Department of Lands and Mapping **Draft 1.2**

MODERNISATION OF LAND MANAGEMENT

STRATEGY

OF THE

MINISTRY OF AGRICULTURE

English Version
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1. Purpose of this Strategy Document

This document is a statement of the Ministry of Agriculture's Medium-Term Strategy for the development of Land Management (land registration, land valuation, land use and land protection). It summarises the considerable achievements of the sector since 1989, the current status of the sector within the Hungarian economy and the plans for continued modernisation that are being supported by the Government and by international funding agencies.

The document lists various initiatives and programmes and explains how they fit into a common strategic framework.

The document presents a Hungarian vision of the future of this sector and has the full support of the Ministry of Agriculture and of the current Government. Itis in line with the modernisation programme for the state administration initiated by the Government. This document is the basis for the medium-term (3-5 year) development plans and is also background information for discussions with other Ministries and with external agencies.

2. Background

2.1 History

The ownership and use of land in Hungary has been systematically recorded and controlled for 130 years. Despite several changes in economic philosophy, agricultural practice and political control, these records have been continuously maintained and have been available to help with the redistribution of land and real property that has taken place since 1989. In particular, the 'Gold Crown' valuation of agricultural land, inherited from the Austro-Hungarian period, has been invaluable in determining fair compensation and redistribution rights.

About half of the 55,000 cadastral maps in the Land Offices have been created since the 1970s in the unified mapping system to a modern specification. The other half originate from surveying campaigns in 1856-94 and 1909-38, though they have been renewed and/or maintained in most cases. However these old maps cannot provide information in the form required by a modern economy because they are of low precision, their content is only partially up-to-date, they are on non-standard media, are often in bad physical condition and are of an obsolete specification. In some areas even the newer maps have been overtaken by events and are now at the wrong scale or on the wrong media.

Land privatisation affects more than half of the territory of Hungary (5.6 out of 9.3 million hectares). The new parcels created during land privatisation are scattered all over the country and this makes it impossible to keep the old cadastral maps up-to-date. Consequently, an overall map renewal programme is necessary, which will take place within the framework of the National Cadastre Programme.

2.2 Economic Transition

During the recent economic transition, a major priority of successive governments has been to redistribute land from state ownership and from co-operatives to individuals. This process has been managed for agricultural areas by the National Land Compen-sation Offices and the Land Assignment Committees acting under the supervision of the County Agricultural Offices of the Ministry of Agriculture. These temporary organisations have placed great demands on the Land Offices which have had to provide information on the past and present ownership status, carry out definitive surveys, subdivide large plots into many small ones and register more than 2.3 million new parcels. In addition, there has been large scale privatisation (over 750,000) of flats from government and local authority ownership that have had to be registered. These transitional changes have taken place alongside the the normal tasks of maintaining and updating the register of the 6.6 million existing land parcels that are shown on the state base maps.

It should also be noted that the sales of state-owned enterprises, and the general increase in activity in the property market have also led to heavy demands on Land Office resources.

As a consequence of these changes and the emerging land and property market, the number of the **applications** submitted to land offices has increased by 50%, and the demand for services (queries, copies etc.) by 60%. There has been, however, no increase in the staff available. (For more details, see **Annex A.)**

The conclusion is that in the future, the land offices can only cope with the increased number of their tasks after the successful realisation of a modernisation programme. This document presents the Ministry's strategy for answering this challenge.

It is worth emphasising that it is a great advantage for this modernisation process that all major tasks of land management are concentrated within one institution - the Land Offices - so that a comprehensive and integrated land information system can be created on a common base. This situation is now being emulated in many European countries.

2.3 Land Market

Under the previous political system there was no effective land & real property market in Hungary. Only 7% of all properties were in private hands, and land market transactions were only concerned with this very small proportion of the country.

Now that the transition process has provided millions of individuals with tradeable interests in land and real property, the role of the Land Offices is changing. They need to become very efficient managers of many different types of transactions on which a market economy depends.

The compensation process is now nearing completion. Therefore, as a first step: staff are being redirected from the Compensation Offices to the Land Offices (in line with the Government resolution No. 2077/1995) to assist with the formal registration process and to help with this increased flow of property transactions. As a second step (in line with the

Government decree No. 1027/1995), the Compensation Offices will be incorporated into the Land Offices.

