

Support to the Land Reform in Lithuania

**Ian Brook
Christer Ragnar**

**Department for Central and
Eastern Europe**

Support to the Land Reform in Lithuania

**Ian Brook
Christer Ragnar**

**Sida Evaluation 96/29
Department for Central
and Eastern Europe**

Authors: Ian Brook, Christer Ragnar

Surcon AB, Finreco AB

The views and interpretations expressed in this report are those of the authors and should not be attributed to the Swedish International Development Cooperation Agency, Sida

Sida Evaluation 96/29

Commissioned by Sida, Department for Central and Eastern Europe,

Copyright: Sida and the author

Printed in Stockholm, Sweden

ISBN 91 586 7408 X

ISSN 1401-0402

SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

Address: S-105 25 Stockholm, Sweden. Office: Sveavägen 20, Stockholm

Telephone: +46 (0)8-698 50 00. Telefax: +46 (0)8-20 88 64

Telegram: sida stockholm. Telex: 11450 sida sthlm. Postgiro: 1 56 34-9

Homepage: <http://www.sida.se>

TABLE OF CONTENTS

The Mission	1
Land Reform Implementing Agencies	1
The Objectives of Support to the State Land Service of Lithuania	2
The Development of the Land Reform	3
The Legislative Framework	4
The New Law on Land Registration	5
Entries in the Land Cadastre Register	6
The Cadastral Maps	7
Planned Map Production Facilities at NLS	8
Swedesurvey in Lithuania - the Practical and Economic Perspectives	9
The Practical Perspective	9
<i>Land Administration System</i>	10
<i>Legislation</i>	10
<i>Aerial photography and the production of orthophoto maps</i>	11
<i>Training programmes, constancy, study visits and seminars</i>	12
<i>Digital terrestrial mapping</i>	12
The Economic Perspective	13
The interlinked development chain	13
<i>Maps and spatial data</i>	13
<i>The Cadastre Register</i>	14
<i>Sell assets and/or borrow money</i>	14
The end of interlinked development chain	14
Other External Contributions to the Land Reform Programme	15
Other on-going projects	15
Other Swedish Input to SLS	16
Co-ordination of Inputs	17
The Land and Property Market	17
The Credit Market	18
General Observations	19
Recommendations	21

References	22
Persons met during the mission	24

The Mission

1. The mission was carried out in Lithuania during the period May 31-June 6, 1996 in accordance with the Terms of Reference prepared by Sida's Division for Central and Eastern Europe. See Appendix 1. The consultants were Mr. Ian Brook, SURCON AB and Mr. Christer Ragnar, FINRECO AB. The report is based on interviews, formal and informal discussions, documents, publications and reports. The central theme is the on-going Land Reform programme in Lithuania, in particular the impact of the Swedish support that has been provided since 1992 through Contracts LTU0161, LTU0162, LTU0163, LTU0164, LTU0165, LTU0711 and LTU0712. The total financing that has been provided to date is SEK 21 365 000.
2. Sida (formerly BITS) has also financed a small scale mapping project based on the use of satellite imagery through Contracts LTU0411 and LTU0412 at an approximate cost of SEK 7 200 000. This project is also briefly reviewed in the report.
3. A comprehensive programme designed to illustrate activities at all levels of the National Land Survey's organisation was arranged.

Land Reform Implementing Agencies

4. In 1940, when Lithuania was annexed by the Soviet Union, private ownership of land was abolished. Cadastral type mapping principally for land management purposes was, however, still carried out and production for the Baltic States was centralised to Kaunas in Lithuania. The land management and soil maps that were produced were detailed and of good quality. After re-independence in 1990 a re-organisation of surveying and mapping was necessary to create the resource base needed for implementing the land reform programme. Currently the National Land Survey of Lithuania has the overall responsibility for organising and implementing the Land Reform. The National Land Survey answers to the Ministry of Agriculture. Thus, with the exception of the Inventory Bureau of the Ministry of Construction and Urban Development, which is responsible for creating and maintaining the register of buildings and flats, there is no segmentation of responsibility.
5. The present organisational structures are shown in Appendixes 2 and 3. The National Land Survey (NLS) is three-tiered with central, regional and local offices. The central organisation includes two state enterprises, the former State Land Survey Institute which has five branch offices, the State Land Cadastre Enterprise and the Institute of Aerial Geodesy which was formerly the western branch of the All-Soviet

VISCHAGI office for aerial mapping and geodesy or agriculture. The GIS Center also belongs to this group whose general responsibility is for production. The mandate of State Enterprises requires varying levels of cost-recovery in their operations. The three departments, Land Management, Geodesy and Cartography and Land Cadastre with their divisions appear to have a planning and steering function similar to a Swedish "stab".

6. At the regional level NLS works through 55 Land Management District Offices and at the local level through 426 Agrarian Reform Service Offices. Field operations - adjudication, boundary surveys, data capture and entry in the Cadastre Register - are the responsibility of the district and local offices. The local offices have a particularly important role in the practical implementation of the land reform since it is here that the first applications for land are lodged and the initial processing of the applications takes place. The Consultants visited the Agrarian Reform Services Office in Trakai district where 1 400 applications have so far been handled. Despite the simplicity of the office accommodation and equipment - on the one hand an abacus and on the other a modern orthophoto - the atmosphere was one of enthusiasm and competence. At this level there is clearly a close contact with the local people. The Land Management District Office, on the other hand, was relatively modern and was computerised. NLS is assisted by private enterprises and chartered private surveyors with the survey work.

The Objectives of Support to the State Land Service of Lithuania

7 The objective of the support that is being provided is to strengthen the resources and competence of the centres that are responsible for cadastral and, ultimately, land registration activities in Lithuania. Sida support was the first to be provided to Lithuania in this sector. As also is the case in the other Baltic states a well-functioning cadastre is a key administrative tool that the Lithuanian government requires to efficiently implement its Land Reform programme which has as its goal the re-establishment of a just and equitable distribution of land. The attribute data - registers and their contents- and the spatial data - maps and digital databases- are inter-related and indispensable links in one and the same tool box.

8. In this report the term cadastre includes both the land cadastre register which contains the mapping and systematic description and inventory of data on land units, and the legal cadastre which contains title information including descriptions and determination of rights to and restrictions on land. Unlike Estonia and Latvia, where this information is kept in two separate registers: a land cadastre and a land register, in the Lithuanian system the land cadastre register fulfils both functions. The practical creation and maintenance of the State Land Cadastre is the responsibility of the State Land Survey Institute (SLSI) under the aegis of the National Land Survey of Lithuania which, in turn, is responsible to the Ministry of Agriculture. SLSI co-operates closely with the 55 district and city Land Management Boards which are part of the county government administration. These offices, in turn, work at the local level through 426 offices.

9. This model for the management of the cadastre has been adopted, not without conflicts, to minimise the division of responsibility between several ministries with a view to streamlining the administration and implementation of the Land Reform.

10. The goals of the Land Reform have been defined as :

- the establishment of land units on the ground, including the re-structuring of properties by measures such as consolidation.
- the unique definition of land units that can only be changed by a legal process.
- the unique definition of land units as a key to security of ownership which, in turn, facilitates dealings in land and the use of land as collateral to obtain loans.
- the development of a market in land and, on the longer term, the restructuring of land units to form more viable entities.
- the creation of new land units at reasonable prices.
- guaranteed security of ownership and, thereby, the reduction of litigation.
- the identification of overriding planning interests leading to better overall land management in the Public Sector.
- provide input for land policy decisions and local, regional and national physical planning activities including environmental protection.

A national cadastre is often the basis for parcel-related information systems.

The Development of the Land Reform

11. The current land reform is the third major reform in a series that began with a number of minor reforms during the 19th century. The aim of the reform is to restore ownership rights and legally validate them in registers. It is difficult to quantify the number of private properties that existed in 1940 since, for example, the area around Vilnius was under Poland administration between 1922 and 1940. To date, however, 671 000 persons have applied for restitution of land, including forest land, and of these 568 000 have requested restitution of land equivalent to the original ownership and 103 000 have requested compensation. See Appendix 4. A condition for owning agricultural land is that the owner is a prospective farmer.

12. The first major reform was carried out between the World Wars and involved the re-distribution of land that was owned by major land owners. The land was surveyed and boundary markers were given coordinates in the national coordinate system and cadastral maps in the form of village maps were produced. The receiver of the land was recognised as the legal owner and information concerning the property was recorded in ledgers. Land use data was also collected together with other data needed

for valuation purposes. There was, however, no formal land registration. In the late 1930's the size of an average farm was of the order of 15 hectares.

13. Some 80% of the old documents and about 40% of the old maps are still available in the National Archives or at district offices.

14. The second reform was carried out between 1940 and 1990 during the period of Soviet annexation when all land was nationalised and the concept of private ownership was abolished together with all earlier laws related to land.

The Legislative Framework

15. A paper by Millgård [1] gives an overview of cadastral legislation in Lithuania and contains a comparison of aspects of the cadastral systems in all three Baltic states. In Lithuania, one of the first steps towards re-introducing democratic processes and values was the implementation of a land reform to re-establish private ownership of property. At that time, the old Soviet legislative structures remained unreformed and there were no functioning cadastral registration systems.

16. Historically Lithuania has been at the cross-roads of Western and Eastern influences and this has left its mark on the legislation that applied before 1920 [1]. The influence of French, German and Russian legislation can be identified. The occupation of the area around Vilnius by Poland between 1922 and 1940 and the influence of Polish administration during that period also left its mark.

17. Millgård [1] states that Lithuania made the decision to develop its civil law without using foreign civil law as a prototype. Instead, civil law is developing "step by step, on a national basis and with national aim and direction".

18. The restoration of independence took place in 1990, and by 1991 the Law on Land Reform and the Law on the Procedure and Conditions of the Rights of the Restoration of Ownership to the Existing Real Property had been adopted.

19. Other main current legislative components include:

- The Law on Land.
- The Mortgage Law.
- The Law on Land Improvement.
- The Law on the Leasing of Land.
- The Law on Land Tax and government decisions on Land Tax and Land Lease Tax and Procedures for Setting Them.
- Forestry Law.

