Background**

### **Laws and Regulations**

1. Ordinance 54/1997 on the methodology of estimating the value of land as collateral
2. Ordinances 254/2002, 17/2002 and 1008/2002 on the operation of the National Land Fund
3. Ordinance 16/2002 on the rules of purchase and lease privileges
4. Ordinances 147/2003, 29/2003 and 290/2002 on the terms of recourse agrarian and rural subsidies
5. 1997/30 Law on mortgage banks and mortgage bonds
6. Ordinance 184/1999 on land tenure administration
7. Ordinances 27/1980 and 2075/1996 on real property administration
8. Ordinance 210/2004 on agricultural land release for life annuity
9. 1994/55 and 2004/36 Law on agricultural land
10. 2001/116 Law on the National Land Fund
11. 1997/141 Law on property administration  
([http://www.nfa.hu/home/e\\_nfa/e\\_nfa07/e\\_annexes01.php](http://www.nfa.hu/home/e_nfa/e_nfa07/e_annexes01.php))
12. 1992/1 Law on cooperatives
13. Ordinance 115/2003 on the MePAR (agricultural plot identification system)
14. Ordinance 105/1999 on land valuation
15. Ordinance 62/1999 and 1984/1 on land offices

16. Ordinance 6/1988 on the Institute of Geodesy, Cartography and Remote Sensing (FÖMI)
17. Decision 48/2002 on land tenure guidelines
18. Ordinance 1087/1998 on the national cadastral programme
19. 2000/141 Law on new cooperatives
20. 1996/76 Law on geodesy and cartography
21. 1991/25 Law on restitution/privatization
22. 1995/34 Law on the Sale of State-Owned Entrepreneurial Assets

### **Foreign Ownership**

According to the relevant legal regulations, with the exception of inheritance, a foreign legal entity or a natural person is not permitted to acquire agricultural land and areas under protection for the purposes of nature conservation - with a few exceptions. The head of the public administration office may issue a permit only where the acquiring of real estate by a foreigner does not violate the interests of the local government or any other public interest.

In order to enable market conditions based on private ownership in agriculture based on the changing conditions of real estate use and ownership and to enable the trade in agricultural land and agricultural land as the basis of mortgage lending to assist the operation of new business organizations and to enable the development of farms suitable for competitive agricultural production and to prevent the adverse consequences of the fragmentation of farms from deteriorating the ownership structure of land and to make sure that farmers can pursue undisturbed agricultural production and to keep the reduction of the size of agricultural land within reasonable limits and to ensure the provision of a proper legal background for the protection of the quality of agricultural land the Parliament has introduced an act of law to restrict the acquiring of real estate by foreign legal entities and private individuals (hereinafter: foreigners).

No. LV Act of 1994 on agricultural land (Act) introduced a general prohibition on the acquiring of title of ownership of agricultural land and areas under protection for the purpose of nature conservation [Article 7 (1)] and in respect of other real estates (not qualifying as agricultural land) - with the exception of inheritance - retaining the provisions on the rules of payment as laid out in the act on foreign exchange) the Act introduced an obligation to obtain the permit issued by the head of the Budapest or county public administration office with competency over the location of the real estate in question (hereinafter: head of the office) [Article 88 (1)].

In respect of the ownership of agricultural land the statutory provision does not extend to the acquiring of ownership through actual inheritance, prescription, building on land, expropriation or through auctioning of land for compensation vouchers.

The Government is authorized by the Act [Article 90 (1) b)] to issue decrees concerning the acquiring of ownership by foreigners in respect of real estates not qualifying as agricultural land. In exercise of this authorization the Government issued Government Decree No. 7/1996. (I. 18.) on the acquiring of real estate by foreigners (hereinafter: Decree).

Based on the Decree the head of the public administration office may issue a permit only where the acquiring of real estate by a foreigner does not violate the interests of the local government or any other public interest [Article 1 (1)].

In respect of whether the acquisition of real estate violates local governmental interests the head of the office asks for a declaration of the mayor of the municipal government (district government in Budapest) having competency over the location of the real estate (hereinafter: mayor) in view of which the head of the office may refuse the issuance of the permit.

The issuing of a permit may be refused if Hungarian citizens or Hungarian legal entities are not granted identical treatment with the residents of the home country of the applicant under an international agreement or on the basis of reciprocity. Statements issued by the Ministry of Foreign Affairs is to be taken into account in respect of the existence of such international agreement or reciprocity.

In the procedure concerning the acquisition of ownership of historical buildings or buildings of historical nature or other real estate of importance from the aspect of archaeology/history under protection or that of buildings in areas under protection for the purposes of nature conservation the authority with competence according to the type of protection of the real estate participates as specialized authority.

The acquisition of real estate must be permitted in the following cases

1. The foreigner has been granted an immigration permit, or
2. The ownership of the real estate of the foreigner was acquired on the basis of the law decree No. 24 of 1976 on expropriation as amended, or
3. The real estate changes the real estate in his ownership in Hungary for another real estate in the territory of the Republic of Hungary, or
4. The aim of the acquisition of ownership is to terminate joint ownership, or
5. Real estate is donated to the foreigner as a gift, or
6. A foreigner is proven to have been staying in Hungary on a permanent basis for the purposes of working for a minimum of 5 years.

According to Article 2 *a*) of No. XCV Act of 1995 on foreign exchange which was repealed on 1 January 2002 a resident was permitted to donate ownership of real estate in Hungary as gift to a foreigner only if such foreigner is a close relative of the donor [Article 685 *b*) of the Civil Code]. This area is now governed by No. XCIII Act of 2001 on the termination of foreign exchange restrictions and on amendment to certain related acts since 1 January 2002, this latter act, however, does not impose restrictions on donation of real estates as gift.

The acquiring of real estate must be permitted to foreign natural persons settling in Hungary as sole proprietors (entrepreneur) if this is directly required for the pursuance of the economic activities for which such natural person has settled in Hungary.

Real estate intended to be acquired for the purposes of real estate agency activities (sale and purchase, exchange, lease) does not qualify as real estate intended for economic activities. A Within 1 year of the withdrawal or returning of his entrepreneurial card or license - where the foreigner has set up a business, after its deletion from the trade registry - and after the termination of his membership in the relevant economic chamber a foreign natural person settled in Hungary as a sole proprietor is obliged to alienate the real estate or to submit an

application to the head of the office for the maintenance of the ownership of the real estate under the general criteria.

The following have to be attached to an application for such permit:

1. Document certifying the identity of the foreigner (valid passport or personal identity card made out for foreigners and an authentic copy of the permit to remain);
2. One (original or authenticated) copy of the contract concerning the acquisition of ownership of the real estate;
3. A copy of the title page from the land registry office issued not more than 3 months before the submission of the application;
4. Tax and value certificate issued not more than 3 months before the submission of the application;
5. In the case of donation as a gift a certificate of the degree of relationship between the parties (in general, an authentic excerpt from the birth and marriage register).

In the case of payment in installments or life annuity or maintenance contract the payment of the first installment or the payment of the first due amount of annuities to be proven. The head of the office may call on the foreigner at any point in time to certify the payment of his debt.

Acquiring of property by a diplomatic or consular representation or by other international organizations is governed by the rules on the above decree - taking into account the provisions laid out in Article 88 (3) of the act on agricultural land. Provisions on the acquiring of real estate for the purposes of the establishment of units and trade representations of businesses operating from head offices abroad are contained - unless it is subject to a specific international agreement - in No. CXXXII Act of 1997 on units and trade representations of businesses operating from head offices abroad. Such businesses may acquire ownership of the real estates required for their business activities if the necessary real estate is not agricultural land or area under protection for the purposes of nature conservation. No permit is required for the acquiring of ownership in the following cases

1. In cases regulated in international organizations or
2. Where there is reciprocity between the state in which the foreign business is domiciled and the Republic of Hungary, to this effect.

The Minister of Foreign Affairs and the Minister of the Interior discloses notices on the existence of international agreements or reciprocity.

Where there is no international agreement or reciprocity a foreign business may acquire the ownership of real estate required for the purposes of the operations of its unit in Hungary under the rules governing the acquisition of real estate by foreigners in Hungary.

Real estate intended to be acquired for the purposes of real estate agency activities does not qualify as real estate intended for economic activities.

Upon the closure of the branch unit the foreign business entity must alienate the real estate within a year unless the head of the county (Budapest) public administration office

(hereinafter: head of office) has granted exemption from the alienation obligation. The head of the office will grant exemption under the conditions of the statute on the acquiring of real estate by foreigners in Hungary, following the procedures specified in the same statute, providing, that exemption may not be refused if the real estate is required for the operations of a domestic business entity established by the foreign business or with its participation, for the operation of another branch unit or for a commercial representation unit.

For the initiation of the procedure required for the acquiring of real estate by foreigners a separate duty of HUF 50,000 per real estate is payable, pursuant to Article 29 (2) of No. CXIII Act of 1990 on duties. A foreign natural person, who has a permanent settlement permit for the territory of the Republic of Hungary and has applied for Hungarian citizenship, has to pay HUF 10,000 for the procedure aimed at the acquiring of the ownership of his home.

**Practical advice:**

1. No specific form has been introduced to be used as application for the permit.
2. The authority proceeding in decision making on an application has to consider whether the acquisition of the real estate would violate the local government having competency over the location of the real estate therefore the objective of the acquiring of the real estate and the intended mode of its utilization and any relationship tying the foreigner to Hungary should be described in the application. The detailed reasons will be of outstanding importance in the cases where there is no reciprocity between the home country of the applicant and the Hungarian state in respect of the acquisition of real estates. (The lack of reciprocity might be a sufficient reason for rejection.)
3. The duty is to be settled in duty stamp attached to the application. (Late payment of the duty may entail the imposing of a default penalty.)
4. An application should be submitted to the public administration office only where the applicant has collected all of the necessary attachments to the application. A call for the supplying of the missing attachments may result in the protraction of the procedure.
5. The procedure may, however, be accelerated by the applicant himself asking for the statement by the mayor (by submitting a sale and purchase agreement and a copy of the page of titles). (Mayors do not tend to reject such requests.)
6. The tax and value certificate is to be obtained from the notary having competency over the location of the real estate (Article 101 of the duty act). The duty on this procedure is (currently) HUF 3,000.
7. According to the land act (No. LV of 1994) immigrants and persons recognized as refugees do not qualify as foreign private individuals for the purposes of the acquisition of real estate therefore, no permit by the head of the public administration office is required or their acquisition of land. Their status is to be certified in the course of the land registry office procedure relating to the change of ownership (submitting the relevant final decision).

(Source: [www.magyarorszag.hu](http://www.magyarorszag.hu))

## 5. Ownership Structure

### Consolidation

#### The German-Hungarian Land Reorganisation Consolidation (TAMA) Project

About 5.1 million ha were released into private ownership after agricultural land in Hungary had been privatized as a result of the Compensation Act and the privatisation of the cooperatives. This land is divided into nearly one and half million separate parcels of land, which are scattered over a wide area and are often shaped very strangely. This is making them difficult to use productively. The Hungarian and German Ministries of Agriculture have initiated a cooperative project - the *German-Hungarian Land Reorganization Consolidation (TAMA) Project* - to solve this problem.

The basic aims of TAMA are:

- to improve the agricultural production factors which influence cost-effective farming (e.g. accessibility, size and configuration of fields)
- to improve the yields which are unsatisfactory because of the degradation of the sites (due for example, to erosion etc.)
- to protect and restore particular ecological potential (eg. certain parts of the landscape)
- to protect and restore particular ecological damage in highly susceptible sites (eg. where a loss of species has taken place)

The German partner in the Project, the büro für bodenbewertung (bfb) Kiel, is providing technical assistance and based on their experience, has designed a procedure which will include the following steps: The available information is to be collected, checked and interpreted in order to suggest a reorganization of the land structure. Satellite data and images, new aerial photographs, digital orthophotos and digital cadastral maps have also been used as input data for GIS. Digital image processing and digital cartography are being used to interpret the natural environment and the structure of land use. Pilot projects have been launched simultaneously in 15 neighboring communities, which are equally divided between four counties. A complete organizational hierarchy from the MoA and land offices to the communities and the landowners has been set up. This will be used to coordinate the transfer of the core technical standards and know-how. Local representatives will also be involved in the reorganization procedure and the wishes of the new owners will also taken into account. This process of communication and decision-making includes a comprehensive training component and workshops and courses will provide information at all levels. In addition, the Project will administer a *land-exchange service* for owners from different communities. This Project will also be involved in supporting legal regulations for land reorganization and consolidation. (Source: The Hungarian Agency on Land Administration and Mapping, Annual Report, 1995)

### **Dutch-Hungarian co-operation**

The Ministry of Agriculture and Rural Development, Hungary through its departments is responsible for co-coordinating land related activities including land consolidation matters. The Ministry has launched a new project „Technical Assistance on Land Consolidation in Hungary”, TALC, in 2002 under umbrella of Dutch-Hungarian co-operation. The aim of this project to implement a land consolidation process as it's determined in the Munich statement „the application of land consolidation should be seen in the framework of an overall agricultural and rural development policy, and as an essential tool within a range of instruments to achieve sustainable rural development” In this project land consolidation should be a project-wise tool for improvement of the lay out, agricultural structure, infrastructure and landscape of rural areas by exchange and concentration of scattered lands, by constructing, improving roads, biking paths and watercourses, by enlarging nature areas, designing and planning more beautiful landscape. This project suggests at least three way of possible realization of land consolidation. The main stakeholders should decide which one to apply.