One undesirable feature of the compensation process has been the creation of many very small parcels which are not suitable for economic cultivation. However, although organised Land Consolidation is therefore being trialled in pilot areas, there is alrady considerable co-operation between owners and farmers that is enabling more economic cultivation than if the farmers worked separately on their new small-size parcels. There is no immediate political imperative to speed up the consolidation process, before closing down the land privatisation procedure.

2.4 Unified Registry and Cadastre

Since 1972 the Ministry of Agriculture has been responsible, in its Land Offices, for both the land and property registration (detailed description of land parcels, ownership and other rights on the property sheets) and the updating of large scale Cadastral Maps to which they are referenced. Those maps show the authentic geographical situation of the properties. This unified Land Registry and Cadastre enables the Department of Lands and Mapping, which is responsible to the Ministry for the County and District Land Offices, potentially to offer a very efficient service to all users of land and property information. This potential is further enhanced by the Department's other responsibilities for land classification (valuation), land use monitoring and land protection.

2.5 Land Management

"Land Management" is the collective term used for the responsibilities of Department of Lands and Mapping (DLM) as well as the Land Offices and the Institute of Geodesy, Cartography and Remote Sensing (FÖMI) Together they havea total staff of over 4300 and an annual budget of some 8 billion HUF (40 million ECU).

DLM itself, in the Ministry, is very small (only 23 staff) and is not therefore in a position to carry out the normal management tasks that would be associated with such a headquarters establishment in Western economies. One of the results is that in this respect, considerable power and responsibility is effectively devolved to the County/ Capital Land Offices while the technical instructions and regulations are made by FÖMI. This can lead to situations where resources, responsibility and authority are not coincident. In other words, some managers may be given responsibilities without resources or authority, others may have these factors reversed.

2.6 Insfrastructure Investments

Over the past five years the DLM, with the aid of the EU Phare Programme and, to a lesser extent, the Swiss and German Governments, has made a considerable investment in the modernisation of the infrastructure for Land Management.

As a result of this investment and of the counterpart funding from the Government budget, all of the Property Sheets (The Land Register) of the country should be loaded onto PC based computer systems in the Land Offices by the end of 1997. Thiswill speed up the management and updating processes as well as potentially making them available for remote, on-line access by clients, lawyers, notaries and other interested parties. For current situation of **data loading status**, see **Annex B**.

In 1997 work will commence on the National Cadastre Project - in line with the Government Decree No. 2167/1995 - which, as a first step, will produce digital cadastral maps for an area of 1.3 million hectares. This programme is being separately funded by the Government Commissioner's Office for National Cadastre Programme, from a loan guaranteed by the German Federal Government.

The production of this huge amount of digital mapping data - together with mapping data coming from compensation and land privatisation - will enable the Land Offices to integrate the maintenance and updating of the property sheet datasets created as a result of investments mentioned earlier, within the Land Office IT-systems (Phare funded TAKAROS). Furthermore, it will provide other sectors of the national economy with a single comprehensive source of land information.

3. Strategic Objectives

3.1 Increasing Security of Ownership

At present there are very long delays in the processing of Applications submitted to the Capital District Land Offices and in general at the County Land Offices. In addition there are many new parcels which have not yet reached the Land Offices but which are already being processed through the Land Compensation Offices or Land Assignment Committees. (For statistics on **privatisation of land see Annexes "C" and "D".)**

The DLM regards the former situation as unacceptable and is taking different steps to reach the mentioned goals:

- acceleration of application registration and loading of new registration entries, by improving IT infrastructure and developing human resources,
- strengthening the Land Offices, in line with complete realisation of the Government Decree No. 2077/1995,
- lobbying for the passing of a law by Parliament as soon as possible, to close down the compensation procedure,
- acceleration of the acitvity in Land Assignment Committees, using increased technical support from the Land Offices,
- passing the new law on land and property registration.

The target date for completion of these goals is the end of 1997.

3.2 Modernisation of Land Office Operation

The DLM is only part way through a programme of modernisation, particularly computerisation, but which alsoaddresses the legal basis, institutional reorganisation and operating procedures. In the framework of this comprehensive institutional modernisation, the following actions will be taken (proposed deadlines in brackets):

