

Figure D.4.4 Scenario A - Sample Cropping

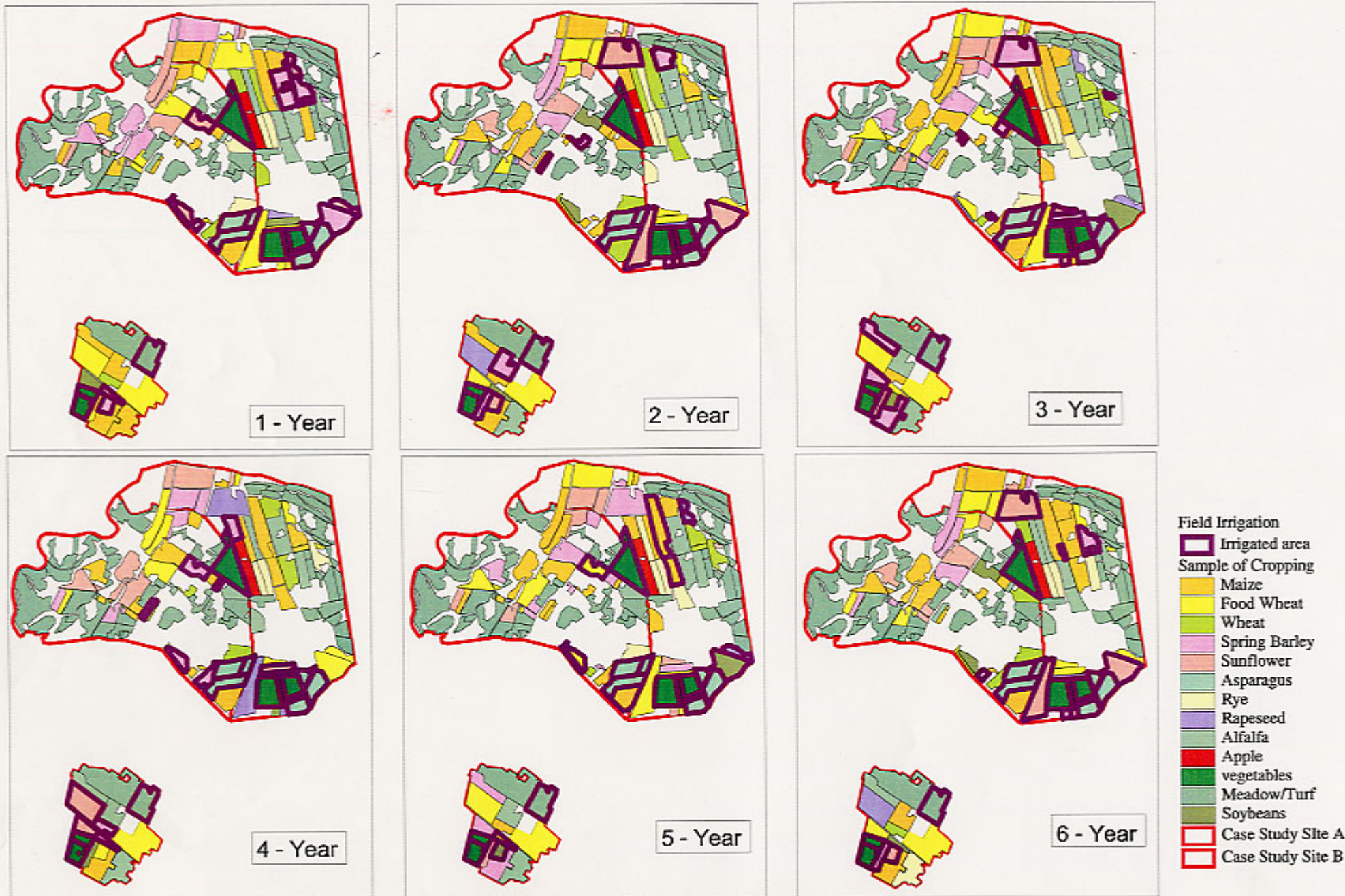


Figure D.4.5 Scenario B - Sample Cropping



Figure D.4.6 Scenario C - Sample Cropping

ANNEX E RURAL SURVEY

E.1 SUMMARY OF RESULTS FROM 2001 AND 2002 RURAL SURVEYS

In the study period, two kinds of rural survey were carried out; 2001 rural survey targeting the whole study area and 2002 rural survey targeting the case study site. The summary of results from both of survey is as follows:

(1) 2001 Rural Survey (whole Study Area) - Land Ownership

Out of the 268 respondents, 80 (nearly 30%) owned extra-vilan farmland. 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.

The land restitution/restoration process from collectivised farms to former owners 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. 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 landowners are not directly involved in farming business activities - many are village-based pensioners or external to the 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, have to rent some of their farmland from others.

Thus it seems that many 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. 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.

(2) Involvement of Villagers in Household Gardens and Farming

Many village households have continued to cultivate their small household plots, both in the socialist era and in the period of economic transformation. They are used for fruit, vegetables and livestock i.e. to supplement the household economy, whereas in many parts of Western Europe such household gardens are used more for recreation/relaxation, with grass lawns and flowers pre-dominating over fruit, vegetables and domestic stock. Immediately prior to the economic transformation of the last 10 years, 60%-80% of the economically active population might commute from their village to a nearby place of employment and return to the village and work in their gardens in the afternoon. Now, with the development of the market economy, though 'gardening' remains widely popular, there may be more pressure on the time of employees leading to less time for 'cultural' activities such as gardening. Of the very few registered private farmers (SHR) who now continue farming, it is understood that most in the two rural survey villages can be considered as part-time.

Thus, in a relatively wealthy region, in comparison to other parts of Slovakia, and with other employment opportunities available, a relatively low interest in employment in the agricultural sector now prevails. Villages, which were dependent on agriculture and were rural in the traditional sense, are no longer primarily agricultural settlements. However, the proximity to a major market (Bratislava) and good access to others (Austria, Czech Republic) may now increase the interest of entrepreneurs and other individuals in the agricultural sector, and help to maintain demand for farmland and support the rural economy.

(3) Gardening Activities in Male Lezare and Vel'ke Lezare

The 2002 rural survey in the Case Study villages in Male Lezare and Vel'ke Lezare revealed that a wide range of 'gardening' activities take place. In particular, the survey indicated that there is considerable variation in both the nature and scale of these activities in terms of land used, the crops produced and animals reared, according to household circumstances. The situation is 'dynamic' in the case of many households. There have been significant changes since the 1989 revolution and the time and effort that is now put into 'gardening' depends both on 'internal' factors (i.e. land available to the household, gardening experience and skills) and 'external' factors such as employment and other family circumstances.

Animal production (especially of poultry and small stock) is a feature of many respondents' households, especially in Male Lezare; 22 (67%) had domestic stock of one type or another, whereas only 14 (48%) of respondents' households in Vel'ke Lezare had domestic stock. The most frequently reared animals are poultry, which were kept in 64% of ML respondents' households (mostly chickens for eggs, but also turkeys, ducks and geese) and 38% of VL respondents' households. Rabbits were kept in 33% of ML respondents' households, mostly for meat, but only 17% of VL households. Pigs are also of some significance, being owned in approximately 1 in 4 respondents' households in ML, though fewer (17%) in VL. Where such animals are kept it is usual for the household to grow some cereal crops, either on the plot near to their house and/or on extra-vilan land, as a source of feed. It was apparent, therefore that the rearing of small numbers of domestic stock is a significant activity, but single and older pensioners gave up livestock because they required too much work. However, younger pensioners (recently retired and in good health) can devote considerable time and effort to a household plot and livestock, making a useful contribution to the extended family's diet and livelihood. It was apparent that extra-vilan land, where owned, was often used for growing cereals to feed to livestock, especially poultry and pigs.

For some households, co-operation within the village was good and very important, especially with extended family members, but others indicated that co-operation with neighbours was not so good, referring to theft of produce (especially potatoes and maize) as a problem.

Some families are not particularly interested in gardening/agriculture as a means of making a significant contribution to self-sufficiency or their family income. The gardens serve a primarily recreational function and supply some fresh fruit and vegetables in the summer. Other employment, not related to agriculture, young children and other factors meant that they have other priorities and interests.

E.2 RURAL SURVEY IN ZAHORSKA LOWLAND - 2001 RURAL SURVEY

Key Aspects of the of Survey Rural Communities and their Livelihoods in the Zahorska Lowland

E.2.1 STUDY OBJECTIVES

- ▶ To understand better the socio-economic condition of those communities working and living in the study area and their involvement in farming;
- ▶ To understand the opinions and attitudes of people living and working in rural areas;
- ▶ To report on the findings and information collected as an input to the agricultural guidelines for - "Sustainable agriculture and the protection of natural resources".

E.2.2 TARGET GROUPS AND QUESTIONNAIRES

This was a sample survey to be conducted in a representative selection of municipalities and farm enterprises, the time and resources not being available to cover all Municipalities and farm enterprises in the Study Area.

The target groups and sample sizes (nos. to be interviewed) were as follows:

- ▶ Employees of agricultural enterprises (90 - 100)
- ▶ Employees in non-agricultural sectors (90 - 100)
- ▶ Individual farmers (SHR, registered and unregistered) (20-30)
- ▶ Mayors (key informants) (10)
- ▶ Unemployed (20-30)

The reasons for this selection are as follows:

(1) People Working in Agriculture

This group, more than the others, is influenced by the development level of agriculture and its productivity. They are, and have been, employees of bigger agriculture enterprises (s.r.o., a.s., cooperatives) and their income is believed to come primarily from their main employment. Members of this group are unlikely to imagine working in another sector or as entrepreneurs. They rely on agriculture and have an interest in working to make it better. This group was the experimental group.

(2) People Working in Non-agriculture Sectors

They were chosen as a control group to the first group. The aim is to compare living standards and attitudes of agricultural and non-agricultural employees and to obtain a general understanding of people living in the Study Area. The sample size of these two groups was to be the same or very similar size.

(3) Individual Farmers (SHR)

They are very new phenomenon in Slovakia, connected to the economic transition that has been taking place since 1990. These people carry out their own farming activities. Their agriculture production is not just for the immediate needs of their household, but for the market and they are dependent on income from marketing their produce.

(4) Mayors

They can be seen as key persons in community development. The mayor in Slovakia represents local self-government. They are chosen by a community's inhabitants in local elections.

(5) Unemployed

They introduce potential working power and could benefit from the creation of employment opportunities in the agricultural sector.

E.2.3 CRITERIA FOR SELECTING THE VILLAGES AND FARM ENTERPRISES

The survey, being a sample survey not a census, was organised so that information was obtained from a representative range of stakeholders. The intention was to focus on the collection of data from 10 out of the 30 Municipalities, according to proportions as follows - which reflects the overall distribution of villages, by population size, in the Zahorska Study Area.

Obec Size (population)	No.
Small (<1000)	2
Medium (1000-2000)	4
Large/Town (>2000)	4

The selected villages were to be well-distributed through the Study Area (in the different zones identified by the Study Team) - near to and away from the Morava River, close to the Small Carpathian Hills, close to and distant from Bratislava/Stupava and in Senica and Malacky.

The need to cover a representative set of agricultural enterprises (by type and size) also guided the selection of villages. Other than SHR, there are 3 main types of farm enterprise in Slovakia and it was intended that examples of all three would be covered in the survey, according to the ratio in which they occur in the Study Area.

Type	No.
s.r.o.	6
a.s.	2
P.D. (Co-op)	1

However the status of some enterprises appeared not to be stable. It was learned that the remaining P.D.s (co-operatives) in the Study Area (in both Malacky and Senica *okres*) were going into liquidation and might be resurrected as/transformed to s.r.o. Requests were made to interview the employees of one such co-operative but the management were not willing to facilitate this so P.D.'s could not be included in the survey.

The attached Table E.1 indicates the 10 (principal target) villages and 9 farm enterprises that were selected in advance and in which the surveys were carried out and gives also village population, various contact details and the names of some individual farmers. The table below summarises this information, showing the selected villages, the planned programme, the expected number of questionnaires from each target group and the approximate numbers achieved.

Day	Village	Village size	Questionnaires				
			Employees of agricultural enterprise	Employees of non-agricultural sectors	SHR	Mayors	Unemployed
Expected number of completed questionnaires			90-100	90-100	20-30	10	20-30
Monday 22 nd October	Plavecky Peter*/ Plavecke Podhradie* Rohoznik	Small Large	(21)	(16)	(4)	2	(8)
Tuesday 23 rd October	Moravsky Svaty Jan Borsky Svaty Jur	Large Medium	(18)	(23)	(4)	2	(7)
Wednesday 24 th October	Kostoliste Plavecky Stvrtok (Gajary **) (Malacky***)	Small Medium	(23)	(20)	(7)	2	(6)
Thursday 25 th October	Vysoka pri Morave Stupava (Velke Levare****)	Medium Town	(36)	(33)	(10)	1+1 [#]	(4)
Friday 26 th October	Velke Levare**** Male Levare	Large Medium	(12)	(5)	(5)	1+1 [#]	(0)
Total			106 (110)	95 (97)	31 (30)	10 [#]	26 (25)
Grand Total			268 (272)				

Comments:

(Nos.) in brackets were questionnaire numbers counted in the field; final numbers entered to database, including some rejected as unsatisfactory, are not in brackets.

* Plavecke Podhradie is the seat of top-management of AGROPARTNER, s.r.o. A representative group of employees from AGROPARTNER's operations in Plavecke Podhradie and Rohoznik, were pre-selected for interview; however, except for two Managers, the survey team (for unspecified reasons) did not carry out the interviews in Plavecke Podhradie but interviewed employees at the AGROPARTNER farm in Plavecke Peter. The mayor of Plavecke Podhradie was interviewed as planned, and the remaining interviews of local people were carried out in Plavecke Podhradie. Both Plavecke Podhradie and Plavecke Peter are small villages, in terms of population, so this change in target is not considered very significant - though Plavecke Podhradie is in Malacky *Okres* while Plavecky Peter is in Senica *Okres*.

** Gajary is a neighbouring village with two SHRs, who were willing to be interviewed.

*** Malacky is the seat of top-management of AGRA M, s.r.o.; one economist and two employees were interviewed at Malacky locations.

**** Velke Levare – see the text below (most of the interviews had to be carried out on Thursday)

[#] The mayor of Velke Levare had to leave during the interview and completed and returned the questionnaire the following week. The mayor of Stupava was also interviewed the following week (31st October) as he was busy in the week of the survey.

It was assumed that most of the employees of the farm enterprises would live in the target villages, but with the possibility that a few lived in neighbouring villages.

Since there appeared to be very few SHRs, it was agreed that SHRs from neighbouring villages would also be interviewed in order to reach a satisfactory sample size; hence two SHRs were interviewed in Gajary.

Mayors were asked to help identify employees in non-agricultural sectors, unemployed and individual farmers, especially the latter - though students were also asked to use their initiative to find members of the various non-agricultural groups.