#### **They are as follows:**

- Small scale, voluntary land exchange with a dominant agricultural objective,
- Exchange/concentrations of lands on and within the properties of the National Land Fund by purchasing scattered lands and by selling larger, concentrated plots, based on the existing Land Fund Act
- Large scale, integrated, legal land consolidation project, based on the future Land Consolidation Act (can be used after the Act comes into force in a couple of years).

Before starting the program of land consolidation a lot of measures are planned to be taken.

#### **Some of them are:**

- The politicians should agree which organization(s) on national, county and local level will be primary responsible for managing the project.
- Before starting the project a training program should be developed and the main stakeholders should decide which organization(s) will be trained in land consolidation management.
- Co-financing the land consolidation project will have a major importance. On one hand it could be co-financed by the budget of the Ministry of Agriculture and Rural Development and county and local budgets. On the other hand there are European funds available to cofinance the Hungarian land consolidation project if Hungary applies for it.

It seemed in the TAMA project, the land consolidation was not very popular among the farmers. Land consolidation process carried out by authorities didn't bring result. Based on this experience, authorities have to convince the rural population, farmers and describe the advantages of land consolidation, to prove that this is one of the main tools for the rural development and improvement the quality of life.

### National Land Fund

A new governmental institution was established at the end of 2001. They administer, manage state owned agricultural land and they can act as an owner on behalf of the state. The state owned lands can play a very important role in land consolidation as reserve lands. The National Land Fund launched a program „Life-annuity for land”. The aim of this program to buy agricultural land from elderly land owners who don’t want to be active farmers. The state buys the land for life annuity or cash. The other aim of this program to buy low quality land or lands from flood area. The National Land Fund can be a very important player in the land consolidation program. (Source: Enikő Kovács, András Osskó: Is Land Consolidation Just a Dream in Hungary? 2nd FIG Regional Conference, Morocco, 2003)

### Land Reform and Land Privatization

In Hungary there has been no land reform based upon property restitution. Uniquely among the central and eastern European countries, the Hungarians have addressed the legacy of the socialist expropriation in the following manner. Recognition that loss of property (expropriation) is fundamentally the same loss of privilege or possession as other assets (Constitutional Court decision). Claimants may not recover the original asset, but will receive compensation instead. The compensation is in the form of compensation vouchers that may be used at auctions to obtain property, or they may be redeemed for cash or invested.

There is no distinction between claimants upon the grounds of ethnic origin or nationality. All victims of injustice are eligible to apply. Past workers of state farms and co-operatives who are landless will receive land grants of the value 20 Gold Crowns (state farms) and 30 gold crowns (co-operatives). The state is correcting past injustice; therefore the state will pay for the compensation process to be carried out.

The claims submitted under this legislation are summarized below.

<b>Total Gold Crown requests in the Compensation Programme</b>			
	<b>Gold Crown Requests (million Gold Crowns)</b>	<b>Total area involved (mill. ha)</b>	<b>Total number of claimants</b>
Gold Crown Requests	41.3	3.0	1,040,000
Part Ownership (former members of co-operative )	38.6	2.1	1,600,000
Membership Employee Fund (state farms)	10.5	0.7	500,000
<b>Total</b>	<b>90.4</b>	<b>5.8</b>	<b>3,140,000</b>

Privatization of land was based on the compensation policy and on legislation guiding the restructuring of collective farms. Of the 5.6 million ha farmed by the collective farms in 1992, 36,3 % was formally in the private ownership of the collective, but there were restrictions on land use. This land became fully-fledged private property by the end of that year. The compensation policy had an impact on both collective and state farmland. Through auctions

about 2.7 million hectares were privatized. About 1.5 million new owners received, on average, less than 2 hectares per person.

The remaining collective farm land has been distributed to members of the collective farms. By mid 1996 the compensation process was completed for about 85 % of the land, and the land of new owners have been physically identified (completed in 1997). The physical distribution of the land shares for collective farm members is lagging behind; only about 20 % of this category of land had been distributed by mid-1996. As a result of the land privatization, the completion of which is expected by the end of 1998, over 90 % of agricultural land will be privately owned.

**Reorganization of Collective Farms.**

The reorganization of collective farms was based on 1992 legislation that provided a framework for distribution of assets and the privatization of land. The actual restructuring took longer than originally envisaged and the first phase was completed only in 1995. From the initial assets of the collective farms, 41.5% were given to the active members; pensioners received 38.7%, while those who had left the farm earlier received 19.9%. In the first phase of reorganization, most of the active members opted to remain under the umbrella of co-operative farming organizations.

Only about 15% of the active members chose to leave, and about one-third of these created smaller co-operative organizations or partnerships. The restructuring of these new co-operative organizations has continued throughout recent years and is ongoing. The share of co-operative farms in total arable land declined by a further 20% from 1994 to 1995 and was only 33.1% (see the table below.). The features of the remaining co-operative farms are evolving toward service and marketing types of cooperation or toward holding type structures.

<b>Utilisation of Arable Land (%)</b>		
User	1994	1995
Companies	17.4	16.8
State Owned	1.9	1.9
Co-operatives	39.9	33.1
Private Farmers	40.8	48.2
Total	100	100

**Privatisation of State Farm.**

The privatization of state farms was almost fully completed by mid-1996. Of the initial state farmland (411,000 hectares), 47 % was used to compensate previous owners. Out of 121 state farms, 86 have been fully privatized so far, 44 of them having been purchased by Hungarian nationals (mainly the managers and former workers of the farms). Only 3 farms were sold to foreign investors. 39 farms were liquidated and their assets were sold through auctions. The privatization of seven additional farms is in process and will be completed by the end of 1996.

The privatized farms currently use 118,000 hectares of state owned land, leased from the state for ten years with the option to buy. 28 former state farms were turned into joint-stock companies and remain in majority state ownership. Nearly 48 % of the assets of the former state farms and 36 % of their land remained with these farms. 25 % of the shares of these farms are intended to be sold to private owners (probably to current managers and employees) in the near future.

(Source: The development of land markets in Central and Eastern Europe, action for cooperation in the field of economics, November 1999, directed by Dr. Richard Baldwin)

### **The results of the privatization**

More than 2 million hectares have been sold in auctions and approximately 2,5-3 million hectares were denominated until 1997. The total area of reallocated land has been 6,5-6,7 million hectares, the average area per owner was 5-6 hectare. The cooperatives had lost almost all of their plots and began to eat up their capital. The new holdings had no fund for machine investments or modern production methods; therefore the productiveness of land had started to fail.

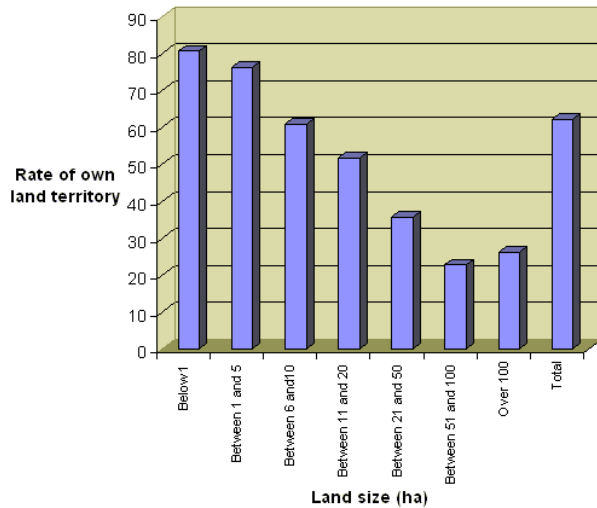
Urban, non-agricultural people still own a significant share of plots; land ownership and land use had been sharply divided. Due to the delay of the second wave of compensation and the inflation of the vouchers, agricultural employees do not have interests or control in food industry and in other parts of vertical integrations. (Source: Tassy, I.: Land management challenges in the private sector in Hungary and possible solutions, F I G Commission 7, Annual Meeting 1996, Budapest, Hungary)

The excess supply of land, as a consequence of recent land privatization and redistribution, has pressed both the land prices and rents down. Many agricultural pensioners and people employed outside agriculture bought land cheaply for compensation bonds. They lease the land to agricultural cooperatives and companies, and family farms. The rents are low because of the large supply and the low agricultural incomes. Even so, they are highly relative to the land prices of than in Western Countries. This is due to the higher demand for renting land than for buying.

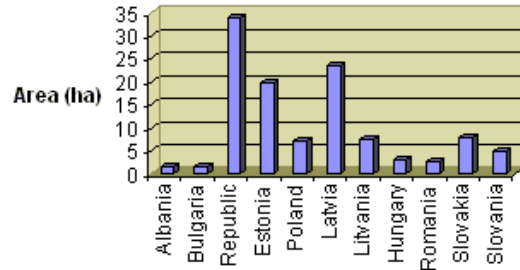
Rents will grow if agricultural incomes become higher and the supply of land lower in Hungary. The growth of land prices also depends on the decrease of land supply. Supply will decline when land selling and buying grow and most of the excess land not used by owners will be sold. (Source: Burgerné Anna Gimes: A Mezőgazdasági Földtulajdon és Földbérlet, Akadémiai Kiadó, Budapest, 2002).

The influence on and consequences of land privatization in figures are as follows:

Land division of the private farms in Hungary (in hectare) and the rate of own territory (in per cent)

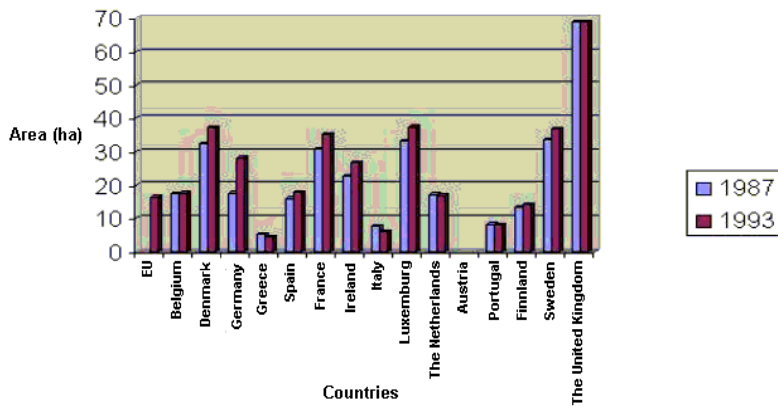


Average size of the private farms in 1998, hectare

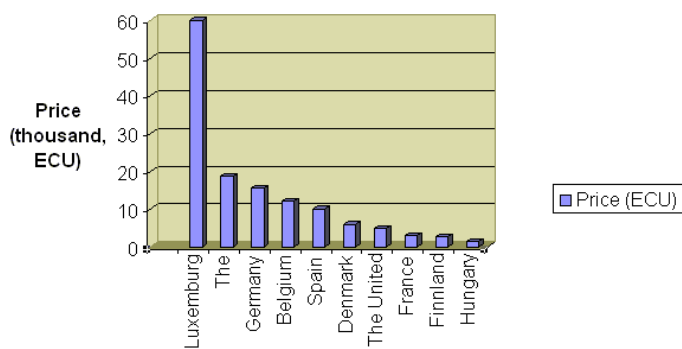


Source: Agricultural Policies in Emerging and Transition Economies. OECD, 1999.

The average size (ha) of the more than one hectare farms

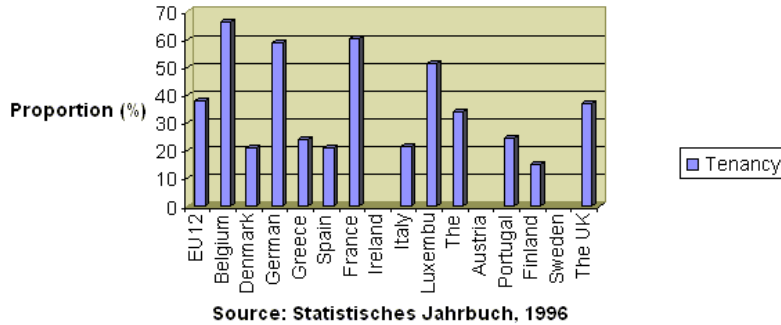


The price of one ha land in the EU (1994)



Source: EUROSTAT

The proportion of leased lands in the EU (1993)



## Land Banking

### National Land Fund

Pursuant to the Government Program adopted by the Parliament, the Ministry of Agriculture and Rural Development started legislative and institutional development activities under the direction of the Government Commissioner for Land Policy with the aim of creating developed tools for the management of state owned land with a view to meet the requirements of the European Union. The guiding principles of Land Policy intends to provide an opportunity for all actors in agriculture - so the family farmers as well - to become a competitive business unit. Land Policy is organized around the user of the land, irrespective of the organizational and management structure of the business. In accordance with the guiding principles of Land Policy the NLF (<http://www.nfa.hu>) is required to provide land for use for social purposes, which indicates that special consideration is given to social aspects.

State owned arable land within the National Land Fund is now used for the additional purpose of making arable land available for voluntary land exchange with a view to land consolidation and to facilitate the operation of animal farms. These new measures will allow the formation of stable and competitive economic units taking into consideration the outcomes of EU accession.

