

ANNEX B.6

LAND USE OF THE STUDY AREA

B.6 LAND USE OF THE STUDY AREA

B.6.1 LAND USE AND LAND COVER

(1) Historical Changes in Land Use and Land Cover

The present character of the Morava River floodplain is a result of both natural processes and man's activities over thousands of year. Reliable documentary evidence of land cover and land use is available only from 1733, primarily in the form of maps. Lasak, Seffer and Cierna of Daphne (Centre for Applied Ecology) have published a detailed analysis of changes of land cover/land use between Devin and Sekule (the western part of the Study Area) from 1733 to 1999 - see Seffer J. and Stanova V. (eds.) 1999. Earlier evidence of land use of the Study Area, derived from research on the floodplain of the Morava River, has also been published by Daphne. The description below on the historical land use of the area, which has shaped present land use and land cover, is based in particular on the papers of Polacek and Lasak, Seffer and Cierna.

Man may have been present along the Morava River for at least 10,000 years, with early settlements on sandy islands in the floodplain being settled by Mesolithic hunters and fishermen between 8,000 B.C. and 6,000 B.C. With the onset of agricultural settlement in Europe in the Neolithic period (6,000-2,000 B.C.) there is evidence of seasonal settlements, which may have been associated with pastoral farming, while in the Bronze Age (2,000-750 B.C.) there was a period of intense settlement of the floodplain - with possible agricultural use of higher ground.

By the end of the 18th century, the floodplain was part of a developed agricultural area, but wetland habitats (wet grasslands, forests of hard and soft wood and water bodies) dominated the landscape of the floodplain. The ratio of Natural:Man-made areas was approximately 2:1. However, in 1942, the building of a dike interfered with the water regime and decreased the floodplain's area and then in the second half of the 20th century an irrigation and drainage system was built and new areas of arable land were created. Gravel extraction has also taken place, e.g. at Male Levaré, leading to the creation of flooded gravel pits, now used for recreation purposes. Thus, during the last 50 years, the ratio of Natural:Man-made areas has been reversed to 1:2 and a belt of wetlands in the 'middle section', between Gajary and Suchorad, has been completely removed. The principle changes in the constituent land cover types (grasslands, woodlands and arable land) are described below.

Grasslands were a dominant ecosystem throughout the Morava River floodplain, and along its tributaries, and included a continuous belt of wetlands in the floodplain's 'middle section' between Gajary and Suchorad (evident from maps of 1898 and 1923); these no longer exist, having been converted to arable land. During the 18th and 19th centuries grasslands occupied approximately half, 8,000 ha, of the approx. 16,000 ha area studied, and the largest complex of high quality

¹ The report and maps published by Daphne do not present summary tables of changes in land cover/use i.e. the

floodplain meadows, at Devinske jazero, is still present having been maintained for more than 200 years.

The meadows would be mowed annually or bi-annually and would be grazed in autumn. According to memories of old inhabitants, if the flood regime was regular (bringing with it many nutrients) the "grass would grow up to the horse's back", but in dry years the grass would be low, the hay sour and the production as little as one fifth that in wet years. In 1923 grasslands still occupied 7,931 ha, but by 1999 this had dropped to 1,913 ha, just 12% of the floodplain area. This trend of conversion of grasslands to arable land may now have stopped; due to increasing frequency and height of floods, some arable land near the river channel has reverted to grassland. Since 1992, co-operative farms have experienced financial problems and this has resulted in a decrease in animal production and in turn a decline in hay consumption. Meadow maintenance in many areas has therefore been low or non-existent. (Daphne now has a Project entitled "Central European Grasslands - Conservation and Sustainable Use", supported by the Global Environmental Facility (GEF) of the World Bank and with the goal of ecologically sustainable agricultural and pastoral management. The project will help to restore certain Slovak grassland ecosystems, and their biodiversity, including some on the Morava River Floodplain.)

The extent of **woodlands** in the floodplain seems to have fluctuated during the last 300 years. In 1733 hard and soft wood floodplain forests created a wide, continuous belt beside the main river channel; in 1783 a more precise map shows forest occupying 26% of the total area, but fragmented. Coverage had decreased to 16% by the 19th century, but during the last 50 years has increased to 24% of the total area. The most valuable part of the forests, from an ecological and landscape perspective, have been continuously present since 1733 and are now the Horny and Dolny Les Nature Reserves.

In the 18th century, **arable land** was generally located 1 - 2 km from the river channel, with exceptions at Vysoka pri Morave and Zahorska Ves, where arable land was closer to the river. It occupied approximately 4,000 ha, less than one quarter of the total floodplain area studied. In the 19th century there was a 50% increase in the area of arable land, mainly near the villages of Vysoka pri Morave, Zahorska Ves and Suchorad; this was attributed to the planting of sugar beet. By the end of the 20th century arable land occupied 63% of the floodplain.

(2) Present Land Use

Data, at cadaster level for 1999, originating from the Institute of Geodesy and Cartography (GKU), gives the official areas of land designated for agricultural use (divided into arable land, pasture, hop-fields, vineyards, gardens and orchards) and of forest, water bodies, built-up areas and 'other' land uses. For the Study Area these are presented in Tables B.6.1 and B.6.2. The data are presented in map format in Figure B.6.1.

areas of grassland, woodland, arable land etc. for the years studied.

The total area of the Municipalities of the Study Area is 843 km²; of this 42% (354 km²) is arable land (328.9 km²) plus vineyards, gardens and orchards (25.3 km²); 8.9% (75 km²) is pasture and 37.6% is forest (317 km² is forest). However, as explained in Chapter B.1.2, nearly 209 km² of the Study Area consists of the forested western slopes of the Male Karpaty Mountains. If this is excluded as all forest, then approximately 56% (354 km²) of the Study Area can be regarded as arable land plus vineyards, gardens and orchards, and 12% (75 km²) as pasture and 17% (108 km²) as forest. Arable agriculture is therefore the predominant, formally designated, rural land use, with the ratio of arable land to pasture approximately 4.4:1.

Data, for 2001, on land used by the various enterprises and individual/private farmers (SHR) in the Study Area were obtained from the Bratislava and Senica Regional Departments of the Ministry of Agriculture (RDA); the data gave total "agricultural" land consisting of arable and pasture. Some enterprises and private farmers used land in more than one municipality - and some in both Malacky and Senica Districts. The largest, Agropartner s.r.o., uses land in six different municipalities. Most private farmers used land in only one Municipality.

In Table B.6.3, a comparison is made between the areas of arable land and pasture that are registered with the Regional Departments of the Ministry of Agriculture (RDA) for the Study Area between January and August of 2001, and the corresponding areas of available arable land and pasture (the land resource), in 1999 according to the official records of the Institute of Geodesy and Cartography. This shows some interesting discrepancies. For example in Borinka, 137 ha arable land plus pasture (62% of the total of 220 ha) is not registered with the Bratislava RDA as being used. Similarly, in Gajary, 693 ha of arable land plus pasture (21% of the total of 3,285 ha) is not registered with the Bratislava RDA; this consists of 16% of the arable land and 49% of the pasture. In Devinska Nova Ves, none of the 1193 ha of agricultural land (1,038 ha of arable land and 155 ha of pasture) appeared to be registered with the Bratislava RDA.

On the other hand, in some municipalities, more agricultural land is registered with the Regional Department of the Ministry of Agriculture than is available. For example in Malacky, 931.9 ha of agricultural land (882 ha of arable and 49.9 ha of pasture) is available, but 1,112.5 ha (1,090.1 ha arable land and 22.4 ha of pasture) is registered with the RDA. In Rohoznik, 988.2 ha of agricultural land (803.5 ha of arable and 184.7 ha of pasture) is available, but 1,110.3 ha (946.5 ha arable land and 163.8 ha of pasture) is registered with the RDA.