- Law on Procedures and Conditions for the Restitution of Ownership Rights to the Remaining Real Property.
- The Law on the Privatisation of the Property of Agricultural Enterprises.

In addition, a number of decrees and resolutions have been enacted. These include:

- The resolution on “The confirmation ^{of} on temporary regulations for State Cadastre of natural resources”.
- The resolution on “The confirmation of regulations for the State Land Cadastre (with real estate elements) of the Republic of Lithuania”.
- The decree on “Confirmation of the State Land Cadastre data temporary register and certificate”.
- The decree on “Organisational means for implementation of the Land Information System project”.
- The decree on “Organisational means for the creation of a unified Land Information System for Lithuania”.
- The decree on “The order for registration of land parcels in the City (District) Land Register”.

The New Law on Land Registration

20. In January this year, Parliament rejected a proposal from the Ministry of Justice regarding a new law on land registration. If it had been accepted, the proposal would have resulted in a transfer of responsibility for the registration of title of ownership from the Ministry of Agriculture to the Ministry of Justice.

21. The Ministry of Agriculture, which supported the rejection, has formulated an alternative proposal for a new law which, according to the Ministry, is expected to be presented to Parliament within the next month. After committee investigations and two readings in the parliament, a new law could possibly be approved 3-4 months from now.

22. The proposal aims to confirm that the State Cadastre Enterprise of the Ministry of Agriculture also in the future will be responsible for the registration of land and properties with regard to cadastre information as well as for ownership. The Inventory Bureau will be required to provide the Land State Cadastre with the required information.

23. According to the proposal, mortgages will be approved by the courts but the courts will be obliged to immediately report all approved mortgages to the State Cadastre Enterprise which then will register them in the Cadastre Register. Some of

the banks, on their own initiative, have already begun to register mortgages in the Cadastre Register.

24. If the new law is approved, it should mark the end of a long lasting dispute between the Ministry of Agriculture and the Ministry of Justice.

25. Swedesurvey legal specialists have made significant contributions to the formulation of these laws, decrees and resolutions.

26. The basic units in the land cadastre are land units and it will provide information on land, buildings and forest in order to:

- consolidate the rights of owners and users.
- provide the base for taxation.
- generate information for physical planning, statistics, transactions with real property, and national economic planning.

Entries in the Land Cadastre Register

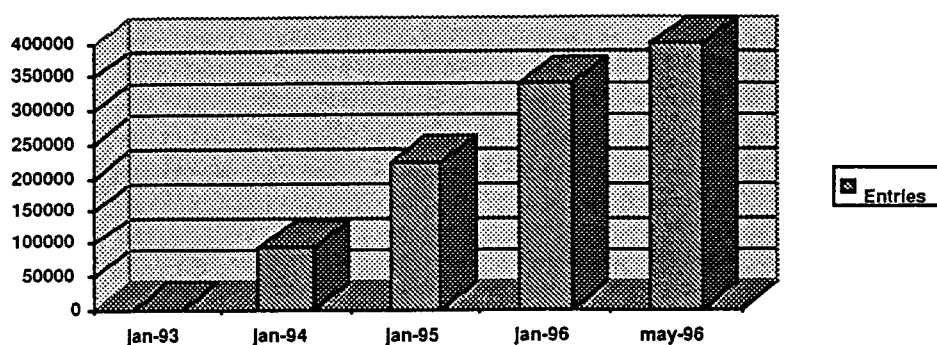
27. The programme for re-establishing land ownership rights through restitution, replacement, privatisation and compensation began in practise in 1992. As per May 31, 1996, the following statistics are available:

Number of entries registered	400 000
Expected number of total registrations	3 000 000
Target fulfilment	13 %

28. It should be noted that a number of entries have been registered on the basis of boundary identification on old Soviet maps. These maps, which are generally regarded as good from the point of view of cartographic quality, are in many cases obsolete and the few printed copies that are available are deteriorating due to frequent use. New copies of the maps cannot be produced since the feature separations and printing originals have been taken out of Lithuania.

29. Entries into the cadastre also include information about title to the property, i.e. ownership is registered, if possible, simultaneously with other property information. This also means that there is a number of additional entities (about 150 000), which are in the register but for which information about ownership still needs to be clarified.

30. The figure below illustrates how the number of completed entries has increased over the last few years.



At present the rate of the increase in the number of new entries is of the order of 12 000-14 000 per month. See Appendix 5.

31. In the future the Cadastre Register will be expanded since relevant parts of the Building Register, which will contain all buildings as well as all privatised flats in Lithuania, will be incorporated into it. The Building Register is being created, and will be maintained, by the Inventory Bureau under the Ministry of Construction and Urban Development. By including this information from the Building Register in the Cadastre Register the intention is that it will be possible to obtain all relevant information about all land and buildings in Lithuania from one source.

32. To date, of a total of 500 000 units approximately 350 000 have been entered in the Building Register. The majority of the remaining 150 000 units are in rural areas. There are about 1 500 000 flats; they are not included in these figures.

33. Present estimates by NLS are that the Land Reform will be completed within 7-10 years depending on the budget situation.

The Cadastral Maps

34. This section deals specifically with mapping as discussions have tended to be polarised on the production of orthophoto maps.

35. One of the cornerstones of a cadastral system is the maps on which boundaries and other relevant information can be shown. Cadastral maps can be produced by terrestrial or photogrammetric methods or by using a combination of both methods: they can be line maps - maps on which the information is shown with the help of conventional signs - maps in which the background is a photographic image, or maps on which the line information is superimposed on the image background. Nowadays, photogrammetric methods, based on the use of aerial photographs, are increasingly used to produce both line and image-based maps. In Lithuania, for practical and economic reasons, a decision was taken at an early stage to use image-based orthophoto maps which would successively replace the existing Soviet-era line and photomaps which were out of date and therefore not suitable for most cadastral applications. Some information will be extracted from these sheets, but the orthophoto maps will replace them as the national cadastral index maps.

36. Internationally, increasing use is being made of digital methods and this is the methodology that SLSI has chosen for the production of both orthophoto and line maps. Digital methods have long-term benefits: flexibility in the products that can be created is greatly enhanced; data can be exchanged between systems run by different organisations; and the spatial base is created for the development of information systems.

37. In continental Europe, the classical way of establishing plot boundary markers and the boundaries between them has been by precise measurements and coordinates in a national coordinate system. This is known as the fixed boundary method. At an early stage of the present reform it was recognised that precisely measuring boundaries in rural and forest areas would seriously slow down the re-establishment of boundary markers and unnecessarily increase costs. The alternative concept is that of general boundaries. A general boundary need not be precisely defined: for example, it can be along either edge or in the middle of a ditch, without its location being precisely defined; similarly, a boundary can follow a hedge, a line of trees, or a road. The boundaries can be delimited relative to physical objects that can be identified in the terrain and on aerial photographs. Suitable scale orthophoto maps together with simple field equipment and methods are suitable tools for this purpose and the attainable accuracy is adequate. The option of precise, coordinate surveys is still left open, but in rural areas such surveys will only be required if a property which has general boundaries is sold, sub-divided or consolidated.

38. Boundaries plotted on the orthophoto maps are also used to check their correctness on older map sheets. In some cases they have also been used to correct the orientation and geometry of theodolite surveys.

39. An investigation carried out by IGN of France (the French National mapping Agency) in Lithuania clearly showed that orthophoto maps are a cost-effective and technically viable tool for working in the Land Reform.

Planned Map Production Facilities at NLS

40. The standard and amount of technical equipment available at NLS is increasing. Equipment that has been acquired and installed includes computers, modern field survey equipment, mapping equipment and, most recently, the installation of leading-edge photogrammetric equipment at the Institute of Aerial Geodesy. As can be seen from Appendix 6, a production line for orthophoto maps is also planned.

41. In a letter to Sida dated 96-03-04, the Minister of Agriculture, Mr., Vytautas Einoris confirmed that "Lithuania is aiming at the development of [an orthophoto production line] and, according to the existing possibilities, expects their introduction in 2-3 years time". During the transition period continued support with aerial photography and orthophoto mapping is, if not critical, at least close to being so. In the Consultants' opinion it would be an unrealistic and, from an economic point of view, incorrect decision to establish full aerial photography

facilities in Lithuania. The market is too small and, even if a leasing agreement could be made for an aircraft, the investments in cameras, ancillary equipment and laboratory facilities would be prohibitively high. On the other hand, the possibility of establishing a joint venture to provide air photo services in the Baltic States could be considered.

Swedesurvey in Lithuania - the Practical and Economic Perspectives

The Practical Perspective

42. In this section the Sida (formerly BITS) financed technical assistance, provided by Swedesurvey during the period 1992-96, is put into a practical and broader economic perspective. Furthermore, an attempt is made to identify some key variables which possibly could be used by Sida as an additional operational tool for monitoring the assistance. A number of general observations are presented which constitute some of the inputs for our recommendations.

43. Swedesurvey and NLS originally identified two principal fields of co-operation:

- assistance with the development of a land information system.
- aerial photography and orthophoto mapping.

For practical and budgetary reasons the fields have been separated and, at times, have been incorrectly interpreted as “either/or” projects when, in reality, they are complementary. One field generates the attribute data for the system and the other the spatial (“lägesbunden”) data. Together they are the two bearing pillars in the complete system. These two fields of activity are also the themes that were identified in two World Bank reports [6] and [7] as fields in which support to the land administration sector was necessary.

Sub-fields have involved:

- the development of a land administration system (LAS) which comprises the further development, with Lithuanian specialists, of the local system and a prototype central computer system for land registration.
- a study of data integrity and data security. Studies of the possibility of linking the cadastral registers with other registers maintained by other authorities
- the development of system user guidelines to improve administrative routines.
- assistance with the further development of cadastral and related legislation.
- aerial photography and the production orthophoto maps.

- digital cadastral mapping using AutoKa PC software.
- studies related to the introduction of cost recovery.
- training programmes, study visits and seminars.