## **6. Land Development Related Policies, Programmes, and Projects**

### **Agriculture and rural development**

#### **The National Rural Development Plan**

The aim of the rural development policy is to improve the quality of life of people living in rural areas, to avoid further growth of the disadvantage of rural regions and to provide opportunities for catching up. The intervention focuses on the provision of appropriate living conditions and operational opportunities for the stakeholders of rural society and economy. Those are the aims of the strategies and the proposed implementation activities prescribed in a set of internally coherent development documents (NDP, ARDOP, NRDP). The National Rural Development Plan for the EAGGF Guarantee Section Measures (hereinafter referred to as the NRDP) aims to provide a uniform framework for the national implementation scheme for rural development measures to be financed by the Guarantee Section of the European Agricultural Guidance and Guarantee Fund (hereinafter referred to as EAGGF). The NRDP sets forth objectives and priorities aimed at the sustainable development of rural regions, and contains the detailed eligibility conditions and rules of implementation of each measure. The scope of the National Rural Development Plan extends to the accompanying measures financed by the EAGGF Guarantee Section, prescribed in Council Regulation (EC) no 1257/1999 and its amendment Council Regulation (EC) no 1783/2003. Thus, its content is narrowed relative to an integrated approach to rural development. Complex rural development is implemented in an integrated way, in coordination with the measures targeting the development of rural areas in the operational programmes of the National Development Plan, in particular the Agricultural and Rural Development Operational Programme (ARDOP).

#### **Legal background of the Plan**

The legal basis for the drafting of the NRDP is Council Regulation (EC) no 1257/1999, amended by Council Regulation (EC) no 1783/2003 and Council Regulation (EC) no 567/2004, Commission Regulations (EC) no 817/2004, no 141/2004, no 447/2004, no 740/2004 and the Accession Treaty.

#### **Links with other development documents**

##### **National Development Plan (hereinafter referred to as NDP) and Agricultural and Rural Development Operational Programme (hereinafter referred to as ARDOP)**

The basis for NRDP is the situation analysis, SWOT and strategy devised for the National Development Plan and the Agricultural and Rural Development Operational Programme. Both the NDP and the ARDOP objectives include the general aims set in the NRDP, for which resources are provided by the NRDP. The situation analysis and strategy of the NRDP are based on the strategic conclusions of the NDP and ARDOP, furthermore it provides additional details about some elements within the scope of the NRDP, e.g. employment, profitability, state of environment, differences in the production qualities of agricultural areas.

These documents provide a strategic basis for the implementation of rural development measures to be financed by the EAGGF Guarantee Section. The strong coherence of these three documents is also ensured by their shared basis. The rural population has to face several

(social, economic and environmental) problems these days. The rural development measures offer solutions to some of them. The ARDOP7 measures serve the improvement of employment and income-earning opportunities and living conditions and, to some extent, infrastructure. The measure LEADER+ catalyses the abovementioned processes by increasing the activity of local communities and their internal resources, involving social aspects as well. The measures of the NRDP provide answers primarily to the environmental challenges (agri-environmental management, support of less favored areas, meeting standards, afforestation of agricultural land) and play a role in solving the economic and social problems caused by the transition (setting up of producer groups, support of semi-subsistence farms undergoing restructuring, early retirement).

### **National Environmental Programme 2 (NEP 2)**

The Government of Hungary has adopted the second National Environmental Programme, whose fundamental objectives are the promotion of sustainable development, the improvement of the environmental conditions of Hungary and the protection of natural assets. The integration of environmental protection and nature conservation objectives into development plans and programmes is a necessary condition for economic development that respects environmental considerations as well. The support of environmentally friendly, sustainable forms of agriculture and the encouragement of environmental protection and landscape preservation are among the most important objectives of the NRDP. Those objectives are to be achieved directly through the measures entitled “Agri-environment and animal welfare”, “Less favored areas”, “Meeting standards” and “Afforestation of agricultural land”. The NRDP objectives are in close connection and in conformity with the objectives set forth in the Rural Development Action Programme of the NEP 2, therefore they have positive effects on implementation of the Action Programme.

### **National Agri-environment Programme**

In Government Resolution 2253/1999 (X.7.), the Government of Hungary approved the National Agri-Environment Programme (NAEP) as a sub-programme of the National Environmental Programme. This Programme contains various horizontal and zonal target programmes supporting environmentally friendly farming. The NAEP objectives are in line with NRDP objectives, its target programmes are integrated into the agri-environmental management measure of NRDP.

### **The SAPARD Plan of Hungary (2000 – 2006) (SAPARD Programme)**

Of the measures prescribed in the SAPARD Plan, the activities involved in the measures entitled “Supporting the establishment of producer groups”, “Protection of agri-environment” and „Technical Assistance” provided the basis for elaborating the corresponding NRDP measures, although the first two measures shall not be launched within the framework of the SAPARD Programme. The chapters on monitoring, controls and evaluation also rely heavily on the relevant chapters of the SAPARD Programme.

### **National Afforestation Programme**

Based on the consideration of agricultural land utilization concepts, the national long-term afforestation concept was completed in 1996. According to the concept, 778 thousand 8 hectares is a realistic estimate of the quantity of agricultural land suitable for afforestation, and the afforestation of that area would raise the forest rate of Hungary to the optimal level of 27%. Sectorial control institutions have targeted 15 thousand hectares of afforestation per year from 2001 until 2010, approximately 80% of which is to be carried out on agricultural land. This is in line with the afforestation plan proposed in the National Forest Programme of Hungary, which is currently under elaboration, and with the NRDP objectives.

### **Nitrate Action Programme**

Government Decree 49/2001. (IV. 3.) on protection against the nitrate contamination of waters from agricultural sources (hereinafter referred to as the Nitrate Decree) contains provisions in line with Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources. In a manner similar to the directive, the Nitrate Decree, which came into effect in 2001, contains the list of settlements in nitrate sensitive areas, the rules of “Good Farming Practice in manuring” that farmers are obliged to keep and the time-schedule of implementation in the form of an action plan. The Action Programme was launched on 1 January 2002 and extends to 31 December 2013. Along with nitrate sensitivity, its priorities include the requirements applicable to the manure storage systems of animal keeping sites that use semi-liquid manure technology. The ARDOP measures aimed at investment in animal keeping facilities are complemented by measure 4.3. of the NRDP, which is also linked to measure 4.1. (Agri-environment) of the NRDP, since the organic manure produced in animal keeping sites and stored in the way defined in the Nitrate Decree can only be utilized by farmers who enter the agrienvironmental programme.

(Source: Imre Németh, Minister of agriculture and Rural Development: National Rural Development Plan for the EAGGF Guarantee Section Measures, Budapest, 2004)

### **Land Registration and Cadastre**

#### **The National Cadaster Program (NCP)**

The idea of National Cadastral Programme was born in 1994, the implementation started in 1996 with a sample area.

From professional aspects the necessity for starting the program was that most of the maps were in different projections and mapping systems, nearly all of them in analogue form. (Approximately 60 000 cadastral map sheets cover the area of Hungary at scales from 1:1000 to 1:4000. A large part of the sheets are in different projections, mapping systems and datum: stereographical, cylindrical etc. Around 4 % of the map-sheets were available in digital form).

The following reasons had to be also considered: the dramatic change in the structure of legal ownership (after the political and economical changes the land privatization affected more than half part of the country: 5.6 out of 9.3 million hectares), the rapid development of computer systems and techniques, the growing national economic demand on digital maps and accurate databases, and the development of GIS.

A nation-wide map renewal (data capture) programme was worked out to realize the unification and updating the existing systems within the framework of the National Cadastral Programme. New professional standards and rules prepared by FÖMI were issued for digital mapping: the Hungarian standard on the Digital Map describing the Conceptual Model of the Digital base maps, and the Guidelines for Digital Base Maps.

Important work was done between 1994 and 1996 on the process of working environment, the legal aspects (e.g. the act on Land Surveying and Mapping Activities), and the government guarantee needed for financing the credit.

Considering that neither the Ministry of Agriculture and Rural Development, nor its institutes could get the credit, therefore the National Cadastral Programme Non-profit Public Benefit Company had to be founded (on 1st November 1996). The exclusive owner of the company is the Ministry of Agriculture and Rural Development. The NCP Public Benefit Co. draws the credit and organizes the map production. It supervises the implementation, gets – in co-operation with the Land Offices – the new maps and sells it directly or indirectly to the users. The latter forms the basis for the redemption of the credit. The tendering is according to the Hungarian Public Procurement Act.

The main aim of the Programme is to produce digital cadastral maps in vectorised form throughout the country.

From professional aspects, the implementation of the programme is directed by the Department of Lands and Mapping of the MARD. Professionals and surveying and mapping companies are contracted by the NCP Public Benefit Co. to carry out the digital cadastral survey in standardized form and the digitization for rural areas.

Recently, the digital cadastral survey in standardized form is carried out on 500 thousand hectares (6% of the area of Hungary), as well as 2300 thousand hectares of rural areas (25% of the area of Hungary) are digitized in near-standardized form.

During the last years, NCP Public Benefit Co. has successfully performed digitization of cadastre maps of rural areas in a pilot project over 300 thousand hectares to support the Integrated Administration and Control System (IACS) to be introduced at the time of the EU-accession of Hungary. Based on the results of the pilot project, DLM of MARD instructed the NCP Public Benefit Co. to extend the digitization of cadastral maps covering rural areas to 1.9 million hectares. This project is going to be completed before the end of this year.

The results of large amount of digital cadastral maps are expected to be integrated with land registry data in the database of the Land Office IT-systems called TAKAROS to make the cadastral system alive in computerized form.

Beyond the national demands, a top priority is the EU accession of Hungary, and first of all the EU regulation that prescribes the use of GIS systems to solve the tasks corresponding to agricultural subsidies. The maps prepared within the National Cadastral Programme will serve good basis for this purpose.

The Department of Lands and Mapping of the Ministry of Agriculture and Rural Development has drawn up the proposal for the continuation and acceleration of the National Cadastral Programme. In connection with the relevant measures it organized a conference titled “Information society and the National Cadastral Programme” with the President of the Hungarian Academy of Sciences, and the Minister of Agriculture and Rural Development as

chief patrons. The conference confirmed clearly the need for the continuation of the National Cadastral Programme and the main aim of the Programme is to produce digital cadastral maps in vectorised form throughout the country.

**The proposal suggested a two-step solution:**

The first measure is to ensure the digitalization of existing analogue maps starting with the rural areas (currently underway). Since January 2004 the process includes the county seats, the big cities and other settlements.

In the second measure the aim is to make digital maps that correspond with DAT Professional Rule System using modern data collecting field methods, and field measuring techniques. The proposed starting date of this measure is 2008.

A recent government decision accepted the proposal on the implementation of first measure, i.e. the acceleration of the Programme, and on the ensuring the needed 9.8 billion HUF by credit with government guarantee.

The area to be processed is 62 000 square kilometers in the first measure, including 56 000 square kilometers rural area, and 6 000 square kilometers urban area.

The financial and professional preparations for the starting time of 2004 have begun. The National Cadastral Programme Non-profit Company co-operating with the involved institutes will make the Project Plan. Financial preparations have already started; the Company issued a tender for the bank giving the credit.

(Source: Report of the Hungarian Land Administration and Mapping Agencies, UNECE Working Party and Land Administration, 2003)

**The Countrywide Computerization of Map-based Cadastre System (TAKAROS)**

TAKAROS is a Hungarian acronym with the above meaning and a significant IT concept elaborated for the land registration offices. It is the name of a large and expensive project in the overall modernization programme of the land management sector, more closely, the land and property registration and its institutional network that has partly been financed by the EU Phare Aid Programme.

The TAKAROS concept specified two levels of computerization, as the land office network consists of county- and district level offices.

The first phase, the so called TAKAROS-DLO is a workflow-driven land/property administration system for district land offices as they form the operative level of public administration, where the whole workflow is regulated by rules of law, including LIS elements, too, like map sketches, checking applications for registration of title, and also keeping legal and map data up-to-date. The implementation of this first phase started in 1995, and officially it was closed down in 1998. From technical and financial reasons the development covered the country IT system only, the Capital System was considered separately. Having defined TAKARNET as part of TAKAROS the IT concept has become unified.

The second phase, TAKAROS-CLO, in other word, the META concept (Megyei TAKAROS= county level TAKAROS) is the system for county land offices. In the meantime, in 1996-1997, also TAKARNET (TAKAROS NETWORK) project was completed. It is essential as in the framework of this project, the workstations of 116 district level land offices and the 9 county level land offices plus those of Budapest and Budapest districts were interconnected for proper and quick data transfer.