Small discrepancies could be attributed to the fact that the land use and registration data relate to different years (1999 and 2001 respectively), but the annual changes in agricultural land area (e.g. transfers between arable and pasture) are relatively small - as far as formal designation of land use in statistical data is concerned. The discrepancies above are much more significant. In some municipalities they suggest either that some land is not being farmed at all and/or is being farmed by farmers/enterprises/individuals not registered with the Regional Department of Agriculture and therefore not receiving subsidies for use of this land. However, in other Municipalities the amount of land registered, by the several companies and individual farmers that use land, is

greater than the area of land that is supposed to be available. In some cases it is possible that the same land has been recorded twice during the same period, because it has changed hands i.e. one company was renting the land at the beginning of the year, but then transferred the lease to another company or individual.

If the totals of available land (according to the GKU database) are compared with the registered land the discrepancies are not so great. Thus the available arable land is 32,889 ha, while that registered is 29,505 ha i.e. 2,742 ha (9.2%) less land is registered than is considered to be available in the Study Area.

(3) Recent and Present Land Cover

The following table presents a summary of Land Cover data for the Study Area, according to the CORINE system, for the years 1970, 1990 and 2000. The 1970 classification is based on Landsat MSS (Multi-Spectral Scanner) imagery; this has lower resolution than the Landsat TM (Thematic Mapper) imagery used for 1990, which in turn has lower resolution than that of the SPOT imagery used for the year 2000. A map of land cover in 2000 is presented as Figure B.6.3.

The analysis shows that, in percentage terms greater than 1%, there is almost no overall change in land cover between 1970 and 1990. However between 1990 and 2000 there do appear to be some significant changes in the Study Area, though some of the supposed "changes" could be attributed to image interpretation differences associated with the higher resolution of the 2000 imagery.

Assuming the changes to be real, in relation to the total Study Area, Artificial Surfaces (i.e. industrial and urban land) have increased by 1 %, Forests and Semi-natural areas by 2% and Wetlands and Water Bodies each by about ½ %. These appear to be at the expense of agricultural land, which has decreased by just over 4 % of the "Total Land Area" under study. Examining the figures for agriculture more closely there are even greater changes within the sector. Arable land fell from 45.6% to 37.1% of the Study Area, while pasture increased from 3.1% to 9.4%; heterogeneous agricultural areas dropped from 5.0% to 3.0% of the total land area. These land cover trends are consistent with the general picture that has been painted for agriculture in the Study Area over the last 30 years, with a general decline and arable land reverting to pasture.

CORINE Landcover 1970, 1990, 2000

LEVEL 1	LEVEL 2	1970	1970	1990	1990	2000	2000
		Area (ha)	Area%	Area (ha)	Area%	Area (ha)	Area%
1. Artificial surfaces		4,724	5.6	4,896	5.8	5,666	6.7
2. Agricultural areas	2.1 Arable land	38,170	45.5	38,228	45.6	31,169	37.1
	2.2 Permanent crops	913	1.1	848	1.0	827	1.0
	2.3 Pastures	2,897	3.5	2,623	3.1	7,864	9.4
	2.4 Heterogeneous agricultural areas	3,804	4.5	4,158	5.0	2,504	3.0
	Subtotal:	45,784	54.6	45,857	54.7	42,364	50.4
3. Forests and semi-natural areas		32,790	39.1	32,628	38.9	34,735	41.3
4. Wetlands		324	0.4	227	0.3	583	0.7
5. Water bodies		260	0.3	286	0.3	746	0.9
Grand Total:		83,882	100.0	83,894	100.0	84,094	100.0

B.6.2 LAND USE SYSTEM

(1) Situation Prior to the 1990's Economic Transformation

As described by Blaas (1999; 2001), the present land use systems in areas that are primarily agricultural have been shaped by the political and social forces of the last 200 years. Except for the flood plain area of the Morava River (see section B.6.1.1 above and section B.12.1), detailed historical information on land tenure, land use systems and the development of agriculture in Zahorie, is not readily available. However it is understood that the changes in land use that took place in the Study Area were in general similar to those in Slovakia as a whole, as described here.

From the Middle Ages a form of protection of agricultural land existed through the prohibition of construction of buildings outside a designated village boundary. This distinction between built-up (intra-villain) and non-built-up (extra-villain) areas (agriculture, forests etc) was reinforced during the period of the Austro-Hungarian Empire, especially in the time of Maria-Theresa in the 18th Century when mapping was undertaken and a Land Register issued in 1723. This distinction and the associated protection of rural land have continued to this day.

In 1848, serfdom was abolished in what is now Slovakia (then it was a part of the Austrian Empire); but over forty years later, in 1895, estates larger than 100ha still utilised nearly 50% of the total land area even though they represented only 1% of the land holdings. At the same time, 52% of the total number of holdings were peasant farms smaller than 2.9ha, occupying only 5.8% of the total land area. Thus land was subject to a dual farming structure: there was a large number of very small peasant farms, but a significant portion of the land was in the hands of huge, privately owned estates.

However, after the first Czechoslovak Land Reform was adopted in 1919, there was a decline, to 23.5%, of the share of land occupied by large holdings (those over 100ha). There was an increase in the area of land under middle-sized holdings; 146,326 Slovak farms (26.8% of the total of 545,481 which includes holdings/gardens of 0.5 ha and less) were of a size between 5ha and 20ha and they occupied 44.7% of the land area.

The first Land Reform set a maximum limit on farm land owned of 150ha, but a new act adopted in 1948 allowed a household to own a maximum of only 50ha, provided that the land was cultivated by that household. Land of absentee landowners and those who hired labour could be confiscated. However, the majority of the intended beneficiaries of this reform did not become land-owners, since they had to join production co-operatives, so the continued development of a cadre of private farmers, farming their own land, came to a halt.

Instead, collectivisation (1949 to 1960 and beyond) again pushed the management, if not the ownership, of land towards the 'dual pattern' of (i) a small number of large farms occupying the greatest share of agricultural land and (ii) a very large number of holdings of less than 0.5ha. The

number of holdings of the latter soared from 74,824 to 201,720 between 1949 and 1970. Thus, by 1989, along with large collective farms (State Farms and Co-operatives), a large number of very small "farms" (mostly household plots/gardens) survived and produced a significant share of total agricultural output (see table below).

Farm Sizes in Slovakia 1989

Farm Type	Number	Average Size (hectares)	% Total Agric. Area	Share of Total Agricultural Output
Co-operatives	631	2,667	78%	64%
State Farms	70	5,186	17%	21%
Family Farms	2,437	2.6	<1%	15%
Household Plots/Gardens	300,000	0.31	4%	

Source: Derived from Ambrozyova, M.: Analysis of structural development in agriculture 1990-1997. Project report, RIAFE Bratislava, 1998 (Quoted in Blaas, 1999)

Blaas (2001) has suggested that collectivisation may be considered to have interrupted the process of a concentration of land towards more viable and competitive holdings, based on private ownership, which was the trend in western democracies. Democratic land reforms were on the point of contributing to that process, but their outcome was annulled by collectivisation.

(2) Situation During the Economic Transformation

When the 'socialist' era ended in 1989 a new legal base for land ownership and farm management was established. This was based on the privatisation of state-owned farms and the so-called transformation of co-operatives; this involved dividing co-operative owned assets into individual property shares and allocating them to co-operative members and other eligible persons. During this process, old (original or inherited) ownership rights have been restored and new ownership rights created (like co-operative property shares). In the case of land, the maximum amount of **agricultural** land that could be allocated to a single owner was 150 ha, with 250 ha being the limit for all land. These limits did not apply to land acquired by other means e.g. by purchase or inheritance and this is still the case.