44. The present evaluation has shown the following practical levels of achievement.

Land Administration System

45. The computer system which is in use at the 55 Land Management District Offices has been operational for about three years. Not all offices are fully equipped with hardware, but this deficiency is being remedied through support from the PHARE project. A demonstration of how registration is done at a local office showed the good functionality of the system, and the users expressed their satisfaction both with the assistance that has been given with the development work and with the results so far achieved.

46. As the State will guarantee the contents of the databases, it is vital that the risk for illegal entry to the systems and tampering with data is minimised. Swedesurvey specialists have studied security questions and identified a need to develop a security system. An equally important question is that of data integrity. Studies have been started and should continue.

47. Development of the central computer system has been slowed down by the lack of the necessary hardware. This has now been provided through the PHARE project and has been installed. An additional factor that has slowed down development is the delay in finalising the Land Registration Law. See paragraph 14. Development of the system will continue based on the model created by the Swedesurvey and Lithuanian specialists. The preliminary, central system will continue to be used during the development of the final, central system which will take some years to complete.

Legislation

48. Stable and adequate legislation is one of the cornerstones of the Land Reform. Bearing in mind that there was no land-related legislation in Lithuania five years ago, the present situation reflects the great efforts that have been made to create a stable framework. The Director of the National Land Survey commented very favourably on the assistance that has been provided by Swedesurvey. Overall, the assistance provided by the legal expertise has been very well received.

49. Swedesurvey experts have assisted with the formulation of the draft of the Land Registration Law and there will be a need to further develop the legal structure as the Land Reform proceeds. An analysis of the present situation by a Swedesurvey expert is planned.

Aerial photography and the production of orthophoto maps

50. The possibility and hopes of retaining Sida support for aerial photography and the production of orthophoto maps was a central issue during the evaluation. The almost total integration of cadastral mapping and cadastral attribute data was reiterated on many occasions, as was the multi-purpose use to which the mapping materials are put.

51. In 1995, aerial photography of an area of approximately 12 000 km² in 8 districts was carried out at a scale of 1:20 000 under Contract LTU0711. Orthophoto mapping was included in this contract. See paragraph 54.

52. In 1996, under Contract LTU0712, an area of 18 000 km² was photographed at a scale of 1:30 000. The reduction of the scale as compared with the 1995 photography was agreed between NLS and Swedesurvey as a way to reduce costs and speed up production without sacrificing quality. No mapping was included in the contract pending this evaluation mission. In the proposal submitted by NLS more of the preparatory work including signalisation of ground control points, identification of the signals in the contact prints, the measurement and computation of ground control points and the block triangulation (our highlighting) will be the responsibility of NLS. At the time of writing this report approximately 80% of the area has been photographed. Poor weather has been a problem.

53. When the 1996 aerial photography has been completed, and including the 5 000 Km² of the 1:40 000 NATO photography (only this amount can be used), approximately 55% of Lithuania will have been covered with modern aerial photos. See Appendix 7.

54. The total national map coverage at a scale of 1:10 000 amounts to approximately 2 900 sheets.

The present situation is as follows:

Scale	Planned production	Delivered
1:10 000	480 sheets	449 sheets
1:5 000	220 sheets	163 sheets

All of the work has been done by Swedesurvey in Sweden. Delivery of the maps will be completed by the end of August 1996. All the materials will be supplied in both analogue and digital form. The digital data will be delivered on CD-ROM: 49 of the total of 80 disks have been delivered. The quality of the products that were shown to the Consultants was good.

55. In the Land Reform programme the maps are used both as the basis for adjudication and boundary identification as well as for the development of a national series of cadastral index maps. The attainment of a full national coverage is vital for the reform programme.

56. The 1996 and NATO photography can, together, be used to produce 970 sheets at a scale of 1:10 000 and 300 sheets at a scale of 1:5 000.

57. NLS will supply copies of the orthophoto maps to an increasing number of users with, at this stage, emphasis on the analogue (hardcopy) products. In addition to the regional offices of the NLS and its enterprises, the county, district and local Land Management Boards, other major actual and potential users include the forestry sector for planning and inventory purposes, environmental and regional development agencies, defence agencies and the private sector. A facility for producing copies of the original materials has been established with Swedesurvey assistance.

58. The forestry sector will be a very important user of orthophoto maps. The Consultants visited the Institute of Forest Management to discuss how image-based maps are used for forest inventory. With a start in 1956, inventory has been done at approximately 10 yearly intervals using colour-coded Russian aerial photography. The photography that is currently available is very old and no longer provides a reliable picture of the situation on the ground. It was stated that there is "a desperate" need for up-to-date image maps which can be used in the up-coming inventory that will be executed by the Institute with the assistance of Jaakko Pöyri and financed by Sida.

59. As can be seen from Appendix 8, about 30%, or 1 970 000 hectares, of Lithuania is forested. This represents a market value of about USD 2 billion based on an average value of USD 1 000/ha which was quoted by the management of the Institute. Therefore, the forestry sector is potentially of great importance for the national economy.

Training programmes, constancy, study visits and seminars

60. A comprehensive programme of training courses has been carried out and co-ordinated with the PHARE project. The target groups have been the staff of the district and local offices. The themes have been closely related to the practical Swedesurvey input. The courses have included organisation and management questions, property formation and registration and terrestrial digital mapping. Valuation and the role of a cadastral system in the marketplace have been the subject of seminars. This input has been very well received.

Digital terrestrial mapping

61. Swedesurvey has trained field surveyors in the use of the Swedish mapping software package AutoKa PC. Currently 12 sets of this software are used in field production. The computers and field equipment were supplied through the PHARE project.

The Economic Perspective

The interlinked development chain

62. The services provided by Swedesurvey have a large technical content, and, at first sight, it is not always easy to understand how the different projects contribute to the economic development of the recipient country.

63. In order to explain the logical connections between different activities, the concept of an “interlinked development chain” can be used to illustrate how different projects are linked to each other.

Maps and spatial data

64. Maps and spatial data constitute a part of the fundamental infrastructure of a country and play an important role in establishing “law and order” within the field of property formation, privatisation, land market and other land and property-related activities. For this purpose, the maps must be of a good geometric quality, contain sufficient information - suitable scale - and be up-to-date so that they can be used for defining and showing the current boundaries between different owners of land and properties and physical development on the ground.

65. The maps that are produced with Sida assistance and used in Lithuania are made in three main ways:

- i. as image-based maps using satellite imagery.
- ii. as image-based maps using orthophoto techniques based on aerial photography.
- iii. as line maps using digital and terrestrial methods.

66. Solely from a cost point of view method i. is the least expensive technique, followed by orthophoto and line mapping. Due to the relatively limited resolution - a pixel size of 10 m - of the present generation of commercial satellites, satellite imagery cannot be used to produce maps at a scale large enough to be used to identify cadastral plots and boundaries and must be ruled out for cadastral purposes. Of the two remaining alternatives the orthophoto technique is the preferred one for rural and most built-up urban areas. Orthophoto maps are also significantly cheaper than line maps to produce - approximately 70% cheaper - and can be produced much more quickly - a 60% reduction in production times. Image maps are also generally easier to use as an inexperienced user can quickly relate the contents of the map to the reality on the ground without going via conventional signs.

The Cadastre Register

67. The Cadastre Register contains attribute information about land and properties including the name of the owner and rights of other persons to the land, the area of the parcel, the location of the parcel by its number, address, and a centroid coordinate. Other attribute data includes the planned land use and land use requirements and information about leaseholders who have leased the land for more than 3 years. Servitude rights and special conditions regulating land and forest use are also included. Information regarding the root of the title such as when land is restituted or excised from former State land. Information from the Building Register is also incorporated. In order to register information in the register, units of land (parcels, plots etc.) and properties must also be identified by their physical identities and relative and absolute location which include their boundaries shown on a cadastral map.

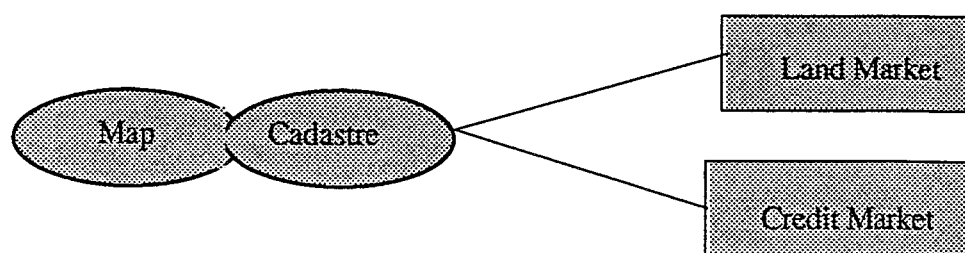
68. The cadastral map is a prerequisite for identifying land and properties.

Sell assets and/or borrow money

69. Without an entry of title, it is not possible either to sell a property or to approach a bank in order to apply for a credit where the property or a plot of land can be used as a security. To a large extent, this is what the Land Reform is about, namely, creating the opportunity to own, dispose of, buy and mortgage personal assets which constitute part of the process of creating an economic development shared by the majority of the population.

The end of interlinked development chain

70. We have thus arrived at the end of the inter-linked development and in the figure can see the relationship between seemingly disparate projects. The map is a cornerstone in the Cadastre Register which is a prerequisite for the Land Book which gives the owner the right to sell or mortgage his or her property.



Other External Contributions to the Land Reform Programme

Other on-going projects

71. The major contributors are listed below together with a brief description of their activities.

Denmark, through Kampsax Geoplan, has provided relatively small, but according to NLS, very effective contributions including:

- the provision of equipment and training.
- the development of a Geographic Information System in a UNIX/ARCINFO environment.

There has been co-ordination between the Swedish and Danish assistance.

The Federal Republic of Germany has been engaged in:

- a seminar on land management.
- a seminar on land information systems.
- training in the use of GPS equipment and densification of the national network.
- general transfer of technology and evaluation of needs.

The United States of America, through the Defence Mapping Agency (DMA) is engaged in:

- the production of 1:50 000 topographic maps, for defence purposes, based on NATO standards and using 1:40 000 aerial photography.

Norway has provided:

- field survey equipment.
- training in field survey methods.
- computer and software for one workplace.

The European Union, through the PHARE project, has provided a broad spectrum of technical support related to the Land Reform through consultancy, reviews, reports, study tours and technical equipment. See Appendix 9.