E.2.4 PRE-SELECTION OF EMPLOYEES OF AGRICULTURAL ENTERPRISES

To help with the smooth running of the survey, minimise any disruption of farm activities and obtain a representative sample of interviewees, the target farm enterprises were contacted in advance and asked to provide lists of employees according to their job/educational level from which the survey team could make a selection. In general this process was followed, but some enterprises made their own selection while at three (Poľnohospodárska spol. Moravský sv. Ján, AGROBOR s.r.o. and AGRA M s.r.o.), management did not provide a list and it is understood that the selection was done 'on the spot' by management, students and employees.

Of the target of 10 employees per company (20 for AGROPARTNER, divided between two farms in different villages) the pre-selection was as follows (where employee sex was provided by the enterprise, it was made sure that women were included in the sample):

Category	Target Number of Interviewees
Senior Management	1
Supervisors/Professional (eg Agronomist, Economist, Accountant)	2
Skilled Labour (eg tractor driver, maintenance, plant production)	3
Unskilled Labour	4
Total	10

Where the enterprise made their own selection of employees for interview, they were requested to follow this distribution.

The agricultural enterprises and villages at which employees were interviewed, and the number interviewed at each, are listed in the table below. Where employees of two or more companies were interviewed on the same day the number of respondents from each company was not recorded - but in most cases at least 10 from each enterprise were interviewed.

Name of Company	Villages where Employees Interviewed	Number of Respondents
AGROPARTNER, s.r.o	Plavecky Peter; Rohoznik; 2 managers at Plavecke Podhradie	(21)
Poľnohospodárska spol. Moravský sv. Ján (prev. Grand s.r.o. of Borsky Svaty Jur)	Moravsky Svaty Jan	(18)
AGROBOR, s.r.o. (prev. PD BORSKÝ SVÁTÝ JUR)	Borsky Svaty Jur	
JAKOS, a.s.	Kostoliste	(23)
AGRA M, s.r.o.	Plavecky Stvrtok (Malacky)	
AGROVYS, s.r.o.	Vysoka pri Morave	(36)
ZSVP Stupava, a.s.	Stupava	
ASPARAGUS, s.r.o.	Velke Levare	
STOMFA, s.r.o.	Male Levare	(12)
9 Companies	10 (principal target) villages	106 (110)

E.2.5 THE SURVEY TEAM, TIMING AND LOGISTICS

The survey was organised in the week from 22nd to 26th October 2001. 23 students, 3 assistants and 1 university teacher (Ing.Ivana Gecikova) from the Slovak Agricultural University in Nitra, Dr.Robert Whitcombe, PhD. and Ing.Tesfu W/senbet took part in the survey. The group of students was chosen from the 2nd and 3rd years of the Joint Study Course on "Economics and Management of Land Development". These students had a good theoretical knowledge of agriculture, environmental protection, regional development and the economic aspects of these subjects.

The survey team was based during the week in Rohoznik, where the participants were provided with accommodation and food. The students were transported every day from Rohoznik to the selected villages. Every evening a session was held with the students where the day's results were discussed and problems considered.

Partly for safety reasons, the students worked in pairs while carrying out the interviews, approximately two sets of five pairs covering each of the two selected villages/farm enterprises per day. The interviews of mayors were carried out by one or more of Ing.Ivana Gecikova Ing.Tesfu W/senbet and one of her Research Assistants; some were attended by Robert Whitcombe. Some of the interviews of Farm Enterprise Managers and SHRs were also carried out by this group.

At the request of the farm enterprises, most of the interviews were carried out early in the morning (eg starting between 7.00 and 7.30 a.m.) before the employees departed for their duties. During the survey week some changes to the planned schedule had to be made, according to circumstances. In particular, after discovering that the Asparagus Company, based in Velke Levare, were giving their employees a free day on Friday 26th October, interviews there had to be brought forward to Thursday afternoon and one group of 10 students therefore had to conduct an additional set of interviews that day. Though tired they completed their work in a professional manner.

Entry of data from the questionnaires was started in Rohoznik and continued in Nitra, mainly by Ing. Ruzena Gabasova and Ing.Viera Papcunova, with assistance from students. A system for analysing the database was prepared by Eva Matejkova of the Statistics Department of Nitra Agricultural University.

E.2.6 PROBLEMS ENCOUNTERED DURING THE COURSE OF THE SURVEY

The biggest problem during the surveying was connected with the identification of SHRs (individual farmers, both registered and non-registered); the assistance of the mayors proved helpful in this regard, since some held lists which included names not on the register provided by the Regional Office of Agriculture (which records those requesting subsidies). However the students (surveyors) did not have a problem in finding people working in the non-agriculture sector. By carrying out the interviews during the daytime, the sample of non-agricultural employees may not be very representative of this sector, since most 'employees' will have been at work - especially any working in small towns, the Volkswagen factory, Bratislava or even outside Slovakia. It is understood that a high proportion of interviewees on the first day were retired people or mothers at home and these groups were by and large excluded from the target group on subsequent days.

The questionnaire was long so took some time to be completed (perhaps one hour on average) though some respondents were quite interested and spent time giving additional information and/or discussing some issues. The formulation of some questions was found to be a little difficult, primarily by those with lower levels of education e.g. Question C 25, where ranking was required. As a result there were a number of 'no responses' to these and to some other questions that may have been considered sensitive by the respondent (eg relating to sources of income). Therefore the sample size for each question/response is not always the same as the completed number of questionnaires. In some cases it was not clear whether the answer given by the respondent is 'no response' or 'no'. Care will need to be taken in analysing the responses to such questions and it may be necessary to examine the original questionnaires to clarify the intention of the respondents.

E.2.7 CONCLUSIONS

With a total of 268 questionnaires completed, when 200 had been the target (according to the Project Proposal/JICA Terms of Reference), and with a wide range of respondents, it is felt that the execution of the survey was generally successful. Advance contact with mayors and agricultural companies meant that the survey team was well-received by most stakeholders and benefited from their co-operation.

Table E.1 RURAL STUDY FOR SUSTAINABLE DEVELOPMENT OF AGRICULTURE IN THE ZAHORSKA LOWLAND SURVEY SURVEYED VILLAGES, AGRICULTURAL ENTERPRISES AND INDIVIDUAL FARMERS

Date of Visit	Village/Town Name (Secondary Target)	Village/Town Population (1999)	Type	Name of Agricultural Enterprise	Name of Director/ Owner	Address	Tel/Fax	Pre-Selection of Employees	Total No. Employees
				<Malacky Okres>					
Monday 22nd October	PLAVECKÉ PODHRADIE - target	875 (S)	s.r.o.	AGROPARTNER, s.r.o.	Ing. Vladimír CHOVAN Marcel Celiga	Plavecké Podhradie 258 m.celiga@nexta.sk	034-6584-392	By team & management	212 80 at PP sites
	(PLAVECKÝ PETER) Senica Okres			In practice most/all employees interviewed worked at Plavecky Peter					
	ROHOŽNÍK	3407 (L)	s.r.o.	AGROPARTNER, s.r.o.	Ing. Vladimír CHOVAN	Plavecké Podhradie 258	034-6584-392	By team	212 18 at Rohoznik Sites
			SHR	Chmela Miroslav	Chmela Miroslav	Rohoznik	034-6588803		
				<Senica Okres>					
Tuesday 23rd October	MORAVSKÝ SVĚTÝ JÁN	2004 (L)	s.r.o.	Poľnohospodárska spol. Moravský sv. Ján previously Grand s.r.o. Borsky Svaty Jur	Ing. Robert DOHÁL Pan Kollár	Závod 908	0905-289-768 0905-289-769		
			SHR	Agroplant	Mr. RUSŇÁK	Zámocká 66, Moravský sv. Já	034-7770-483 Home		
	BORSKÝ SVĚTÝ JUR	1581(M)	s.r.o.	AGROBOR, s.r.o. (previously PD BORSKÝ SVĚTÝ JUR)	Ing. Boris SOUKUP	SNP 79, Borský sv. Jur	034-7772-154 (tel/fax)		
				<Malacky Okres>					
Wednesday 24th October	KOSTOLIŠTE	924 (S)	a.s.	JAKOS, a.s.	Ing. Jozef MISLOVIČ	Kostolište	034-7734-085(86) 034-7733-016 (fax)	By team	139
					Jurackova	sekretariat@jakos.sk	0905-329-083		
	(GAJARY)	2577 (L)	SHR	Velebný Václav	Václav VELEBNÝ	Riadok, Gajary	034-7797-328		
			SHR	Bogdalík Vladimír	Vladimír BOGDALÍK	I. Mája 1042, Gajary	034-7797-475		

Date of Visit	Village/Town Name (Secondary Target)	Village/Town population (1999)	Type	Name of agricultural unit	Name of president/ owner	Address	Tel.	Pre-Selection of Employees	Total No Employees															
Wednesday 24th October	PLAVECKÝ ŠTVRTOK	1983 (M)	s.r.o.	AGRA M, s.r.o.	Mr. Jozef KUBOVIC - Director Mr. MICHALOVIČ - ?manager Ms. Lipova	Kozia 2243, Malacky	0903-456496 034-7722-022 No. not listed now	By students & company	33															
			SHR	FARMA OLŠIE	Mr. J. HÁJEK	Plavecký štvrtok	034-7793-190, 0905-835-657																	
	(MALACKY)	18293 (L)	s.r.o.	AGRA M, s.r.o.	Mr. Jozef KUBOVIC - Director	Kozia 2243, Malacky	0903-456496	By company & Tesfu																
	3 employees																							
Thursday 25th October	VYSOKÁ	1819 (M)	s.r.o.	AGROVYS, s.r.o.	Ing. Vladimír MINDOŠ	Hlavná 1, Vysoká pri Morave	02-6596-7130																	
	PRI MORAVE		(previously P.D. Vysoká pri Morave)	Ms. Sebelova (?Assistant)		02-6596-7330 (fax)																		
	STUPAVA	7854 (L)	a.s.	ZSVP Stupava, a.s.	Mrs. ROVENSKÁ	Ferdiša Kostku 55, Stupava	02-65934-727	By company																
	VELKÉ LEVÁRE	3358 (L)	s.r.o.	ASPARAGUS, s.r.o.	Ing. Milan FABUŠ	Veľké Leváre 1135	034-7794-488																	
			SHR	Ing. Dunár Milan	Ing. Milan DUNÁR	Veľké Leváre 310	0905-451-854																	
Friday 26th October	VELKÉ LEVÁRE continued	3358 (L)	s.r.o.	ASPARAGUS, s.r.o.	Ing. Milan FABUŠ	Veľké Leváre 1135	034-7794-488	By company & students																
	MALÉ LEVÁRE	1002 (M)	s.r.o.	STOMFA, s.r.o.	Ing. Marián SLOBODA	908 74 Malé Leváre c. 469	034-7795-075/95 (fax) 0905-896682-7																	
	Robert/Tesfu did informal interview 8 Nov. 2001, data not included		SHR	Hollý Ivan	Ivan HOLLÝ	Malé Leváre 254	034-7795-170																	
		<table border="1"> <thead> <tr> <th>Obec Size</th> <th>No.</th> </tr> </thead> <tbody> <tr> <td>Small (<1000)</td> <td>2</td> </tr> <tr> <td>Medium (1000-2000)</td> <td>4</td> </tr> <tr> <td>Large >2000</td> <td>4</td> </tr> </tbody> </table>		Obec Size	No.	Small (<1000)	2	Medium (1000-2000)	4	Large >2000	4	<table border="1"> <thead> <tr> <th>Company Type</th> <th>No. of Type</th> </tr> </thead> <tbody> <tr> <td>s.r.o.</td> <td>7 - one very large s.r.o. (AGROPARTNER) in 2 surveyed villages</td> </tr> <tr> <td>a.s.</td> <td>2</td> </tr> <tr> <td>P.D. (Co-op)</td> <td>0 (under liquidation)</td> </tr> </tbody> </table>		Company Type	No. of Type	s.r.o.	7 - one very large s.r.o. (AGROPARTNER) in 2 surveyed villages	a.s.	2	P.D. (Co-op)	0 (under liquidation)			
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E.3 RURAL SURVEY IN CASE STUDY SITE - 2002 RURAL SURVEY

E.3.1 RURAL SURVEY METHODOLOGY

Survey Dates and Team

Following two weeks of preparations (informing the Municipal Offices of the two villages; arranging surveyors, accommodation, transport and materials; preparing a questionnaire, a semi-structured interview checklist etc), the Rural Survey of Vel'ke Levare and Male Levare was carried out in the summer of 2002. A small team of 'surveyors' was used, supervised by the JICA Study Team Rural Sociologist.

Survey Techniques

To obtain the required understanding of (i) household plots/farming (in particular) and (ii) of the socio-economic situation of the two Case Study villages and the livelihoods of their inhabitants (in general), a number of information-gathering techniques were used. The main technique was the conduct of semi-structured interviews, guided by a checklist of discussion topics and focusing on the respondent (and his/her household and employment), land ownership/use and household plot activities. This was supplemented by a more detailed "questionnaire/interview form" to be completed at the time of the interview or immediately afterwards depending on the degree of co-operation of the respondent.

In addition the survey team undertook a 'transect' of each village, partly on foot and partly by vehicle, in the company of an informed member of the community. This was done in order to make observations on the natural and physical assets of the villages and to ask questions of the 'guide' on the facilities/resources/land uses observed, especially in relation to the history of the village and agriculture/gardening.

The survey team also held a meeting at each Municipality Office, attended by a small number of members of each village/municipal council, at which the initial findings of the survey were presented and feedback and additional information on the situation in each village was obtained through a SWOT analysis.

Survey Targets

The intention was to interview a representative range of village inhabitants from the following:

1. Mayor and officials
2. Professionals (teacher, doctor, lawyer, engineer)
3. Entrepreneurs
4. Individual farmers
5. Farm employees
6. Other employees working in village
7. Other employees working outside the village (inc. 'commuters' to Bratislava and Malacky)
8. Pensioners
9. Unemployed and socially vulnerable persons
10. Others (eg youth under 16 years old)

It was considered likely that the most significant differences in household farming might be related to the following parameters and the survey team made efforts to select representatives of these groups:

- **Place of work** e.g. working in or near the target village or working some distance away e.g. Malacky or Bratislava
- **Age** (differences between old and young)
- **Sex** (differences between male and female)
- **Family/Marital Status** (esp. single parent family)
- **Household size** (extended family or not)

Potential respondents were identified from the following sources:

- Mayor/Municipal Office
- Secondary data from Municipal Office
- Observation/random selection
- Respondents suggestions
- Original interviewees (October 2001 Survey)

The numbers of respondents interviewed in each of the broad categories listed in the table below was checked each day, so that respondents in categories that it appeared might be under-represented could be targeted the following day.