During the 'socialist' period in Slovakia, legal titles to land for the most part remained untouched and therefore the process of renewal of property rights was somewhat different from that of other post-socialist countries. **Restitution** of land (the restoration of full title to land) applied to land confiscated by the State during communist rule and was relatively limited in scope. Thus, according to Blaas (1999) only 166,407 ha of land, of which 99,231 ha was agricultural land (approximately 4% of Slovakia's total agricultural land), had been 'restored' by the end of 1998, representing 80% of claims. (Bandlerova and Marisova, 2000, put forward figures of 178,675 ha of agricultural and forest land being returned by 1997, out of 220,098 claimed). The process has still to be completed. Figures for the Study Area have not been obtained but this may be possible later for Case Study areas - see Section (3) on land registration.

The great majority of landowners had, however, **preserved** their legal titles to land during communism. They were deprived only from the right to *use* their land, because their had been legal provision that had prioritised its collective use. After 1990, all owners became free to claim their land for their own use or for lease to an entity different from the previous user. However many of the natural boundaries of historical plots had disappeared during the socialist period and it could be difficult to detach a small piece of land from the middle of a large plot for private use. So in many cases a substitute plot was given to a claimant. There had been a plan to consolidate land, to bring land use in line with land ownership (see section B.6.2.4), but this has proved to be a long and costly procedure, so consolidation has not yet contributed much to determining the land use pattern. A complicating factor for consolidation is the system of classifying the quality of agricultural land. Original owners may have had certain amounts of land of different values (quality) and would therefore seek to obtain the equivalent in any 'new' allocation; this could be difficult to achieve in a single block.

(3) Land Registration System

The above **restitution** and **restoration** processes have both been made very difficult because many land claimants and land users cannot present valid deeds or other documentation to support their claims and, conversely, there are many plots registered in Cadaster Offices for which owners cannot be traced. The reconstruction of the Ownership Registry has also been hindered because registration maps and land registers have been lost or badly damaged.

The reconstruction of the Land Registry is a major exercise and in the Study Area the whole system is being modernised by a process of digitising existing maps and recording details of land use, buildings, ownership etc on a linked database i.e. by the establishment of a simple Geographical Information System (GIS). The work is part of a national programme "Register Obnovenej Evidencie Pôdy" (ROEP). In Malacky Cadaster office this work is being contracted out on a village (cadaster) by village basis, using a Czech mapping and database programme. The work is complete for approximately 70% of the Districts (*okres*), with the work on 4 cadasters not started as of the end of July 2001. Inside the town (built-up areas) of the cadasters of Malacky Town (*Mesto*) and Studienka the mapping/digitising work is being carried out at 1:1,000 scale, but at 1:5,000 scale outside the 'urban' areas. For the other cadasters in Malacky District the work is being carried out at 1:2,880 scale.

In Senica District the work has not been completed for the 4 Municipalities of the Study Area, while for the Bratislava IV Municipalities the work is complete.

It should be possible to obtain a clearer more accurate picture of overall land use in the Study Area once this work is complete and available. Nevertheless, the accuracy will still be dependent on the reliability of the data entered; it is understood that there is a problem with owners providing up-to-date information on changes in land use. In the meantime the Study Team is trying to acquire the digital data that is available. The team can then obtain a preliminary understanding of e.g. the extent of land fragmentation, with a view to making a closer analysis of the situation in one or more of the Case Study areas.

(4) Consolidation of Land

The consolidation of land, from a fragmented state with many owners into a system of ownership (or, at the very least, land use) based on blocks or similar units that facilitate management on an economic basis, should help to make agricultural and rural development more effective. A functioning land market can be an important element in helping to achieve this consolidation. Legislation has therefore been passed (Act No. 180/1995 - prior to Dec 99) to make it easier to identify land owners and support land consolidation. This Law of Land Use Regulation set up simplified procedures for proving ownership and having this recorded in the land registry, for 'uniting' land, straightening boundaries between plots etc. The Law also incorporated measures relating to water, ecology, the prevention of erosion and other measures intended to improve the conditions for agricultural production and improving the livelihoods of rural inhabitants.

To prevent fragmentation and loss of agricultural and forest land that is outside the built-up area of a village, the legislation establishes procedures for the transfer of property and changes in land use; an example of such a provision follows. For transfer of land for agricultural use that has an area of only 2,002 to 5,000 m² (0.2 - 0.5 ha), the transferee of the land has to pay a fee equal to 20% of the price of the land. If the area of the land is from 0.5 to 2.0 ha the transfer fee is 10% of the land price. The fee is paid to the State Fund for the Protection and Improvement of Agricultural Land.

Though the ownership structure has disintegrated somewhat with restitution, agricultural activities and land use have not been fragmented to the same extent (nationally and in the Study Area) and the amount of large-scale agricultural production remains one of the highest in Central and Eastern Europe (Bandlerova and Marisova, 2000). This has been achieved by Co-operatives and their successor companies (s.r.o. and a.s.) and private farmers renting land from the numerous land owners through leases. According to (Bandlerova and Marisova, 2000), the rent is usually paid in kind or in cash and at between 0.5 and 2.5% of the official administrative price of the land, depending on location.

It seems that agricultural land has attracted purchasers mainly if there has been a possibility of making a profit by using the land for non-agricultural purposes; the prices paid cannot be used as an indicator of the market value of land where its use is limited to agricultural purposes.

(5) Administrative Prices of Land and the Land Market

1) Administrative Prices of Land

The "Administrative Prices" of land take into consideration topography, soil type etc (i.e. land capability/agricultural quality and thus the potential yields) and are also used for assessing the land-value tax. These prices apply only to Slovak citizens, since foreign investors can only purchase land if they start a business in Slovakia (i.e. register with the Trade Registry as a legal

entity). There are further restrictions, according to which the foreign investor must either pay a price agreed by expert opinion in accordance with German or Austrian laws or a price agreed by the Ministry of Finance. With respect to leasing there are no restrictions on foreigners; this system therefore does not encourage purchase, and the establishment of a land market, but rather leasing.

The present "Administrative Prices" as decided by the State range from SKK 5,000 to SKK 110,000 per. When applied to an individual farm it is understood that the average administrative price of the land in a given village is applied to the whole area of agricultural land used by a farm enterprise in that village. In the case of a large enterprise this may extend over more than one village (*obec*) and include blocks of land with a range of "bonity" values and therefore administrative prices.

2) Land Market

The Land Market can be an important indicator of the health of agriculture in particular and of rural development in general. It plays an important role in:

- investment in agriculture and rural development;
- enabling structural changes in the countryside and its management;
- facilitating e.g. agro-tourism and other employment alternatives, if there is a drop in demand for agricultural produce;
- influencing the level of infrastructure provision;
- the retention of resident rural populations.
- The land market in the Zahorie area (and in Slovakia as a whole) appears neither to be well developed, nor transparent, and suffers from the following constraints:
- The supply is probably greater than demand and so, in the absence of limited demand, real market prices are not set.
- Weak economic performance and reductions in subsidies have resulted in a lack of capital for purchasing agricultural land.
- Long-term credit, with acceptable (low) interest rates to support purchase, is not available.
- The rate of interest on savings can be higher and more reliable than revenues from land/agriculture.
- The restitution/restoration process is not finished, with landowners unknown or absent from the area.
- Divided land ownership (one plot several owners).

As result there appears to be a significant degree of speculation by the many landowners in Slovakia and the Study Area who prefer to keep their land, partly in the hope that its market price might rise, especially as a result of joining the European Union. This may be an obstacle for farm enterprises or private farmers wishing to make long-term investments in their land.

(6) Rural Survey Responses on Land Use

The Rural Survey included questions regarding land ownership, leasing and interest in selling land. Some relevant results are presented here.