- Installation of TAKAROS IT-infrastructure for the County/Capital and District Land Offices, supported by the Phare Land Registration Project (1997)
- Completing a telecommuncation network (WAN) for countrywide data access/supply, by connecting the Land Offices with each other and with external users (1997)
- Completing the development of security systems for the Land Offices
- Establishment of data communications with the National Registry of Personal Data and Addresses, for updating and control of registration data (1996)
- Data loading of the land registration and cadastral map databases at the Land Offices by digitising the property sheet and cadastral map data and by processing existing digital data from land privatisation programmes. The land and property registration (Property Sheet) data base will be complete by the end of 1997. Loading of mapping database will happen in two steps: land privatisation data loading will be finished by 1998, the data coming from the National Cadastre Programme will be loaded (for the whole of Hungary) by 2010.
- Development of a Management Information System for monitoring, analysing, controlling and directing all of the activities of the land offices. (1997)
- Modification of management and processing procedures compatible with computer processing and development of relevant new standards (1997)
- Preparation of the Land Office IT system (TAKAROS) to be able to provide services/information about property, including a modernised land valuation system for, among other things, any new property taxation scheme. (1997-98).
- Investigation of demands and opportunities for new market oriented services, and estimation of the expected income from such services. (1996)
- Preparation of a business plan and budget for a partially self-financed land office network, based on the previously calculated income from services.(1997)
- Support for establishing a land mortgage institution. (1997)
- Development of a central and county-level land use monitoring system that enables MoA to harmonise the agrarian aid system with the EU Structural Funds (1998-1999)
- Completion and modernisation of the topographic (1:10 000) map series in the interest of the agrarian regional development programmes and general rural development. (1998-2000)
- Review the legal basis of land management to reflect the requirements of the free market economy and modern technology in use for technical and administration procedures. This will require that the law on land surveying and mapping be passed (1996), a new law on land registration be prepared (1997), the concept of a law on land consolidation will be proposed (1996) and the relevant legislation will be completed (1998).
- Introduction of an up-to-date land consolidation procedure aimed at improving land property structure and increasing the competitiveness of agriculture.

3.3 Development of Human Resources

The modernisation tasks listed above are dependent on further development of human resources. High priority should be given to this problem, as the land management sector has more than 4300 employees. The training for the employees parallel with the daily activity can only partly be organised within the Land Offices themselves, so other forms of education should be applied. The following measures are in effect or planned:

- GIS training for land surveyors (1996)
- training for land office employees in using TAKAROS system, organised in various steps (1996 and 1997)
- continuous training for county EDP managers
- preparation and start of a remote learning programme (OLLO - Open Learning for Land Offices) giving an academic level certificate - within institutional framework - for land surveyors. The programme is supported by the EU Tempus Aid (1996)
- preparation and start of training that gives an academic level certificate (“ land registration secretary”) - within institutional framework - for land registration employees. The programme is supported by the National Cadastre Programme (1996)
- Management Traning for District and County Land Office heads (1996-1997)
- “Managing land consolidation procedures on an improved level” - Training for Land Office employees(1998)
- Training for land office employees on managing state acceptance and verification procedures for digital cadastral maps. Supported by the National Cadastre Programme (1997).

3.4 Strengthening and Reorganisation of Management

DLM will be strengthened and re-organised with the integration of Compensation Offices in a way that allows

- independent financial arangements and monitoring, and
- commercial trading in a wide selection of land information (data on property, mapping, land valuation, land use etc.) maintained by the Land Offices.

The trade in data will become more and more service-oriented but will still have the 'stamp' of official authority.. Data is in demand from different types of customers, resulting from the political and economical changes, such as public notaries, lawyers, courts, financial/credit taxation institutions, property valuers and property salesmen, local governments, public utilities, planning and land surveying enterprises.

From this long but by no means exhaustive list of interested parties it can be seen that the incremental creation of a National Land Information Service is both necessary and desirable. However it will require very close co-operation between many public and private sector organisations. The DLM is committed to this co-operation and understands that compromises will have to be made if common benefits are to be achieved. Of course, DLM intends to consult the other organisations before making changes to laws and regulations which may affect them.

The Government Commissioner directing the National Cadastre Programme is also responsible for preparing reorganisation proposals for the land management institutions.