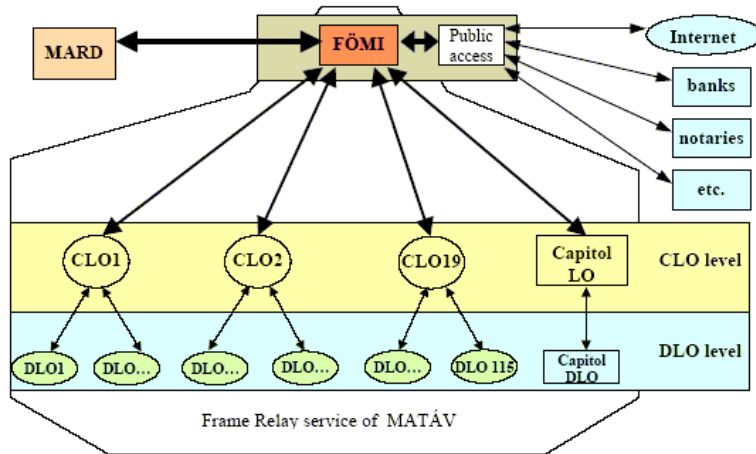
(Source: Report of the Hungarian Land Administration and Mapping Agencies, UNECE Working Party and Land Administration, 2003)

### **The TAKARNET System**

TAKARNET is an intranet-type network, which connects the institutions of the Hungarian land administration (MARD, Land Offices and FÖMI) and it provides data supply for external users on Internet. The network has hierarchical contexture. The central access point at FÖMI set up the data service. The TAKAROS data-servers of the District Land Offices and the identical BIIR data server of the Capitol Districts Land Office are hierarchically connected to the central access point. The external users can reach the data through this network at the central access point. The physical contexture of the network is as follows:



The Logical hierarchy and mode of the access to the network is shown below:



FÖMI services of the TAKARNET for the Land and Mapping Administration are as follows:

- Electronic mail,
- Supporting the work in land offices,
- Acceleration of the communication,
- TAKAROS software support.

The following services of TAKARNET are provided for external users:

- Information about the property sheets,
- Map copies (under evaluation).

The external users are as follows:

- Notaries,
- Local authorities,
- Banks,
- Lawyers,
- Property agencies,
- Public administration.

The physical network was set up in 1998. The latest improved software was installed in the middle of 2002, after this the test operation started. The network provides data service in the land offices since 1st August 2002. External users can use the network since 14th April 2003. The ministerial decree 41/2002 FVM regulates the financial and other conditions (data supply and fees) of accession to the network.

#### **META Project – Development of Land Registration at County Level**

META is a Hungarian acronym of MEGYEI TAKAROS, i.e. county-level TAKAROS System. TAKAROS is the name of the IT concept with the meaning „Countrywide Computerization of Map-based Cadastre System” of Hungary. META is the final project of a

multi-annual, huge programme. All projects of it – aiming at modernizing the land management sector, more exactly, the land and property registration and its institutional network – have partly been financed by the EU Phare Aid Programme.

The TAKAROS concept specifies two levels of computerization, as the land office network consists of county- and district level offices. TAKAROS-CLO, in other word, META is the system for county land offices, which form the land management and business level. It will provide the county land offices with the necessary IT-sources to support DLO-s in maintaining their databases and producing value-added products, introducing Management Information System (MIS) that will help the land management sector in decision-making and daily administration.

META opens the gate to form a multi-purpose, countrywide Land Information Service and also helps to fulfill several expectations connected to the future EU accession (e.g. set up the IACS - Integrated Administration and Control System).

The META project consists of three subprojects:

1. Technical Assistance (EUR 0.2 million). This first subproject is connected to the software development, involving Hungarian and foreign consultants. This subproject also included the test data production, to prepare the digital map dataset of the rural area belonging to the Vác District Land Office. This subproject was completed on 31 August 2002.
2. META Software Development (EUR 3.6 million). The invitation tender of this subproject was launched on 10 November 2000. More than 30 companies declared their interests in tendering. 13 of them were able to meet the demands of the pre-qualification. Finally, 6 offers were submitted by the deadline. The winner of the tender is T-Systems Unisoftware Kft (Hungary) with their subcontractors. After signing the contract, they started to work on the project in August 2001. Twenty months were given for the implementation that also included the procurement of the software development tools and standard GIS software, and system integration. It was also an expectation that the future system should provide an instrument to the county land offices for supporting the county land office tasks and procedures. It was also prescribed archiving the land registration data of the district land offices, the standardization of the data exchange between district and county land offices, providing the production of value-added products from county land office data, and also the elaboration of the MIS for supporting the leaders of the sector.

The aim was to design and develop a system in line with the technical specification, then its testing and setting up a pilot system followed by countrywide rollout. The contract for providing the necessary equipment for system development and testing was signed in May 2002. An other tender was launched for procuring the basic GIS software for development and operation, plus the licenses for the land offices. The amount of the procurement did not reach the allocated sum, so there was opportunity to procure equipment for the central training cabinet at the Institute of Geodesy, Cartography and Remote Sensing (FÖMI), according to the joint proposal by the Department of Lands and Mapping and T-Systems Unisoftware

Kft. With this new task, the deadline was extended to end December 2003, so further refinement of the META system became possible.

In the meantime, the pilot operation was successfully completed after three months in Salgótarján, at the headquarters of the Nógrád County Land Office. The countrywide rollout of the system was finished before end 2002. Training of the employees of the county land offices and EDP managers, also those of FÖMI who will operate and develop the system in the future, is going on.

3. Procurement of META Hardware Components (EUR 2.4 million). The winners of this subproject are ICON Kft. and Kventa Kft.. Between June and November 2002, they delivered the complete configurations needed to operate the system at every county land office. The former pilot configuration was sent to the College of Geoinformatics of the University of West-Hungary, for education purposes.

As of end August 2003, the procurement and software development are completed, the training of the staff and selected end users is finished. Before end of the calendar year, the project will be closed down. At the moment the acceptance procedure is going on.

## Topography

Hungarian Topographic Programme (*Magyar Topográfiai Program, MTP*) is planned to be carried out in co-operation between civilian, military and some non-governmental mapping organizations.

Keeping in view the present status, the emerging requests and the future demands for military and civilian topographic mapping as well as taking into account the creation of the juridical background, it has become necessary to develop a modern, unified, digital topographic mapping system. Considering that almost all sectors of economy are concerned as user, this aim can be implemented by an independent, infrastructure development project, the *Hungarian Topographic Programme*. The estimated duration of the programme is six years.

The object of the Hungarian Topographic Programme is the development of a topographic database and map series suitable for defense, administrative and national economic purposes as well as to fulfill the requirements of NATO and EU integration and Hungarian professional demands. It shall meet the complex requirements both in content and form and could become a uniform, interdisciplinary informatics base infrastructure of modern GIS systems. By this, the compatibility of systems of different purposes and content can be achieved.

As for its content, the Hungarian Topographic Programme is a complex system designed for data capturing, data processing, data storing, product generating, change revising and data servicing tasks, putting classical topographic mapping on modern platforms. Its basic technical component is the digital topographic database and map series, the parts of which can be utilized independently. Another integral part of the Hungarian Topographic Programme is the creation and continuous maintenance of the digital topographic database and map series as well as the establishment and operation of the technology elaborated for servicing, and the organizational frame necessary to fulfill the tasks.

The first concrete common work between the civilian and the military mapping agencies in MTP was the finalization of the common, new standard of topographic database, MSZ 7772-2:2002. The standard is accepted by the Hungarian Committee of Standardization. The standard strongly connects to the accepted Digital Base Map Standard MSZ 7772-1:1997. The conception of the standard also connects to the DIGEST standard used by NATO.

The new MSZ 7772-2:2002 standard will be the base of the development of the topographic database within the Hungarian Topographic Programme. The geometry and the topology of the database is very close to the concept of DIGEST. The structure of objects and attributes is identical with the MSZ 7772-1:1997 standard, the digital base (cadastral) map standard. The MSZ 7772-2:2002 standard defines the digital topographic database. This database is not a cartographic database; therefore we cannot find any generalized objects in it. For the printing of maps a new standard will be elaborated, the standard of the Digital Cartographic Databases, which will define the generalization methods and rules for different scales (1:10 000 — 1:250 000), and the standard cartographic objects.

Another important step in preparation of the programme was a preliminary pilot project, completed in March 2000. In the frame of this project the Mapping Agency of the Hungarian Defense Forces, in co-operation with six GIS companies, has completed the loading of a sample sheet with reduced DITAB data content.

The document System plan of the defense sector of a GIS supporting the creation of state topographic maps and data provision was completed in May 2001.

The leaders of the military and civilian mapping organization have agreed that production of a digital topographic database to serve as basis of the MTP is a common task. A decision preparation study from the summer of 1997 has already stated that the creation of DITAB has to be completed in a reasonable time. Different demands for each scales, especially defense requirements on the 1:25 000 to 1:250 000 scale range does not allow a larger degree drag out of the implementation of the programme in time. Since the demand for capacity to produce the 1:10 000 scale map series surpasses the joint requests for the production of all other scale state topographic map series, it seems to be useful to make a reduced version of the topographic database. The data content (data 'density') of this database answering to the 1:25 000 scale maps and an accuracy of data acquisition corresponding to the requirements set against the 1:10 000 maps in the first phase. This mapping base will be suitable to form the cartographic databases of the 1:25 000 to 1:250 000 scale range directly. In the future it can be supplemented with the planned full data content – corresponding to that of the 1:10 000 scale – continuously.

(Source: Report of the Hungarian Land Administration and Mapping Agencies, UNECE Working Party and Land Administration, 2003)

## **Remote Sensing**

### **Digital Orthophoto Programme of Hungary (MADOP)**

In the frame of European Harmonization Programme of the Department of Lands and Mapping at the Ministry of Agriculture and Rural Development three nationwide connected projects were launched by FÖMI in 2000 to be carried out during 3 years.

These are:

- “Wall to wall aerial photography of Hungary”,
- Creation of 5 m x 5 m resolution DEM of the country,
- Set up of full digital orthophoto coverage of Hungary.

The project “Aerial photography of Hungary 2000” was finished successfully. Now in the archives of FÖMI about 7000 aerial photos at scale 1: 30 000 are available in analogue and digital forms.

As a result of almost 20 years project – ended in 1999 – Hungary is covered by ~ 4092 map sheets at the scale 1:10 000 in analogue form.

The estimated and overall quality controlled accuracy of contour lines is between  $\pm 0.5 - \pm 1.5$  m, depending on the interval of contour lines of a given map sheet according to the national standard. In the national archives of FÖMI we have the color prints, the individual layers of contour lines, planimetry and hydrography of 4092 sheets (altogether 4 x 4092 sheets). During one year period the colour prints and three layers (hydrography, planimetry, contour lines) of 1:10 000 scale topomaps were scanned and geo-referenced. The layers of contour lines of topomaps were vectorised in the period 2000-2003. The vectorised contour lines served as the basis for creation of 5 m raster size and 0.7 m accurate in Z DEM for the whole country. The 5 m x 5 m DEM of Hungary (about 4 billion points) archived now according to map grid of 1:10 000 and is available for the user community.

A complete photogrammetric technology was elaborated for analytical and digital aerial triangulation to use the existing high accurate 4th order national triangulation network for determination of orientation element of aerial photos taken in 2000. The technology takes into consideration the creation of orthophotos on the base of DEM and the orientation elements of aerial photos adjusted for the whole country. An overall quality control was applied for the whole procedure and for every map sheets of digital orthophotos. The accuracy of aerial triangulation is characterised with  $\pm 0.25$  m in X and Y ground co-ordinates. The “MADOP” project was finished in June 2003.

The high resolution and quality checked orthophotos were archived (about 2.5 terrabyte) as part of meta data base, according to the 1:10 000 map grid and we started to distribute among end-users of several professions. The average accuracy of the orthophotos is characterised by 0.7 m in X, Y on the ground.

The orthophotos geo-referenced with high accuracy that are easy to handle on PC-s – among several other applications – can serve as common spatial reference for the Hungarian GIS and RS systems.

The digital orthophotos are suitable for several applications, as

- Creation Hungarian Land Parcel Identification System
- Topographic mapping,
- Recording of statement of several agricultural plants,
- Establishing of land use categories,
- Delineation of waste lands,
- Surveying of soil map contents,

- Delineation of soil erosion areas,
- Mapping of inland waters,
- Regional planning,
- Forest inventory, management etc.

Based on the high-resolution digital elevation model (5m-grid interval), FÖMI has started the orthorectification of aerial photographs (ground pixel size 63 cm). The full technology is under construction.

### **National Crop Monitoring and Production Forecast Programme (CROPMON 1997)**

#### **R&D plus operational applications**

In the framework of Hungarian Agricultural Remote Sensing Programme (HARSP 1980-) supported by the National Committee for Technological Development (NCTD) and Ministry of Agriculture and Rural Development (MARD, earlier MoA), 300 man-years R+D was invested by FÖMI Remote Sensing Centre (FÖMI RSC). The original final objective of the programme was to introduce remote sensing to the operational agro-information system in Hungary. The R+D phase (1980-96) of HARSP was fundamental to the operational CROPMON (from 1997 to date). In the CROPMON Programme that has been operational for the 5th years now, FÖMI RSC provides county and country level crop production forecast based on remote sensing, measuring the areas and expected yields of the 8 main crops. These crops together represent the 78-82% of the entire Hungarian cropland. The area and forecasted yield data are reported by a strict calendar to the Ministry of Agriculture and Rural Development, 4-5 times in a season, synchronised to the existing traditional production forecast system of MARD.