Land Ownership. Question E.1

Respondent Type	Own Land		Only Rent		Own and Rent		No answer (No)	
	Number	%	Number	%	Number	%	Number	%
Farm Employees	24	22.6%	4	3.8%	0	0	78	73.6%
Individual Farmers	17	54.8%	3	9.7%	6	19.4%	5	16.3%
Unemployed	3	11.5%	1	3.9%	0	0	22	84.6%
Other inhabitants	19	20%	2	2.1%	1	1.1%	73	76.8%
Mayors	9	90%	0	0	1	10%	0	0
Total	72		10		8		178	

Note: 'No answer' includes those who do not own land and these are the majority who gave 'no answer'.

Out of the 268 respondents, 80 (nearly 30%) owned farmland. Even the 20% of inhabitants not working as farm employees owned land, and all but one of the mayors. As might be expected, 23 out of the 31 private farmers (SHR) interviewed owned land, six of them also renting land.

Renting of Land. Question E.5

Respondent Type	To company where working		To another company		Both		Neither		No answer	
	Number	%	Number	%	Number	%	Number	%	Number	%
Farm Employees	20	18.9%	2	1.9%	3	2.8%	0	0	81	76.4%
Individual Farmers	5	16.1%	10	32.3%	3	9.7%	4	12.9%	9	29.0%
Unemployed	0	0	1	3.8%	1	3.8%	0	0	24	92.3%
Other inhabitants	3	3.2%	8	8.4%	1	1.1%	7	7.4%	76	80.0%
Mayors	4	40%	3	30%	1	10%	1	10	1	10%
Total	32		23		9		12		191	

Note: 'No answer' includes those who do not own land and these are the majority who gave 'no answer'.

Of the 25 farm employees who responded, 23 rented their land to the enterprise where they worked and three of these to another entity as well; two rented land to another enterprise. All, therefore, rented their land to another user. Of the 19 inhabitants with land (non-agricultural employees) who responded, 7 did not rent their land to anyone; this suggests that they might use it themselves even if they are not registered as farmers.

Preference for Selling or Keeping Land (of those that own it). Question E.6

Respondent Type	Prefer to Sell Land		Prefer to Keep Land		No Opinion		No answer	
	Number	%	Number	%	Number	%	Number	%
Farm Employees	2	1.9%	22	20.8%	4	3.8%	78	73.6%
Individual Farmers	6	19.4%	21	67.7%	2	6.5%	2	6.5%
Unemployed	0	0	1	3.9%	1	3.9%	24	92.3%
Other inhabitants	3	3.2%	16	16.8%	2	2.1%	74	77.9%
Mayors	4	40%	5	50%	0	0	1	10%
Total	15		65		9		179	

Note: 'No answer' includes those who do not own land and these are the majority who gave 'no answer'.

Only 17% of respondents wished to sell their land; 73% expressed a preference to keep their land. This response was consistent across the groups of respondent, except for the mayors, where 40% did express an interest in selling their land.

A more detailed interview with the senior manager of one farm enterprise sheds further light on the complexities of the land ownership and rental situation and the problems this can cause for farming. Of the approx. 2500 ha of land being farmed by the enterprise, all except the land with the main farm buildings was rented. Between 50% and 55% was rented from known, individual landowners by means of many different contracts; the average amount of land rented through each contract was 27 ha. Two people were employed by the enterprise to administer these contracts. 24 hectares belonged to and was rented from the state, while the remaining 45% to 50% was in the hands of the State Land Fund and being leased from the fund for an unlimited period. The land belonged to private individuals who could not be traced or could not establish their claim to ownership.

The manager claimed that the landowners preferred to sell their land to the Company (somewhat contrary to the results of the questionnaires presented above), but the Company could not afford to buy the land at present - though it had an interest in doing so. The profitability of farming was not yet high enough to justify such investment; if cash surpluses were available, bank deposit accounts paid better interest rates. With rental rates low (approximately 1% of the land's administrative price, which is the legal minimum) renting was a better commercial option than purchasing, being between SKK370 and SKK1,000 per ha/year.

(7) Consequences of Land Administrative and Tenure System and other Factors on Land Use

The land restitution/restoration process from collectivised farms to former owners (where known) has led to a situation where most farmland is rented, much of it from either landowners who are not resident in the village where the land occurs or from the State Land Fund. Most of those who have 'acquired' land have chosen to rent their land to the larger unit that emerged from the transformation process (whether a co-operative or new successor company). Some have used their land almost for 'hobby' purposes e.g. the rearing of horses (many people in the area appear to have a strong and traditional connection with horses). The majority of owners are not directly involved in co-operative or farm business activities - many are village-based pensioners or external to the co-operative/farm business or village or both. There are a few private farmers using small areas of their own land but others, including the more successful private farmers with large farms (e.g. 200 ha or more) have to rent their farm land from others.

This it seem that many of those who have acquired land as a result of the restitution process have recognised the problems of returning to a farming system based on small holdings; they have lost their close connection with and experience of the land and relatively few have chosen to farm.

Others acquired the land with little or no intention of farming it themselves, but to re-gain a 'lost' asset, as an investment. Therefore, neither the restitution nor restoration of full ownership rights to land, nor the creation of new ownership rights to land and agricultural property, have led to the emergence of owner-operated family farms to a significant extent, even though in Western Europe these may be considered the more successful farm enterprises.

Furthermore, in the last ten years or so, people have realised that 'rural land' should not just be regarded as agricultural and a producer of food, even though this may be its main task. Rural land and agriculture creates an environment that is important for both rural and urban people; attention needs to be paid to the non-agricultural functions of rural areas and rural development in general as indicated by Bandlerova and Marisova (2000). New owners are expected to invest in and create not just productive agriculture but in job opportunities, because of high unemployment, and in the recreational and ecological (e.g. the Territorial System of Ecological Stability and the restoration of floodplain meadows) functions of the land.

Table B.6.1 Land Use by Municipality (1999)