Rural Survey: Breakdown of Respondents in the Two Case Study Villages

Respondent Type	No. Interviewed in Male Levare	No. Interviewed in Vel'ke Levare	Total Nos. Interviewed	%-age of Respondents
Professional	3	4	7	11
Entrepreneur	7	5	12	19
Employee	10	9	19	30
Unemployed	3	0	3	5
Pensioners	10	11	21	33
Other	0	2	2	3
Totals	33*	31**	64	100

*The Polish priest for Male Levare was also interviewed, providing some useful views/information on the village, but he was new (6 months in residence) and did not provide information on his garden so is not included in this list.

**For some questions the effective no. of respondents had to be reduced to 30 or 29, because (i) two separately identified respondents proved to be father and son living as part of one large household and together managing both an intra-vilan garden and extra-vilan land (therefore the respondents were characterised separately but their land, production etc could not be 'counted' twice) and (ii) the respondent was a pensioner, living seasonally with his daughter to whom he had given the house and garden; he provided some useful general information on Vel'ke Levare and on his daughter's garden/household, to which the limited data refers, but for most questions he could not provide details.

Most interviews were conducted in the mornings and afternoons. However, in order to obtain information on employees that worked during the daytime, some interviews were conducted in the evening. Interviews were also conducted on one week-end day in order to interview respondents who were not present or were too busy to be interviewed during the week. Most interviews were conducted at respondents' homes (giving a better opportunity to see their garden/household plot) but some interviews were conducted at the respondent's place of work; in such cases it was not always possible to arrange a

subsequent visit to the respondent's garden. Despite efforts to get a balanced sample, there is an over-representation of pensioners (33% of respondents) in the survey. According to the 2001 Census of Population and Housing (Bratislava Regional Statistics Office), pensioners constitute 19.4% of the population of Male Levare and 19.1% of Vel'ke Levare; 17.5% is the proportion of pensioners in Malacky District as a whole. Pensioners had the most time to talk about the village and many were interested in doing so, especially about their gardens/household plots of which they were quite proud. Many pensioners had lived in the village for much of their life so they were an excellent source of information; therefore this over-representation was of some value, considering the 'garden' focus of the survey.

Most respondents co-operated well with the interviews, but a number of candidates declined or were busy, such that the interview was not so comprehensive. Many, but not all, respondents were willing to show the surveyors their (intra-vilan) gardens, which enabled some verification of the information provided. It was possible to visit only a few extra-vilan plots (some were in other villages, or even at unmarked locations; the surveyors did not wish to take too much of the time of the respondents, many of whom were very helpful and hospitable).

E.3.2 INTRODUCTION TO RESULTS - DIVERSITY OF GARDENING ACTIVITIES IN MALE LEVARE AND VEL'KE LEVARE

The survey revealed that a wide range of 'gardening' activities take place in Male Levare and Vel'ke Levare. In particular, the survey indicated that there is considerable variation in both the nature and scale of these activities in terms of land used, the crops produced and animals reared, according to household circumstances. Furthermore, the interviews showed that the situation is 'dynamic' in the case of many households. There have been significant changes since the 1989 revolution and the time and effort that is now put into 'gardening' depends both on 'internal' factors (i.e. land available to the household, gardening experience and skills) and 'external' factors such as employment and other family circumstances. Some quantification of these 'gardening' activities has been possible and the results are presented where appropriate. However the complexities of the situation are often better explained by a qualitative description of some of the recorded/observed activities with reference to interviews carried out at representative households.

The text in this chapter therefore provides a general description of household gardening in Male Levare and Vel'ke Levare, and discussion of its significance, presenting figures and then case studies to support the conclusions reached. Figures for Male Levare and Vel'ke Levare are presented together, starting with a characterisation of the respondents (association with village, employment etc). Before presenting the data, interpretation and case studies, an account is given of the pre-1989 revolution situation with respect to the systematic production and collection of produce from household plots, with particular reference to Male Levare.

E.3.3 RURAL SURVEY RESULTS

(1) Significant Household Vegetable Production and Collection Activities, prior to 1989, and their Decline

During the conduct of the survey in Male Lezare, information was obtained on a semi-formal marketing system for household plot vegetable production that operated for at least 35 years, up until about 1990, with 'export' to markets outside Male Lezare. This was part of a system involving state enterprises and associations (such as the Slovak Gardeners Association), under which vegetables and fruits were purchased, from gardeners in various municipalities of Slovakia, by employees of the state enterprise (or seasonally contracted workers) from the given municipality.

This provides an indication of the scale of vegetable growing in the Zahorie area that took place in the recent past, and thus of the present potential of the gardens for 'commercial' vegetable production. The system operated in Vel'ke Lezare and other villages also, but inhabitants of Male Lezare appeared to be particularly active participants so the description and figures mentioned here relate primarily to Male Lezare (the figures are based on a respondent's memory, not written records, so are indicators of the scale of production not absolute values). Under the system, and on a voluntary basis, householders with gardens produced both 'salad' crops (lettuce and cucumbers) and a range of other vegetables (carrots, beans, beetroot, leeks etc) not just for their own consumption but also for sale. Up to 120 households produced crops for sale. The 'gardeners' would grade some of their produce and put it in plastic trays/boxes outside their houses for collection twice a week; this started in May, for 'salad' (lettuce) and cucumbers, and continued until October.

The collection of boxes and payments for the produce, by a van and driver, was organised for 35 years by one resident of Male Lezare, who was employed by a State Company (in Zahorska Nova Ves) that processed/pickled the produce e.g. cucumbers. She recorded/checked the quantity and grade (size) of the produce of each grower and paid them accordingly; she had to take responsibility also for checking the quality of the produce, since she would not be paid by the Company for produce of poor quality. The typical price paid for the cucumbers (by the Company) was SKK 10 per kg.

The trade was said to be at its peak in the 1970s, when the revenue paid one year (c.1975) to those c.115 households in the village that supplied this trader was said to have totalled approx. SKK 2.5 million for cucumbers alone, with a maximum of SKK 150,000 over 2 days (one week). The cucumber revenue for a more typical year was said to be SKK 600,000 to SKK 800,000. Families were paid at the end of the season, with SKK 4,000 being a typical payment.

This trader also had a contract with another state enterprise (possibly through the Head Office of the National Association of Gardeners), to collect other garden produce (carrots, beans, leeks, beetroot etc). This was taken to a centre in Malacky and from here it was distributed to supply other processing factories and outlets that required fresh produce eg the army and other institutions.

After the 1989 revolution, a private company took over one or more of the state enterprises (processing factory etc) and this company did not pay on time for the produce brought from Male Lezare. These payment problems, and also competition from a new trader, led to a loss in confidence on the part of the producers who believed that the 'trader' would not pay them or might be making a larger profit on this trade, now that the market was no longer controlled. It was also claimed that some of the older, regular suppliers died, while the younger generation was not so interested in working on the land, and consumer demand for typical Slovak produce (cucumbers etc) dropped in favour of foodstuffs not previously available. The result was that the production/collection system, involving this particular trader, stopped.

A similar system existed in Vel'ke Lezare; this description is based on follow-up telephone interviews with one of the respondents and his wife. A VL member of the Vel'ke Lezare and Male Lezare Gardeners Association undertook the purchase of vegetables and fruits from various local gardeners before 1990 (the ML 'purchaser' was also a member of this Association). The producers (household plot owners) brought their vegetables (cucumbers, carrots, parsley etc) and fruit (plum, grapes etc) directly to his house. The purchaser supplied a processing company (canning factory) situated in Moravsky Sv. Jan and possibly others in the Malacky region; the grapes were even transported to Morava (now Czech Republic) for liquor production. After he died, his wife continued his business and gradually opened her own green grocery in Vel'ke Lezare. So at present, she has two jobs. One as an economist, working in a company from 8 a.m. to 2 p.m., and in the afternoon from 2:30 p.m. she works in her greengrocery. For a short period, 1988–1989, another man also used to be involved in the purchase of vegetables and fruits.

(2) Respondents' Association with Case Study Area Villages

Most respondents/households had long-term relationships with their villages; 20 out of the 30 respondents, including most of the pensioners, had lived in Male Lezare their whole life, been to school in the village etc., and an even higher proportion in Vel'ke Lezare.

Length of time lived in village Male Lezare (ML) and Vel'ke Lezare (VL) (Q: B2 & B3)

No. of years	0 to 10	11 to 20	21 to 30	>30	All Life	Week-end Resident	Response Not clear	Total
No. of respondents in ML	3	2	2	2	20	1	3	33
No. of respondents in VL	1	4	1	1	24	0	0	31
Grand Total	4	6	3	3	44	1	3	64

(3) Employment

Prior to the 1989 revolution, it is understood that a significant proportion (c. 20%) of the workforce of Male Lezare were employed by the State Farm that operated in the two villages, both in management/technical positions or as workers e.g. responsible for livestock (the mayor estimated the number at approx. 100 residents, and this out of an economically active work force, in 1991, of 514). Some pensioners recounted how they had to start work early, e.g. at 3.30 a.m. to feed the cattle, and also worked on late shifts. Now, other than the farm business Stomfa s.r.o., which occupies part of the site of the old co-operative/state farm and uses much of the land of the village, there are not any significant

employers within the village of Male Levare. Not even Stomfa employs people living in Male Levare, though it does employ staff from other neighbouring villages, especially Sastin Straze (where Stomfa was originally based) and Vel'ke Levare; the General Manager lives in Malacky. Therefore most of those people that do live in Male Levare either:

- work in one of the very few small businesses (eg butcher, pub, shop) in the village
- work in the government sector (municipality, school)
- are self-employed (SHR, Garage)
- work outside the village (as employees of other organisations/businesses)
- are unemployed
- are retired (pensioners)

Though the sample sizes from the 2 villages are small, it did appear that residents of Vel'ke Levare were more likely to work in VL, with 15 out of the 20 respondents doing so - and only one working in Bratislava. Twelve out of 21 workers from Male Levare worked in their own village and five respondents worked in Bratislava. Asparagus s.ro. provides employment in Vel'ke Levare and there are factories associated with this village, but not with Male Levare.

Nos. interviewed according to place of work (Q: C3)

Respondent	Not Working	Bratislava	Kuty	Kostoliste	Malacky	Male Levare	Male & Vel'ke Levare	Vel'ke Levare	Zohor	Grand Total
ML	12	5	1	0	2	12	1	0	0	33
VL	11	1	0	1	1	1	0	15	1	31
Grand Total	23	6	1	1	3	13	1	15	1	64

(4) Land Ownership

Of the 33 respondents interviewed in Male Levare only one, an entrepreneur living on the edge of the village in an apartment (that had provided accommodation for border guards), said he did not cultivate an intra-vilan garden plot i.e. near to the respondent's house. The size distribution of these household garden plot areas (measured in *are*, which is 10mx10m) is as follows (Questions D1 and D2):

Garden Plot Area (1are = 10mx10m)	None	< 5	6 to 10	11 to 20	21 to 30	31 to 50	>50	Not known	Total
No. of households in ML	1	9	9	4	2	4	3	1	33
No. of households in VL	0*	20	6	2	0	1	0	1**	30
Grand Total	1	29	15	6	2	5	3	2	63

*Father and son interviewed separately, but they shared a plot so only one plot for the two respondents is counted and the sample size drops from 31 to 30.

**Relates to household with pensioner living temporarily with his daughter; they have a household plot, but details could not be provided in absence of daughter.

The majority of household garden plots in VL are relatively small (20 plots are < 500m²) whereas in Male Levare most household plots are larger than 500m². This difference relates to differences in the size and form of the two villages; many of the houses in VL are in more densely planned 'urban' areas and are surrounded by other houses, such that the housing plots have less space for garden land. Male Levare is more rural, with many houses being on the periphery and having long, narrow gardens directly adjoining agricultural land.

In ML, 13 out of the 33 respondents also cultivated other land, in most cases extra-vilan but not exclusively e.g. one respondent had purchased unused intra-vilan land, in a housing area, and established two greenhouses, each of 3 *are*, for growing peppers to sell locally (he later abandoned this activity - see interview Z/E 9 later). Another household was cultivating 10 *are* of land, belonging to a neighbour and near to their house, as described later in interview R/I 6. Of these 13 respondents, 7 were cultivating their own land, 5 were cultivating land that was not theirs (in two cases the land belonged to a relative; in one case the father's friend; in one case to an owner in Bratislava and in one case rented from a neighbour) and 1 respondent would not indicate to whom the land belonged. The area of land cultivated (where known) by these respondents is given below. The table shows that small areas of 1ha or less are typical in ML, though one respondent (an SHR) said that he cultivated 'other' land amounting to 8ha. The situation is similar in VL, with 9 out of the 30 respondents also cultivating other land. The two respondents cultivating over 6 ha of land are both entrepreneurs, registered and working as private farmers (SHR). One runs a business renting agricultural machinery but also, together with his brother, he farms 20 ha of arable land and 5ha of meadow (some belonging to his family, some rented from other owners). The other SHR farms over 500 ha of land in Vel'ke Levare, mostly rented from others but approximately 30ha of the land he owns himself.

Area of 'other' land (intra-vilan or extra-vilan) cultivated by respondent (Q: D3 and D5)

Plot Area (ha)	None or used by other	Details of Area not given	0 to 1	2 to 5	>6	Total
No. of Plots in ML	20	2	7	3	1	33
No. of Plots in VL	21	2	4	1	2	30
Grand Total	41	4	11	4	3	63

It was apparent that the extra-vilan land was often used for growing cereals to feed to livestock, especially poultry and pigs (kept in sheds associated with the intra-vilan house and garden).

Twenty-six (42%) out of the 62 respondents from the two villages stated that they owned land that they did not cultivate, most (19 out of 33) being from Male Levare; only 7 out of 29 respondents from Vel'ke Levare had such land. For the 19 Male Levare respondents, the location of the land belonging to 15 of them was in Male Levare only, but some landowners had land in other Municipalities, some in more than one Municipality and two had land outside Slovakia. For the 7 VL respondents who provided information on the location of such land, 5 had land only in Vel'ke Levare.

Location of agricultural land owned but not used by respondents (Q: D10)

Resident of	*N/A	Male Levare	Vel'ke Levare	Gajary	Studienka	ML, Svaty Jur, Austria	Czech Rep	Dunajska Streda, VL	Grand Total
ML	14	15	0	1	1	1	1	0	33
VL	22	1	5	0	0	0	0	1	29
Total	36	16	5	1	1	1	1	1	62

* N/A: Respondents use their own land or do not own other land

In Male Levare, Stomfa s.r.o. (the farm business which, in Male Levare, has now succeeded the State Farm that managed most of the land in both Male Levare and Vel'ke Levare), was the main user of land that was not cultivated by its owners, but two landowners rented land to individual private farmers (SHR) and one pensioner to his cousin living in Bratislava. For Vel'ke Levare the land was used by a mixture of farm businesses, private farmers, acquaintances and a relative.