The World Bank has provided consultancy and is working to establish three credit lines, all of which can have some impact on the Land Reform:

- USD 35 000 000 to the agricultural sector to be routed to the National Agricultural Bank.
- USD 10 000 000 to an energy and housing efficiency programme.
- USD 20 000 000 in an enterprise and financial sector programme.

Other Swedish Input to SLS

72. Through Contracts LTU0411 and LTU0412, satellite imagery, assistance with production and transfer of technology for basic mapping has been provided by Satellitbild AB. The image interpretation is carried out in Lithuania at the Aerogeodesy Institute in Kaunas and the digitising is done at the GIS Centre in Vilnius. During a visit to the Aerogeodesy Institute in Kaunas the Consultants saw image interpretation in progress. Very little field verification is carried out or considered necessary. The scale of the maps is 1:50 000, but they are not intended to be a replacement for the type of line maps at the same scale that were produced during the Soviet period and which, to a certain extent in the future, will be produced in co-operation with DMA. The level of detail in the image-based maps is considered to be insufficient by many users of 1:50 000 maps including the very important group of defence agencies. On the longer term, the digital data will certainly have a wider field of application as spatial input to information systems than the analogue printed maps. Suitable fields of use for the printed version of the maps can be as overview maps for general applications such as geology, environmental studies and monitoring and overview physical planning. These products have little or no use in the Land Reform programme.

73. The production situation is as follows:

- the total number of sheets for Lithuania is 137.
- image interpretation has been completed for 131 sheets.
- 106 sheets have been digitised of which 42 have been approved.
- 64 digitised sheets are awaiting approval.
- 42 sheets have been sent to Sweden.

The printing films will be produced in Sweden.

It was stated that transfer of know-how has been an important part of the project.

74. In reply to our question it was stated that the material had satisfied a stop-gap need in the early years of re-independence, but that the requirement now was for material with a higher resolution.

Co-ordination of Inputs

75. There are no signs that there has been a lack of co-ordination of the support to the Land Reform. The co-ordination with the PHARE project has been exemplary.

The Land and Property Market

76. An important question in the context of the Land Reform is: "Does there exist a market for properties in Lithuania today?" This study confirms there is an embryonic market for land, single family houses and privatised flats even if it has not been possible to obtain any complete corroborative, nation-wide statistics.

77. The number of registered transactions involving private land from 1994 up to and including April 1996 amounts to about 34 000 transactions representing an area of 104 000 hectares. The average transaction is thus about 3 hectares. This means that an area representing less than 2 % of the total land area in Lithuania has changed ownership after the initial privatisation process.

78. Information was given that a fair number of flats are bought and sold but the turnover could not be quantified. The price level mentioned would indicate that one would have to pay up to USD 50 000 for a flat of about 100 m² in the centre of Vilnius.

79. Even if it is encouraging to see that the interlinked development chain produces end-results, it is fair to say that, so far, this market is limited to a restricted number of participants, and the fact that most prices are quoted in USD sends a clear signal that at this stage it is not a market open to everyone. There are even voices of concern that claim that the privatisation process could come to a standstill due to the low paying capacity of the population, which makes it virtually impossible for the majority of the population to afford market rents.

80. Due to a number of economic factors the market for agricultural properties appears to be stagnant. A looming problem is that many of the properties that are restituted are too small to be economically viable, and a number of observers have indicated to us that the next stage of the Land Reform should be a major consolidation movement where, once again, smaller units are packaged together in larger, more economic entities. However, this time the consolidation would be based on agreements between willing buyers and sellers in a functioning land market.

81. As background information, it should be mentioned that the role of the agricultural sector has changed dramatically since the establishment of re-independence. During the Soviet period, the agricultural sector's proportion of the GNP was more than 20%. Since 1990, the corresponding ratio has dropped to less than 10%, while, at the same time, the number of people employed within the sector has increased from 17% to 23%. These figures point to a significant decrease of productivity and the need for land consolidation. The figures could also be interpreted as a flow of people back to the countryside to live on the proceeds from restituted land parcels.

The Credit Market

82. The inter-linked development chain also provides one part of the fundamental infrastructure for an efficient credit market. The follow-up question is thus, "Does an efficient credit market exist in Lithuania?" As is the case with the land market described above, it can be stated that the first steps towards the development of a market have been taken, even if progress has been plagued by serious set-backs.

83. Due to the banking crisis which started at the end of last year, four out of 13 major banks have temporarily or permanently ceased their activities

84. At the end of December, 1995, the volume of outstanding credits amounted to LTL 4 010 000 000. In order to put this figure into perspective the following comparison can be made between the situation in Lithuania and Sweden.

	Lithuania in millions of LTL	Sweden in millions of LTL
Total volume of credits	4 010	1 217 752
GNP	41 438	698
Credits as % of GNP	10 %	138 %

85. The conclusion that can be drawn is that the credit market has not yet taken off, partly because of the limited number of registrations in the Cadastre Register, partly because of the general economic situation which makes it impossible both for many private individuals and a number of corporations to repay their debts and to pay interest. Moreover, it could be interpreted as if the legal framework which governs lending and the rights for mortgage holders still has some deficiencies which prevent the banks from granting new loans.

86. According to statistics provided to the Consultants, the number of cases where a mortgage on land has been registered during the last 30 months amounts to about 3 600 in the whole country, which is less than 1% of the entities registered in the Cadastre Register.

87. However, there are also positive macro-economic data. Inflation continues to decrease from 36% in 1995 to 31% for the twelve-month period ending in April 1996. The lending rate for long term loans has also decreased from 30% in December 1994 to 24% in December 1995.

88. The GNP for 1996 is expected to rise again by at least 1%, according to the International Monetary Fund, on top of an increase of 3,4 % during 1995.

General Observations

89. The general impression, from a practical and economic point of view, is that the assistance provided by Swedesurvey and financed through Sida (formerly BITS):

- is relevant.
- has made an impact on the development in Lithuania.
- is fairly cost-effective.
- has been very well-received.
- is sustainable.
- will have long-term, positive effects on the Land Reform and land market development.

90. Without any order of ranking we wish to highlight the following observations:

- Due to the general budget situation in Lithuania, there is a constant pressure on government agencies to generate funds outside the state budget. The National Land Survey showed a great interest in developing techniques for cost recovery and even in projects for generating export income.
- The co-ordination and co-operation between Swedesurvey, the National Land Survey and the EU PHARE projects seems to be very efficient.
- The status of the proposed new law on Land Register needs to be monitored closely.
- A better co-ordination between the National Land Survey and the Ministry of Justice would be welcomed to avoid duplication of work with regard to mortgages and to improve the efficiency of the mortgage system.
- There seems to be a need for a higher degree of co-operation between the National Land Survey and the Inventory Bureau both in order to avoid duplication of work with regard to the Building Register and to improve the efficiency of that register.
- In order to be able to allocate the resources necessary for certain long term projects in the most cost efficient way, it may be that a revised planning model could be worthwhile testing. The Land Reform project will take at least 7-10 years, and probably longer, to complete. The Swedish assistance has been granted on an annual project basis in spite of its long term implications. We believe that a programme with a duration of two to three years and clearly defined check-points would be a more viable model in this case. We even believe that the recipients would be prepared to substitute a lower budget in money terms for some sort of "trust agreement" i.e. "we will be at your side next year as well in response to new challenges".
- Lithuania is still in a developing stage with a fairly unstable legal infrastructure which means that any technical assistance programme needs

to be closely monitored by Sida at least once a year in order to decide the exact content of next year's programme. Flexibility is a key word.

- It is understood that the Ministry of Agriculture would be interested to participate in a potential donor's seminar regarding a legal framework for a mortgage system proposed in a SILD-report of April 9, 1996. Furthermore, we understand that the PHARE co-ordination unit at the Ministry of Foreign Affairs intends to take an initiative to arrange such a seminar.
- We see an increased demand for "hot line" services, whereby, through the use of modern communication methods, an increasing part of the assistance provided could be done on demand only and without physical visits.
- If a programme does not use the full amount of the funding allocated by Sida, a re-allocation should be granted only after discussions and written approval by Sida.
- Up to now all map production has taken place in Sweden, but it is our opinion that it should be possible to carry out all cadastrally-related map production in Lithuania beginning in late 1997. This is also the goal of NLS.
- Regarding mapping and aerial photography: during the discussions the Consultants have understood that general "signals" given by Sida have, rightly or wrongly, been interpreted to mean that this type of support would continue. These signals have been concretised in the planning process.
- World Bank consultants have commented very favourably on the Swedesurvey inputs and have stated that it is a pre-requisite for the implementation of the Land Reform programme and the development of a land market in Lithuania.

Recommendations

It is recommended that:

1. A framework policy should be formulated and agreed upon by Sida and the Ministry of Agriculture for a period of 2-3 years with the aim of achieving a sustainable transfer of technology and services in connection with the provision of assistance to the Land Reform programme. This policy statement should clearly define the type, scope and conditions of the support, whilst permitting a degree of flexibility, but without defining costs for more than one year at a time, on a programme rather than on a project basis.
2. Funds should be provided to carry out the orthophoto mapping of the block that was photographed in 1996 and for the block covered by the NATO aerial photography.
3. If additional requests for aerial photography are received, they should be given positive consideration pending a further investigation of alternative sources of imagery. The whole of Lithuania should be covered in a 2-3 year period.
4. The NLS should be requested to keep Sida informed of plans indicating when a local production line for orthophotos can be operative.
5. Assistance should be provided to speed up the modernisation of the NLS management and organisation functions and project monitoring.
6. Support should be considered for an active Swedish participation in a potential donor's seminar on the legal framework for a mortgage system.
7. The credit and land markets should be the subject of a special study.
8. The huge needs for training and transfer of technology particularly at regional and local level, should be investigated.
9. Support should be given to speed up the introduction of effective costing and cost recovery techniques within the NLS and to encourage and explore export possibilities to third countries for products and services that can be provided by NLS.