Village Code	District:	Total area extent in ha							
		Total Village area	Agricultural land % of village area	Agricultural land	Non-agricult. land	including			
						Forest land	Water area	Built up area	Other area
MALACKY in the Study Area									
507831	BORINKA	1,579.68	16.40	258.99	1,321	1,272.17	13.24	28.09	7.20
507890	GAJARY	5,087.84	67.10	3,413.77	1,674	1,162.33	187.41	187.47	136.85
507954	JABLONOVE	1,322.21	74.13	980.11	342	240.08	20.76	74.94	6.31
507962	JAKUBOV	2,085.91	52.15	1,087.81	998	782.66	97.15	87.52	30.78
508012	KOSTOLISTE	1,682.50	59.73	1,005.01	677	550.85	51.53	63.88	11.23
508021	KUCHYNA	4,472.26	34.56	1,545.79	2,926	2,730.11	48.48	110.74	37.14
508039	LAB	2,785.24	57.94	1,613.69	1,172	957.97	75.54	100.51	37.53
508055	LOZORNO	4,431.20	31.78	1,408.24	3,023	2,692.27	30.03	157.66	142.99
508063	MALACKY	2,320.24	49.07	1,138.51	1,182	532.20	35.60	511.92	102.00
504556	MALE LEVARE	2,175.99	66.21	1,440.70	735	325.61	219.77	92.75	97.16
508080	MARIANKA	322.35	47.80	154.08	168	104.68	2.13	30.60	30.85
508161	PERNEK	2,766.45	42.02	1,162.49	1,604	1,410.41	39.22	73.95	80.38
504629	PLAVECKE PODHRADIE	2,118.79	38.28	811.03	1,308	1,170.62	24.61	71.68	40.85
504637	PLAVECKY MIKULAS	2,668.36	48.37	1,290.65	1,378	1,204.95	45.18	82.99	44.60
508195	PLAVECKY STVRTOK	2,245.72	43.38	974.28	1,271	960.78	130.79	144.66	35.21
504769	ROHOZNIK	2,747.37	37.09	1,019.05	1,728	1,376.27	36.94	132.73	182.37
504858	SOLOSNICA	3,774.83	42.37	1,599.31	2,176	1,944.44	51.12	61.47	118.49
504874	STUDIENKA	1,563.44	51.52	805.55	758	620.16	25.33	46.61	65.79
508233	STUPAVA	6,717.84	50.52	3,394.18	725	78.40	117.68	358.72	170.53
508241	SUCHOHRAD	1,540.67	58.89	907.32	633	391.25	119.41	67.74	54.94
504947	VELKE LEVARE	2,399.81	66.58	1,597.88	802	451.53	73.76	113.96	162.68
508349	VYSOKA PRI MORAVE	3,357.57	58.75	1,972.69	1,385	838.63	236.84	157.68	151.74
500267	ZAHORIE								
508365	ZAHORSKA VES	1,305.95	64.32	840.04	466	250.35	68.15	108.28	39.13
504980	ZAVOD	2,737.38	49.62	1,358.19	1,379	1,137.23	34.95	74.08	132.93
508381	ZOHOR	2,112.74	78.46	1,657.63	455	174.89	82.11	159.94	38.16
SUB TOTAL (excluded military area)		66,322.34	50.42	33,436.99	30,287.01	23,360.84	1,867.74	3,100.57	1,957.86
BRATISLAVA IV in the Study Area									
529371	DEVINSKA NOVA VES	2,422.78	54.35	1,316.84	1,106	309.00	87.79	324.24	384.92
529419	LAMAC	654.32	43.39	283.90	370	145.73	4.65	70.19	149.85
529427	ZAHORSKA BYSTRICA	3,229.23	45.02	1,453.83	1,775	1,518.82	39.91	163.78	52.89
SUB TOTAL		6,306.33	48.44	3,054.57	3,251.76	1,973.55	132.34	558.22	587.66
SENICA in the Study Area									
504220	BORSKY SVATY JUR	3,971.92	49.67	1,972.98	1,999	1,640.48	96.28	169.91	92.26
504572	MORAVSKY SVATY JAN	3,921.89	58.01	2,275.20	1,647	1,077.69	193.47	213.39	162.14
504645	PLAVECKY PETER	1,478.25	50.46	745.88	732	603.90	23.64	58.49	46.34
556114	SEKULE	2,324.35	62.17	1,444.96	879	470.65	121.18	141.92	145.63
SUB TOTAL		11,696.41	55.05	6,439.03	5,257.38	3,792.73	434.57	583.71	446.37
Total Study Area		84,325.07	50.91	42,930.59	38,796.15	29,127.12	2,434.64	4,242.50	2,991.89

Source: Institute of Geodesy and Cartography (GKU)

Table B.6.2 Agricultural Land Use by Municipality (1999)

Village Code	District:	Agricultural land in ha						In %		
		Total	including					% Arable land of Total agri. Land	% Pasture of Total agri. Land	%G+O+V Total agri. Land
		Agricultural Land	Arable land	Pasture	Garden	Orchard	Vineyard			
MALACKY in the Study Area										
507831	BORINKA	258.99	73.24	147.00	29.74	8.77	0.25	0.28	0.57	0.15
507890	GAJARY	3,413.77	2,760.79	523.81	129.18	57.89	6.95	0.81	0.15	0.06
507954	JABLONOVE	980.11	681.80	221.75	76.56	51.35	1.53	0.70	0.23	0.13
507962	JAKUBOV	1,087.81	939.27	106.54	41.99	0.00	1.87	0.86	0.10	0.04
508012	KOSTOLISTE	1,005.01	929.04	64.20	11.76	0.00	1.10	0.92	0.06	0.01
508021	KUCHYNA	1,545.79	1,146.72	314.79	84.28	29.68	0.82	0.74	0.20	0.07
508039	LAB	1,613.69	1,433.33	161.67	18.69	0.00	1.90	0.89	0.10	0.01
508055	LOZORNO	1,408.24	940.35	348.31	119.58	29.99	49.63	0.67	0.25	0.14
508063	MALACKY	1,138.51	881.98	49.93	206.60	0.00	0.29	0.77	0.04	0.18
504556	MALE LEVARE	1,440.70	1,054.59	365.95	20.17	0.00	0.48	0.73	0.25	0.01
508080	MARIANKA	154.08	100.93	4.36	48.80	10.20	0.75	0.66	0.03	0.39
508161	PERNEK	1,162.49	921.56	207.03	33.90	0.00	0.61	0.79	0.18	0.03
504629	PLAVECKE PODHRADIE	811.03	627.20	165.72	18.10	1.04	0.00	0.77	0.20	0.02
504637	PLAVECKY MIKULAS	1,290.65	1,078.27	186.13	26.25	0.00	0.00	0.84	0.14	0.02
508195	PLAVECKY STVRTOK	974.28	796.18	156.28	21.82	0.00	0.10	0.82	0.16	0.02
504769	ROHOZNIK	1,019.05	803.51	184.69	30.85	0.00	0.00	0.79	0.18	0.03
504858	SOLOSINICA	1,599.31	1,220.72	335.19	43.40	5.36	0.00	0.76	0.21	0.03
504874	STUDIENKA	805.55	623.31	153.29	28.94	0.00	0.37	0.77	0.19	0.04
508233	STUPAVA	3,394.18	2,175.35	671.63	504.88	161.91	181.05	0.64	0.20	0.25
508241	SUCHOHRAD	907.32	691.32	203.46	12.54	1.14	0.17	0.76	0.22	0.02
504947	VELKE LEVARE	1,597.88	862.46	568.70	166.71	137.14	1.78	0.54	0.36	0.19
508349	VYSOKA PRI MORAVE	1,972.69	1,322.43	623.40	26.85	1.82	0.00	0.67	0.32	0.01
500267	ZAHORIE									
508365	ZAHORSKA VES	840.04	697.34	115.35	27.35	0.12	3.31	0.83	0.14	0.04
504980	ZAVOD	1,358.19	1,063.23	252.52	42.44	0.00	5.61	0.78	0.19	0.04
508381	ZOHOR	1,657.63	1,621.96	16.14	19.54	1.26	0.78	0.98	0.01	0.01
SUB TOTAL (excluded military)		33,436.99	25,446.89	6,147.84	1,790.93	497.67	259.35	76.10	18.39	7.62
BRATISLAVA IV in the Study Area										
529371	DEVINSKA NOVA VES	1,316.84	1,037.55	155.35	123.94	0.00	9.52	0.79	0.12	0.10
529419	LAMAC	283.90	188.20	1.20	94.49	0.25	16.24	0.66	0.00	0.39
529427	ZAHORSKA BYSTRICA	1,453.83	1,225.33	17.94	210.57	88.22	4.07	0.84	0.01	0.21
SUB TOTAL		3,054.57	2,451.07	174.49	429.00	88.47	29.83	80.24	5.71	17.92
TRNAVSKY KRAJ										
SENICA in the Study Area										
504220	BORSKY SVATY JUR	1,972.98	1,431.50	359.85	181.63	144.73	1.46	0.73	0.18	0.17
504572	MORAVSKY SVATY JAN	2,275.20	1,718.65	529.16	27.39	0.12	2.89	0.76	0.23	0.01
504645	PLAVECKY PETER	745.88	675.12	61.52	9.25	0.00	0.00	0.91	0.08	0.01
556114	SEKULE	1,444.96	1,165.42	238.29	41.25	3.18	0.51	0.81	0.16	0.03
SUB TOTAL		6,439.03	4,990.68	1,188.82	259.52	148.03	4.86	77.51	18.46	6.40
Total Study Area		42,930.59	32,888.64	7,511.14	2,479.45	734.17	294.04	76.61	17.50	8.17

Source: Institute of Geodesy and Cartography (GKU)