To achieve the goals mentioned previously, the following measures will be taken:

- Preparation of proposals for the modification of the legal background aiming the reorganisation of the institutional system (1996),
- Modification of legal background, organisation of establishing the new institution (1997)
- Creation of an independent Office of Land Affairs (1998)
- Convening of a Steering Committee with responsibility for submitting a proposal for the conversion of the Office of Land Affairs into a Service/Agency. The Committee will include representatives of the interested Ministries and institutions. (1999)
- Organising the National Land Information Service. (2000)

3.5 Benefits of Modernisation

Some expected benefits are as follows:

- improved security of ownership, and publicly acknowledged official authenticity of property interests will be maintained even though volume of Application throughput has increased by over fifty per cent.
- an open and nationally accessible registry will be available for the users of land management data,
- processing time for Applications will be significantly reduced,
- new and improved products and services will be provided,
- improving efficiency and cost recovery will enable Land Offices to become increasingly self-financing.
- priority will be given to data quality and data security,
- better support will be provided to the land and property market,
- land management will become more service-oriented and "agency status" will become a reality.
- Land information for EU harmonisation will be provided as required.,
- the integration of all land and property data in the new service-oriented institution will supporting a more holistic approach to sustainable land management.

4. Implementation Phases

Within the framework of this strategy, a number of activities must be pursued. These will deliver incremental benefits over the lifecycle of the modernisation programme. Details of the

status, funding and timing of these phases are shown in **Annexes E & F**. The major activities taken from the strategy statement include:

4.1 ***Completing District Land Office IT Infrastructure*** *(TAKAROS, Phase 1.) with the aim improving case-settlementand the updating of the register , for both legal and mapping data.*

4.2 ***Completing Capital District Land Offices IT Infrastructure*** *with the same aim as in the first paragraph above.*

4.3 ***Completing County Land Office IT Infrastructure*** *(TAKAROS, Phase 2.) tofacilitate improved procedures for land valuation, land use monitoring and land consolidation tasks, verification and acceptance of cadastral maps and, in the future, the supply of land information for major users.*

4.4 ***Completing WAN (Wide Area Network) Infrastucture*** *with the aim ofproviding direct access to decentralised land registration data bases from all land offices and public notaries, and also enabling other users (local governments, courts, attorneys at law, financial institutions) to connect to the land office system.*

4.5 ***Conversion and loading of the Property Sheets*** *into new computer systems at DLOs (partially supported by the National Cadastre Project) to provide the basis for all of the computerised registry work of the Land Offices.*

4.6 ***Conversion and loading of Cadastral Maps*** *into the new computer system (TAKAROS) at DLOs (supported by the National Cadastre Project) to create mapping databases for the operation of the computerised registry.*

4.7 ***Creation of National Standards*** *to support dissemination and interchange of land & property information by all the users and suppliers of digital land information.*

*4.8 **Provision of MIS (Management Information System**) with the aim of supporting the technical and administrative management of the Land Offices by continuous monitoring, analysis and evaluation of management information.*

*4.9 **Formulation of a Marketing Strategy** for land management data products and services based on a realistic assessment of the supply of and demand for these products. The associated marketing plan will estimate potential income with a view to increasing cost recovery.*

*4.10 **Provision of Information Services and Data Products** at the CLOs to generate increased revenue for the sector.*

*4.11 **On-line Land Information Services** for major users (local governments, public utility companies, real estate agencies) from the Land Offices enabled by the Wide Area Network.*

*4.12 **Value Added Information Services** with extra information or processing of the basic Land Office databases.*

*4.13 **Support of land consolidation** activities to create more economical agricultural units by using computer-assisted procedures in CLOs.*

*4.14 **Creation of a strategy for modern land and property valuation** procedures appropriate to the Land Office organisation to support the land and property market.*

*4.15 **Completion of conventional 1:10 000topographic map series**,(currently 15% outstanding) and production of a digital version that can run on TAKAROS system.*

*4.16 **Management training** for senior Land Office leaders to develop their skills and enable them to cope with the requirements of modernisation.*

*4.17 **Academic education** for Land Office employees providing an opportunity for them to participate in training courses and to keep pace with the ongoing technical and IT developments.*

*4.18 **Preparation of short and medium term Business Plan** for the operation of Land Management to ensure that technical and IT-developments are properly planned and utilised.*

4.19 Support of the Land Mortgage Institution to encourage investment in the Agricultural sector.

*4.20 **Provision of agricultural statistics** to support EU Harmonisation process which will require a feasibility study and a pilot project to create a statistical system that is able to supply relevant information for EU land use monitoring programmes with special attention to environmental protection and yield forecasts.*

*4.21 **Evolution of a National Land Information Service** (NLIS) integrating public and private sector land and property information to support a sustainable land management policy that will be independent and largely self financing.*

*4.22 **Continuous consultancy** for justifying and implementing modernisation as well as post implementation studies for analysis and evaluation.*

Relevant data and information are shown in **Annex G.**

5. Summary of Significant Modernisation Programme Milestones

The following milestones represent the delivery of significant benefits to the Land Registration Sector in Hungary:

1996 The law on land surveying and mapping activity passed, providing an up-to-date basis for performing digital cadastral land surveying.