References

- [1] Cadastral and Real Property Legislation
Olle Millgård, 1994
- [2] Land Use Planning and Land Reform in the Baltic Countries
Timo Linkola, Paper presented at the International Symposium of FIG,
Berlin May 24, 1995.
- [3] Features of Land Reform and Real Property Registration in the Baltic States
and Belarus, Karin Haldrup
- [4] Property Rights and Privatisation in the Baltic Countries
Jaffe, Turner and Victorin, Nordic Council of Ministers, 1995:25
- [5] Swedesurvey annual and activity reports
- [6] Lithuania - Review of Land Reform, World Bank mission report Hendrik
Westerbeek, ILIS, Holland.
- [7] Land Reform Programme, World Bank mission report, Dr Peter Dale.
- [8] Lithuania Housing-Energy Efficiency Project Legal Elements of the Staff
Appraisal Report, Jean-Paul Gauthier.
- [9] Land Information System, Appendix A of Swedesurvey project proposal
submitted to Sida.
- [10] Land Reform, World Bank Technical Assistance Programme (L-01).
- [11] Land Information System, Annual Report for 1995, National Land Survey
of Lithuania.
- [12] Memorandum, Lantmäteristöd till Central- och ÖstEuropa
Jim Widmark, Lägesrapport till Miljö- och naturresursdepartementet,
1994-10-04.
- [13] Memorandum, Strategy of Orthophoto Mapping in Latvia and Lithuania.
Submission to Sida 16 April 1996 by Guntis Grube and Silvestras Staliunas
- [14] Land Registration and Cadastre System in Lithuania,
Memorandum, P. Aleknavicius
- [15] Orthophoto mapping, Appendix B of Swedesurvey project proposal
submitted to Sida
- [16] Generaldirektörsbeslut Sida/BITS concerning Swedesurvey's activities
1992-1996.

- [17] Feasibility study, Land Administration and Land Information in the Republic of Lithuania, Swedesurvey June 1992
- [18] National Cadastre and LIS Prospects and Future Vision, Bronislovas Mikuta and Romualdas Kasperavicius, Vilnius 1993.
- [19] Regeringens proposition 1994/95:160, Sveriges samarbete med Central- och ÖstEuropa
- [20] Legal Framework for a Lithuanian Mortgage System, Interim Report of April 9, 1996, Swedish Institute for Legal Development
- [21] Assistance to Lithuania under the Phare Programme, European Integration Support Unit, Ministry of Foreign Affairs, February 1996.

Persons met during the mission

National Land Survey of Lithuania

Silvestras Staliunas, Secretary of the Ministry of Agriculture, Director
Alvidas Bujavicius, Director, Land Management Department
Zenonas Kumetaitis, Director, Department of Mapping and Surveying
Rimantas Ramanauskas, Director Land Cadastre Department
Bronislovas Mikuta, Chief, Land Cadastre Division
Romualdas Kasperavicius, Chief, ISS Division
Romualdas Staniulis, System Development Director
Evaldas Rozanskas, Director, GIS Center
Antanas Ivancius, Director

State Land Survey Institute

Vaidotas Sankalas, Director

Institute of Aerial Geodesy

Vilius Zilevicius, Director
Gintaras Rumsas, Technical Director

Land Management District Office, Trakai

Officer in charge and staff of the office

Agrarian Reform Service Office

Officer in charge and staff of the office

Land Management District Office, Ignalina

Janina Ribokiene, Officer in charge
Chief Surveyor

Forest Management Institute

Algirdas Brukas, Secretary of the Ministry of Forestry, Director
Members of the staff of the Institute.

EC PHARE LIS Project

Neil King, Project Coordinator

Swedesurvey AB

Ricard Lundgren, Project Manager
Lennart Frej, Project Co-ordinator
Robert Brook, Project Manager

METRIA

Håkan Ågren, Photogrammetric Specialist
Mats Dahlberg, LMKartor, Kiruna

Land Survey of Sweden

Daninge Danielson, Adviser

Swedish Municipalities

Lars Kronlund, surveyor and teacher in surveying at Tartu University

Private Consultants

Olle Millgård, Senior Adviser, Cadastral Expert

Swedish Embassy

Fredrik Löjdquist, Second Secretary

European Integration Support Unit, Ministry of Foreign Affairs

Daniel Dobrovoljec, Programme Manager

The Bank of Lithuania, the World Bank Loan Management Unit

Björn Haggren, Adviser

APPENDIX 1

APPENDIX 1

TERMS OF REFERENCE

Evaluation of BITS/Sida's Support to the Land Reform related activities in Latvia and Lithuania

Background

Sweden has provided support to activities related to the land reform in Latvia and Lithuania since 1992 through SwedeSurvey AB. So far within this field, SEK 14 216 000 have been allocated to projects in Latvia and SEK 18 274 000 to projects in Lithuania. The projects have mainly concerned the development of a Land Information System and orthophoto mapping. A complete list of projects is found below. In view of the relatively extensive support in this field, Sida has decided to undertake a review and evaluation of the achievements to date and to review the needs for and relevance of possible further support. To undertake this evaluation, Sida intends to recruit an independent consultant team (the Consultants). These Terms of Reference will guide the work to be done by the Consultants.

Purpose

The purpose of the evaluation exercise is to evaluate the relevance, impacts, cost-effectiveness, sustainability and effects of the Swedish support so far provided by SwedeSurvey in activities related to the Land Reform process in Latvia and Lithuania, and to review the needs for and relevance of possible further support.

Scope of work

The scope of work will include, but will not necessarily be limited to, the following:

1. Carry out a brief general evaluation of the current situation regarding the progress made towards the development of a national cadastre system, including the impact of contributions from other international donors. The following points should be included:
 - a brief description of general organisational issues including the relationship between central, regional and local levels regarding the introduction of common methods, systems and legislation and the exchange of information, including cadastral organisation and cadastral legal system (förrättningsväsende och fastighetsrättsligt system);

- present status of land reform and assessment of government policies and action plans to accelerate the process;
 - current inputs in the cadastral field from other donors;
 - the impact of the introduction of large scale orthophoto mapping and large scale digital mapping methods;
 - general assessment of needs of technical assistance.
3. Make an evaluation of the performance and results attained of the Sida (earlier BITS) supported projects in the field of (i) land information systems and (ii) aerial photography, mapping and transfer of technology, in particular of the transfer of know-how with regard to system and institutional development. The evaluation should include an appraisal of the production potential and plans including the current and planned future situation regarding the acquisition of hardware and software and projected training needs. It should also include an analysis regarding cost effectiveness of the map-production programme (input reasonable in relation to expected output) and assessment of financing/funding possibilities of existing map-production programme.
- The Consultants should appraise the interplay between mapping and cadastral organisations.
4. Make an assessment of the need for future support in relation to other external support (World Bank, EU Phare) and make recommendations to Sida on the policy for future support.
5. Discuss lessons learned from the activities.

Method of work and reporting

To collect the required material, the Consultants will review relevant policy and project related documentation at Sida and make a visit to SwedeSurvey. They will then visit Riga and Vilnius for approximately 10 days for fact finding. They will visit relevant institutions, including the counterparts, the State Land Service in Latvia and the National Land Service in Lithuania. The visits should be made before 10 June, 1996.

After the visits to the two capital cities, the Consultants will submit first draft reports to each of the Baltic counterparts concerned and to SwedeSurvey for their review. After having received the counterparts' and SwedeSurvey's comments, draft final reports for each country will be submitted within five working days to Sida. Final reports including findings and conclusive assessment, are estimated to be presented to Sida no later than 28 June, 1996.

All reports should be written in English. The reports should be outlined in accordance with Sida Evaluation Report - A Standardized Format (Annex A, Evaluation Manual for Sida) with a comprehensive Newsletter Summary in accordance with the enclosed guidelines (Annex B). Furthermore, the Sida Evaluation Data Worksheet (Annex C) should be filled in and returned to Sida. The final reports should be presented in two copies as well as in diskette versions.

Undertakings

The Consultants will be responsible for practical arrangements in conjunction with the missions to Latvia and Lithuania and other visits. Sida will make available or cause to make available all written material (reports, project preparation documents, project completion reports, etc.) deemed to be of relevance to the evaluation exercise by the Consultants and Sida.

Consultants

For the task, the following team, consisting of two persons, will be required:

- One senior cadastral expert
- One senior economist

List of projects to be evaluated

(c)=completed project

(o)=ongoing project

Latvia:

LVA0531	SEK 1 100 000	Decision 1992-01-20 (c)
LVA0151	SEK 134 000	Decision 1991-09-30 (c)
LVA0531	SEK 2 202 000	Decision 1993-02-04 (o)
LVA0532	SEK 3 776 000	Decision 1995-03-31 (o)

Assistance with cadastre registration, land evaluation, computerized land information system and modernization of laws.