Table B.6.3 (1) Comparison of Land Resource and Land Utilization in the Study Area Cadasters

	Cadaster name	ha	Agricultural Land Utilized	Agricultural Land Available	Unutilised Land	% of Available Land Not Registered
MALACKY	BORINKA	Total Agricultural Land	83	220.23	137.23	62.31
		Arable Land	42.78	73.24	30.46	41.59
		Pasture Land	40.22	147.00	106.78	72.64
	GAJARY	Total Agric. Land	2591.19	3284.60	693.41	21.11
		Arable Land	2324.69	2760.79	436.10	15.80
		Pasture Land	266.5	523.81	257.31	49.12
	JABLONOVE	Total Agric. Land	887.76	903.55	15.79	1.75
		Arable Land	684.55	681.80	-2.75	-0.40
		Pasture Land	203.21	221.75	18.54	8.36
	JAKUBOV	Total Agric. Land	1,000.50	1045.81	45.31	4.33
		Arable Land	944.00	939.27	-4.73	-0.50
		Pasture Land	56.50	106.54	50.04	46.97
	KOSTOLISTE	Total Agric. Land	958	993.24	35.24	3.55
		Arable Land	893.5	929.04	35.54	3.83
		Pasture Land	64.5	64.20	-0.30	-0.47
	KUCHYNA	Total Agric. Land	1530.71	1461.51	-69.20	-4.73
		Arable Land	1246	1146.72	-99.28	-8.66
		Pasture Land	284.71	314.79	30.08	9.56
	LAB	Total Agric. Land	1384.29	1594.99	210.70	13.21
		Arable Land	1223.97	1433.33	209.36	14.61
		Pasture Land	160.32	161.67	1.35	0.83
	LOZORNO	Total Agric. Land	1222.13	1288.67	66.54	5.16
		Arable Land	844.25	940.35	96.10	10.22
		Pasture Land	377.88	348.31	-29.57	-8.49
	MALACKY	Total Agric. Land	1112.55	931.91	-180.64	-19.38
		Arable Land	1090.11	881.98	-208.13	-23.60
		Pasture Land	22.44	49.93	27.49	55.06
MALE LEVARE	Total Agric. Land	1423.77	1420.53	-3.24	-0.23	
	Arable Land	1003.04	1054.59	51.55	4.89	
	Pasture Land	420.73	365.95	-54.78	-14.97	
MARIANKA	Total Agric. Land	23.89	105.29	81.40	77.31	
	Arable Land	23.89	100.93	77.04	76.33	
	Pasture Land	0	4.36	4.36	100.00	
PERNEK	Total Agric. Land	1256.48	1128.59	-127.89	-11.33	
	Arable Land	1026.19	921.56	-104.63	-11.35	
	Pasture Land	230.29	207.03	-23.26	-11.23	
PLAVECKE PODHRADIE	Total Agric. Land	862.77	792.92	-69.85	-8.81	
	Arable Land	699.3	627.20	-72.10	-11.49	
	Pasture Land	163.47	165.72	2.25	1.36	
PLAVECKY MIKULAS	Total Agric. Land	1380.06	1264.40	-115.66	-9.15	
	Arable Land	1208.68	1078.27	-130.41	-12.09	
	Pasture Land	171.38	186.13	14.75	7.92	
PLAVECKY STVRTOK	Total Agric. Land	987.97	952.4577	-35.51	-3.73	
	Arable Land	947.77	796.1805	-151.59	-19.04	
	Pasture Land	40.2	156.2772	116.08	74.28	
ROHOZNIK	Total Agric. Land	1110.27	988.20	-122.07	-12.35	
	Arable Land	946.46	803.51	-142.95	-17.79	
	Pasture Land	163.81	184.69	20.88	11.31	
SOLOSNICA	Total Agric. Land	1685.84	1555.91	-129.93	-8.35	
	Arable Land	1369.65	1220.72	-148.93	-12.20	
	Pasture Land	316.19	335.19	19.00	5.67	
STUDIENKA	Total Agric. Land	777.58	776.61	-0.97	-0.13	
	Arable Land	638.98	623.31	-15.67	-2.51	
	Pasture Land	138.6	153.29	14.69	9.58	
STUPAVA	Total Agric. Land	2660.09	2846.98	186.89	6.56	
	Arable Land	2198.1	2175.35	-22.75	-1.05	
	Pasture Land	461.99	671.63	209.64	31.21	

Table B.6.3 (2) Comparison of Land Resource and Land Utilization in the Study Area Cadasters

	Cadaster name	ha	Agricultural Land Utilized	Agricultural Land Available	Unutilised Land	% of Available Land Not Registered
MALACKY	SUCHOHRAD	Total Agric. Land	886.7	894.78	8.08	0.90
		Arable Land	683.2	691.32	8.12	1.17
		Pasture Land	203.5	203.46	-0.04	-0.02
	VELKE LEVARE	Total Agric. Land	1127.66	1431.16	303.50	21.21
		Arable Land	732.08	862.46	130.38	15.12
		Pasture Land	395.58	568.70	173.12	30.44
	VYSOKA PRI MORAVE	Total Agric. Land	1802.69	1945.83	143.14	7.36
Arable Land		1212.9	1322.43	109.53	8.28	
Pasture Land		589.79	623.40	33.61	5.39	
ZAHORSKA VES	Total Agric. Land	773.65	812.69	39.04	4.80	
	Arable Land	666.18	697.34	31.16	4.47	
	Pasture Land	107.47	115.35	7.88	6.83	
ZAVOD	Total Agric. Land	1277.60	1315.74	38.14	2.90	
	Arable Land	1026.84	1063.23	36.39	3.42	
	Pasture Land	250.76	252.52	1.76	0.70	
ZOHOR	Total Agric. Land	1362.98	1638.10	275.12	16.79	
	Arable Land	1347.21	1621.96	274.75	16.94	
	Pasture Land	15.77	16.14	0.37	2.29	
BRATISLAVA IV	DEVINSKA NOVA VES	Total Agric. Land		1192.89	1192.89	100.00
		Arable Land		1037.55	1037.55	100.00
		Pasture Land		155.35	155.35	100.00
	LAMAC	Total Agric. Land	211.57	189.40	-22.17	-11.70
Arable Land		202.2	188.20	-14.00	-7.44	
Pasture Land		9.37	1.20	-8.17	-677.72	
ZAHORSKA BYSTRICA	Total Agric. Land	235.03	1243.26	1008.23	81.10	
	Arable Land	225.23	1225.33	1000.10	81.62	
	Pasture Land	9.8	17.94	8.14	45.37	
SENICA	BORSKY SVATY JUR	Total Agric. Land	983.17	1791.35	45.31	4.33
		Arable Land	726.25	1431.50	-4.73	-0.50
		Pasture Land	256.92	359.85	50.04	46.97
	MORAVSKY SVATY JAN	Total Agric. Land	2057.68	2247.82	35.24	3.55
		Arable Land	1577.42	1718.65	35.54	3.83
		Pasture Land	480.26	529.16	-0.30	-0.47
	PLAVECKY PETER	Total Agric. Land	671.16	736.63	65.47	8.89
		Arable Land	619.89	675.12	55.23	8.18
Pasture Land		51.27	61.52	10.25	16.66	
SEKULE	Total Agric. Land	1362.07	1403.70	210.70	13.21	
	Arable Land	1130.32	1165.42	209.36	14.61	
	Pasture Land	231.75	238.29	1.35	0.83	