Cultivator of agricultural land that is not used by owner D.10

Resident of	*N/A	STOMFA	ASPAR AGUS	STOMFA & ASPARAGUS	SHR	Cousin from Bratislava	Acquaintance	SHR in Czech Rep.	Grand Total
ML	14	14	0	1	2**	1	0	1	33
VL	22	1	2	1	1	0	2	0	29
Total	36	15	2	2	3**	1	2	1	62

SHR = Individual Private Farmer

* N/A: Respondents use their own land or do not own other land

**One of the landowners rented some land both to Stomfa and an SHR.

Payment for land rented to the farm businesses is typically in cash (but there were complaints that the payments are late and some times do not come at all). Stomfa is the main farm business renting the land, paying 400 Sk per hectare to the owners and also the land tax on their behalf. Most land-owners appreciated that the land was being used (and not left idle) and also that the farm business was paying the land tax. A small number of respondents claimed that they did not charge any rent for use of their land or received some payment in kind; this might be in the form of some fodder or grain to feed their domestic stock (e.g. goats).

Income (rent) received from leasing land (Q: D12)

Resident of	Not applicable (land not leased)	Free	In kind	In kind & cash	Cash?	200 Sk/ha	3-500 Sk/ha	1-2000 Sk/ha	Grand Total
ML	14	2	1	1	6*	1	7	1	33
VL	22	2 ⁺	1	0	1**	0	2	1	29
Total	36	4	2	1	7	1	9	2	62

⁺For one of these respondents the land user paid tax, but not rent.

*The respondent's land is being used by Stomfa in 5 cases and both by Stomfa & Asparagus in 1 case, but the amount being paid was not clear. ** Rent paid in cash, but amount not stated.

The above information on land ownership shows that all but one of those 33 interviewed, who represented a broad cross-section of the inhabitants of Male Levare, had a household gardening plot of some form next to their house and 13 of them (39%) also cultivated land at a separate location. All interviewees from Vel'ke Levare had a household gardening plot next to their house, but typically much smaller than those of ML; of the 30 VL interviewees 9 (30%) cultivated land at a separate location. Gardens and 'garden-farming' would therefore appear to be important to most households in Male Levare; in Vel'ke Levare gardens are also 'popular', but the significance of gardening (especially as indicated by area cultivated) appears to be somewhat less. Information on the productive and other uses of gardens is presented in the next section.

(5) Garden/Farming Activities (Cultivation/Production)

Data are presented below on the number of gardens/plots used for broad categories of 'crop'. A wide range of crops are grown in the gardens/household plots of both Male and Vel'ke Levare, while a smaller number are grown on the extra-vilan plots. Most respondents' households cultivate fruit (ML 85% and VL 86%), vegetables (ML 82% and VL 90%) and potatoes (ML 76% and 59% VL), especially on the plots close to their homes. Where 'other' plots are cultivated (most are extra-vilan), cereals are the main crop and are used in particular for domestic stock; potatoes are also cultivated, though it was said by several respondents that the latter are now grown less frequently on extra-vilan land because of the risk of theft. There are not great differences between the 'cropping patterns' of the two villages, though the percentage, 39%, growing cereals in ML is somewhat more than the 28% in VL. This probably reflects the higher percentage of respondents rearing animals, especially pigs and poultry, in ML (see following table) and the greater size of ML household plots (larger plots being preferable where mechanised harvesting of cereals is to be undertaken).

Cultivation, according to type of crops/plants grown, of household and 'other' plots; figures relate to the number of households cultivating the crops in question (Q: E2)

	None grown by household		On household plot only		On 'other' plot only		On both Plots		Total no. of households growing the crop		Total no. of respondents	
	ML	VL	ML	VL	ML	VL	ML	VL	ML	VL	ML	VL
Cereal Crops	20	21	6	2	4	5	3	1	13	8	33	29
Potatoes	8	12	20	12	2	4	3	1	25	17	33	29
Fruit	5	4	26	23	1	1	1	1	28	25	33	29
Vegetables	6	3	25	22	1	1	1	3	27	26	33	29
Ornamental flowers	13	11	19	17	0	0	1	1	20	18	33	29
Grass for hay	31	26	0	0	2*	2	0	1	2	3	33	29
Amenity grass	16	16	17	12	0	0	0	1	17	13	33	29

*For one respondent, who had no livestock, the hay was probably being used by another person/organisation. For the second, the hay was being cut by another person, but was used to feed the goats of the respondent.

Animal production (especially of poultry and small stock) is a feature of many respondents' households in Male Levaré; 22 (67%) had domestic stock of one type or another, whereas only 14 (48%) of respondents' households in Vel'ke Levaré had domestic stock. The most frequently reared animals are poultry, which were kept in 64% of ML respondents' households (mostly chickens for eggs, but also turkeys, ducks and geese) and 38% of VL respondents' households. Rabbits were kept in 33% of ML respondents' households, mostly for meat, but only 17% of VL households. Pigs are also of some significance, being owned in approximately 1 in 4 respondents' households in ML, though fewer (17%) in VL. Where such animals are kept it is usual for the household to grow some cereal crops, either on the plot near to their house and/or on extra-vilan land, as a source of feed. It is therefore apparent that the rearing of small numbers of domestic stock is a significant activity for many households in the Case Study area, and to a greater extent in the 'rural' Male Levaré than in Vel'ke Levaré with its smaller, more 'urban' gardens and a longer history of non-agricultural activities.

No. of households (respondents) with and without various types of domestic stock (Q: E2)

	No. of households without		No. of households with		%age of households with		Total no. of respondents	
	ML	VL	ML	VL	ML	VL	ML	VL
Cows/cattle	33	27	0	2	0	7	33	29
Pigs	24	24	9	5	27	17	33	29
Goats	32	28	1	1	3	3	33	29
Sheep	33	28	0	1	0	3	33	29
Poultry	12	18	21	11	64	38	33	29
Rabbits	22	24	11	5	33	17	33	29
Horses	32	28	1	1	3	3	33	29
Bee-keeping	33	28	0	1	0	3	33	29
Other	30	30	0	0	9	0	33	29

(6) Household Case Studies - Presentation of Results from Selected Semi-structured interviews.

There now follows a selection of interviews with respondents that illustrate some of the household 'gardening' activities in the Case Study Area - simple in some cases, complex in others - and the changes that they have been undergoing.

Interview A/V2 (Male Levaré)

General facts about respondent:

The respondent is a 51 year old married teacher. She has a university degree and works 23 hours per week. Her salary varies from 11 000 – 13 500Sk. Since this income is not sufficient, her husband started his own trading business. She was born in Malé Levaré and has lived there all her life. She is one of three siblings (her sister lives in Velké Levaré and her brother lives in Malacky). Her mother is from Velké Levaré, her father from Male Levaré. Her husband is from Kostolište. She and her husband own a family house, where they live with their three 'near adult' children (seasonal residents; two are employed outside Male Levaré and one is looking for a job).

Land ownership:

Their house is built on her parents' plot; her parents' house is next to theirs (only the father lives there now as her mother has died). The family does not own a weekend house or cottage. She and her immediate family own both intra-vilan and extra-vilan land. The garden by the house is 5 *ares*. She owns extra-vilan agricultural land in Male Levaré that is being rented to STOMFA, a.s.; it was inherited from her father. Outside the village, she owns forestland, where pine trees are planted; the trees are suited to this area because of the sandy soil. The family cultivates 17 *ares* of intra-vilan arable land belonging to her father; this land adjoins the 'garden' plots/backyards of the two households. They also have another intra-vilan plot (in Male Levaré, location not specified) of 15 *ares*. She and her two siblings cultivate the intra-vilan plots together with their father, who always divides the yield equally between himself and the 'households' of the three siblings.

Inputs:

The entire family helps to cultivate the land. She works in the garden mostly at weekends since she and her husband both work full-time. The time she spends in the garden is approximately three hours per day in the spring, one hour per day in the summer, and three hours per day in the autumn. In their 5 *are* garden/backyard, they used to till the land manually, but now they borrow a rotavator. For the 17 *are* of intra-vilan land that is being used for Triticale they hire/rent a tractor to do the ploughing, for a payment of 300 Sk. Sowing and harvesting is done mechanically also (the combining costing – 500 Sk). They do not use any agro-chemicals (herbicides, insecticides, fungicides) against pests and diseases. They do not use any mechanical weeding. To increase the yield, they apply organic fertilizers. They do not use chemical fertilizers. They irrigate, by means of a hose-pipe, their backyard vegetables, especially peppers, cucumbers and tomatoes using water from the well next to their house. The well is 16 m deep and is not suitable for drinking; for this they have to bring clean water from one of the village's public artesian wells (or buy mineral water).

Outputs:

She uses the 'backyard' garden for growing potatoes; these yield 1 kg from one plant. These two neighbouring households (all from the one family) also have fruit trees (apples, apricot, peach), berries, grapes, herbs, vegetables (peppers, parsley, carrots, parsnips, cucumbers), beans, sunflowers (the seeds of which are used for feeding birds during the winter), ornamental flowers – *Gladiolus* sp. and ornamental trees, which her husband gives to his friends. They also have a lawn.

On the 17 *ares* of intra-vilan arable land belonging to her father and adjoining their two 'garden' plots/backyards, they grow Triticale – the yield of this crop reaches 30 grain-sacks (the JICA Study Team recorded 18 bags as the typical yield, which equates to approx. 5t/ha). On their other intra-vilan plot (of 15 *are*, location not specified) they grow potatoes (Santy variety).

All that they grow in the garden is for their own consumption. They store cereals, potatoes, fruit and vegetables (potatoes and carrots, buried in sand, are stored in the cellar) and rabbit meat. She rears poultry to have eggs and meat, and her husband keeps racing pigeons. If they have more eggs than they can consume, they sell them. Her father rears rabbits; while his wife was alive, he used to rear cattle and pigs.

They say, that little co-operation exists between households within the village. Co-operation functions primarily within the family.

Pre-1989, the village and region:

Many years ago, women (so-called Grincajch) used to go to Austria to buy and sell vegetables. The family lost their land to co-operatives during collectivisation. After the year 1990, they received back their land. As far as her future intentions for the land are concerned, the respondent preferred to keep the land.

Benefits/drawbacks of gardening:

They find gardening to be positive in the terms of a self-supply system. Expenditure on vegetables is lower when you grow your own. But there are some problems concerning gardening; one is that other inhabitants of the village steal the crops, especially potatoes that are grown on land away from the house.

Conclusions from this interview are that the family as a whole (respondent, her father, and siblings) makes comprehensive use of all their intra-vilan land and they only rent their extra-vilan land to Stomfa. They claimed to be self-sufficient in cereals (for poultry, rabbits etc), chickens, eggs and rabbits and nearly self-sufficient (90%) in potatoes, fruit and vegetables. Eggs seemed to be the only produce with an occasional surplus that could be sold. The pensioner father had given up keeping pigs and cattle after his wife had died. This situation was encountered elsewhere with pensioners in Male Levere, respondents explaining that such livestock required too much work when they were old and single.

Interview A/V10 (Male Levere)

General facts about respondent:

The respondent is a 43 year-old man who finished secondary school and has some training in animal production. His mother was from Male Levere, but he was born in Bratislava, where his mother was working at the time of his birth. He now lives in Malé Leváre with his wife and five children in his family's house, built between 1987 – 1990. He also lived in Kostolište for 3 years. He works as a security guard, for a Bratislava Company, in Malacky, and also has a job working as a security guard at Asparagus a.s. in Velke Levere. In all he works 72 hours per week and earns between 17,500 and 19,000 Sk per month. Previously (since 1990) he had a succession of jobs in the agriculture sector (managing land, working as an animal technician etc), including work for local co-operative farms and their successor companies, working some of the time also as a self-employed, part-time farmer.

Land ownership and use:

His intra-vilan garden, by the house, is 0.11 ha. He also owns two parcels of extra-vilan agricultural land in Male Levere, which originally belonged to his grandparents (his parents were not interested in acquiring and using this land; it seems that the grandparents owned more land, but the family did not try to retrieve it all after the 1989 revolution). One parcel is 0.64 ha of meadow land, by the Morava River from which grass is cut for hay two times a year. He rents this land to two private farmers in Male Levere, receiving payment in kind, in the form of hay (30 bales). His share of the hay he uses for feeding his goats. The second parcel is 0.45 ha of arable land, said to be of the highest quality (bonity value) for the village; however it is lying fallow, because the inputs required to make it productive/profitable are too high (eg 1300 Sk for ploughing). He used to have agricultural machinery (two tractors), but he sold them - one in order to buy a computer for his children.

Outputs:

Approximately 50% of his household plot is used to grow lucerne (fed to his pigs and goats). The remainder is planted with sugar-beet (for pigs), and vegetables including potatoes, carrots, tomatoes, onions, horse-radish, maize, peppers (paprika), parsley and ornamental flowers; he also grows fruit (grapes, berries and apples). All that he grows is for home-consumption. He buys only tropical fruit and early vegetables. At present he has 6 goats (4 adults, 2 kids), a pig and a sow – which usually produces 3 – 5 piglets. He used to have chickens, turkeys and ducks but foxes killed them all recently. He also used to rear cattle. He acquired three cows and 17 sheep in 1992 from the co-operative in Kostolište and from Bohemia. From these, during the years 1992 – 1995 he produced milk and milk products including cheese, cheese noodles (korbáčiky), which he sold to local people, wool (the price used to be 180-250 SKK per kg, but is now 20-25 SKK per kg) and cowskins for leather. He stopped doing this in 1995 due to pressure of other permanent employment.

He used to keep the animals in a 'free-range' area next to his house and today he provides the remaining animals (goats and pigs) with a balanced feed that he prepares himself. He provides approx. 80% of the family's food requirements, buying lettuce/early vegetables, bread, poultry and meat products in the village.

Inputs:

He normally works alone in the garden, but his wife and children sometimes help. The most time spent in the garden is in spring when they work there 6 hours per week. In autumn they work there 5 hours

per week. He uses a tractor for ploughing, but sowing is done by hand. No chemical protection against pests and disease is used. Organic, but not inorganic, fertilizers are used. He only irrigates during the dry seasons, using water from his own 4m deep well, which is applied with a hose-pipe and a sprinkler.

Recent Changes in Agriculture:

In his opinion, agriculture is not what it used to be. People are not able to make their own living from it. In the past, he sold wool and sheep meat. Merino wool could be sold for 180 to 250 Sk per kg, now it is only 25 Sk per kg. Once he sold 17 sheep at once and was able to buy a car with the money. The inputs for agriculture (eg wheat) have increased five times, but the outputs have stayed the same. He thinks that the EU wants to enter the Slovak market and for Slovakia to reduce its farm production.

This would mean losses for small Slovak producers.

Co-operation within the Village:

There used to be co-operation among people within the village through lending machinery and help in building houses, but less so now.