THE CROP AREA ASSESSMENT in CROPMON is based on the quantitative analysis of multitemporal high-resolution images (Landsat TM and IRS-1C/1D LISS-III.) providing precise crop area estimation at different levels: locally, in the counties and for the entire country. The actual standard crop maps were also provided to MARD.

THE CROP YIELD FORECAST is accomplished by the application of FÖMI RSC developed model which combines high-resolution satellite (Landsat TM and IRS-1C/1D LISS-III. or SPOT) data and NOAA AVHRR time series. An HRPT receiving station had been installed and operated in FÖMI RSC from May, 1998 to provide secure and real time NOAA AVHRR data access for the models. FÖMI RSC provided yield estimates for the counties and expanded them to Hungary using a regional-historical correlation scheme. Because of the method applied, yield spatial distribution maps could also be reported for the major crops.

### **Area-based Subsidy Control by Remote Sensing (1999-)**

The principal national crop area based subsidy programme has been operative in Hungary, for many years now. Both the crop subsidy and the ad-hoc partial loss compensation programmes that are responses to extreme natural disasters (as e.g. for waterlog/flood damages), work in sound legal framework. In 1997 FÖMI Remote Sensing Centre (FÖMI RSC) initiated to MARD the introduction of remote sensing into the control of the subsidy and partial compensation programmes.

The subsidy controls were performed on the CROPMON basis. Using FÖMI RSC's operational remote sensing based technology; a 3 counties sample was controlled by in a pilot project in 1999. The target area for RS based subsidy control was extended to a 7%, 4% and 5% ample of all the dossiers in 2000, 2001 and 2002 respectively. On the basis of CROPMON the automatic control can be an important part of the control of area-based subsidies in Hungary.

### **Development of the Physical Block based Hungarian Land Parcel Identification System (LPIS) for IACS on Pilot Areas (ProMePAR)**

FÖMI RSC is building up the Hungarian Land Parcel Identification System (LPIS-Hu) based on physical blocks in a fully accomplished GIS system. The base of the block system and the block boundaries delineation is the digital orthophoto coverage of Hungary with support of multi annual and multi temporal satellite images, as well 1:10 000 raster form topomaps.

According to the plans to build up the LPIS-Hu, the orthophoto production for the entire country accomplished by June 30, 2003; while the LPIS-Hu block system in GIS is ready for the territory of Hungary since mid-October 2003.

Several parallel projects facilitate the access to the LPIS (prints and computerised access at county IACS preparation units) for the institutions involved in the operations and for the farmers as well.

The aim of the pilot project was to develop the country-wide Land Parcel Identification System (LPIS=MePAR in Hungarian) on pilot sites with orthophoto based physical blocks in harmony with the requirements of the Integrated Administration and Control System (IACS) of the European Union.

Major results from ProMePAR as the basis for developing MePAR (the Hungarian LPIS):

- EU harmonic timeframe followed in the simulated EU harmonic area-based subsidy payment process
- Orthophoto generation and development of the physical block system (on 83 000 hectares) with unique block identification, with delineation of non-cultivated areas within the blocks, using satellite data time series and digital topographic maps as supplementary information, giving the exact areas of the blocks in a GIS system
- Training for the farmers and participating institutions

- Development of the EU harmonic application forms, maps and guidelines together with the other participants (county offices of the Ministry of Agriculture and Rural Development, Agricultural Intervention Centre)
- Preparation and dissemination of orthophoto based physical block maps to the local agricultural officials participating in the project
- Preparation of orthophoto based block maps focused on the farmers' agricultural parcels, and sending of these through mail
- Reception of the filled EU area-based subsidy forms, building up the databases and GIS system
- Formal and administrative control of over-declarations
- Remote-sensing and field control of declarations

#### **Additional Applications Implemented on the CROPMON bases**

- Satellite Based Vineyard Area Assessment (FÖMI RSC, from 1997)
- Waterlog and Impact Monitoring Programme (FÖMI RSC:1998, 1999)
- Remote Sensing Based Flood Monitoring operations (FÖMI RSC, from 2000)
- Satellite Based Drought Monitoring (FÖMI RSC, 2000)

#### **CORINE Land Cover 1:50000**

As part of fulfillment of the government resolution on the "Development of environmental information systems", the implementation of the CORINE Land Cover database at scale 1:50 000 (CLC-50) has started within the frames of the Acquis National Programme in 1999. The database supports Hungary's accession to the EU in various fields, such as the planning of sustainable agriculture, rural development, agri-environmental planning and nature conservation.

The CLC-50 project has direct links to the standard European CORINE Land Cover project, however most elements of the methodology were upgraded according to the present level of technology in geo-data processing. The CLC-50 nomenclature used has been developed from the standard (level-3) nomenclature and includes nearly 80 level-4 and level-5 classes, which have been adapted for Hungarian conditions.

Orthorectified SPOT-4 satellite images taken in 1998-99 and computer-assisted photointerpretation allow for high positional accuracy of delineation. The 0.04 km<sup>2</sup> size minimum mapping unit (0.01 km<sup>2</sup> for lakes) provides enhanced geometric detail.

A rigorous internal supervision and an external quality control (performed by the National Park Directorates and the counties' Plant Health and Soil Protection Service) are other key elements of producing a high quality database.

Mapping session of CLC-50 database production was finished in early summer 2003. The database for the whole territory of Hungary will be available from September 2003. Mapping has been financed by Ministry of Agriculture and Ministry of Environment.

First applications of the CLC-50 database include:

- setting up a lake inventory as part of Hungary's preparation to the EU Water Framework Directive
- characterisation of IBA (Important Bird Areas) sites using statistical measures derived from CLC-50
- habitat mapping for designated areas of Hungary to support NATURA2000
- development of agri-environmental indicators using land cover changes derived from CORINE Land Cover data
- updating of standard European CORINE Land Cover data in the frames of the IMAGE & CLC2000 project, managed jointly by EEA and JRC.

#### **CORINE Land Cover 1:100000 update (CLC 2000 project)**

The basic aim of the European CORINE Land Cover project is to provide an inventory of the Earth surface features for managing the environment. CLC is consistent and comparable across the continent.

A new project called IMAGE&CLC2000 was undertaken to update the standard CLC database (referred to as CLC1990) giving a “snapshot” of Europe (this means minimum 27 participating countries) for the year 2000. In the course of updating a refined nomenclature is used, which accumulates 15 years of CLC experience. The updated CLC database is called CLC2000.

In Hungary the project is co-financed by:

- The Ministry of Environment and Water (MoEW).
- The European Environment Agency (EEA).

The existence of the CLC-50 database allows for the use of a unique methodology (a variant of the standard CLC2000 methodology), which consists of the following main steps:

- Semiautomatic generalisation of CLC-50 data respecting the parameters of standard CLC (level-3 nomenclature, 25 ha area limit, 100 meter limit for linear elements, generalisation rules) to yield CLC1998.
- Updating of the CLC1998 database using IMAGE2000 satellite data to yield CLC2000.
- The CLC\_Changes database will be produced by interpreting land cover changes using the CLC2000 database and IMAGE90 data (satellite images used in the CLC90 project);

The re-produced (backdated) CLC1990 database will be automatically generated using the CLC2000 and the CLC-Changes databases.

The consequences and benefits of the application of this method are as follows:

- National CLC-50 and CLC2000 will be compatible as much as possible;
- CLC2000 will have high quality in terms of geometry and thematic content;
- There is no need to correct the original CLC1990 database (which includes several geometric and thematic errors due to simpler technology of the 90's). The reproduced CLC1990 will also have high thematic and geometric accuracy.

### **ERS-SAR Application R+D Project**

The aim of this project was to apply an integrated method for area estimation of four main crops covering an agricultural test area in Hungary on the base of the processing and analysis of multitemporal, weather independent radar (ERS SAR) and optical (Landsat TM, IRS-1C) satellite images. The test area (about 12 000 ha) is located in Szolnok county. The ERS SAR data (provided by ESA, monthly for the period of 1997), optical data used for national crop monitoring project, real time in situ ground truth data and digital cadastral maps were processed and analyzed. The results of the project confirmed that the use of ERS–SAR data can improve the effectiveness of optical satellite remote sensing techniques.

### **Development of Human Resources**

The modernization tasks listed above are dependent on further development of human resources. High priority should be given to this problem, as the civil Lands and Mapping Administration sector has more than 4900 employees. The training for the employees parallel with the daily activity can only partly be organized within the Land Offices themselves, so other forms of education should be applied.

The following actions are in effect or planned:

- GIS training for 800 land surveyors of Land Offices (1996);
- Continuous training for county EDP managers (1995- );
- Distance learning programme (OLLO–Open Learning for Land Offices) giving an academic level certificate (within institutional framework) for land surveyors (1996-);
- Training that gives academic level certificate („Land Registration Secretary”) for employees of the civil Lands and Mapping Administration, within the organizational framework (since 1996);
- Management training for District and County Land Office heads (1996-97);
- Training for Land Office employees on managing state acceptance and verification procedures for digital cadastral maps supported by the NCP Public Benefit Co. (1997);
- Creation of Human Resources Development strategy for Land Offices (1998);
- Training for Land Offices in using TAKAROS system (1998);
- Management training for new system administrator employees of Land Offices in using TAKAROS system (1999);
- Launch of SDILA (Staff Development in Land Administration) Phare/TEMPUS project (2000);
- Launch of LIME – Land Information Management for Executives (2001);
- Launch of Land Registration Managers’ Training Course at Székesfehérvár College offering college degree training for land registration management staff (2001).
- Training for Land Office employees in using META system (2002-)

- Training for external users (public notaries, jurists etc.) in using TAKARNET (2002-)

**In organizational sense the main actors of the field are:**

University of West Hungary, College of Geoinformatics ([www.cslm.hu](http://www.cslm.hu))

Budapest University of Technology and Economics (<http://www.bme.hu/en/index.html>)

Institute of Geodesy Cartography and Remote Sensing ([www.fomi.hu](http://www.fomi.hu))

(Source: Report of the Hungarian Land Administration and Mapping Agencies, UNECE Working Party and Land Administration, Third Session, 17-18 November, 2003, Geneva)

## **7. Statistics**

### **Ownership**

Hungary's agricultural territory was 5,865 million ha on the 31st May 2003, while the productive land area was 7,734 million ha.

Hungary's land privatization program has generated a great diversity in the legal status, size and ownership of agricultural holdings. The majority are nearly one million private holdings with an average size of 3 ha. These farms cultivate about 55 % of the agricultural area. The 7800 agricultural enterprises (1% of total holdings) cultivate a share of 45% of the land.

The development of structure of farming in Hungary reveals that the total number of farms declined from 1991 to 2000. Individual farms especially are shrinking in number. In 2000, this number had declined by about 30 % in comparison to 1991. The number of farms in the lower size classes up to 1 ha shrank by about a half, while those in the one from 1 ha to 10 ha gained most in numbers. Relatively speaking however, the class between 10 and 100 ha increased fastest. In Hungary, small farms are excused from certain taxes, so there is an incentive to register several farming operations within one family, even if the land is cultivated as a unit.

The average territory used by agricultural enterprises was 503 ha, while territory used by private holdings had only been around 3 ha in 2003. There were significant differences between the two forms in the structure of land tenure as well. The share of private holdings using more than 50 ha is only 1%, but the territory used by them is nearly 40% of the land being used by private farmers. There are only a few private holdings using more than 300 ha, more than 70% of private holdings cultivates less than 1 ha, while 20% of agricultural enterprises use more than 300 ha. However, concentration of land tenure slowly keeps continuing.

### Number of agricultural holdings

Number of agricultural holdings (1000)			
Year	Private holdings	Agricultural enterprises and cooperatives	Total
2000	958,5	8,4	966,9
2003	765,6	7,8	773,4

Magyarország mezőgazdasága 2003 (Gazdaságszerkezeti Összeírás), Előzetes adatok. KSH 2004.

### Distribution of the number and the territory of agricultural holdings

Distribution of the number and the territory of agricultural holdings (%), 2003						
Territory (ha)	Private holdings		Agricultural enterprises and cooperatives		Total	
	Number	Territory (%)	Number	Territory (%)	Number	Territory (%)
0	7,5	-	11,7	-	7,5	-
0-0,2	35,5	1,2	1,3	0,0	35,2	0,5
0,2-0,5	19,9	2,0	1,2	0,0	19,7	0,8
0,5-1,0	9,3	2,1	1,0	0,0	9,2	0,8
1,0-10,0	21,9	23,2	11,7	0,1	21,8	9,5
10,0-50,0	4,8	32,4	22,6	1,3	5,0	13,9
50,0-100,0	0,7	15,0	10,7	1,7	0,8	7,1
100,0-300,0	0,4	21,6	20,1	8,9	0,6	14,0
300,0-	0,0	2,6	19,7	87,9	0,2	53,4
Total	100,0	100,0	100,0	100,0	100,0	100,0

Magyarország mezőgazdasága 2003 (Gazdaságszerkezeti Összeírás), Előzetes adatok. KSH 2004.