LVA0691	SEK 5 314 000	Decision 1994-05-24 (o)
LVA0692	SEK 1 690 400	Decision 1995-07-18 (o)

Aerial photography (LVA0691) and orthophoto mapping (LVA0691 and 0692)

Lithuania:

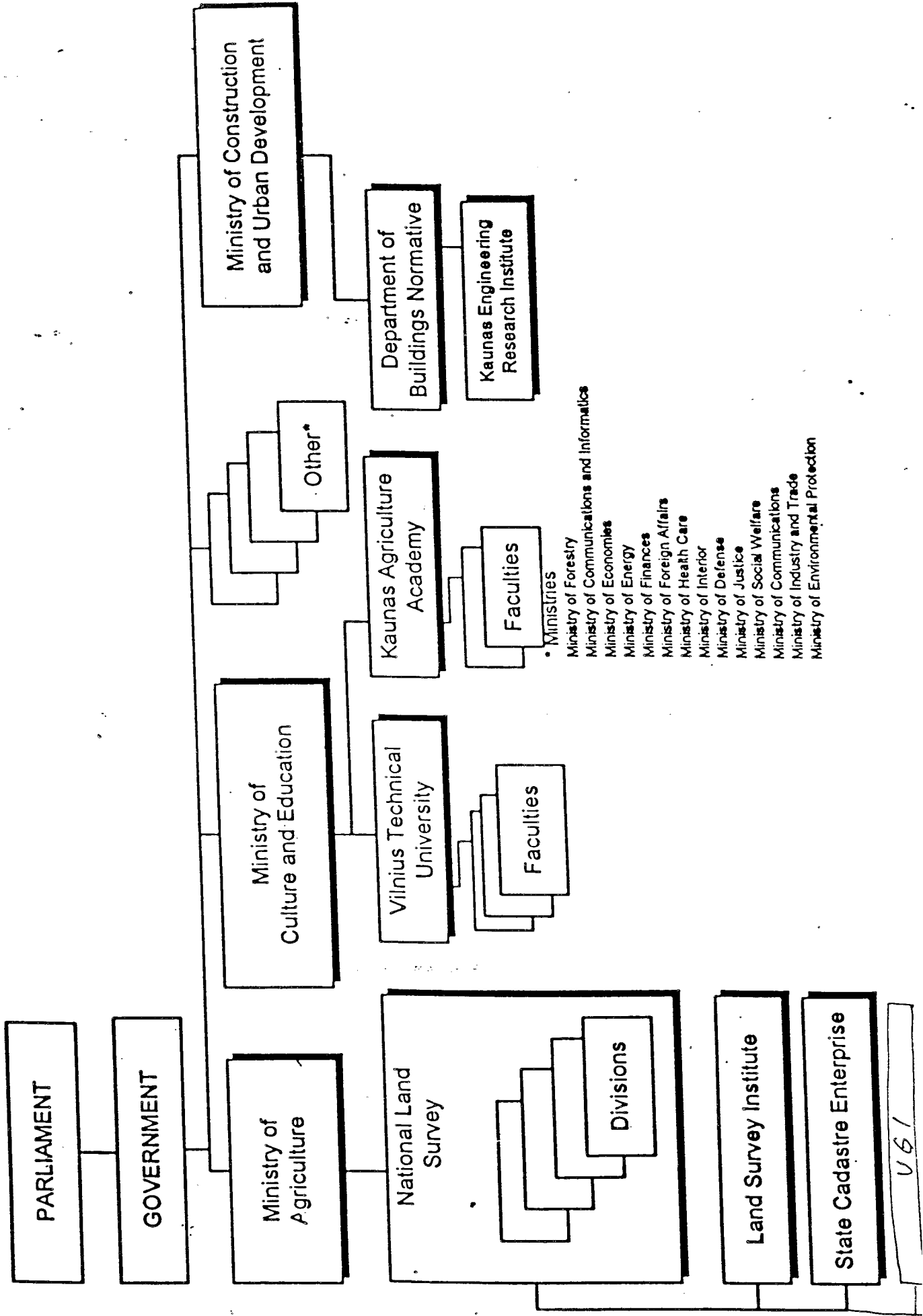
LTU0161	SEK 1 050 000	Decision 1992-01-20 (c)
LTU0162	SEK 2 996 000	Decision 1993-01-21 (c)
LTU0163	SEK 2 816 000	Decision 1994-02-25 (c)
LTU0164	SEK 3 163 000	Decision 1995-02-24 (o)

Assistance to the land reform through development of a land information system, training and advisory services.

LTU0711	SEK 6 849 000	Decision 1995-03-28 (o)
LTU0712	SEK 1 400 000	Decision 1996-04-09 (o)

Aerial photography (LTU0711 and 0712) and orthophoto mapping (LTU0711).

Lithuanian Ministries



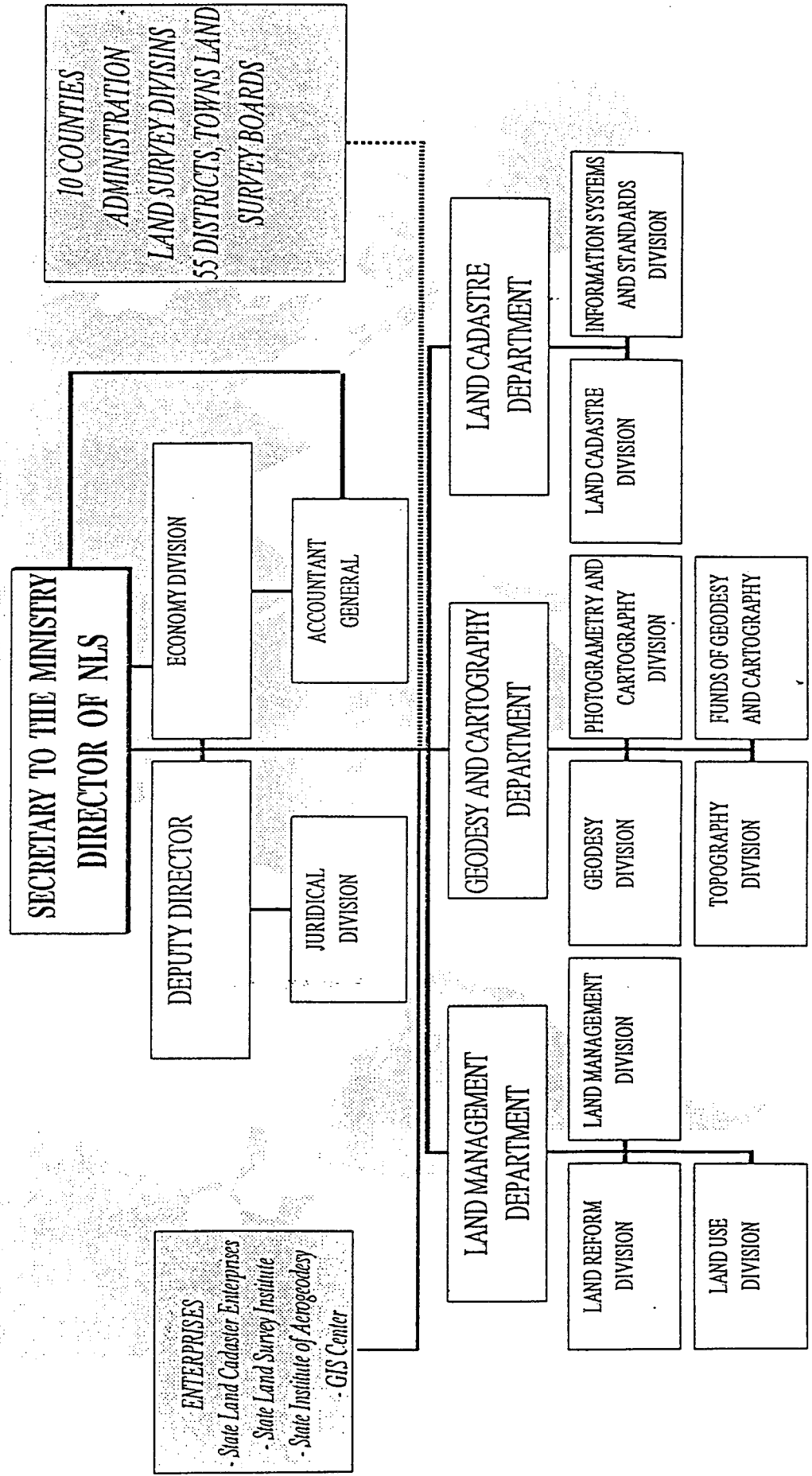
APPENDIX 2

10/10/14

APPENDIX 3

[illegible]

NATIONAL LAND SURVEY OF LITHUANIA (NLS)



APPENDIX 4

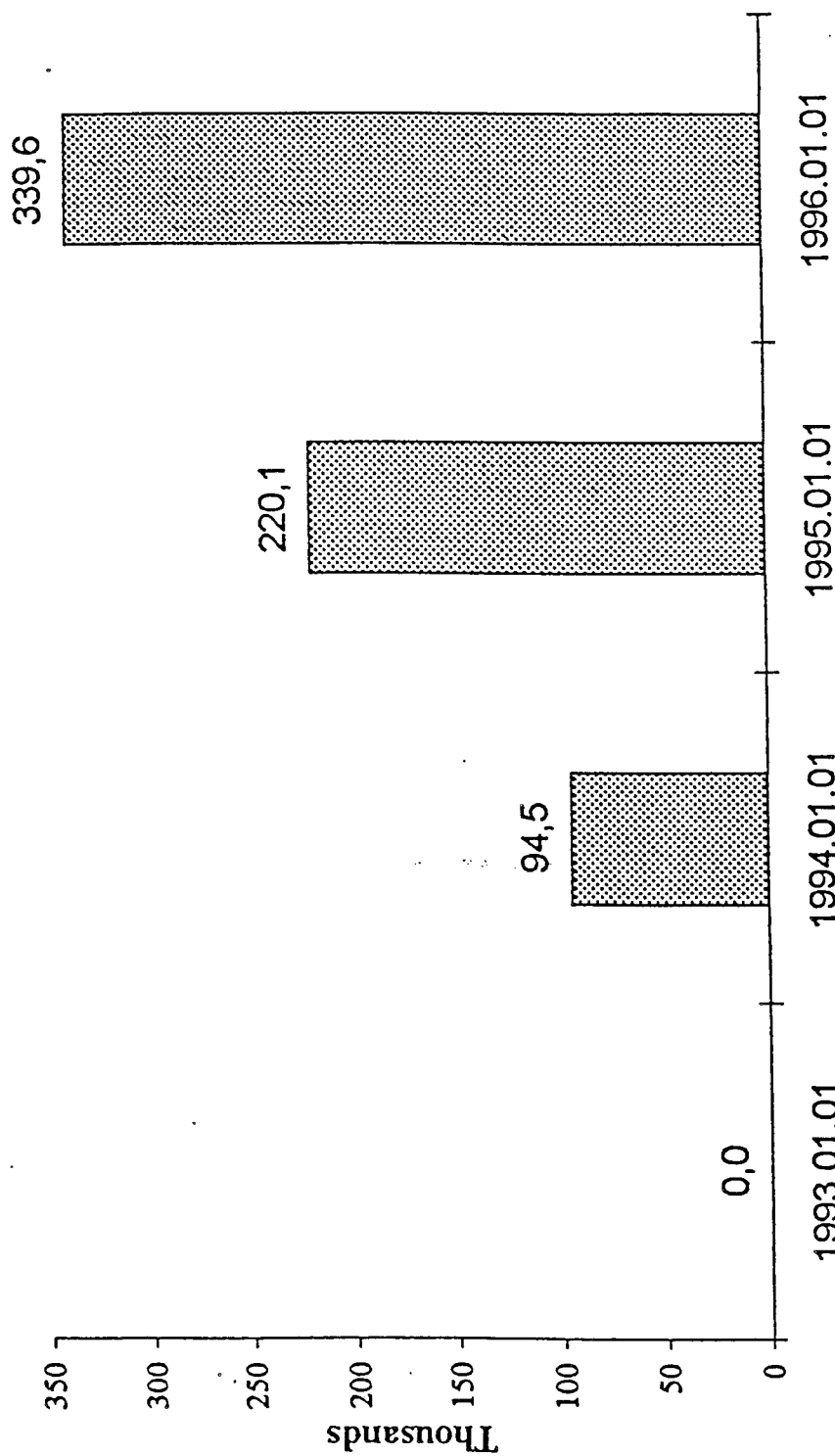
Page 10 of 10

Data about the persons' applications to restitute ownership right to previously owned land and forests and how these applications are satisfied, 1 of January, 1996