Conclusions from this interview are that this is an individual who has a strong interest in animal husbandry and so, after the revolution, he made a big effort to derive an income from rearing a small number of livestock. However he found that this was not sufficiently cost effective (at least on a small-scale) to provide him and his family with a sustainable livelihood and he has had to abandon most of his animal rearing activities, so that he has time for regular employment. Nevertheless he still has a close attachment to the land and livestock, expending considerable time on his garden, goats and pigs and making a significant contribution to the household's food requirements. Though he maintains that co-operation within the village has declined, this case illustrates that informal exchange of outputs (hay) and services (cutting of the hay) does take place between friends.

Interview Z/E 9 (Male Levare)

Family and Employment:

The respondent's family has been living in a family house in Male Levare for 8 years; they have 2 children. The respondent was born in Male Levare and her husband is from Malacky, where he works in the state administration. Apart from his main work he also looks for temporary work outside Slovakia, to earn extra money for the family. The respondent has been unemployed for 1 month due to health problems. She was working as a nurse in Malacky. Apart from their main employment, since 1996, for financial reasons, they have together acted as entrepreneurs in horticulture. They constructed two large polythene greenhouses, first to grow and sell peppers and later garden plants and ornaments.

Land Ownership and Use:

They have two plots of intra-vilan land. P1 refers to the 0.06 ha of built-up land (with the house) plus the surrounding garden; most of this land is lawn but there is also a small greenhouse (polythene) - 2m x 4m. Just over 50 m from their home they have another 0.06 ha of land (P2) where they have 2 large polythene greenhouses (each approx. 10m x 30m).

Crop and Animal Production:

On their household plot (P1) they grow a few fruits such as kiwi, berries (raspberries, currants), rhubarb, apples and grapes. In the greenhouses on the land P2, they used to grow peppers for sale on a semi-commercial basis, a special variety suited to hydroponics. It was difficult to compete with growers from southern Slovakia (Dunajska Streda), where the conditions are better. They had to change from growing peppers to ornamental plants, because the peppers were time consuming - also the conditions in the greenhouse were too hot for the peppers in summer (physiological problem with the leaf tips turning black). So, for approximately one year they have been operating as a nursery for ornamental plants (annuals, trees and shrubs - including conifers, cacti, hanging baskets etc). No poultry or other animals are kept for consumption.

Inputs to agriculture:

They work approximately 1-2 hours/day in the garden next to the house and 2-3 hours/day in their large greenhouses. They use insecticide on the shrub/trees, but a minimal amount, and organic and inorganic fertilisers. The 2 greenhouses were built for growing peppers under a hydroponic system, with trickle irrigation and overhead sprinklers, ventilation, security alarm etc. Wells are used to irrigate both their garden (22m well) and large greenhouses (10m well).

Marketing, Consumption, Storage, Reasons for Gardening and Future Intentions:

The ornamental plants are sold to wholesalers (eg. "A" Centrum Malacky), a supermarket and small shops (retailers) in the area; some customers buy directly from the greenhouse. The fruits grown in P1 represent only 5% of the total consumption of the whole family; vegetables are not grown. They estimate that family and friends gave them about 30% of their fruit and vegetable requirements; they buy the rest. Most of the 'agricultural' products (vegetables, fruits, potatoes) are bought from sellers from Dunajska Streda. The motive for starting pepper production in 1996 was financial (obtaining some extra income) and the reason for changing to a 'nursery' was an expected increase in demand, which now exists. Another motive was enjoyment of horticulture as a hobby. However, both the financial and time inputs to horticulture and agriculture are high and they have found that growing ornamental plants has not been a profitable business, it only covers its costs. Also, a big problem in Male Lezare is theft; this is not a question of Roma but of other ethnic groups too. If it is below certain levels then it can be tolerated, but one reason for stopping the pepper business was theft.

So they will not continue their 'nursery' as a business, but will keep it as an enjoyable hobby, only supplying inhabitants who are their regular customers, from the small greenhouse in the garden next to their house. The P2 land they will sell. Originally they wanted to keep production at the same level and to buy land from a neighbour – to increase production. However, the land ownership had not been resolved and the owner decided not to sell the land.

Changes after 1989 and Other Matters:

After 1989, many people from the village received land as a result of the restitution, but they did not have an interest in cultivation and some of them did not know exactly the location of their land. Some of this land is uncultivated because older people do not have energy or the means to manage it. From the respondent's viewpoint, the cultivation of the land by STOMFA is a good solution to this 'problem' – the land is being cultivated. After 1989 there was a change of attitude to gardening, with some families starting to take an interest in the design of gardens around their house i.e. using it for amenity, not just production.

The respondent's family is worried about the absence of a waste water system and drinking water supply in the village and the dangers of pollution of the Rudava reservoir (Recreation Area) from cottages. Male Lezare inhabitants need to buy their drinking water, especially for babies and children.

Conclusions from this interview are that this is a household that saw horticulture as a potential source of supplementary income and which has made considerable investment, in time and money, in establishing a part-time business. However, a combination of factors (competition, technical problems, security, lack of time) has led to this enterprise being abandoned. Self-sufficiency in vegetables, fruit and animal products, through use of intra-vilan and extra-vilan plots to provide cereals for livestock, has not been a motivating factor - though the family concerned clearly derived pleasure from gardening (both productive and ornamental plants) as a 'hobby'.

Interview R/I 06 (Male Lezare)

Family and Employment

This respondent was a 65-year-old retired man, born in Prague, but after his wedding he lived in Male Lezare for 42 years and obtained Slovak citizenship. He has two daughters, but they already moved away and have their own families. They have income from their pensions and also grow crops and raise animals.

Land Ownership/Use and Household Production

He has a small household plot/garden of about 4 *ares* around his detached family house. He cultivates the plot with his wife. Flowers are grown near the house as well as tomatoes, peppers, onions, kohlrabi, cucumbers, carrots. They grow watermelons and other fruits – redcurrants, gooseberries, strawberries, raspberries and apricots. He complained that the watermelons needed a lot of water and this year was very dry and therefore he had to water them every day. They have their own well and they also catch rainwater and store this in the tanks to use for watering the vegetables. Near the house there is a fenced area with sheds, where he raises rabbits (c.10 adults & c.14 young), hens (c. 7), ducks (c. 25-30, including ducklings), Chinese geese (14), 3 pigs (1 adult, 2 young), 1 goat and 2 kids.

He cultivates another 10 *ares* of intra-vilan garden almost opposite his house. This plot belongs to a good neighbour, who has retired and is not able to look after it herself and so offered this plot for cultivation to the respondent. They cultivate potatoes, peas, beans, maize, pumpkin, tomatoes, cucumbers, beetroot, zucchini (courgette), celery and sugarbeet (animal feed); poppies and carrots were inter-planted.

Marketing, Consumption and Storage, Reasons for Gardening and Future Intentions

The crops harvested are used for direct consumption in their household and/or are preserved – winter storage, freezing, fruit preserves and also as feed for their animals. In the cellar, they store potatoes, carrot, parsley, celery and wheat for animals. They freeze carrot, parsley, peas and pumpkins. They produce pork, goat and poultry meat themselves so they do not have to buy it. They have 3 daughters and 7 grand children and they share the produce with them. They have to buy wheat (20 q/year) for animals (i.e. 2,000 kg per year). Among other products they buy are honey, milk and milk products.

Co-operation within the Village and Changes since 1989

The relationships between neighbours are very good. They have a lot of good friends in the municipality; they advise, help and visit each other. A friend ploughs their land with a small tractor, for which they will pay him some money for fuel plus some vegetables or other service. The respondent says that it is necessary to have friends who can help and on whom one can rely because the present times are difficult. When there were state assets, the employees could buy vegetables, wheat, animals and meat more cheaply; a bonus was also given in kind.

Conclusions from this interview are that a younger pensioner (recently retired and in good health) can devote considerable time and effort to a household plot, making a useful contribution to the extended family's diet and livelihood. From other interviews it was evident that older/less fit pensioners would first stop rearing domestic stock, since this requires daily labour input, but would continue growing fruit and vegetables while they were able to do so. For this household, co-operation within the village was good and very important; they were making use of a neighbour's plot, and presumably providing her with some produce in return. Other younger respondents indicated that co-operation with neighbours was not so good, referring to theft of produce (especially potatoes and maize) as a problem.

Interview A/V01 (Vel'ke Levare)***General information about respondent - family and employment:***

The respondent is a 61 year-old man. He was born in Vel'ké Leváre and has been living there all his life. He lives in a family house with his wife, son and daughter-in-law. He completed secondary school. He has been working as an agronomist with JAKOS a.s. in Kostolište for four years. His specialisation is fruit growing. He owns some shares in the company, but is not involved in the decision-making process. He works 40 hours per week and his salary is over 13,500 Sk/month. His journey to work takes just 10 minutes. He obtains additional income from selling 'garden/farm' produce.

Land ownership:

His garden, behind the family house, is 10 *ares* in size. He also cultivates other intra-vilan land belonging to his siblings, who are not interested in cultivating it. He owns extra-vilan agricultural

land, both in Vel'ke Lezare and another village. The 4 ha of extra-vilan land to the south-west of Vel'ke Lezare, on which he grows *Triticale*, is in a single, large parcel within an even larger field of similar parcels belonging to other owners, including individual farmers (SHR) and the Asparagus company. On these other parcels the crops include asparagus, sunflowers and *Triticale*. Because there are no clear field boundaries, the latter *Triticale* parcels are almost indistinguishable from the respondent's *Triticale* parcel and gave the impression that they are under the same management, but in fact the crops had been sown on different dates and will be harvested separately..

Outputs:

With his son (see next interview A/V02), he grows a range of crops in the garden by the house, but especially potatoes and fruit (a speciality of his son also). He has produced 600 kg of potatoes (yield c.15 tonnes/ha) and also grows vegetables (including parsnips, runner beans and calabrese), tomatoes and green peppers (in a polythene covered frame). Of the production, he gives approximately 15 % to his relatives in the village (his daughter lives in a block of flats in the village), some is for his own use and some is sold. Potatoes, fruit and vegetable are stored for winter. The family buys early vegetables and tomatoes in the village, and other produce such as cauliflower, bananas, and oranges.

In the recent past he grew potatoes (Desiré, Santy, Rosaré) on 2 ha of extra-vilan land, where the potential yield was said to be 35 tonnes (17.5t/ha), but stopped because of theft of some of the crop. So for the last three years he has grown only cereals, *Triticum aestivum*, on an area of four hectares. The yield is approximately 4–6 tonnes per hectare. The cereals are sold to traders in Malacky and Senec in the autumn; the traders then supply the grain to others for animal feed (e.g. chickens). Straw from the cereals is ploughed back into the soil, for lack of a market. The price for the cereals should be 2800 Sk per tonne. He believes this cropping will be profitable, in due course, because there is demand for cereals.

Inputs:

He and members of his family, primarily the men, work in the household garden. Since he is employed, he works mostly during the weekend. In the spring, when there is a lot of work to be done in the garden, he works approximately 20 hours per week (see son's interview for further details).

The amount of time he spends on the extra-vilan land depends on seasonal requirements. To prepare the land takes 6–8 hours. He hires a tractor for ploughing, while sowing and harvesting are done mechanically. They hire a combine harvester to harvest the crop in the fields – the price varies e.g. 1600 Sk/ha in Vel'ke Lezare and 3,000 Sk/ha in Moravsky Svaty Jan. He applies organic fertilizers once every four years. Non-organic fertilizers are applied each year. Herbicides, insecticides and fungicides are applied against weeds, pest and diseases.

He owns some agriculture machinery including a tractor, ploughs, discs, a seeder, and a (chemical) fertilizer spreader.

Benefits/drawbacks of gardening:

After 1990, the cost of inputs increased rapidly, but the revenues from sales decreased, so part of the motivation for gardening, for him and his family, is enjoyment (i.e. a hobby). He will keep his extra-vilan land but, if it is possible/profitable, he is willing to rent the land. He thinks that the salaries and wages of people working in agriculture with secondary school and university level education, should be increased.

He believes that there should be more support from Government for registered individual private farmers (SHR) and that the present price liberalisation is too extreme. He claims that it is only because people are interested in agriculture that they do garden/farm, because the financial rewards are inadequate and it is not a worthwhile investment. He himself was more enthusiastic when he first started farming, at the time of the restitution, when they received land and a tractor; he thought it was a career with opportunity. Their original land, however, was too fragmented and it has now been 'consolidated'.

There is little need for co-operation with their neighbours, partly because they have their own tractor and other machinery.

Views on the village and region:

The economic/social situation in Vel'ke Lezare is better than in Male Lezare and young people are not leaving. There is demand for cottages from people from Bratislava, so there is some pressure on

housing in the village. He claims that 25 % of the inhabitants of the village are Roma and that most are unemployed and work only as seasonal labourers. Agro-tourism in the village is not very developed and he had not given consideration to this activity.

Interview A/V02 (Vel'ke Levare)

General information about respondent - family and employment:

The respondent is a 28 year-old, married man who was born in Malacky. Temporarily, he and his wife are living in his parents' family house; they are building a new house next to this. He graduated from Mendelevova zemědělská a lesnická univerzita (Mendelevov's University of Horticulture and Forestry) at Lednice, near Brno in the Czech Republic. His specialisation at university was in fruit trees, and in particular apricots.

He has been working at Asparágus a.s. for 2 years. He works approximately 50 hours per week, but during the season he claims to work as much as 360 hours per month. He uses a bicycle to get to work, which takes him 10 minutes. Besides the income from his job with Asparagus, he has additional income from his own horticultural activities.

Land ownership:

He cultivates family-owned land together with his father (see preceding interview A/V01).

Outputs:

He has particular responsibility for approx. 4.5 *ares* of the household garden devoted to 100 apple trees, planted in rows as in a commercial orchard, which it was said yielded the equivalent of 20 tonnes/ha. Three rows of apple trees were from grafts from Lednice, and two rows of trees from grafts he had produced himself. He also grows blue plums, apricots (a new frost-resistant variety), walnuts, gooseberries and currants. They used to grow grapes, but these did not flourish so they changed to apples.

He grows his own rootstocks for fruit trees, fruit bushes and roses; he uses the rootstock M-9 for fruit trees, and *Ribes aureum* (*meruzalka zlatá*) for grafts of currants and gooseberries. Rootstocks, of roses in particular, were also grown for sale in the village at 30 Sk per plant along with young 'Christmas' trees (the conifer, *Picea abies*). Ornamental flowers grown included hydrangea, geraniums (*Pelargonium sp.*) and chrysanthemums.

Inputs:

He uses rainwater for irrigation of vegetables and fruit in the garden, storing this in a swimming pool in the yard behind the house; this is 'topped up' with water from their domestic supply. The plants are watered using a hosepipe or sprinkler. Herbicides (Touchdown) and fungicides are applied in the garden - the latter against apple scab (*Venturia inaequalis*).

Benefits/drawbacks of gardening:

He thinks that the amount of fruit he grows is small in comparison to the large-scale production at Asparagus a.s., where there is a 30 ha orchard and the growing has the benefit of the economy of scale.