Source: Regional Department of Agriculture SR in Bratislava and Senica

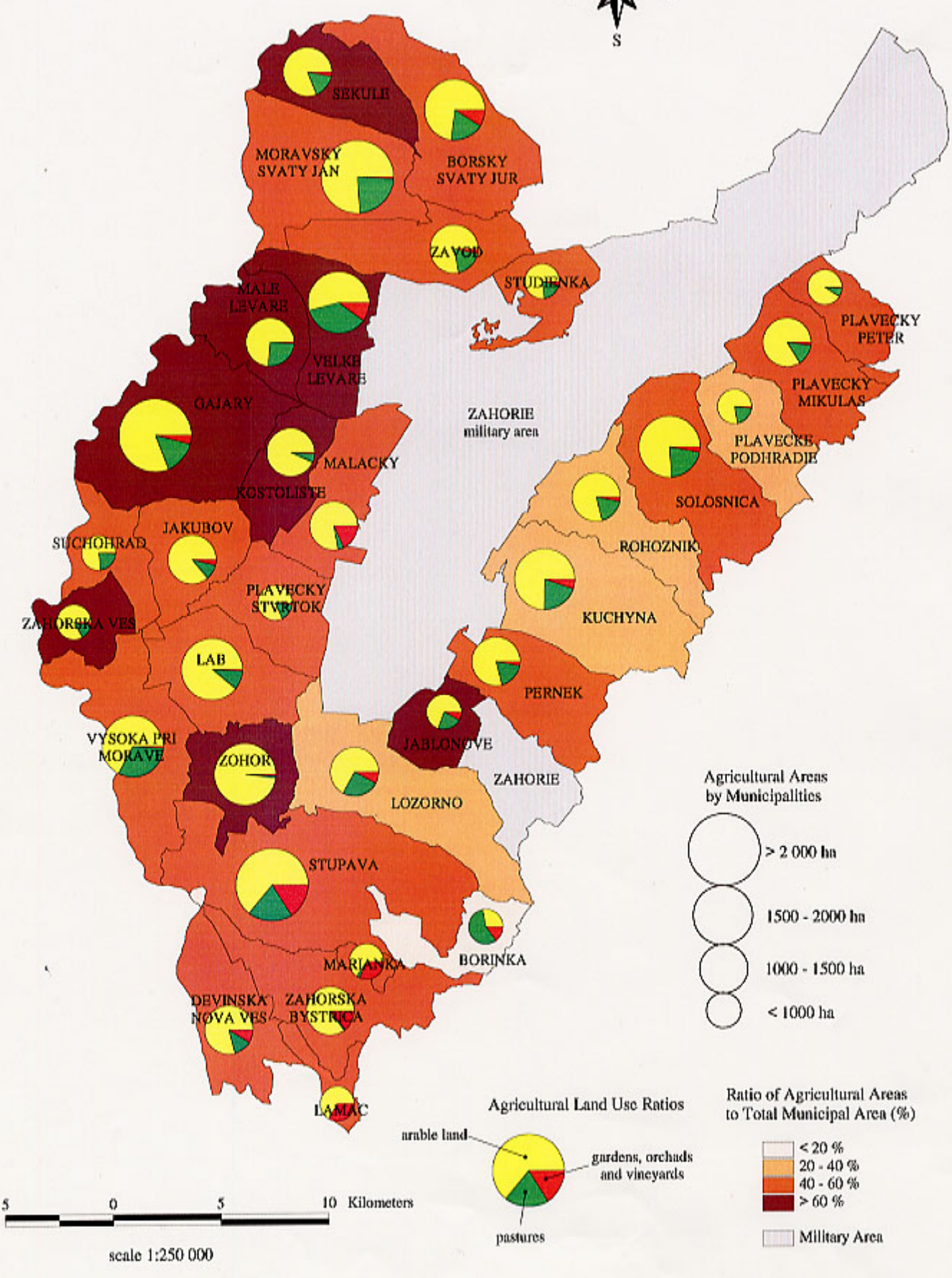


Figure B.6.1 Agricultural Land Use in the Study Area (1999)

source: GKU

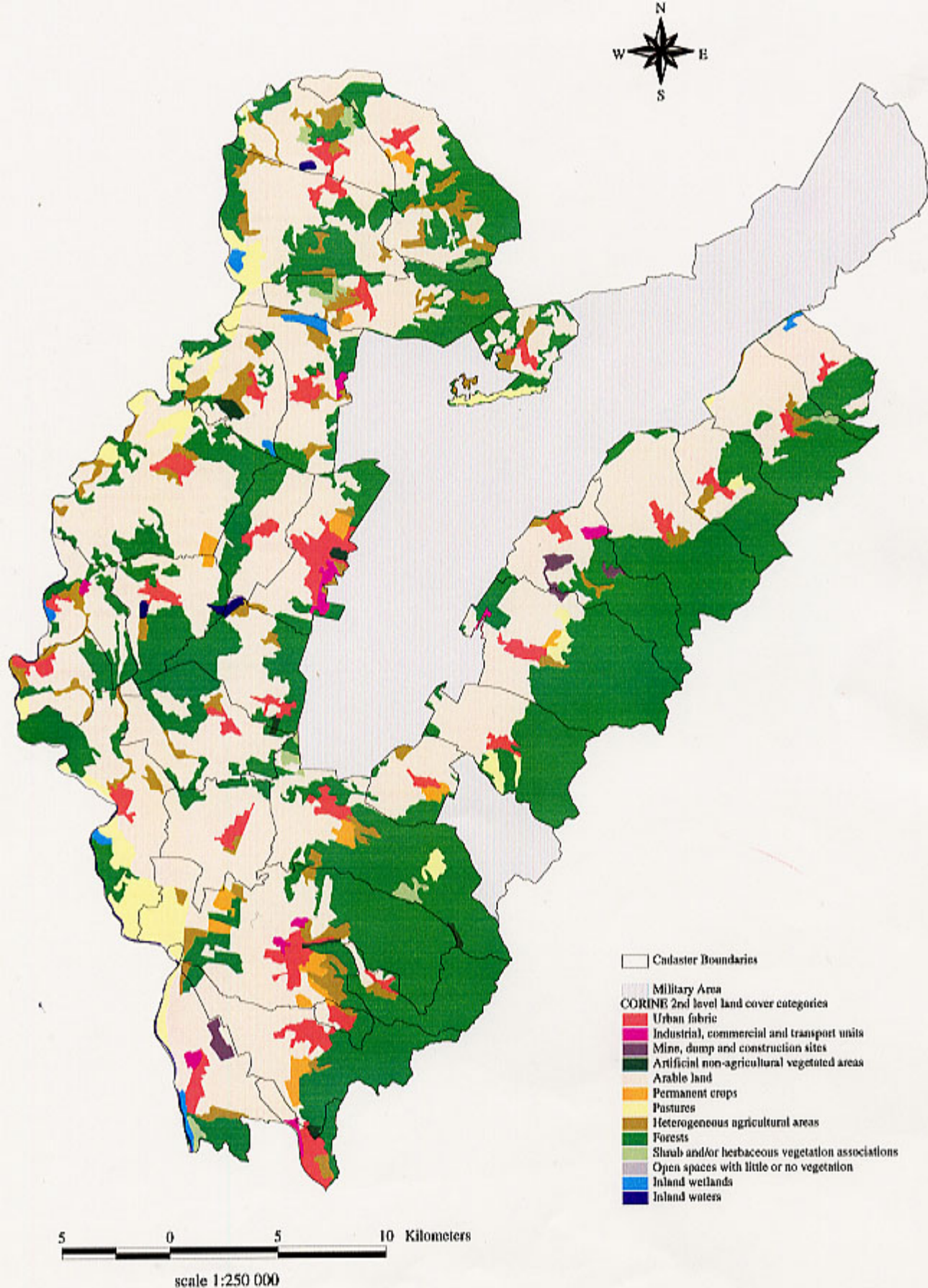


Figure B.6.2 Land Cover Map of the Study Area - CORINE 1970
source: GISAT Co.