Indicators	Number of persons x 1000	Area ha x 1000	Satisfied applications (land surveyed on the ground and decisions are made to allot the compensation for land)				Applications remained not satisfied			
			Number of people x 1000	Area ha x 1000	% from people	% from area	Number of people x 1000	Area ha x 1000	% from persons	% from area
Number of applications granted in order to restitute ownership right to previously owned land and forest	670,7	3727	225,2	1628	34	44	445,5	2099	66	56
Persons who would like to restitute land and forest in equivalent kind	568,2	3159	165,9	1288	29	41	402,3	1871	71	59
Those who would like to get compensation for the previously owned land and forest	102,5	568	59,3	340	58	60	43,2	228	42	40

APPENDIX 5

Privatisation of agricultural land, of household parcels and other land parcels
Registration in Land Register

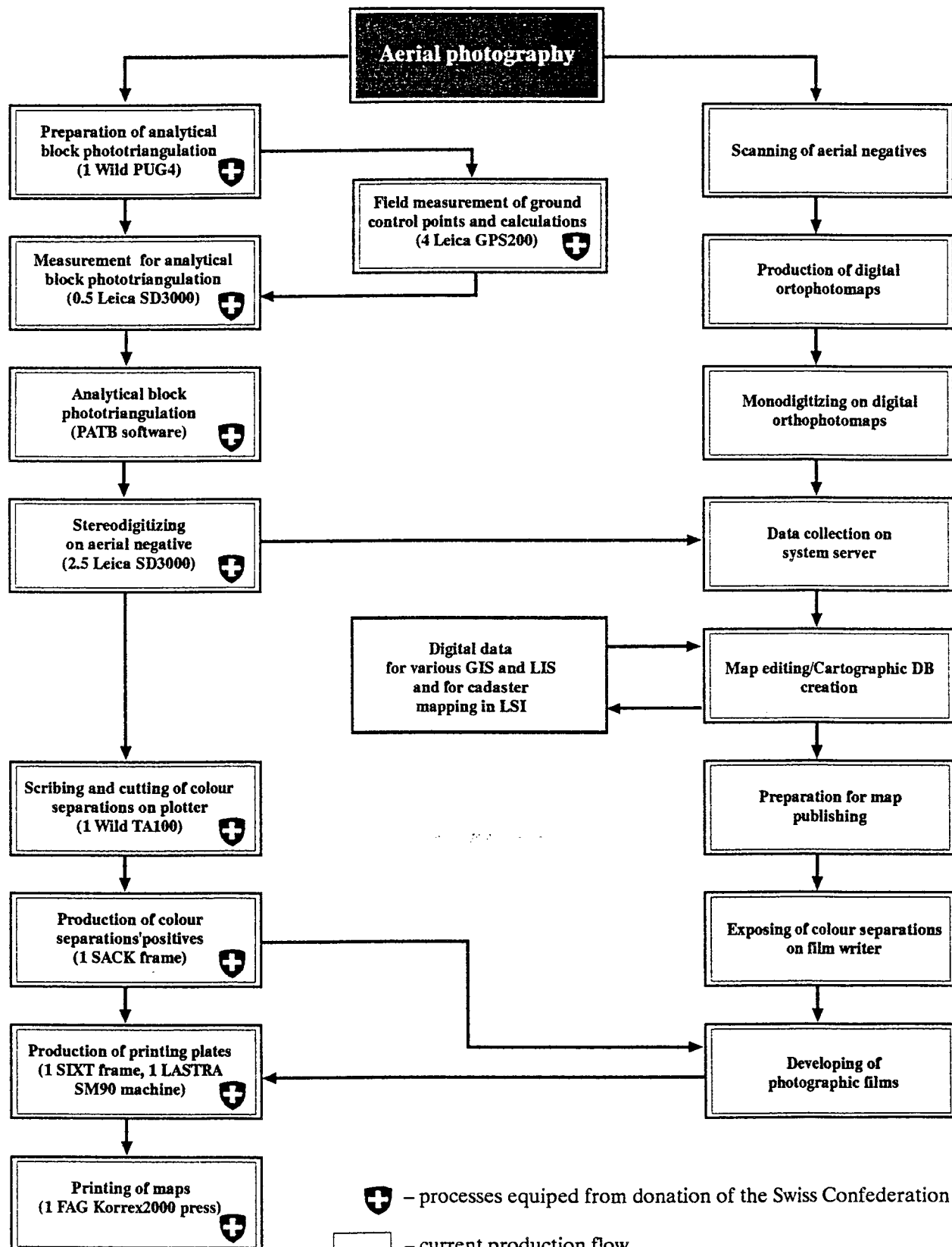


▨ Number of owners who registered the ownership right to land parcels (in th.)

APPENDIX 6

APPENDIX 6

PRODUCTION FLOW CHART



 – processes equipped from donation of the Swiss Confederation

 – current production flow

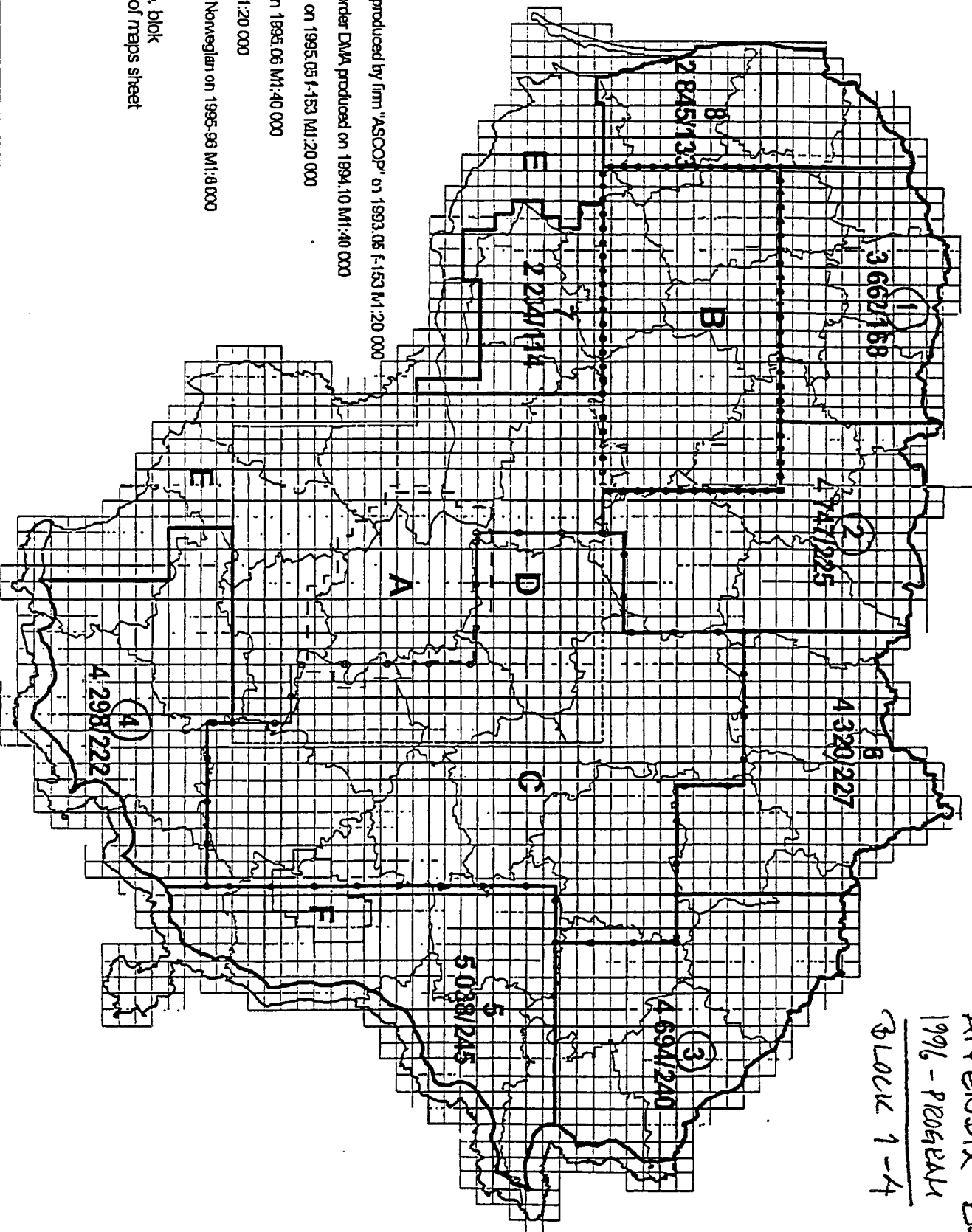
 – production flow under development

APPENDIX 7

APPENDIX B.1

1996 - PRESENT

BLOCK 1-4



A - Flight of Kaunas district produced by firm "ASCOF" on 1993.05 f-153 M1:20 000

B - Flight of Poland firm by order DMA produced on 1994.10 M1:40 000

C - Sweden survey production on 1995.05 f-153 M1:20 000

D - Flight by order of DMA on 1995.06 M1:40 000

E - Flight of Kiev on 1993 M1:20 000

F - Virtus dly area, flight of Norwegian on 1995.96 M1:8 000

No. blok
3 662/168 sq.km/qty. of maps sheet



Vilniaus Respublikos
Gynybos Ministerijos
V. Kudilionis 18, 2000 Vilnius
LIETUVA
Faksas 614604 Tel. 614505

New aerophoto maps of Lithuania

M1:1700000



APPENDIX B.1

APPENDIX 8

APPENDIX 8

LITHUANIAN FOREST RESOURCES
(1993.01.01.)