Interview A/V10 (Vel'ke Levare)

General information about respondent - family and employment:

The respondent is a 60 year-old married, retired woman. She lives in a modern, family house with her husband, a divorced son, a daughter and her son-in-law. Another daughter lives in Bratislava, while a second son and daughter-in-law (who is Roma) live in the neighbouring house in which the respondent grew up (this older house is on the same parcel of land as the modern house; the family is planning to reconstruct the older house). She has nine grandchildren. She was born in the village, where she completed Basic School, and she has lived there all her life. She used to work on the State Farm, but retired 7 years ago when the State Farm collapsed. Her husband has also retired but does some building/carpentry work.

Land ownership:

The garden by the house is approx. 8 *are* in size, with 6 *are* devoted to vegetables and most of the remainder to animal production. In addition, she cultivates an extra-vilan plot of 0.5 ha. She inherited

both of these plots. In front of her house, there is a small garden where her daughter grows ornamental flowers and has a rockery and small pond. Before 1990 she only cultivated the garden by the house, but the extra-vilan land was given back to her family during restitution.

Outputs:

In the garden she has fruit trees (including apple, pear, plum, and walnut) and grows potatoes, soft fruit (strawberries, black/red-currants - the latter used for wine) and vegetables including onions, cabbage, kale, parsley, parsnips, runner beans, maize, tomatoes, cucumbers (on a trellis), green and hot peppers - see *Inputs* for further details. Ornamental flowers are grown for use in the church and cemetery.

At present, the family is rearing two pigs (husband's responsibility), eighty chickens (chicks are purchased from Malacky), 12 hens (egg-layers), 20 ducks, 8 geese, and 4 (previously 6) turkeys.

On the extra-vilan plot she grows cereals, especially wheat, (for pigs and poultry) and vegetables - including beans and beetroot.

Inputs:

Her daughter in law helps her in the garden. Sometimes her husband and children help too (when they visit her). Since she is retired, most of her time is dedicated to her garden. She saves seed each year from her crops, to plant the following year. She uses organic (manure from poultry and pigs) and inorganic fertilizers in her garden and insecticides are only applied to the potatoes against the Colorado potato beetle. Irrigation is used especially for vegetables, both in greenhouse and in the garden. They use well water for irrigation and rainwater collected from the roofs of various buildings/sheds.

She has 2 greenhouses in the garden, one glass the other polythene, and 7 growing 'frames', which are covered by polythene in the spring to keep out frost; she uses these for growing green and chilli-peppers, cucumbers and tomatoes, especially as seedlings for sale. She does her first planting on March 15 in the glasshouse, which she heats until the end of April to protect the young plants from frost and enhance growth. She sells the seedlings in the village, 2 crowns a piece for tomatoes and 3 crowns for peppers.

For the animals, she buys special chicken feed in Malacky.

Ploughing of the extra-vilan land is done with a tractor that they borrow from their neighbour. The sowing of cereals is also done mechanically and they hire a 'combine' for harvesting them at a cost of 1000 crowns.

Benefits/drawbacks of gardening:

She and her husband are fully self-sufficient in terms of providing themselves with meat, fruit and vegetable produce. Approximately 40 % of her production is divided among her offspring in the village and 20% goes to those living in Bratislava and Malacky. Cucumbers, fruit, potatoes, poultry and pork meet are stored for consumption during the winter.

The respondent enjoys working in her garden and a positive side is that she has an additional form of income; and she does not have plans to sell her extra-vilan land. Gardening is primarily a family activity and there is no particular co-operation with neighbours, though one keeps his tractor and trailer on their property.

Conclusions from these three interviews are that co-operation within a family can be particularly strong, with members of an extended household living and working together closely to manage their land and livestock. From such co-operation they can derive a combination of professional fulfilment, varying degrees of self-sufficiency, some additional income and 'pleasure'; thus, for some households, 'gardening' continues to be a serious 'hobby' and can be regarded as a part of Slovak village culture.

Interview R/I 09 (Vel'ke Levare)

General information about respondent - family and employment:

She is a 48 year-old married woman with 2 children, both of them attending high school. She works as a tutor (vychovávateľka) in an institute, while her husband works in a private company. They live in a 50 year-old family house inherited from the parents of her husband; he studied building and

construction at a technical secondary school and has renovated the house and built a terrace in the garden.

Land ownership:

The garden consists of a large and elaborate terrace, decorated with flowers (the hobby of the respondent), and about 1 *are* in which there is a lawn and basic vegetables are cultivated.

Outputs:

A large part of the garden plot is grass (lawn) there are also fruit trees (cherry-tree, apples and apricots) and shrubs (red- and blackcurrant, blackberries and raspberries). The largest portion of the area that is cultivated is used for potatoes. They also grow soup vegetables (carrot, parsley, celery) and legumes (peas and beans) and a single row of sweet corn, which they boil for their own consumption.

Inputs:

They have their own well, but they irrigate mainly with rainwater, caught in a c. 300 litres tank. They irrigate with a watering can or by hosepipe.

Benefits/drawbacks of gardening:

The respondent was not interested in more active/commercial gardening or agriculture and is happy with her garden and gardening as it is. She shared the view of many others in the village that the cost of inputs required (water, electricity, chemicals etc) was high and this meant that a more 'commercial' approach to gardening (for sale and/or self-sufficiency) was not likely to be profitable - especially as it is easy to buy other vegetables and fruit from traders from Dunajska Streda. The only incentive would be the possibility of cultivating an unusual/interesting and profitable crop, as does the Asparagus company.

Interview Z/E 01 (Vel'ke Levare)

General information about respondent - family and employment:

The respondent comes from Vel'ke Levare and his wife from Male Levare; they have two young children. They have been living in a family house for 7 years; it was bought from relatives and rebuilt. They would prefer to move to the city but for family reasons it is difficult to do so. The respondent works as a manager of a department in a machine factory in Zohor; his wife is on maternity leave at the time of the interview.

Ownership and land use:

The area of the household garden is about 1.25 *are*, of which approx. 0.75 *are* is a lawn, for children to play, and 0.5 *are* is used for vegetables and fruit. He received 2 ha of land in the restitution, but it was in many different places (fragmented) and he has not kept it since the quality of land in Vel'ke Levare is not so good, he would have to pay tax and he is not interested in agriculture. Until 1990 the parents of the respondent had a garden (0.04 ha) in the gardening allotment area which he worked on as well; 50 % of the production was sold through the buying system.

Crop and animal production:

They grow: carrots, parsley, onion, kohlrabi, beans, broccoli, peas, strawberries, currants, gooseberry, rhubarb, a peach tree, grapes and also flowers. They do not grow potatoes, nor rear any domestic stock, since they are a 'tie' (they always have to be looked after, holiday periods included).

Inputs to gardening:

His wife spends 5-6 hours a week in the garden in spring and autumn and 2-3 hours a week out of season. They minimise the use of chemicals in the garden but do use insecticide and a bio- fertilizer (Slovcerit). They irrigate with water from their domestic system, using a hosepipe, but have problems with low water pressure so they usually irrigate after 23.00 hours when nobody else in the village does.

Consumption and storage:

Except for some beans and onions, which are stored for the winter, all the production is consumed in the summer. They supply 50% of their own fruit and vegetable requirements, with approx. 10% plus potatoes being provided by parents. Honey and apples are bought from inhabitants of Vel'ke Levare. Melons, peppers and tomatoes are purchased from sellers from the south of Slovakia, and other fruits and vegetables from the shop in the village or from outside.

Benefits and problems of gardening and future intentions:

The respondent does not like gardening, but he does the watering; his wife enjoys the garden for relaxation and as a source of healthy food. Gardening brings problems: theft (this is a reason why they do not want to grow a lot garden produce), work and use of chemicals. However they plan to keep the garden as it is while they have children; later they might cultivate only ornamental shrubs and herbs. The respondent would like a swimming pool.

Co-operation in the village:

They co-operate mostly within the family; other families are not asked for help. The most common co-operation in the village is exchange/rent of agricultural machinery. Since 1990 there has been theft and fragmentation of agricultural land, property and produce, almost to a point of anarchy. Theft is beyond an acceptable level, with thieves stealing directly from gardens - potatoes need guarding.

Future of the village:

Vel'ké Leváre is not an "agricultural village"; historically the inhabitants were craftsmen. The village is well located with good infrastructure and transport connections (rail, road and airports including Swechat at Vienna). People from Bratislava already own many cottages in the historic Habansky dvor (quarter). He believes that there are high levels of education in Záhorie, with many young people being university educated. The respondent sees an industrial park and technology development as the main future for Záhorie, providing work opportunities for at least 15,000 people. There are also good conditions for developing agro-tourism (eg tourist cycle-path from Devín and a number of border crossings to Austria); a theme park might attract wealthy tourists.

The **conclusions** about village society that can be derived from these two interviews are rather different from the conclusions reached from the preceding three interviews. The two families are not particularly interested in gardening/agriculture as a means of making a significant contribution to self-sufficiency or their family income. The gardens serve a primarily recreational function and supply some fresh fruit and vegetables in the summer. Other employment, not related to agriculture, young children and other factors meant that these 'nuclear' families had other priorities and interests. The conclusions are, however, consistent with the assertion of Interviewee Z/E 01 that Vel'ke Levare should not be considered as a (primarily) "agricultural village", though it is set in a rural area, a number of inhabitants are employed in agriculture and many are enthusiastic and productive 'gardeners'. Despite this situation and maybe a trend to further 'urbanisation', with VL inhabitants working in industry, the non-agricultural sector and outside the village, close ties to the land and traditional 'farming' activities still exist. One final example is provided; this was not the result of a formal interview but an informal encounter and discussion with a villager, at a week-end, during the conduct of the rural survey. The discussion is described in the box below.

Informal Interview with Horse-owner/Ploughman (Vel'ke Levare)

The villager was noticed outside a small shop in Vel'ke Levare because he and a male friend were with a cart drawn by two horses. He (and the horses) provide a ploughing service to a number of people in the village, typically for plots of 4-20 *are* where tractors cannot get easy access, where trees are an obstruction etc. He has done this since 1989 and charges 250 Sk / 4 *are*. One horse can plough up to 0.5 ha (50 *are*) in a day. The horse-drawn cart was used to carry hay, straw and other materials in and around the village.

The respondent himself 'farms' on a small scale, and owns 5 ha of arable land and 4 ha of meadow. He keeps pigs (including 13 piglets at the time of interview) and beef cattle (3 ready for sale). The cattle are sold locally e.g. to a group of householders and a butcher. The father of the villager had received 11 ha of land at the time of restitution; since this is a relatively large area to receive it was understood that there is a tradition of farming in this particular family that is still continuing.

E.3.4 LIVELIHOODS AND SWOT ANALYSES OF VEL'KE LEVARE AND MALE LEVARE

(1) Livelihood Analyses

A qualitative analysis of the 'livelihood assets' of the two villages was undertaken, using the information gained from (i) the semi-structured interviews (ii) the transect of each village (iii) formal and informal meetings with the mayors and members of the village councils (including the SWOT analyses, presented in the next section) (iv) the survey team's general observations and (v) documentation relevant to the villages. The livelihoods analysis is summarised below, under the five livelihood assets that are recognised (human, social, natural, physical, financial), a brief explanation of each being given first. Assets are indicated with (+) and liabilities with (-).

Human Capital - represents the skills, knowledge and ability to work (taking into account good health) that together enable people to pursue different livelihood strategies and achieve their livelihood objectives.

Male Levare

- Many inhabitants have high skill levels and knowledge in small-holder horticulture/agriculture, including animal production in some cases (+)
- Educational levels relatively high/balanced (7/33 interviewees were graduates, all but 5 had attended secondary school) (+)
- People are willing to work (+)
- Flexible labour force (+)
- Young people leave the village to seek work elsewhere (-)
- There is an ageing population (-)

Vel'ke Levare

- Some inhabitants have high skill levels and knowledge in small-holder horticulture/agriculture, including animal production in some cases (+)
- Only a few inhabitants interested in acquiring land for farming under the restitution process (in recent history, the people of VL have regarded their skills to be as 'craftsmen' i.e. in the manufacturing rather than agricultural sector) (-)
- Education levels quite high (7 - 8 %, and 8 out of 31 interviewees, are university educated; 25/30 respondents had attended secondary school and only 5 illiterate persons said to live in the village) (+)
- Strong tradition and skills in craftsmanship (+)
- Flexible labour force (+)
- Concerns about rapid population increase and lower education/skill levels in poorer sections of the community (-)

Social Capital - is taken to mean the social resources upon which people draw in pursuit of their livelihood objectives. These are developed through eg **networks** (that increase people's trust and ability to work together and expand their access to wider institutions, such as political or civic bodies) and membership of more formalised groups.

Male Lezare

- Tradition of passing on experience & knowledge from generation to generation, quite strong with respect to **gardening** (+) but weak with respect to medium-scale private **farming** (-), with a missing generation of SHRs as a result of collectivisation during the socialist period
- Strong co-operation (in garden/extra-vilan fields) within the family and with relatives (labour, advice, seeds, seedlings, equipment) (+)
- Some co-operation (in garden/fields) with neighbours - strong in some cases (+)
- No longer an active association of gardeners (only in Velke Lezare) (-)
- Annual fruit and vegetable show (in its 3rd year) organised by municipality; facilitates the exchange of information but not exchange and sale of products (+)
- Elected Municipal Council (+) but perhaps has insufficient support/participation from the village (-)
- Some integration/acceptance into the village of long-term resident Roma (+)/(-)
- In the 1960's development of the Municipality did not have support of the State Government because of its sensitive border location so the village had been in decline (-)
- Though many households use wells on their own property, six public water wells supply the village with drinking water and the municipality keeps the inhabitants informed of their quality (the wells are also provide a place of contact/communication) (+)

Vel'ke Lezare

- Co-operation (in garden/extra-vilan fields) within the family and with relatives (labour, advice, seeds, seedlings, equipment) (+)
- Little co-operation (in garden/fields) with neighbours (+)
- Inhabitants kept informed of news in the municipality (+)
- Various societies in the village (Gardener's Association, Red Cross, Bee-keepers Association, Fishermen's Association, Firemen, Pensioners' Club) (+)
- Competitions organised (exhibitions of flowers and paintings, including international exhibition of art works from SR, Czech Rep., Hungary, Poland, Austria) (+)
- Catholic Church (undergoing renovation) and Protestant/Evangelical Churches present(+) (*these also represent physical capital*)
- Organisation of 'Public Benefit' works (Community Sevice) for unemployed (+)
- Informal co-operation of citizens (+)
- Social/Cultural oportunities (Roma Youth Club ("CESTA"- "GRÓM" pri ZŠ), youth group, music band "Enen taký fukot", elementary art school, library) (+)
- Cinema/Theatre now effectievly defunct (except for school productions) since the cinema is in the lowest class of the SR cinema classification, so movies would only reach the cinema 2-3 years after the premiere in SR (-)
- Poor integration and some conflicts with Roma community (-)
- Deteriorating behaviour (discipline problems) in the school (-)
- Theft of garden/farm produce (including potatoes) is a problem (-)

Natural capital is the term used for the natural resources from which livelihoods are directly or indirectly derived. There is a wide variation in the resources that make up natural capital, from divisible assets used directly for production (land, water, trees etc.) to intangible public goods (such as the atmosphere and biodiversity) and 'environmental services' such as erosion protection.