1996 Sep Implementation of first phase of the National Cadastre Programme started that will renew the outdated cadastral base maps.

1996 Oct Standards and regulations to be published on production, maintenance and exchange of digital cadastral map data.

1997 New law will be passed on land and property registration.

1997 Jun All Property Sheets Computerised (about 11 million pages) in 115 District Land Offices in the country.

1997 Dec All property sheet data (2 million pages) and all cadastral maps (1700 sheets) computerised at the Capital Districts Land Office in Budapest.

1997 Jun Provision of on-line information service in all District Land Offices on property sheet data.

1997 Dec Direct, on-line access to property sheet information for priority clients e.g. public notaries.

1998 Jan Digital Cadastral & Base Mapping available and on-line electronic information service provided for the major towns in Hungary providing support for Local Government and Utility activities.

1998 Apr Completion of the TAKAROS Project, resulting in provision of new, revenue generating information services and data products at the CLOs. These will include 'value-added' services and products derived from the previous investment.

2000 Completion of the modernisation programme, the results of which are:

- Embryonic NLIS to support the Government's sustainable land management policy.
- Digital Cadastral & Base Maps available for all priority areas in Hungary.

2010 Completion of the National Cadastre Project with full national coverage of digital mapping. This will provide for completely computerised Land Management with the potential for full cost recovery.

6. Conclusions

6.1 The Future

This Document describes the vision of future of the Land Management Sector and associated implementation strategy. It has included Modernisation of the monitoring and directing roles of the Department of Lands and Mapping and the implementation role of the Land Offices, with special attention to the Department's responsibility for the Land Register and Cadastre.

6.2 Implementation

The implementation of this strategy is fundamental for the continued transition to a market economy; for security of land tenure, for the economic viability of agriculture, and for underpinning the Government's sustainable land management policy. Although some elements of the programme will not achieve national coverage until 2010, the programme has been designed to deliver major benefits from 1997 onwards. It can be seen that a major investment is being made by the Government and by other agencies; this must be reinforced by strong management taking a realistic view of recurrent expenditure needed to keep the DLM's information up to date and a realistic pricing policy for products and services depending upon overall Government policy.

A N N E X E S

Annex A **Status of Property Sheets, Large Scale Maps and Applications Submitted to Land Offices**

Annex B **Data Loading Status at Land Offices**

Annex C **Status of Land Compensation**

Annex D **Status of Land Redistribution**

Annex E **Status of Modernisation Projects**

Annex F **Implementation Phase Timing (GANTT Chart)**

Annex G **Role of Technical Assistance and Expert Studies**

Annex A

Property Sheets, Large Scale Base Maps and Associated Transactions in the Land Offices

The attached statistics show the current state of the Land Register in Hungary together with the large scale base maps. They also include details of the annual number of transactions (Applications, Appeals, Requests for copies etc.) that make up a large part of the Land Office workload.

Annex B

Data Loading to Land Office Computer Systems

The following Land Office computer systems are in use (or planned) for Applications to Land Offices, Property Sheets (Nos. 1,2,3) held by the Land Offices and Large Scale Base Maps also held by the Land Offices.

1. IKTATO -- PC based software for handling Applications. Runs in all District Land Offices outside the Capital. Software written in house (by FÖMI) but runs on Phare funded PC LANs. All Applications are now logged and processed by this software. Data loading status is therefore 100% outside the Capital.

2. CDPRS -- PC based software for storing and processing all of the Property Sheets that comprise the Land Register. Runs in all District Lands Offices (including the Capital). Written in house by FÖMI but runs on Phare funded PC LANs. 100% of Property Sheet No 1 have been loaded in the past. These have been updated outside the Capital but the software is not currently in use in the Capital.

Over 80% of Property Sheets Nos. 2 & 3 are also now loaded outside of the Capital with some counties having reached 100%. Full details of the data loading status at the end of July 1996 are attached to this Annex.

3. TAKAROS -- New software being commercially developed to replace IKTATO, CDPRS and to integrate digital mapping when it becomes available. Will be used in the 115 District Land Offices outside the Capital. New computer systems and upgrades have now been delivered to all the DLOs. Software should be available to commence data loading by the end of 1996 and data will then be transferred from IKTATO and from CDPRS by the end of 1997 together with all remaining Property Sheet data. Digital maps will be loaded from the National Cadastre Programme as they begin to become available during 1997.