INDICES	Measurement units	Values
Total land area	th.ha	6530
Forest and other wooded land	th.ha	1970
In percent of land area	%	30.1
Forest (stands)	th.ha	1860
- artificial forest	th.ha	424
Other wooded land	th.ha	60
Volume of the growing stock	mil m ³ m ³ / ha	334.0 180
Volume of maturity stands	mil m ³ m ³ / ha	43.6 244
Gross annual increment	mil m ³ / ha m ³ / ha	11.9 6.3
Net annual increment	mil m ³ m ³ / ha	6.9 3.7
Forest area per capita	ha	0.51
Volume per capita	m ³	89

FOREST AREA BY FOREST TYPES (MAIN SPECIES)

Tree species	Area , th. ha	Percents
Pine	695.3	37.4
Spruce	450.2	24.2
Birch	363.4	19.4
Black alder	104.0	5.6
White alder	103.8	5.6
Aspen	50.4	2.7
Ash	49.3	2.7
Oak	32.4	1.7
Other	11.5	0.6

APPENDIX 9

PROJECT TITLE - TECHNICAL ASSISTANCE TO THE IMPLEMENTATION OF A LAND INFORMATION SYSTEM - LITHUANIA

WORKPLAN - PHASE II (Cont'd)

ACTIVITIES	INDICATORS OF ACHIEVEMENT	SOURCE OF VERIFICATION	COMMENTS, ASSUMPTIONS
7. *Market review	-Report with recommendations. -Acceptance by NLS	Reports / comments by NLS, Project Co-ordinator	Review the marketing opportunities for land and land related information with a view to improving sales and cost recovery
8. Identify and organise training / study tours within EC or PHARE recipient States.	-Agreed training / tours within budget.	Reports from NLS and related bodies.	Initially unallocated to allow maximum flexibility. Mix of in-Lithuania and external training.
9. Investigate and organise the setting up of a pilot digital mapping system.	-Agreed system and programme. -Implementation.	Reports from NLS	In support of long term progress towards an integrated land management system. Implementation subject to available support.
10. Identify and organise the provision of equipment / supplies for demonstrations or pilot purposes.	-Timely provision of requirements within budget. -Recipient satisfaction	Reports / comments from NLS	Budget provision within the project. May involve local purchase or hire.

*Activities marked with an asterisk will be done by specialist external consultants.

PROJECT TITLE - TECHNICAL ASSISTANCE TO THE IMPLEMENTATION OF A LAND INFORMATION SYSTEM - LITHUANIA

WORKPLAN - PHASE II

ACTIVITIES	INDICATORS OF ACHIEVEMENT	SOURCE OF VERIFICATION	COMMENTS, ASSUMPTIONS
1. Co-ordination between agencies working in the fields of LIS , cadastre and land management.	-Integration of effort in programmes -Reduction in duplication of effort -Satisfaction of donor agencies	Reports / comments from those involved	Flexibility and commitment by the agencies. Co-operation by Lithuanian and external bodies. Good communications
2. Provide operational advice	-Improvements in the speed and effectiveness of operations	Reports from NLS and related bodies	Good communication and co-operation between Project Coordinator and related bodies.
3. * User Needs Study	-Report with recommendations. -Acceptance by NLS	Reports / comments by NLS, Project Co-ordinator	Review USER requirements for land information
4.*Review training and produce a Human Resources Development Plan	-Report with recommendations. -Acceptance by NLS	Reports / comments by NLS, Project Co-ordinator	Review training requirements for areas related to land information and produce a human resources development plan
5. *Review of land and property valuation.	-Report with recommendations. -Acceptance by NLS	Reports / comments by NLS, Project Co-ordinator	Review the existing land and property valuation requirements and procedures in Lithuania and produce a plan for future development
6. *Review functions of government funded organisations involved in land information.	-Report with recommendations. -Acceptance by NLS	Reports / comments by NLS, Project Co-ordinator	Review functions of all government funded surveying and mapping services and identify all internal costs. Recommend methods for their continuing clear identification.

Sida Evaluations - 1995/96

- 95/1 Educação Ambiental em Moçambique. Kajsa Pehrsson
Department for Democracy and Social Development
- 95/2 Agitators, Incubators, Advisers - What Roles for the EPU's? Joel Samoff
Department for Research Cooperation
- 95/3 Swedish African Museum Programme (SAMP). Leo Kenny, Beata Kasale
Department for Democracy and Social Development
- 95/4 Evaluation of the Establishing of the Bank of Namibia 1990-1995. Jon A. Solheim, Peter Winai
Department for Democracy and Social Development
- 96/1 The Beira-Gothenburg Twinning Programme. Arne Heileman, Lennart Peck
The report is also available in Portuguese
Department for Democracy and Social Development
- 96/2 Debt Management. (Kenya) Kari Nars
Department for Democracy and Social Development
- 96/3 Telecommunications - A Swedish Contribution to Development. Lars Rylander, Ulf Rundin et al
Department for Infrastructure and Economic Cooperation
- 96/4 Biotechnology Project: Applied Biocatalysis. Karl Schügerl
Department for Research Cooperation
- 96/5 Democratic Development and Human Rights in Ethiopia. Christian Åhlund
Department for East and West Africa
- 96/6 Estruturação do Sistema Nacional de Gestão de Recursos Humanos. Júlio Nabais, Eva-Marie Skogsberg, Louise Helling
Department for Democracy and Social Development
- 96/7 Avaliação do Apoio Sueco ao Sector da Educação na Guiné Bissau 1992-1996. Marcella Ballara, Sinesio Bacchetto, Ahmed Dawelbeit, Julieta M Barbosa, Börje Wallberg
Department for Democracy and Social Development
- 96/8 Konvertering av rysk militärindustri. Maria Lindqvist, Göran Reitberger, Börje Svensson
Department for Central and Eastern Europe
- 96/9 Building Research Capacity in Ethiopia. E W Thulstrup, M Fekadu, A Negewo
Department for Research Cooperation
- 96/10 Rural village water supply programme - Botswana. Jan Valdelin, David Browne, Elsie Alexander, Kristina Boman, Marie Grönvall, Imelda Molokomme, Gunnar Settergren
Department for Natural Resources and the Environment
- 96/11 UNICEF's programme for water and sanitation in central America - Facing new challenges and opportunities. Jan Valdelin, Charlotta Adelstål, Ron Sawyer, Rosa Nunes, Xiomara del Torres, Daniel Gubler
Department for Natural Resources and the Environment
- 96/12 Cooperative Environment Programme - Asian Institute of Technology/Sida, 1993-1996. Thomas Malmqvist, Börje Wallberg
Department for Democracy and Social Development
- 96/13 Forest Sector Development Programme - Lithuania-Sweden. Mårten Bendz
Department for Central and Eastern Europe
- 96/14 Twinning Programmes With Local Authorities in Poland, Estonia, Latvia and Lithuania. Håkan Falk, Börje Wallberg
Department for Central and Eastern Europe
- 96/15 Swedish Support to the Forestry Sector in Latvia. Kurt Boström
Department for Central and Eastern Europe

- 96/16 Swedish Support to Botswana Railways. Brian Green, Peter Law
Department for Infrastructure and Economic Cooperation
- 96/17 Cooperation between the Swedish County Administration Boards and the Baltic Countries.
Lennart C G Almqvist
Department for Central and Eastern Europe
- 96/18 Swedish - Malaysian Research Cooperation on Tropical Rain Forest Management. T C Whitmore
Department for Research Cooperation, SAREC
- 96/19 Sida/SAREC Supported Collaborative Programme for Biomedical Research Training in Central America. Alberto Nieto
Department for Research Cooperation, SAREC
- 96/20 The Swedish Fisheries Programme in Guinea Bissau, 1977-1995. Tom Alberts, Christer Alexanderson
Department for Natural Resources and the Environment
- 96/21 The Electricity Sector in Mozambique, Support to the Sector By Norway and Sweden. Bo Andreasson, Steinar Grongstad, Vidkunn Hveding, Ralph Kårhammar
Department for Infrastructure and Economic Cooperation
- 96/22 Svenskt stöd till Vänortssamarbete med Polen, Estland, Lettland och Litaunien. Håkan Falk, Börje Wallberg
Department for Central and Eastern Europe
- 96/23 Water Supply System in Dodota - Ethiopia. Bror Olsson, Judith Narrowe, Negatu Asfaw, Eneye Tefera, Amsalu Negussie
Department for Natural Resources and the Environment
- 96/24 Cadastral and Mapping Support to the Land Reform Programme in Estonia. Ian Brook
Department for Central and Eastern Europe
- 96/25 National Soil and Water Conservation Programme - Kenya. Mary Tiffen, Raymond Purcell, Francis Gichuki, Charles Gachene, John Gatheru
Department for Natural Resources and the Environment
- 96/26 Soil and Water Conservation Research Project at Kari, Muguga - Kenya. Kamugisha, JR, Semu, E
Department for Natural Resources and the Environment
- 96/27 Sida Support to the Education Sector in Ethiopia 1992-1995. Jan Valdelin, Michael Wort, Ingrid Christensson, Gudrun Cederblad
Department for Democracy and Social Development
- 96/28 Strategic Business Alliances in Costa Rica. Mats Helander
Department for Infrastructure and Economic Cooperation



SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

S-105 25 Stockholm, Sweden

Tel: +46 (0)8-698 50 00. Fax: +46 (0)8-20 88 64

Telegram: sida stockholm. Postgiro: 1 56 34-9

E-mail: info@sida.se. Homepage: <http://www.sida.se>