Male Levare

- Zahorie Protected Landscape Area (PLA/CHKO) - Morava River, floodplain meadows, forests and wildlife have high biodiversity value and constitute an attractive landscape (+)
- Meadows produce hay of high quality - in demand for horses (+)
- Alluvial soil of good quality - suited to wheat and rye (+)
- Overall the land capability for agriculture, as measured by BPEJ, is low compared to Zahorska lowland overall (-)
- Many large and well-established household gardens (+)
- Irrigation water available (shallow water table and wells in many gardens with water of reasonable quality) (+)
- Flooded gravel pits at Rudava are an important Recreation Area for local people and visitors (+)
- Area subject to flooding, especially from Morava and Rudava Rivers (-)
- Variable and inadequate rainfall (said to be decreasing over last 10 years) (-)
- Climate and soils are such that agriculture generates seasonal work (-/+)

Vel'ke Levare

- Abrod (National Natural Reserve) and Zahorie PLA nearby (+)
- Meadows and forests (+)
- Excessive deforestation and absence of forest-tree nursery (-)
- Large number of horses, on one SHR's farm in particular
- Variable soil quality (BPEJ value is said to vary from 1.50 to 9.00 Sk/m²)(+/-)
- Variable and inadequate rainfall (said to be decreasing over last 10 years) (-)
- Land (ownership) is fragmented making management more difficult (-)
- Some well-established household gardens and two blocks (colonies) of gardening allotments (+)
- Access to abundant water supply (Rudava, Porec, Morava Rivers) (+)
- Polluted surface water (Rudava river) (-)
- Air pollution through emissions from gas pipeline and storage (Nafta-Gbely) (-)

Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods. Infrastructure consists of changes to the physical environment that help people to meet their basic needs and to be more productive. Producer goods are the tools and equipment that people use to function more productively. The following components of infrastructure are usually essential for sustainable livelihoods: • affordable transport; • secure shelter and buildings; • adequate water supply and sanitation; • clean, affordable energy; • access to information (communications). Infrastructure is commonly a public good that is used without direct payment. Exceptions include shelter, which is often privately owned, and some other infrastructure that is accessed for a fee related to usage (e.g. toll roads and energy supplies).

Male Levare

- Good location, near to two large cities, Bratislava & Vienna (both with airports), Malacky town and the international borders with Austria, Hungary and Czech Republic and associated road and rail links (+)

- Transport system adequate (+)
 - a) Basic bus service - to Malacky and Bratislava (twice a day)
 - b) Nearest railway station is in Veľké Leváre, with line to Bratislava
 - c) Tourist's Cycle Route along the Morava River
- Mains electricity and gas supplies (+)
- No piped water supply nor wastewater collection and treatment system (construction of latter now planned, but no budget yet for the water supply) (-)
- Irrigation and drainage infrastructure, but requiring rehabilitation and maintenance (+/-)
- Adequate housing stock (some in need of renovation) with low construction costs (+)
- Kindergarten and Elementary School (1st – 4th years) (+)
- Catholic Church (in need of some renovation) (+)
- Commercial/retail outlets very limited - 3 groceries, butcher, 2 pubs and mobile shops (clothes and vegetables) (+)
- Recreation facilities - football pitch and, at Rudava, camping ground, accommodation, restaurant, snack bars, water sports (+)
- Part of the premises of the old State Farm has been destroyed, but part remains in tact and operated by Stomfa s.r.o. (+/-)
- Agriculture-related irrigation and drainage system in poor condition (-)
- Many households have private wells they can use for watering gardens (+)
- Mechanised agriculture (esp. tractors and combines) which may contribute to increases in productivity (-)

Vel'ke Levare

- Good location, near to two large cities, Bratislava & Vienna (both with airports), Malacky town and the international borders with Austria, Hungary and Czech Republic and associated road and rail links (+)
- Good transport system (bus service and railway station on line to Bratislava) (+)
- Mains electricity and gas supplies (+)
- Piped water supply present, but incomplete wastewater collection and treatment (construction now planned) (+/-)
- Some irrigation and drainage infrastructure in adequate condition, the system in the fields used by the Asparagus company being of particular value (+)
- Elementary school (1st – 9th years)
- Several shops (general grocery stores, green grocers, electrical appliances, shoe shop, pharmacy) and other services similar to those in a town (savings bank, post office, 'vývarovňa' [canteen providing low cost food], 4 pubs) (+)
- The restaurant has closed down (-)
- Materials/buildings of former State Farm have been stolen/devastated (-)
- Cultural Centre with library and hall for weddings and social occasions (+)
- Psychiatric hospital that has contributed to the maintenance of the village's historical mansion (+)
- Habansky dvor (historic quarter), which has been renovated and is being made into a museum (+)

Financial capital denotes the financial resources that people use to achieve their livelihood objectives. The definition used here is not economically robust in that it includes flows as well as stocks and it can contribute to consumption as well as production. However, it has been adopted to try to capture an important livelihood building block, namely the availability of cash or equivalent, that enables people to adopt different livelihood strategies. There are two main sources of financial capital (i) **available stocks** (savings are the preferred type of financial capital because they do not have liabilities attached and usually do not entail reliance on others and they can be held in several forms: cash, bank deposits or liquid assets such as livestock and jewellery. Financial resources can also be obtained through credit-providing institutions). (ii) **regular inflows of money**: excluding earned income, the most common types of inflows are pensions, or other transfers from the state, and remittances.

Male Levare

- Employment outside the village and outside the agricultural sector
- Pensions
- Agricultural land belonging to inhabitants, which can provide rent income from e.g. STOMFA and ASPARAGUS, or rent in kind (+)
- Income from garden produce (limited in most cases now that formal collection/purchase system for cucumber, lettuce etc has stopped, and gardeners produce primarily for their own families) (+/-)
- Land belonging to Municipality
 - a) Agricultural land, which could be sold or leased for 30-40 years
 - b) Urban land for construction – being sold cheaply, e.g. in Roma quarter (+/-)
- Rudava Recreation Area: camping, housing, retail outlets etc generate revenue for the municipality, but the rents are low and services have to be provided (+,-)
- Sale of plots for new cottages near Rudava, could provide finance for the construction of a piped drinking water supply, but this capital asset would be replaced by low revenues and services then have to be provided (+/-)
- Phare CBC grant for sewers and wastewater treatment system (+)

Vel'ke Levare

- Employment in manufacturing and agriculture (ASPARAGUS) in VL and outside the village (+)
- Pensions (+)
- Agricultural land which can provide rent income from e.g. STOMFA and ASPARAGUS, or rent in kind; mainly an asset of inhabitants but municipality does own 49 ha of land (+)
- Income from restitution of other property (e.g. tractors and combine harvesters; these can be rented to others, providing an income for new owners)
- Income from garden produce (limited in most cases now that formal collection/purchase system for cucumber, lettuce etc has stopped, and gardeners produce primarily for their own families) (+/-)
- PHARE (the municipality has obtained finance for the restoration of *Habansky dvor* and, in co-operation with neighbouring villages, for improvements to waste water collection and treatment) (+)
- Land tax (pays 12 – 13 % of municipality budget) (+)

(2) SWOT Analyses

This investigation of 'rural society' in the Zahorska lowlands, as represented by the two 'Case Study' villages, concludes with an analysis of some of the **Strengths** and **Weaknesses** of the villages and their inhabitants, the development **Opportunities** available to them and any **Threats** which it is considered may prevent or hold back social and economic development. The various **Assets**, as described above, have already provided a detailed review of the **Strengths** and **Weaknesses** of the two villages, so the **SWOT** analysis below picks out some of the main points that arose during discussions with representatives of each village. Where development plans show an understanding of and seek to address these matters, then local support can be anticipated for actions that are proposed.

Male Lezare

STRENGTHS

- ▶ Rich nature (Zahorie Protected Landscape Area and Morava River with rich flora & fauna e.g. beaver, wildfowl, storks)
- ▶ Strategic location, quite close to Bratislava and Malacky and the Austrian and Czech borders with reasonable access to good transport infrastructure
- ▶ Large area of agricultural land plus productive floodplain meadows
- ▶ Availability of surface and groundwater (though, for drinking water purposes, the groundwater is locally contaminated)
- ▶ Tourist resources including PLA (CHKO), cycle route along the Morava River, Rudava Recreational Area, church,
- ▶ Gardens and the gardening skills of the inhabitants of ML
- ▶ Community relations strong in some cases, both within families and between neighbours
- ▶ Roma families that have been long term residents of ML have new housing and are accepted within the village

WEAKNESSES

- ▶ Lack of piped drinking water supply
- ▶ Lack of comprehensive system for wastewater collection and treatment
- ▶ Agricultural land issues - fragmented ownership and some land unclaimed
- ▶ Areas with low soil fertility (sandy)
- ▶ Few local employment opportunities
- ▶ Though near to their borders the Municipality has no good, formal contacts with Austria and Czech Republic
- ▶ Poor relations/co-operation between some individuals within the village

OPPORTUNITIES

- ▶ Proximity to national borders provides employment and marketing opportunities and the possibility of cross-border municipal/district/regional co-operation

- ▶ Eligibility for SAPARD and PHARE CBC Programmes (and later INTERREG)
- ▶ New industry (including foreign investment e.g. VW at Lozorno) and proposed industrial parks provide employment opportunities in the region
- ▶ Tourism and agro-tourism development, especially accommodation and related services and activities such as horse-riding
- ▶ Ecological agriculture (organic farming) in response to growing consumer preference for organic food
- ▶ Small-scale 'market-gardening'/horticulture, producing e.g. early vegetables (peppers, tomatoes etc) and ornamental garden plants under polythene
- ▶ Re-vitalised household garden production for home consumption and local market (since there is demand for 'safe' food)
- ▶ Further promotion and organisation of new events/festivals for local people and visitors (e.g. building on success of the National Beach Volleyball at Rudava, gardening and cultural/folklore festivals that involve younger generation)

THREATS

- ▶ Pollution of Rudava reservoir and groundwater (primarily from cesspits, because of lack of wastewater treatment system)
- ▶ Damage to Protected Landscape Area (CHKO) - its wetlands, sand dunes, meadows, forests - from various activities
- ▶ Lack of developed land market; there is land speculation (owners keep but do not use land, in the hope that prices will rise on joining EU), while farm businesses rent land and may be deterred from making long term investments
- ▶ Soil fertility and weed problems because some land is not cultivated
- ▶ Social problems attributed to recent immigrants to the village, including Roma without employment

Vel'ke Levare

STRENGTHS

- ▶ Natural Resources (Protected Landscape Area and Abrod Nature Reserve with fauna & flora, tributaries of Morava River)
- ▶ Strategic location, close to Bratislava and Malacky and the Austrian and Czech borders with good transport infrastructure
- ▶ Range of employers eg industry (Prefabrikat, Bleckmann, Surpack, Hydrostav) and others (Asparagus, Psychiatric Institute, shops)
- ▶ Local infrastructure and services are good (except for municipal wastewater system and road and drinking water supply to isolated residential/industrial area to the east of the village)
- ▶ Social life in the municipality
- ▶ Presence of gardens near houses
- ▶ Efforts at co-operation within the village (e.g. with Elementary Schools and water monitoring)
- ▶ Attracts some *chalupári* (cottage owners, from outside the area) to reside in the village

WEAKNESSES

- ▶ Lack of comprehensive system for wastewater collection and treatment
- ▶ Agricultural land issues - fragmented ownership and some land unclaimed
- ▶ Situation of Roma community (education levels, employment etc)
- ▶ Poor condition and under utilisation of social facilities (cultural house, cinema, restaurant)
- ▶ Lack of interest in gardening and agriculture
- ▶ Destruction of former state property (especially the State Farm, such that it has become similar to rubbish dump)
- ▶ Close to military airport and training area
- ▶ Lack of safety/security in the municipality (no municipal police)

OPPORTUNITIES

- ▶ Proximity to national borders provides employment and marketing opportunities and the possibility of cross-border municipal/district/regional co-operation
- ▶ Eligibility for SAPARD and PHARE CBC Programmes (and later INTERREG)
- ▶ Industrial parks – provide employment opportunities in the region
- ▶ Tourism and agro-tourism development: resources include churches (tower provides good views; *Habansky dvor* including museum; CHKO and Abrod SPR; ranch with horses; Asparagus farm; craftsmen)
- ▶ Growing consumer preference for organic food may stimulate household garden production (so the family has safe food) and ecological agriculture (organic farming)
- ▶ Organization of cultural and social activities for the community and visitors

THREATS

- ▶ Pollution (concerns over various sources of groundwater contamination and of air pollution from Nafta-Gbely gas pipeline and storage)
- ▶ Damage to Protected Landscape Area (CHKO)
- ▶ Soil fertility and weed problems because some land is not cultivated
- ▶ Increase in unemployment rate, despite adequate work opportunities
- ▶ Bad condition of buildings (including old State Farm), posing a hazard to health and safety
- ▶ Proposed industrial parks – negative environmental impact
- ▶ Cottage owners (*chalupáři*) – do not participate so much in social life and their presence has led to an increase in house prices in the municipality, making it more difficult for young families to take up residence
- ▶ Young people less interested in village cultural and social life and in standing for the municipality's local assembly/council
- ▶ Proximity to border can contribute to problems associated with migrants and drug trafficking

(3) Conclusions

Given the small size of **Male Levere** and its rural location and characteristics, including the Rudava reservoir and its close proximity to the Morava River and the Zahorie Protected Landscape Area, the main opportunities for development would appear to be in rural tourism and recreation, targetted at residents of Bratislava in particular. Further activities such as horse-riding could be provided, as is already available on an informal basis in Gajary, and additional accommodation and restaurant facilities both at Rudava and in Male Levere village itself. The village, being near to Bratislava, proposed industrial parks and associated employment opportunities, is also attractive to 'commuters' and week-end 'cottagers' (*chalupári*), who may be interested in gardens for recreation, but not as a means of being 'self-sufficient' or supplementing their income. Visitors/tourists and new residents, in Male Levere and neighbouring villages, should therefore create some demand for fruit, vegetables, animal products and ornamental plants that could be met by local producers - most of whom already have the land and necessary skills. However, prior to development of tourism etc, it is essential that a piped drinking water supply and wastewater treatment system are installed, to meet the needs of both the existing inhabitants and of visitors.