4. Budapest Property Sheet Database System. This is being commercially developed with Phare funding to handle all Applications and Property Sheets for the Capital District Land Offices. It will be able to load data from the existing CDPRS files which exist (although outdated) for Budapest. It is intended that data loading should take place and be completed during 1997 using help from the National Cadastre Programme.

5. Budapest Digital Mapping System. This is being commercially developed with Swiss funding and will commence operation in two pilot Districts of Budapest (which already have digital mapping) during 1996. Producing digital maps for the rest of Budapest will be the first priority of the National Cadastre Programme in 1997.

6. ÉRTOSZT. This is the software used by the Land Compensation Office for subdividing the compensation areas. All parcels that are to be registered by the Land Offices from the Compensation procedure are therefore already in this digital form and should be capable of being loaded direct into TAKAROS.

Annex C

Land Compensation Statistics

(The Land Compensation Programme transfers land by auctions to those with legitimate claims to compensation)

Land allocated for Compensation : 2,680,711 Ha (232,668 areas - average 11.52 Ha)

Only 75,000 Ha (less than three per cent) has not yet been prepared by the Land Offices, mainly in Heves (87%) Pest (85%) and Veszprem (88%). Note that very little compensation land was allocated in the Capital (just under 3000 Ha)

Land Auctioned by the Land Compensation Offices : 2,168,503 Ha (83% of the area allocated)

Number of new parcels created by the Auctions : 650,000 (average area of 3.34 Ha)

> *Note that the 'workload' on the Land Offices will be the number of compensation areas **PLUS** the number of new parcels created (650,000 + 232,668 = **882,668**) because the preparation of the 'deleted' parcels is at least as onerous as the subdivision into the new parcels. Also note that the total number of registered parcels will only increase by the number of new parcels **MINUS** the number of compensation areas (650,000 - 232,668 = **417,332**)*

After this theoretical subdivision of the land it must be 'set out' in the field by the Land Offices.

Number of new parcels of land 'set out' by the Land Offices : 513,679 (approx 79% of those created)

The final stage of the process is formal registration and creation of the Property Sheets from the documents provided by the Land Compensation offices.

New parcels formally registered : 286217 (56% of those set out, 44% of those created)

County statistics are provided in the accompanying tables. A break down by Gold Crown values is also available but has not been included because the percentages are very similar for numbers of parcels, areas or GC values.

Annex D

Land Redistribution Statistics

(Land from State Farms and Co-operatives being subdivided for those entitled to shares)

Total Area of Land Fund for Redistribution 2,954,112 Ha with 1,851,606 claims from entitled persons.

Number of deeds submitted : 727,783 (for 379,746 parcels covering 37% of the area available).

Number of valid applications for registration : 559,756 (77% of those submitted)

Number of these deeds registered : 422,143 (77% of validated deeds but only 23 % of likely total number of claims)

County statistics are provided in the accompanying tables. A break down by Gold Crown values is also available but the percentages are very similar for numbers of parcels, areas and GC values.

Annex E - Status of Modernisation Projects

Activity	Status	Gov. Hungary Funding Budget Thousand HUFs		Other funding	Phare or Other Funds ECU (or other)	Timing	References to Studies listed in Annex G
1. District LO IT Infrastructure (inc. TAKAROS)	In Progress	FM92/94 FM95/97	297,500 452,000	P90 P91/93	2,960,000 4,340,000	1995 to 1997	1,2,3,11
1. Capital DLO IT Infrastructure	In Progress	FM95/97	154,000	P93 Swiss P95	500,000 (1,200,000sfr) 80,000	1995 to 1997	5,9,10,22
1. County LO IT Infrastructure	Planned	FM97/98	250,000	P95	3,100,000	1997-1998	7,15,16,18, 19
1. WAN (Wide Area Network) Infrastructure	Planned	FM97	63,500	P93	731,000	1996 -1998	18,19
1. Property Sheet Loading	In progress	FM95 FM96	50,000 556,000			1993 to 1997	6,8,29
1. Cadastral Map Conversion /Loading **	Planned	FM97-2000		P95	200,000	1997 to 2010	4,14,21,29
1. National Standards	Complete	OMFB FM96	50,000 16,000	P93	LTTA Con.	1993 to 1996	12,23,24,26
1. MIS Provision	In progress	FM97	5,000	P93/95	100,000	1997 >>	13
1. Marketing Strategy	In progress			P93	80,000	1996	7,15
1. New products/services for generating revenue	Anticipated					1998 >>	7,15
1. On-line Information Services	Planned			(P93)	(part of WAN)	1997 >>	7,15,19
1. Value Added Information Services	Anticipated					1997 >>	7,15
1. Land Consolidation Support	Anticipated	FM95/96	26,000	TAMA	(900,000DM)	1998 >>	14,20,25
1. Valuation Strategy	Planned	FM97	5,000	(P93)	80,000	1997	16
1. Topographic base map production	Planned	FM98-2000	120,000	P97	3,000,000		15,29