**The use of land by legal forms (on the 31<sup>st</sup> May in 1000 ha)**

Form	1999	2001	2003
Agricultural enterprises and cooperatives	3731,2	3407,2	3460,0
Private holdings	4303,9	3965,5	3952,7
Other	-	356,9	320,8
<b>Total</b>	<b>8035,1</b>	<b>7729,6</b>	<b>7733,6</b>

Mezőgazdasági termelés 2003, KSH 2004

**Farm size, 2000 (ha)**

	<10	10-50	50-100	100-1000	>1000	Total
Number of holdings	910523	41062	4434	3556	795	960370
Share of total (%)	95	4	1	0	0	100
Area cultivated (ha)	825776	844057	303075	951692	1726512	4651112
Share of total (%)	18	18	6	21	37	100
Average size (ha)	0,9	20,6	68,4	267,6	2171,7	4,8

Agricultural Situation in the Candidate Countries, Country Report on Hungary, European Commission Directorate-General for Agriculture, 2002

**The use of land by legal forms**

Denomination	1990	1995	1998	1999	2000	2001	2002
<b>Agricultural enterprises with legal entity</b>							
land area, 1000 ha	2146	2269	2128	2318	2346	2592	2740
share, %	26,1	28,3	26,5	28,9	32,2	35,2	36,9
<b>Cooperatives</b>							
land area, 1000 ha	4938	2084	1585	1413	1175	815	616
share, %	60,0	26,0	19,7	17,6	16,1	11,1	8,3
<b>Agricultural enterprises without legal entity</b>							
land area, 1000 ha	7084	4352	3713	3731	3521	3407	3356
share, %	86,0	54,3	46,2	46,4	48,3	46,2	45,2
<b>Private holdings</b>							
land area, 1000 ha	1152	3658	4323	4304	3774	3965	4071
share, %	14,0	45,7	53,8	53,6	51,7	53,8	54,8
<b>Total</b>							
land area, 1000 ha	8236	8010	8036	8035	7295	7373	7427
share, %	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Mezőgazdasági termelés 2003, KSH 2004

## Land Usage

Land area by legal form and by land use, 2003 (%)

	<b>Agricultural enterprises and cooperatives</b>	<b>Private holdings</b>	<b>Other</b>
1 Arable land	40,0	57,9	2,1
2 Garden	0,2	68,2	31,6
3 Orchard	24,0	74,7	1,3
4 Vineyard	11,3	86,7	2,0
5 Grassland	28,9	56,2	14,9
6 Agricultural area (1+2+3+4+5)	36,6	58,5	4,9
7 Forest	71,8	28,2	0,0
8 Reed	28,1	24,3	47,6
9 Fish Pond	68,0	20,6	11,4
10 Productive Land area (6+7+8+9)	44,7	51,1	4,2
11 Uncultivated land area	20,5	14,2	65,3

Mezőgazdasági termelés 2003, KSH 2004

## Land area by legal form and by land use, 2001 (1000 ha)

	<b>Agricultural enterprises and cooperatives</b>	<b>Private holdings</b>	<b>Other</b>
1 Arable land	1872,5	2538,3	105,3
2 Garden	0,3	64,9	32,5
3 Orchard	19,9	76,4	1,2
4 Vineyard	9,3	81,5	2,1
5 Grassland	290,1	595,4	175,7
6 Agricultural area (1+2+3+4+5)	2192,1	3356,5	316,8
7 Forest	1179,8	591,9	0,0
8 Reed	14,7	11,2	34,4
9 Fish Pond	20,7	5,9	5,7
10 Productive Land area (6+7+8+9)	3407,2	3965,5	356,9
11 Uncultivated land area	232,9	230,2	1110,7
Total land area	3640,1	4195,6	1467,6

Agricultural Situation in the Candidate Countries, Country Report on Hungary, European Commission Directorate-General for Agriculture, 2002

### Land area and value by land use, 1997

	Land area (1000 ha)	Land value (GC)	Total (1000 GC)
1 Arable land	4712,7	20,94	98664,8
2 Garden	98,2	23,96	2353,6
3 Orchard	94,3	30,04	2833,6
4 Vineyard	130,9	39,07	5116,1
5 Grassland	1148,3	8,10	9306,0
6 Agricultural area (1+2+3+4+5)	6148,5	19,08	117995,1
7 Forest	1764,5	4,21	7427,9
8 Reed	41,2	12,57	518,3
9 Fish Pond	27,0	-	-
10 Productive Land area (6+7+8+9)	8017,2	15,79	126568,4
11 Uncultivated land area	1285,8	-	-

Eliás János: A jelzáloghitelezés szerepe a mezőgazdaság finanszírozásában, Phd értekezés, Budapesti Közgazdaságtudományi Egyetem, 2000

### Prices

The average land price in Hungary was around 585 000 HUF (2350 Euro) in 2003. The extreme prices were 10 million and 10 thousand HUF. Higher prices were surveyed in the northwest, west and central of Hungary, while prices on the great plain were under the average although the quality of land is often better. The excess supply of land due to privatization and redistribution along with low agricultural incomes has pressed land prices and rents. Even so, rents are higher relative to the land prices than in western countries because of higher demand for renting than for buying. Rents and prices will increase if agricultural incomes become higher and land supply lowers in Hungary. Supply will decline if most of the land not used by owners will be sold. The growing of incomes has already started due to the accession. After the 7+3 years of derogation for foreign investors prices are estimated to grow significantly.

**Land Prices in August 2004 (Price of arable land by regions (1000 HUF/GC\*))**

Regions	Minimum	Maximum	Average
Dél Alföld (South-East)	110,0	110,0	110,0
Észak Alföld (East)	45,7	45,7	45,7
Észak Magyarország (North-East)	5,4	80,0	39,6
Közép Dunántúl (North-West)	26,9	66,7	45,1
Nyugat Dunántúl (West)	20,0	53,8	30,6
Dél Dunántúl (South-West)	19,6	64,3	26,9
Közép Magyarország (Centre)	na	na	na
Country	5,4	110,0	37,4

**Price of arable land by regions (1000 HUF/ha)**

Regions	Minimum	Maximum	Average
Dél Alföld (South-East)	220,0	220,0	220,0
Észak Alföld (East)	320,0	320,0	320,0
Észak Magyarország (North-East)	103,0	920,0	478,8
Közép Dunántúl (North-West)	350,0	1200,0	711,7
Nyugat Dunántúl (West)	400,0	590,0	488,9
Dél Dunántúl (South-West)	240,0	490,0	398,3
Közép Magyarország (Centre)	na	na	na
Country	103,0	1200,0	475,0

**Price of specific territories (1000 HUF/ha)**

	Minimum	Maximum	Average
Forest	320,0	1072,0	550,6
Hunting area	25000,0	42860,0	na
Fish-pond	360,0	3500,0	na
Vineyard	630,0	9900,0	na
Area with thermal well	273,3	42860,0	37,4

All data concerning prices were collected on the 11th August 2004 from the <http://www.foldbroker.hu> and the <http://www.hektarvadasz.hu> websites.

## Rents

### Land Renting

The share of rented territories was around 56% of the cultivated area in 1999. The extremes were woodland by 21% and arable land by 69%. There were significant differences between legal forms in land renting. The rental was usually 0,3-6,8% of the land's value, the average may be estimated around 2,5-3% (15-20000 HUF/ha or 600-1000 HUF/GC). The rental-roll usually ensures an annual yield around 2-5% of the price of land as capital.

### Rent Prices

The average rent price was 15 000 HUF (60 euros) in 2003, while the extremes were 49 000 and 3500 HUF. According to the higher amount of subsidies rent prices are increasing as well. A number of examples confirm that rents are priced as a certain percentage of subsidies.

### The share of rented land by legal forms

The share of rented land by legal forms, 1999 (%)	
Agricultural enterprises with legal entity	51
Agricultural enterprises without legal entity	77
Corporate holdings	91
Private holdings – Full time employed	51
Private holdings – Part time employed	35
Total	56

Mezőgazdasági statisztikai évkönyv 2003, KSH 2004.

### Rents by land-use category and by legal form

Rents by land-use category and by legal form (31st May) (HUF/ha)						
Denomination	Agricultural enterprises and cooperatives		Private holdings		Total	
	2002	2003	2002	2003	2002	2003
Arable land	11118	11719	n.d.	11853	n.d.	11754
Grassland	3787	4236	n.d.	4610	n.d.	4376
Vineyard	18883	18622	n.d.	20668	n.d.	19163
Orchard	13574	13385	n.d.	13320	n.d.	13376
Forest	4056	3961	n.d.	3189	n.d.	3899

Mezőgazdasági statisztikai évkönyv 2003, KSH 2004

## Technical Background

### Stock of Tractors by legal forms

Stock of Tractors by legal forms			
Legal form	1991	1996	2000
Agricultural enterprises	46352	27290	26199
Private farmers	45561	64925	87107
Total	91913	92215	113306

Mezőgazdasági statisztikai évkönyv 2001, KSH 2002

## 8 Information Sources

### Journals

Central news agency of Hungary <http://www.mti.hu/>

Central news agency of Hungary - economic news <http://www.mtieco.hu/>

Népszabadság - Site of the biggest daily newspaper <http://www.nol.hu>

Világgazdaság - Daily economic newspaper with regular real estate supplement <http://www.vgonline.hu>

Napi Gazdaság - Daily economic newspaper with regular real estate supplement <http://www.napigazdasag.hu>

Figyelő - Weekly political/economic newspaper with regular real estate supplement <http://www.fn.hu>

Budapest Business Journal - Daily economic newspaper <http://www.bbj.hu>

Budapest Sun - Daily newspaper <http://www.budapestsun.com>

Budapester Zeitung - daily newspaper <http://www.bz.hu>

Diplomacy and Trade - monthly newspaper <http://www.dteurope.com/>

HVG - Weekly political/economic newspaper <http://www.hvg.hu>

Hungary Around the Clock - Daily newspaper <http://www.hatc.hu>

Portfolio - daily business and economic news <http://www.portfolio.hu/>

### Research and Development

Institute for Geodesy, Cartography and Remote Sensing <http://www.fomi.hu/>

Ministry of Agriculture and Rural Development (MoARD), Hungary <http://www.fvm.hu>

Ministry of Finance, Hungary <http://www.pm.gov.hu>

Ministry of Informatics and Communication <http://www.ihm.gov.hu>

National Land Fund Management Organisation, <http://www.nfa.hu>

Research and Information Institute for Agricultural Economics <http://www.akii.hu>

Statistical Office of Hungary <http://www.ksh.hu>

Center of Regional Studies <http://www.rkk.hu/>

Hungarian Investment and Trade Development Agency <http://www.itdh.hu>

Agriculture and Rural Development Office <http://www.aik.hu>

University of St. Stephen <http://www.szie.hu>

Agroweb Hungary - links for agriculture <http://www.gak.hu/aw/>

Private agricultural and land information site <http://www.hektarvadasz.hu>

Private land information site <http://www.foldbroker.hu>

## **International Connections**

The Hungarian Lands and Mapping Administration keeps rich international links, takes actively part in the work of international associations, unions, organisations on governmental, scientific and technology development level. Some of them are as follows:

### **Organisations of the European Union**

#### **Membership in EuroGeographics**

Being represented in CERCO since the 1991 Plenary Assembly held in Southampton, and also in MEGRIN since its establishment in 1991, the Hungarian national surveying and mapping organisation – with the Department of Lands and Mapping as active member of CERCO and the Institute of Geodesy, Cartography and Remote Sensing as active member of MEGRIN – continues to be full member of EuroGeographics. Hungary actively joins EuroGeographics's working groups on References, on Maintenance of Digital Databases, EuroGeographics<sup>TM</sup> Expert Group on Legal and Commercial Issues and Quality and Standard Expert Group.

Hungary also takes part in the pan-European projects. The Hungarian Administrative Boundaries Database (in scale 1:500 000 and 1:30 000) is part of SABE. The description directory of the Hungarian geodetic references, as well as descriptions of different databases of the Hungarian NMA have been elaborated and submitted to MEGRIN GDDD and the on it built up LaClef project. In EuroGlobalMap project the Hungarian data are provided by the Institute of Geodesy, Cartography and Remote Sensing. Hungarian boundary data from every boundary around Hungary were accepted to be used as common international boundaries. Hungary took part on the first EuroSpec workshop and agrees and supports this initiative.

## **Involvement in the work of the Permanent Committee on Cadastre (PCC) in the European Union**

In the PCC operational framework the Hungarian Land Administration is represented by the Institute of Geodesy, Cartography and Remote Sensing (FÖMI). As point of contacts with PCC the director general of FÖMI, Dr. Szabolcs Mihály and the desk officer for international co-operations at the Department of Lands and Mapping of the Ministry of Agriculture and Rural Development Dr. Gábor Remetey-Fülöpp were appointed by DLM MARD Director General Géza Apagyí.

As it has been proposed during the constitution meeting of the Committee, from the first of July of 2003 Italy was taking the Chairmanship from Spain. By invitation of General Director of the Cadastre in Spain and Director of the Agenzia del Territorio Italy, the Department of Lands and Mapping was represented at the 2nd Meeting of the PCC held in July 2003. The meeting held in Rome under the auspices of the Italian EU Presidency dealt with the evolution of the PCC activities, made a balance on the Spanish Chairmanship in PCC providing an in-depth SWOT analysis also discussing the tasks to be completed under the Italian Chairmanship. The meeting resulted among others, that representatives of Poland and Hungary were co-opted into the Working Group devoted to the final formulation of the document entitled "The Declaration of the Cadastre in European Union - A vision to its immediate antecedents". The project is managed by I.G.Rodriguez (Spain) with the collaborators Roberta Marconi (Italy), P. Fraisse (Belgium), W.Zeddies (Germany), B.Kjellson (Sweden), E.Mecha (Poland) and G.Remetey-Fülöpp (Hungary). The objectives are to describe the content of cadastral activities in the EU, to collect reference documents previously issued by official organisations, to identify the common and essential elements of cadastrals and to foresee trends in the future evolution of cadastral systems. Another project has been approved devoted to the identification of EU Institutions potentially interested in access to cadastral information..