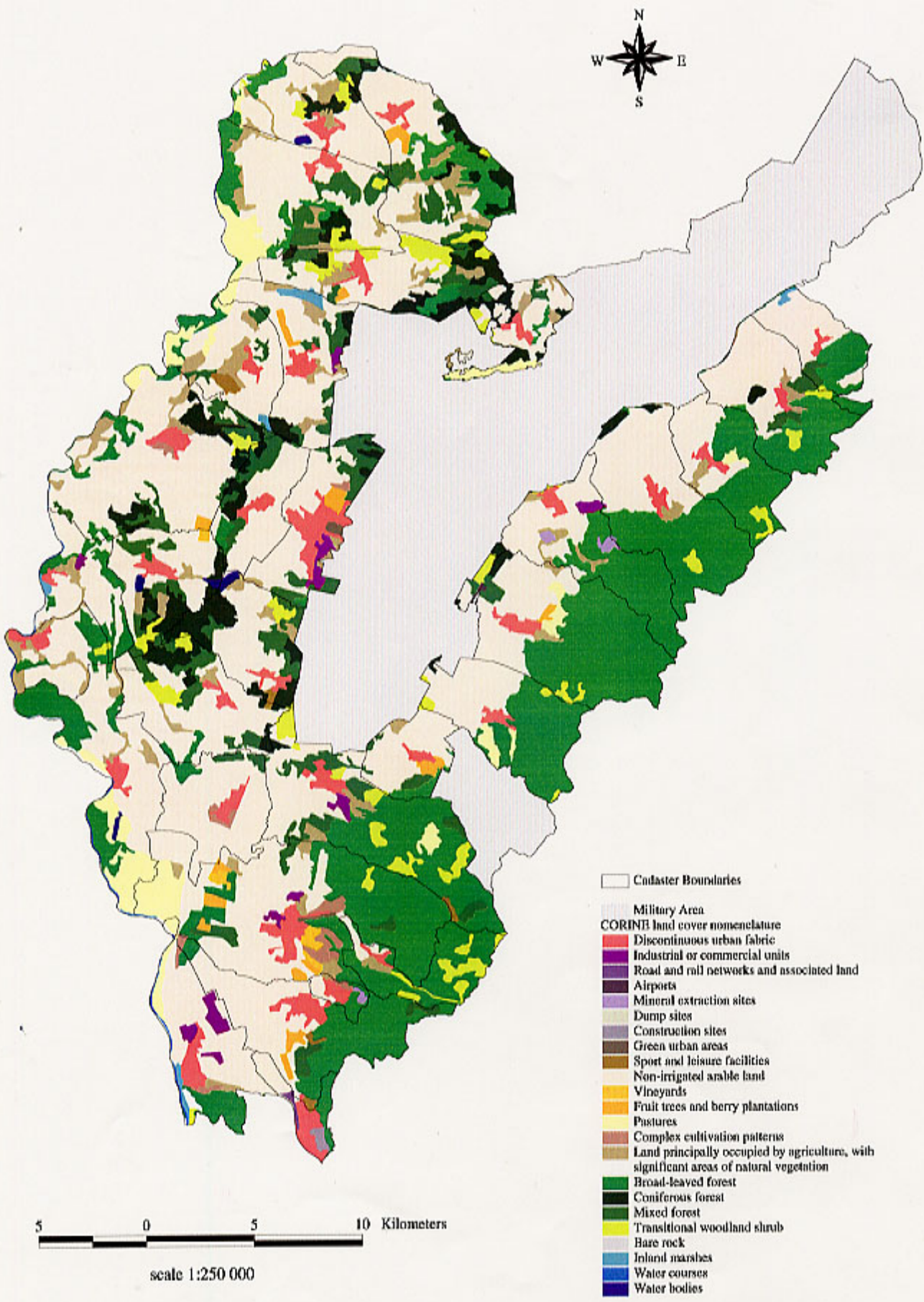


Figure B.6.3 Land Cover Map of the Study Area - CORINE 1990
source: SEA

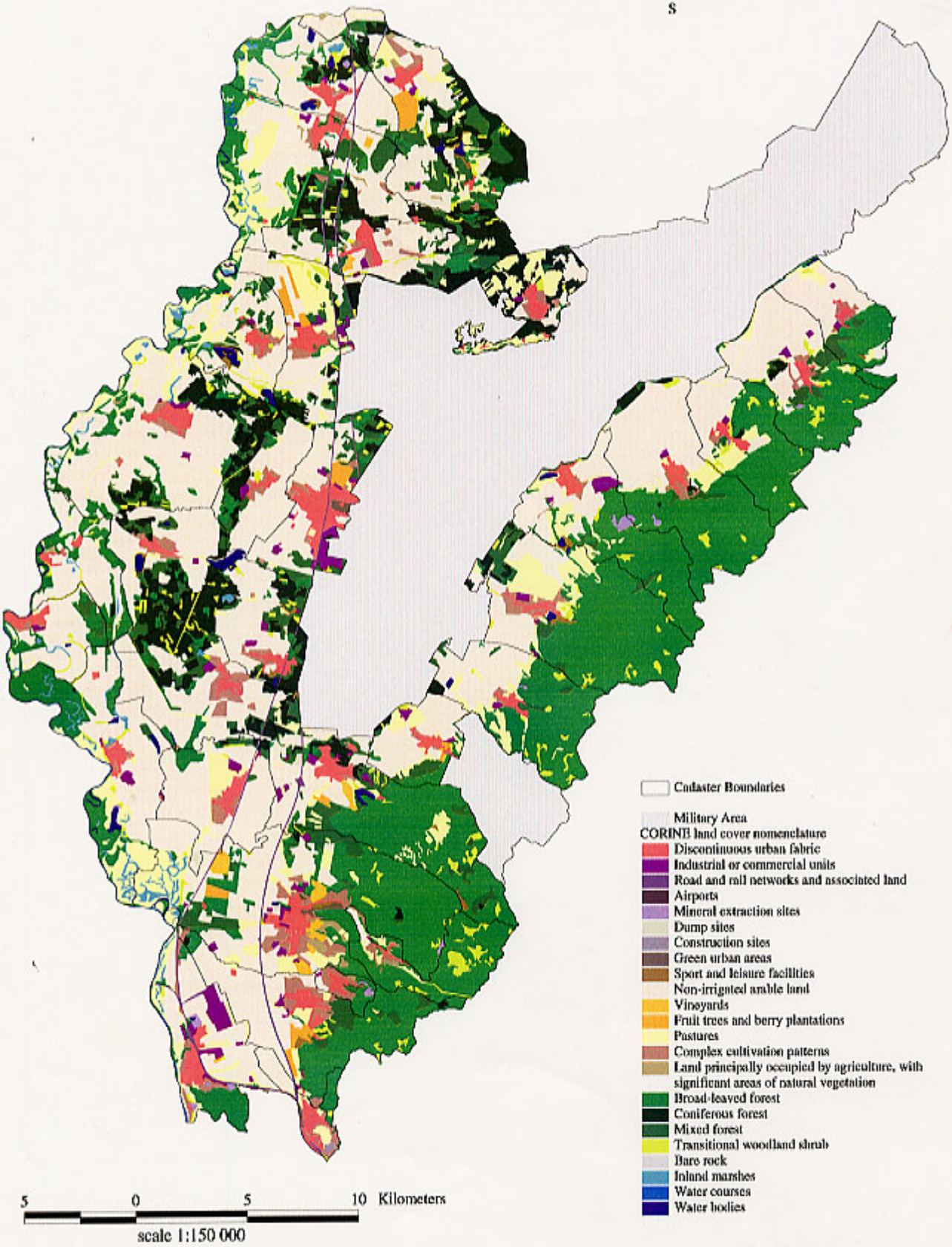


Figure B.6.4 Actual Land Cover Map of the Study Area (year 2000)

source: Study Team