1. Management training for LO heads	Planned	FM95 FM97	5,000 10,000	P97	150,000	1997 to 1998	27,28
1. Academic level training for LO employees	In Progress	FM96	2,000	TEMPUS	300,000	1996 >>	27,28
1. Business Plan for running LO organisation	Planned	FM97	5,000			1997	27,15,29
1. Mortgage Institution support	Anticipated	FM97	5,000			1998 >>	27,15
1. EU Harmonisation support (agric. stat.)	Anticipated	FM98/99	250,000	P97	2,800,000	1996 >>	27
1. NLIS Evolution	Planned	FM98-2000	50,000	P97	200,000	1997 >>	15,17,18,27 29

P91, P93, P95 - Approved EU Phare funding programmes P97 Potential EU Phare funding

Swiss - Swiss Government funding TEMPUS - EU Phare funding for educational projects

TAMA German Government Funding for land consolidation pilots

** The National Cadastre Plan may also make use of commercial loans backed by the German Government

In addition to the Phare funding above another 2.276MECU has been provided for Long Term Technical Assistance and 170,000ECU for Short Term Consultancy up to Nov 96 (see Annex G)

Annex G - List of Reports related to the Strategy

Ref	Title of Report	Author(s)
1.	Automatization of Land Offices - Project Description	MoA Phare AICU & FOMI
2.	Computerisation of Land Offices Project - Conceptual Design	FISIA (Phare Long Term TA)
3.	Services of Technical Assistance for the Computerisation of Land Offices Project - COLOP LIS Project ITT & Tender Dossier	FISIA (Phare Long Term TA)
4.	Large Scale Cadastral Survey and Mapping Strategy for Hungary	AGRAR/SATEC (Phare Short Term)
5.	Information Technology Strategy Study Budapest Land Offices	Know Edge (Phare Short Term)
6.	Budapest Data Entry Project	Know Edge (Phare Short Term)
7.	Role of the County Land Offices	AGRAR (Phare Short Term)
8.	Processing the backlog of Application Registrations in the Budapest District Land Offices	Know Edge (Phare Short Term)
9.	Budapest Land Offices - ITT for Land Register System	Know Edge (Phare Long Term TA)
10.	Budapest Land Offices - Cabling Requirements	Know Edge (Phare Short Term)
11.	District Land Offices of Hungary ITT for TAKAROS DLO	Know Edge (Phare Long Term TA)
12.	Hungarian Spatial Data Transfer Standard HUSSAR	Know Edge (Phare Long Term TA)
13.	Management Information System (MIS) Project	Know Edge (Phare Long Term TA)
14.	Present Status of Management of the Land Compensation Data stored in Digital Form	SATEC (Phare Short Term)
15.	Data Products and Services Marketing Study - ITT	Know Edge (Phare Long Term TA)

16.	Land and Property Valuation Study - ITT	Know Edge (Phare Long Term TA)
17.	UN ECE Guidelines for Land Administration Systems - Appendix A - the Hungarian Experience	Know Edge (Phare Long Term TA)
18.	Strategy for IT - Development of the Land Offices	MoA DLM & the Co-ordination Office for Informatics of the Prime-Minister's Office
19.	Supply of a Wide Area Network for the Land Offices of Hungary-ITT	Know Edge (Phare Long Term)
20.	Land Consolidation and its possibilities from point of view of GIS	OMFB
21.	Quality Control for Basic Map's Content of Budapest	OMFB
22.	LIS Budapest - ITT	ITV AG (Swiss Cadastre Project Long Term Consultancy)
23.	Hungarian Standard Proposal Msz 7772-1T - Digital Maps	FÖMI
24.	Hungarian Standard Proposal Msz 7771 T - Hungarian GIS Data Exchange format	FÖMI
25.	Flurbereinigung in Ungarn (Report on the TAMA Land Consolidation Project)	bfb (German Long Term Consultancy)
26.	GIS Data Transfer Standards	Know Edge (Phare Long Term TA)
27.	Strategic Review Study of the Hungarian Land Registration	Prof Bogaerts (Phare Interim Report)
28.	Management for Land Office Managers - Draft syllabus	EFE FFFK (College of Land Management)
29.	National Cadastre Programme Interim Report	DLM, MoA