## **EUROGI**

The Hungarian Association for Geo-Information (HUNAGI) was founded in 1994 by seven professional organizations. After its court registration in January 1996 HUNAGI applied for and got membership in the European Umbrella Organization for Geographical Information (EUROGI), which was established by the guidance and support of the European Commission DG Information Society. Today HUNAGI has 80 member organizations and associations including acknowledged representatives of the academic, governmental, and non-governmental institutions. About 30 % of the members are small and medium size enterprises representing the private sector. The operational infrastructure for the secretariat is provided by the Department of Lands and Mapping of MARD since 1994. HUNAGI has seated in the Executive Committee of EUROGI since 1998 and its representative was Treasurer of the European Organization between 1998-2003.

The EUROGI membership facilitates the access and use of Geographical Information and the emerging Pan-European links by international networking. HUNAGI plays active role in international and cross-border actions, initiatives (ESMI, ECAI, EXADINT, GIS Day),

projects (OLLO, ABDS, PANEL GI, SDILA, LIME, GINIE) and policy formulations on domestic and European level (GIS Data Policy, Europe Day, GI and Information Society, GIS and the EU Enlargement, EC GI/GIS Workshops, high-level expert and working group meetings of ETeMII and the INSPIRE Initiative respectively). The membership directly supports the tasks related to the National Programme for the Adoption of Acquis Communautaire using GI/GIS/RS as an effective tool in the monitoring and control of policy implementations. In co-operation with HUNAGI, MARD hosted the first EU Workshop on the “Use of cadastre as major component of the spatial data infrastructure in the implementation EU programmes”. The event – held in Budapest between 7-9 June 2001 – was a great success attracting over 120 participants from 20 countries and representatives of the World Bank, FAO and three European Commission DGs (InfSo, JRC and Environment). The results have been highlighted at the 7th and 8th EC GI/GIS Workshops held in Potsdam and Dublin but also at the UNECE WPLA Workshop held in Gävle. In 2002 the European Cadastral GIS have been surveyed by the Hungarian member of EUROGI ExCom and the results were presented as invited lecture at the 1<sup>st</sup> EU Cadastral Congress held in Granada. HUNAGI was selected as one of the five models of National GI Associations to be presented for the European GI communities by EUROGI.

The Global Spatial Data Infrastructure (GSDI) Conferences provide major international fora for the discussion of a wide range of scientific and policy related issues relating to the use of geographic information technology and the development of associated products and services. The European Umbrella Organization for Geographic Information (EUROGI) and its member, the Hungarian Association for Geo-Information (HUNAGI) have been involved in their organization and participated since the first of these high level conferences was held in Bonn in September 1996. The sixth conference in this series was returned to Europe last year, following similar conferences held in Chapel Hill, North Carolina (1997), Canberra, Australia (1998), Cape Town, South Africa (2000) and Cartagena, Colombia (2001). EUROGI requested bids from its 20 national member associations to host this conference, and the Hungarian national GI association (HUNAGI) was selected.

The conference was held in Budapest at MATÁV Conference Center between September 16-19, 2002, attracted an audience over 250 senior scientists and decision-makers from 55 countries of the world. Minister of Informatics and Communications Dr. K. Kovács opened the conference, which was actively participated by leading civil servants of DG Research, DG Envi, DG InfoSO, JRC, EUROSTAT and other European Institutions. CEOs and top managers of industry giants (Intergraph, ESRI, Oracle) contributed also significantly to the success. The theme chosen for this meeting was 'From global to local', emphasizing the extent to which the GSDI must be seen as part of an overall strategy for geographic information.

It is felt that the decision to hold this conference in Europe was particularly appropriate that time. This is due to the large number of local, national and EU initiatives that were under way such as e-government, PSI and the emphasis that was given to GI policy issues in the Information Society Technology (IST) program. Under these circumstances it can be argued that this conference made a useful contribution and added value to the discussions that were taking place intensively that time regarding EU information policies with special emphasis to the Infrastructure for Spatial Information in Europe (INSPIRE) supported by the Memorandum of understanding between Commissioners Wallström, Solbes and Busquin. In the process it also contributed to improve overall competitiveness and stimulating the European GI industry

as a whole. The Hungarian Government strongly supported this initiative with the expectation that it will stimulate the development of GI products and services not only within Hungary but also throughout Europe as a whole.

In 2003 HUNAGI was invited both by the FAO European Office and by the World Bank to co-operate with their NGO fora to facilitate the exchange of experiences and knowledge between different disciplines, coalitions to contribute to the solution of global and regional/sub regional problems. HUNAGI was invited e.g. to the Steering Committee of the Global Spatial Data Infrastructure organization incorporated in 2002, to the Scientific Board of EFITA, to the UN Summit on Information Society. Moreover a Letter of Agreement has been signed with CelkCenter, the Central European Land Knowledge Center established by the World Bank, FAO and the MARD in Budapest.

### **EARSel**

In 1984, FÖMI RSC became observer member of the European Association of Remote Sensing Laboratories (EARSel) and in 1990 obtained full membership in the Association, as the first organisation from Eastern Europe. In 1992 FÖMI organised the annual EARSel Conference and General Assembly, as the first such event in Central and Eastern Europe. The head of FÖMI RSC was a full member of the EARSel Bureau as treasurer between 1997 and 2001

### **AGILE**

The education projects supported by EC TEMPUS and MARD/DLM are called SDILA and LIME. These special educational programmes are designed to meet the needs and requirements of the staff in the Land Offices. The main projects are run by the College of Geoinformatics in Székesfehérvár of the University of West Hungary, Sopron.

The aim of SDILA (Staff Development in Land Administration) project is the co-operative staff development in the Hungarian land offices and in the related Public Administration. The long-term objective of the project is to support the College in its role as the principal centre of excellence for staff development in Land Administration in Hungary in order to apply the acquis, and essential identified elements in Land Administration. The three elements of this are to establish a viable, developing educational programme, to establish a developing system of delivery and to establish working links with EU educational providers and professions in Land Administration.

There are three project objectives to support the long-term aims. First, the creation of a knowledge centre at the College, which will form the base for programmes of education for continuing professional development for Land Administration in Hungary utilizing existing programmes developed under the TEMPUS OLLO Project and the existing Land Administration infrastructure. To these will be added new programmes for higher management and a set of programmes for all levels in Land Administration focusing on matters pertinent to EU entry. Second, a delivery system for continuing professional development based on adapted curriculum structures, management tools and education technology, both CD and web, with a comprehensive credit system. Third, the creation of a network of EU centers and

education providers with the objective of participating fully in EU activities in Land Administration and the EU professional community.

Target groups are civil servants in administrative, technician and managerial level in land and cartographic administration. The project is seen as being a key element in coordinating training between these groups and in the harmonization process within land administration and it will act as medium for furthering EU harmonization.

This TEMPUS Institutional Building project complies with the priorities for Hungary. It has its core element in the development of the administration in the land and cartographic subject area.

The project will develop 3 short courses, and a management course in land administration. The project is essential for the Land Office staff and very important in the state administration, because a number of local governments and administrative offices will connect to the Land Offices through the TAKARNET network in the near future. The programme will form an institutional twinning, which leads to an eventual EU harmonization.

The LIME project aims to produce a new profession (assistant in Land Information Management) based on the existing OLLO, UNIPHORM, SDiLA materials and methodology developed in UNIPHORM, exploitation, further development, improvement of OLLO and UNIPHORM. The target groups are the high school graduates in land offices, local governments, regional development offices, ministries, banks, insurance companies, lawyer assistants, other professionals and service providers.

## **Participation in Working Groups of the European Institutions**

### ***Participation in the EUROSTAT Working Group "Land Use Statistics" (LUCAS)***

By invitation, experts of the Lands and Mapping, Ministry of Agriculture and Rural Development as well as the Institute of Geodesy, Cartography and Remote Sensing take part together with the representatives of the Central Statistical Office in the Land Use/Land Cover Working Group driven by EUROSTAT since 1999. Recently, in the framework of the EUROSTAT and CSO co-operation, the LUCAS project has been launched for the territory of Hungary. Within this project, the European LUCAS area frame sampling network was densified (i.e. number of sampling area four times more than for EU level) aiming at preparing national statistics. The orthophoto processing was based on the images of project "Aerial photography of Hungary 2000" and the GIS part of the work has been carried out by FÖMI in 2002 during a relatively short period of time (three months).

Since 1999, DLM MARD and FÖMI have been invited, active participants of the yearly conferences organised by the Institute of Environment and Sustainability of the DG JRC on the CAP IACS –related Control with Remote Sensing and LPIS.

## **Participation in initiatives, programmes and projects of the European Commission**

### ***Participation in the European Topic Centre on Terrestrial Environment (ETC-TE)***

The European Topic Centre on Terrestrial Environment (ETC-TE) is one of the five Topic Centres designated by the European Environment Agency (EEA) for the period 2001-2003 to assist in its work of collecting, analysing, evaluating and summarising information relevant to national and international policies for environment and sustainable development.

The ETC-TE concentrates on providing relevant information on past trends, current status and prospective developments relating to land and soils in Europe, in order to support legislative frameworks on sustainable land use, soil protection and integrated coastal zone management.

The ETC-TE is an international consortium composed of 10 partners from eight countries of Europe (<http://terrestrial.eionet.eu.int>). The consortium is led by the Universtitat Autònoma de Barcelona. FÖMI is part of the consortium.

FÖMI experts are participating in the following tasks:

- Coordination of the implementation of CLC2000 (the update of CORINE Land Cover database in Europe).
- Contribution to the development of developing agri-environmental indicators.
- Investigation of the use of LUCAS (Land Use / Cover Area frame Survey implemented by EUROSAT in the EU and accession countries) information for CLC2000 land cover update.

### **Participation in the INSPIRE Initiative**

Experts of the Ministry of Defence Mapping Non-profit Company, FÖMI and DLM MARD took part in the Working Groups of the INfrastructure for SPatial InfoRmation in Europe (INSPIRE) Initiative. The affected WGs are as follows: Architecture and Standards, Implementing Structures and Funding as well as Impact Analysis. Invited representative from GSDI to the INSPIRE Expert Group was observing member also for the Lands and Mapping Department of MARD. At the closing expert meeting held under the Italian EU Presidency in July 2003, the Hungarian contributions were welcomed by the INSPIRE coordinators at DG Envi. For INSPIRE visiting expert, HUNAGI has arranged about 25 on-the-site interviews with leading GI market players in Hungary, mostly members of the national GI association. Hungary was alone from the accession countries, which was surveyed together with 8 other EU member states.

### **Participation in the GINIE project**

DLM MARD and FÖMI take part in the EU funded project “Geographical Information Network Infrastructure for Europe” (GINIE) driven by the University of Sheffield, and participated by OGC Europe, JRC and national member associations of EUROGI. The

affected chapters are as follows: GSDI data policy, SDI Workshop, Pre-Accession, Local to Global, e-Registries, GI in the Mediterranean, Dynamic case portfolios and Public-Private Partnership establishment. Some of the publications' executive summaries have been translated into Hungarian and are available on the website of the European project.

## **Membership in Professional Federations, Associations, Societies and Unions**

### **Membership in FIG**

Hungary has been a member of FIG for decades and has always been playing an active role in the organization. The Hungarian National Committee (HNC) is represented in all of the nine commissions. Especially the Commission 2, 3 and 7 is very active. A Hungarian delegation participated in FIG's Working Week and 125th Anniversary in Paris, France, 13-17 April 2003. The Hungarian representatives of Commission 2 and 7 are chairs of Working Groups in their Commissions.

### **Membership in ICA**

Hungary has been a member of the Association since 1964. Its activity is demonstrated by the following events held in Hungary during the past three years:

- The Commission on Education and Training met in Budapest in February 2000, Budapest;
- Within the international conference "Teaching Maps for Children" the ICA Commissions Cartography and Children and Gender in Cartography also met in Budapest's Eötvös Loránd University (ELTE), in September, 2000;
- Hungary was proud to host the ICA Executive Committee, which held – on the premises of ELTE – a meeting on 2-4 May 2003 and discussed preparations for the 12th General Assembly of ICA and the 21st ICC.

Having given a Hungarian vice-president in the 80's (Árpád Papp-Váry) the country successfully applied, in the person of Mr. László Zentai, on the Durban General Assembly (August 2003) for the Chairmanship of the Commission on Education and Training in 2003-2007. Mr. Zentai also presented two of the three Hungarian papers in the conference. Awareness for maps is on the increase even in the younger generation, thanks to Jesús Reyes Nunez, now Co-Chair of Commission Cartography and Children, shown in yet another award for Hungarian schoolchildren's drawing in Durban.