Annex G

Role of Technical Assistance and Expert Studies

Part of the Phare Programme for the Computerisation of the Land Offices has been the provision of a Long Term Technical Assistance Team for the Department of Lands and Mapping at the Ministry of Agriculture. This team has provided support to the DLM Project Manager since 1992 and has played a major role in the procurement of the computer systems, in the provision and/or management of short term consultancy for several specific areas associated with the project, in the provision of management information and in the development of policy. A second smaller team has been established in the Capital District Land Offices since November 1995 in recognition of its importance and specialised needs.

Given the limited resources available within the DLM HQ and the Phare PMU in the Ministry of Agriculture, the LTTAT has effectively been responsible for the analysis, specification, tendering and (organisation of) the evaluation for large procurements under stringent Phare guidelines for competitive tendering. The systems procured (or in progress) are:

First phase PC LANs in all District Land Offices (using in house software)

Second phase TAKAROS integrated Land Register and Cadastral mapping systems for 115 District Land Offices

Budapest Land Register Database system (for the 23 Capital District Land Offices),

Wide Area Network linking all Land Offices with the Ministry of Agriculture and FÖMI.

Third phase TAKAROS systems for GIS and value added services at the County Land Offices.

The total value of these procurements will amount to around 11.5 MECU.

The LTTAT has employed a part time consultant to develop and to operate (for an initial period) a Management Information System that keeps track of the progress of computerisation in the Land Offices and which is now being developed into a broader based system which, with the WAN mentioned above, will provide on-line management information concerning all operations of the Land Offices.

LTTAT team members have been in the mainstream development of policy in the Department of Lands and Mapping as far as the responsibilities for the Land Register and large scale Cadastral mapping is concerned. This ranges from the concepts underlying the integrated computer systems to the potential development of the DLM (and FÖMI and the Land Offices) into an 'Agency' status body and its leading role in a future National Land Information Service.

The value of the LTTAT contracts from 1992 to 1998 will be 2.276 MECU

Short term consultancies have been let (either within the LTTA framework contract, or with direct Phare funding) to help with:

Project planning and management. The move away from a command economy and the introduction of complex computer projects requires that project planning and management skills are provided and transferred to DLM personnel.

Systems analysis and system requirement specification. The analysis of existing practices and the development of system requirement specifications is a skilled process which needs knowledge of both computer systems and of the applications being computerised.

Management information systems. The introduction of modern management techniques in the Department requires the provision of up to date management information to all of the

managers concerned. The use of imaginative presentation of data loading information so far collected on a monthly basis has enabled management to compare districts and counties and helped to create a spread of 'best-practice'.

Data standardisation. Development of national standards for content and exchange formats for digital mapping and geographic information systems are essential for the widespread use of common data by several different organisations.

Specification of computer networks. LAN & WAN consultants have been employed to specify the equipment and services that are necessary to set up the Local Area Networks in each Land Office and the Wide Area Network which will link them together.

Marketing of products and services study. Essential to the development of any long term business strategy by the Department and should be carried out against the background of similar Departments in other, particularly Western European, countries.

Land and property valuation study. Essential if land and property valuation in Hungary are to be brought up to modern standards to support a market economy and to facilitate the introduction of land or property taxes.

Data conversion and loading feasibility studies and trials. Necessary to try out alternative solutions to the problems of populating the TAKAROS and Capital Land Office systems with Property Sheets and large scale base maps. It is essential that the conversion and loading of maps, in particular, be investigated to establish whether interim solutions and/or the use of existing data can bring forward the full use of the infrastructure now being installed.

Training for Land Office Staff. The LTTAT staff have assisted with the specification of both education and training courses for Land Office staff. It is essential to upgrade skills and knowledge of the staff that will manage and use the systems now being installed.

This assistance has been vital to transfer key skills and knowledge to DLM and Land Office personnel and to bring external, objective (and internationally experienced) analysis to bear on the specialised requirements of the Hungarian Land Registration system. The value of short term consultancies contracted directly through the Phare programme is 170,000 ECU.