*A recognition of Hungarian cartography was also felt in awarding the Honorary Fellowship to Mr. István Klinghammer, President of ELTE, the third such honour for our countrymen (Radó 1974, Papp-Váry 1995).*

### **Membership in ISPRS**

Hungary has been a member of the International Society for Photogrammetry and Remote Sensing (ISPRS) for more than 70 years. Members of the Hungarian National Committee of ISPRS are working in all of the seven Commissions and Hungary has provided the Presidency

and Secretariat for Commission VII devoted to Resources and Environment Monitoring between 1996-2000, hosting the mid-term International Symposium of ISPRS Commission VII (ECO BP'98) in September 1-4, 1998. At the XIXth ISPRS Congress held in Amsterdam, three sessions have been chaired and two oral presentations were given by experts of the Hungarian NMA. In the Session "The synergy of integrated use of GIS and Remote Sensing" – the case studies entitled "Hungarian Operational Crop Monitoring and Yield Estimation Programme" as well as "Countrywide aerial survey as backbone of the geospatial information infrastructure" have been presented. For the period 2000-2004 Hungary and Germany have been selected to run the operation of the Working Group VII/4 "Human settlements and impact analysis". The detailed workplan under execution includes contributions to high-profile international conferences and events in the topics urban/rural land use change, urban applications, as well as monitoring and reporting of cultural heritages by tools GIS/RS. The successful conference entitled "Space and Time" was approved by ISPRS was held in Sopron, Hungary between 6-8 September 2001. Organized by UWH-GeoInfo, the event was participated by the full staff of ISPRS WG VII/4 and presidents of CIPA, ISPRS Commission VII (Resources and Environmental Monitoring as well as the Director of the UNESCO World Heritage Programme Bureau. The event was also supported by EARSeL and EUROGI. The ISPRS WG VII/4 officers from DLM MARD and FÖMI have prepared the mid-term Symposium in Hyderabad at NRSA, in November 2002 arranging 3 sessions devoted to the subject Human settlements and impact monitoring, remote sensing of land use as well as application of very high resolution systems. Under the auspices of the ISPRS and organized by German Co-chair of the WG VII/4 under Hungarian-German leadership, the 3<sup>rd</sup> Urban Remote Sensing Conference attracted experts from 33 countries to Regensburg in June 2003. The event was attended by President and Secretary General of the ISPRS and EARSeL respectively.

### **Membership in IUGG and IAG**

The Hungarian community in geodesy and geophysics are systematically represented in Study Groups and conferences of IUGG and its associated organisation IAG. The Hungarian National IUGG Report gives a comprehensive overview on the Hungarian activities including the IAG ones.

### **EUREF**

Hungary has joined EUREF in 1991 with the establishment of five EUREF sites. We also participated at the EUREF's EUVN97 campaign with successful GPS observations as well as levelling and gravity measurements of 4 special benchmarks. In 2002 the Hungarian part of the EUREF network has been re-established in order to improve our connection to ETRS89. Nine sites have been measured and processed according to the latest standards. Based on the new coordinate solution the OGPSH network was re-adjusted and a new updated database has been created.

In 1996, the FÖMI Satellite Geodetic Observatory (SGO) – based in Penc, north of Budapest – joined the EUREF Permanent Network (EPN) under the name PENC. Further EPN stations were installed in 2001 (OROS – Orosháza) and in 2002 (NYIR – Nyírbátor). These stations

are routinely forwarding daily and hourly data to the EPN data centers (BKG, Frankfurt and OLG, Graz). Since the end of 2001, the SGO is running an EUREF Analysis Centre, where the data of 17 EUREF permanent sites are processed routinely and the results are submitted to the EUREF Combination Centre. The SGO is also running an EPN Special Project, where the co-ordinated time series of the EPN stations are analyzed in order to derive higher accuracy velocity of the EPN stations. This is a fundamental contribution to the maintenance of the European Reference Frame.

We also initiated and led a EUREF action for the densification of the existing EUVN GPS/levelling network. This action aims the collection and measurement of high accuracy GPS/levelling data according to specified standards and will support the creation of the sub-dm accuracy European height reference surface and also the geoid. We are active member of the EUREF Technical Working Group, the EUREF Permanent Network (EPN) Co-ordination Group and the respective working group of EuroGeographics.

## **Participation in activities of the United Nations Organizations**

### ***Membership in UN standardization of geographical names***

Hungary has been participating in this activity ever since its launching in the late 50s and early 60s (in the first conferences: Sándor Radó and Ervin Földi). Hungarian experts (G. Mikešy and B. Pokoly) participated in the 8th UN Conference in this subject (Berlin, 27 August – 5 September 2002) and provided information on the recent activities of the Hungarian Committee on Geographical Names as well as on the progress achieved in developing the Gazetteer database of Hungary. The efforts of the previous divisional chair for East Central and South-East Europe (Slovenia) of the past five years are very much appreciated and the new chair (Czech Republic) is warmly welcomed.

### ***UNECE Working Party on Land Administration***

Five years ago the Department of Lands and Mapping, MARD Republic of Hungary was one of the founders of MOLA (Meeting of Officials of Land Administration) in Geneva under the auspices of the United Nations Economic Commission for Europe, Committee on Human Settlements. Hungary played strong role in the work of this forum, providing an expert for the Task Force in Cadastre, arranging two Workshops (one related to the elaboration for Guidelines on Land Administrations published for the UN HABITAT II, the others on Land Market issues, the very first conference on this subject in a CEE country), and delivering lectures on different UNECE sponsored symposia, and acting as permanent observer invited to the Executive Board meetings till 1999. Hungary was not represented at the first session of the new organization UNECE Working Party on Land Administration held in Geneva between November 15-16, 1999. Due to the fact, DLM MARD agrees with the actions adopted by the First session of UNECE WPLA, Hungary already takes part in these actions fulfilling the major objectives and strategy plan of WPLA. The DLM MARD participated in the workshop devoted to "Safety mechanism in creation of immovable property markets: protecting rights" held in Madrid late 2000, in the workshop on "EU accession and the Land Administration" hosted by Lantmateriet under the auspices of the Swedish EU presidency in Gävle, June 2001 and the UN/ECE - Committee on Human Settlements WPLA-Workshop: "Spatial Information

Management for Sustainable Real Estate Market - Best Practice, Guidelines on nation-wide Land Administration” in Athens, Greece, May 29, 2003

Back to 1997, based 6 months preparatory work Hungary has initiated to UNECE to perform a comprehensive survey in its 55 member countries on the existing legislation on land administration with special emphasis on the restrictions related to access of agricultural land property ownership. Based on the prepared detailed questionnaire - a joint work of Hungary and United Kingdom - the delegation of the Russian Federation has continued the work on the survey study, which was completed in late 2001. DLM MARD took part in the 2001 General Assembly of UNECE WPLA on DLM MARD Director General level. and contributed to the thematic workshops held in Athens and next in Edinburgh.

## **UN FAO**

In 2002, Hungary was represented by the Director General of DLM MARD at the FAO Conference hosted by the University of Munich (Prof. Holger Magel) devoted to the Land Fragmentation in the Central and Eastern European countries. In co-operation with the sub-regional centre located in Budapest (FAO SEUR) a proposal has been elaborated and submitted to launch a FAO Technical Co-operation Project in the topic of land consolidation and tenure policy in areas endangered by natural disasters such as flood, logwaters and erosion. The fact-finding mission was just completed and the potential areas of the assessments have been selected. FAO HQ invited representative of DLM MARD to take part in the Working Group Land Consolidation Guideline in May 2002. The FAO Technical Assistance Programme proposal prepared by MARD in 2002 was enhanced by FAO and invited sectorial representatives to serve better the already ongoing or just to be launched projects in the Tisza River Catchment area. The TCP project proposal's topic is related to "Land management in naturally endangered areas". An intersectorial expert group has been formed where FAO played a catalysator role. The host institution remains the MARD Department of Lands and Mapping.

## **Participation in Other International Activities**

### ***The World Bank***

DLM MARD took part in the Europe and Central Asia Initiative on the Development and Maintenance of Property Right Supported by World Bank, FAO and the Austrian Government, the „Europe and Central Asia Initiative” has been formed in a series of high-level meetings in Vienna and Budapest. The ECAI would serve as an information gathering and dissemination group. Additional to representatives of the above mentioned ones and the former Chairman of UNECE MOLA, DLG, GTZ of Germany, recently Hungary, Romania and the Russian Federation have also been invited to be member of ECAI's Provisional Steering Committee. Supported by the Head of the Department of Lands and Mapping, MARD Hungary is represented in this steering and strategy group co-chaired by the land tenure and rural development specialist of FAO SEUR Mr. F. Rembold and the advisor of the Vice President of the World Bank Mr. F. Kaps.

Supported by the Department of EU Integration of MARD, a project proposal of DLM MARD has been prepared in FAO-World Bank co-operation and was approved by the World Bank in

April 2002. The aim of the proposal is to set up a competence and knowledge centre at MARD providing assistance and support for some of the EU candidate countries and some of the Balkan countries in land and property right related issues. It is anticipated the activities using Hungarian expertise and capacities with special emphasis on EU-accession related know-how would be supported later on also by international donor organisations.

### **CELK Center**

The Central European Land Knowledge Center (CELKCenter) was set up in the beginning of 2003 in Budapest, Hungary, on the basis of International Letter of Agreement between the World Bank (WB) and the Government of the Republic of Hungary (Official Gazette of Hungary, no 2002/119, pages 6424-6429), within the Property Rights and Land Market Development Project for EU Candidate and Balkan Countries by the financial assistance of the World Bank (IDF Grant No. TF050701) and the Ministry of Agriculture and Rural Development (MARD), Republic of Hungary.

#### *The Center Mission*

To serve Central, Eastern and South-eastern European countries as a knowledge management and advisory center to secure land tenure regime, support land market development and improve land management.

#### *Rationale*

The rationale for establishing the Center should be seen in conjunction with real property rights and land market development matters addressed by the accession countries, the candidate countries and the EU integration countries. All these countries agree that the issue of adequate property rights legislation and monitoring is one of the key challenges in the transition process. The Center is seen by many international and bilateral institutions as an important vehicle to provide and exchange knowledge on this important topic. This was the common view of the 99 experts coming together from 19 and 16 international, Pan-European and national organisations, governmental agencies, NGOs, as well as the private sector and academia.

### **Participation in the GSDI**

Hungary is involved in the evolution of the Global Spatial Data Infrastructure Initiative since September 1996. Via the Hungarian Association for Geo-Information (HUNAGI), Hungary has a seat in the Steering Committee of the Initiative. The chairmanship of Santiago Borrero Mutis from Colombia and the Secretariat provided so far by FGDC (USA) returned to Europe to Prof. Ian Masser and EUROGI respectively. Budapest hosted the 6th International Conference, and the organisation provided two seats in its Steering Committee for this region co-opting one Czech and a Hungarian member. At the Steering Committee meeting held in Cambridge UK, EUROGI was represented by its President and the Hungarian member of its Executive Committee. EUROGI's offer to highlight the cadastral GIS solutions in Europe at

the GSDI7 Conference was welcomed. The presentation is based on the survey made by EUROGI in 2002-2003.

### **Participation in the CEN TC 287 and ISO TC 211 activities**

According to the recommendations of the CERCO Advisory Board meeting held in Bad Godesberg, in 1994 the Hungarian Office of Standards established the Technical Committee MSzT/MB 818 devoted to digital mapping and GIS standardisation (a Hungarian mirror committee of the CEN/TC 287). As part of the activities in frame of the National GIS Project - as advised by CERCO - the professional surveying and mapping branch via FÖMI staff members are authorised to delegate to the meetings of the relevant European Technical Commission. The chairmanship of MSzT/MB 818 is provided by FÖMI of the Hungarian NMA. Three standards (MSZ 7772-1:1997, MSZ 7771:1997) and one pre-standard (MSZ 7772-2:2002) are the results of MSzT/MB 818 activity so far.

### **Bilateral agreements**

#### **Bilateral agreements of MS-HDF**

MS HDF endeavours to establish an extensive relationship not only with the neighbouring countries but also with other P4P nations. As a result, MS HDF has already concluded bilateral agreements with 14 countries so far. We continue to make massive efforts to strengthen and widen our international relationship. We opine that national mapping can only cope with the challenges of the rapidly developing cyber world if it is able to make use of international experience as well as scientific accomplishments.

#### ***Dutch-Hungarian bilateral agreement at the Ministry of Agriculture and Rural Development (MARD)***

The Hungarian Ministry of Agriculture and Rural Development (MARD) and the Dutch Ministry of Agriculture, Nature management and Fisheries, represented by the Government Service for Rural Areas (DLG) have expressed the mutual wish of implementing the TALC-project in 2003 and 2004. Implementing the project called Technical Assistance in Land Consolidation (TALC) has three phases: Inception phase, which has started on 2003 January 1st and was finalized on March 31st. Implementation phase and Completion Phase. The objectives and results of TALC will be: formulate building stones for the Hungarian land consolidation strategy, scenarios for the institutional framework, trainings and a draft communication strategy between organizations and towards farmers. (Source: Report of the Hungarian Land Administration and Mapping Agencies, UNECE Working Party and Land Administration, Third Session, 17-18 November, 2003, Geneva).