Vel'ke Levere could also derive similar benefits from investments in rural tourism (especially in relation to *Habansky dvor*) and as a commuter village for Bratislava. The village offers wider employment opportunities than Male Levere, in the form of local industry and by means of its good access to Bratislava and Malacky. Extensive agriculture may not be a major employer in the future but, where the existing farm infrastructure allows, more intensive, 'sustainable/organic' irrigated agriculture could be encouraged (as at the Asparagus Company). This specialised agriculture could act as a visitor attraction in its own right as well as supplying the local, Bratislava and international markets.

Such promotion and development of the Zahorska lowlands as a resource for rural tourism, as well as productive and sustainable agriculture, is consistent with the expectations of the community and the mayors that represent them - namely that these farms, as well as being sources of employment and production, should serve to protect and enhance the rural environment.

<i>ANNEX F</i>	<i>FARMING UNIT SURVEY</i>
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ANNEX F FARMING UNIT SURVEY

F.1 OBJECTIVES

To develop the Study on the Agricultural Development in the Zahorska Lowland Area, it is important to understand the current situation of agricultural production and marketing and farm management. Various constraints which cause low productivity and low profit are priority area to examine. It is also urgently required to explore possible measures to develop high profitable farming system. From these points of view, the interview survey was conducted as a part of the Development Study.

F.2 METHODS

Prior to start of the interview survey, targets of farming units <enterprises, independent farmers (SHR) and agricultural cooperatives>, target areas, and questionnaires were prepared in close consultation with Ministry of Agriculture (MOA) <Regional offices of Bratislava and Senica>.

(1) Farming Units

In the Zahorska lowland area majority of the farm land are occupied by a small number of but large scale farming enterprises, and also only a small number of SHR are engaged in the farming. The population of this survey was 28 units: 25 for Bratislava and Malacky and 3 for Senica. Through the consultation with MOA 24 units were selected. During the progress of the survey 5 units were confirmed that they had already stopped farming, and 3 units were newly added; therefore, the final target farming units were 22 units. The breakdown of the units indicates 12 enterprises, 9 SHR and 1 cooperatives.

(2) Questionnaires

For the interview survey three different types of questionnaires were prepared for the three categories. <Questionnaire for enterprises: Attachment>

The major items of the questionnaires are as follows:

1. General matters.
2. Irrigation and drainage.
3. Production.
4. Marketing.
5. Economic matters and access to information
6. Future development.

(3) Implementation of the Survey

The enumerators (Japanese staff and an interpreter) visited the farming units at least two times: first to explain the outline of the survey and request their cooperation to fill in the questionnaire and next to interview directly and collect data. Necessary relating information on agriculture including maps, etc. was also collected during the interview.

F.3 RESULTS OF SURVEY

The following report was compiled based on the results obtained in the farming unit survey. The report will be prepared to provide the survey data to the interviewed farming units for further survey and change of views.

F.3.1 GENERAL MATTERS

(1) Targeted Farmers and Farming Units

At first 24 farming units were recommended from the MOA. During the survey 5 farming units had already stopped farming (including a bee keeper), and 3 farming units were newly added. Therefore, the final farming units were 22, of which 19 farming units properly responded.

SHR is an independent farmer who are registered to be a farmer as his major work. Therefore, part-time farmers are not included in this survey. In addition, number of these farmers and areas of arable lands cultivated by part-time farmers are not publicized.

<Final target farming units>	<22>
Recommended by MOA	24
Farming units which stopped farming:	5
Newly added farming units.	3
<Total responded units >	<19>
No response	3

(2) Numbers of Responding Units

Nineteen farming units were interviewed and responded to the questionnaires. The ratio of the responding farming units was 86% which was thought to be on average level of this type of interview survey. The arable land area of the responding farming units was 25,092 ha.

District	Number of units			Area of arable land		
	Total	Enterprise	Farmer (SHR)	Area used by target units (ha)	Survey area* (ha)	Coverage (ha)
Senica	2	1	1	705	-	
Malacky	16	9	7	24,275	25,428	96%
Bratislava IV	1	1		112	-	
Total	19	11	8	25,092		
*	22	11	10	-		

(3) Family Members / Employees and Their Technical Level

1) SHR

The number of family members was 4.3 people on average. The number of people engaged in farming was 3.0; mainly father, mother and their sons or daughters. House owners have usually about 10-year experience in farming since the days in PD. These data indicate that their human resources are stable and techniques are good enough for farming.

a	Number of family members:	Average: 4.3	(3-6 people)
b	Number of people engaged in farming	Average: 3.0	(2-4 people)
c	Farmers have about 10-year experience in farming. <Mainly father, mother and son or daughter>		

2) Enterprises

a. Employees

Majority of the enterprises had employees less than 50 people, and the number of employees of all the enterprises was 67 on average. Besides these permanent employees 190 seasonal workers are employed.

Number of employees	Number of enterprises	
1-10	3	27%
11-50	5	46%
51-100	1	9%
101-	2	18%
Total	11	100%

Number of employees on average: 67

Number of seasonal workers: 190

b. Directors

Generally directors are young: 43 years old on average. From their age they are in new generation different from the old socialist regime. They are active aggressive in their business and shoulder the new agricultural world.

c. Technical Staff

Each farming enterprise employs technical staff. There are 11 people as technical staff on average. Agronomy and animal husbandry are major fields. These people support the new development of market-oriented farming.

Agronomist:	2.7	Economist:	2.4
Machinery:	1.7	Animal husbandry:	2.6
Civil engineering:	1.6	<Total>	<11.0>

(4) Salary

Average salary of permanent employees was 11,861 SKK/month with range from 10,754 to 12,670 SKK/month for the answering enterprises.

(5) Land Use, Soil Type and Land Location of SHR and Enterprises

a. Land Use

Total land area held by the enterprise and SHR were 2,949 ha and 102 ha on average, respectively. For arable land the areas were 2,300 ha and 100 ha. The arable land area per employee or member of SHR were almost the same, 34 ha and 33 ha, respectively. Majority of agricultural land of the enterprises was rental: as high as 96% on average. However, almost a half of the agricultural land of SHR was owned by themselves. The rental fee was about 1.5% of buying price of land. This low rental is one of the major reasons of the high rate of rental farming. The enterprises and SHR are all aggressive and developing; therefore, no farming units reduced their farmlands.

Item	Unit	Enterprise	SHR
<i>a</i> Total land area per unit.	ha	2,949	102
Agricultural land	ha	2,916	102
Non-agr. land	ha	33	0
Arable land		2,300	100
<Arable land area per employee>		34	33
<i>b</i> Land ownership (agricultural land)	%		
Own land	%	1	44
Rental from private unit	%	96	45
Rental from state	%	3	12
<i>c</i> Rental fee			
Ratio to buying price of land	%	1.42	1.50
Rental fee per ha.	SKK/ha	845	633
Total fee	SKK/ha	1,246,560	122,700
<i>d</i> Change of agr. land use.	ha		
- Increase	ha	1,635	54.3
agricultural land	ha	67	0.0
purchased	ha	1,568	54.3
rental	ha	67	0.0
arable land	ha	67	0.0
purchased	ha	1,518	53.6
rental	ha	0	0.0
- Decrease		0	0.0

b. Soil Type

In the Zahorska area the major soil type is sandy soil. For the soil of the enterprise lands 61% of them was sandy soil, while the soil type of the SHR was 38%.

Soil type		Enterprise	SHR
Share of sandy soil	%	61	38
Share of other types.	%	39	62

c. Land Location

The land location in terms of the natural reservation areas 23% of the enterprise land was in the natural reservation areas, but the share was as low as 8% for SHR.

From these data mentioned above, SHR has some advantage in the land holding.

Location		Enterprise	SHR
Share of CHKO	%	23	8
Agricultural areas	%	77	92

<Note> CHKO: Natural reservation area.

(6) Sales Amount and Crude Profit

Major farming style is mixed farming of cereal production with animal husbandry including cash crops such as oil crops, and its ratio to the entire farming units was 68% : 13 farming units of the 19 units. There were no farming units which ran their single farming by cereal farming or animal farming. The ratio of mixed farming of crop production with cash crops was high, even if they do not run the cereal-animal mixed farming. Selling amounts were high in cereal production, milk production and pig production. Crude profits were observed in oil crops, pig production and milk production. The crude profit of bull was minus.

a. Sales Amount

The following numbers are averages of units which are actually engaged in the farming.

Crops	Enterprise	SHR	
Cereals	7,039	934	
Vegetables	*25,060	900	* Asparagus
Fruits	598	0	
Potatoes	15,693	48	
Oil crops	5,318	600	
Milk	28,612	0	
Cattle	3,234	250	
Pigs	5,534	288	
Processing	4,090	0	
Non-agr.	4,916	0	
Services	5,042	20	

b. Crude Profit (% in plus and minus crude profit)

Product	Name of enterprises				<Enterprise> Ratio of units with plus profit	
	A %	B %	C %	D %	Cases	%
Crops	41	-56	47	19	3/4	75
Fruits		-34		-6	0/2	0
Potatoes				12	1/1	(100)
Oil crops	59	2	26	6	4/4	100
Milk		15	19	52	3/3	100
Cattle	-39	-10		-12	0/3	0
Pigs						
Processing				-71	0/1	(0)
Non-agr.		41			1/1	(100)
Services	-61	38	8	10	3/4	75
(Ref. Wheat production)						
Yield (t/ha)	2.8	3.2	2.8	2.6	Average	2.85
Price (SKK/kg)	4.3	4.2	4.5	4.0	Average	4.25

c. Selling Amounts (Approximate % in selling value)

Products	<SHR>					
	Name of farmers					
	I %	II %	III %	IV %	V %	VI %
Crops	50	0	69	70	0	65
Vegetables	50	0	0	0	100	0
Oil crops	0	0	17	0	0	0
Cattle	0	50	0	0	0	35
Pigs	0	50	14	0	0	5
Potatoes	0	0	0	30	0	0
* Farmer No.	2	6	9	14	17	20

F.3.2 IRRIGATION AND DRAINAGE

(1) Contract with Povodie Dunaje (PD)

PD is a sole agent of management of irrigation and drainage in SR. When farming units need irrigation water and drainage, they need contracts with PD for irrigation and drainage. The ration of the farming enterprises which had the contracts with PD was 82%, but the ratio of SHR was as low as 25%.

Farming units	Contracted farming units	
Enterprises	82%	(9/11)
SHR	25%	(2/8)

(2) Ratios of Irrigation-Facilities Installed Area and Actually Irrigated Area

The ratio of installed area with irrigation facilities to the total arable land was 36% for the enterprises and 5.6% for SHR. The ratio of irrigated area replied in the interview was as low as 9%. However, the ratio of the actual irrigated areas was 2.1%, still lower calculated from the crop production survey in the same farming unit survey. From these data irrigation is not widely performed in this area, although the sandy area is spread.

Items	Unit	Enterprises	SHR
a. Average arable land	ha	2,311	106
b. Installed area	ha	834	5.9
	<b/a: %>	36	5.6
c. Irrigated area	ha	214	3.8
	<c/a: %>	9	3.6
	<c/b: %>	26	61.0

* The ratio of actual irrigated area was 2.1% of the entire arable land surveyed in the farming unit survey.

(3) Time of Irrigation by Crop and its Growth Stage

Winter crops are usually not irrigated. Crops which have high response to irrigation are summer crops such as spring barley and maize and broad leaf crops such as soybeans. The growth stages of the highest needs for irrigation are estimated to be seedling stage and before and after flowering stage.

Crop	Growth Stage	Time
Barley, spring	Tillering	May-June
Maize, grain	Initial vegetative stage	May-July
Rape	10 cm in height	May
Potatoes	Before/after flowering	June-July
Alfalfa		May-September
Soybean	Before/after flowering	July-August
Asparagus		June-September

In the traditional agricultural performance winter crops such as winter wheat, rye, triticale, rapeseeds, etc. are not irrigated. Percentage of these crops were winter wheat: 18.4%, rye: 16.7%, other cereals (oats, triticale, etc.): 4.6%, rapeseeds: 11.1% and alfalfa: 5.3% in 2000. The total share was 56.1%, indicating more than a half of the total cropped area did not require irrigation from traditional land use for cropping.

(4) Type of Irrigation Equipment by Capacity

Majority of the farm lands were irrigated by sprinklers. Drip irrigation was begun to be used for potatoes and vegetables.

Type	Area by capacity (ha)	Ratio by type (%)
Sprinkler	3,143	96.3
Drip	40	1.2
Others	80	2.5
Total	3,263	100.0

(5) Ownership of Irrigation Water Source

Only a farmer was identified to take water from a stream by a water pump in 2000.

(6) Satisfaction with the Irrigation Services

The farming units satisfied with the irrigation services were only 27% of the contracted units. Major reasons were poor capacity of irrigation equipment, damaged facility, etc. The farming units requested PD to repair the facilities, but their requests were not fulfilled.

<i>a</i>	Irrigation at right time to right place:		Enterprises	3/9
	<As to the contracted units with PD>		SHR	0/2
			Total	3/11 (27%)
<i>b</i>	Reasons	Capacity of equipment was not enough.		
		Pumps and networks were damaged.		
		Electricity supply was stopped.		
<i>c</i>	Requests	Farmers submitted requests to PD many times, but it could not fulfill the requests from farming units due to its budget limitation.		

(7) Examples of Irrigation Cost

The irrigation was not widely conducted; therefore, the examples of irrigation were rather limited. The following irrigation performance was found in the rough sketch: 5-6 day irrigation with about 20 mm per day, equivalent to 1000 t/ha, charging 1000-2000 SKK/ha. Water price was 2.3 SKK/m³ with fairly fixed value.

a. Cost by Crop

Crop	Days	Strength of irrigation (mm/day)	Amount of water (t/ha)	Water price	
				(SKK/t)	(SKK/ha)
Maize, grain	6	20.0	1,200	2	2,400
Barley, spring	3	16.7	500	2	1,000

b. Examples of Break-down of Unit Cost

Item	User name			(SKK/m ³)
	A	B	C	
Pumping station	0.50	0.50		
Water	0.81	0.82		[2.30]
Electricity	1.00	1.00		
Total	2.31	2.32	2.30	

(8) Effects of Irrigation on Crop Yields <Examples by Interview>

Increase of crop yields by irrigation was 1.1 to 1.3 times of crops without irrigation for winter crops. While yields of irrigated summer crops was about 2 times as high as the crops without irrigation. Potatoes and sunflowers, being about 1.1 to 1.3 times by irrigation, had lower effects than other summer crops. These data were not ones obtained by exact field experiments, or soil conditions and fertilization were not identical. However, they can be used as indicators for effects of irrigation.

Crops		No-irrigation (t/ha) a	Irrigation (t/ha) b	Increase b/a	Remarks
Cereals	Wheat, winter	2.9	3.5	1.21	Winter crop
	Triticale	2.6	3.0	1.15	Winter crop
	Rye	1.6	2.0	1.25	Winter crop
	Maize, grain	2.4	4.8	2.00	
	Barley, spring	2.4	4.1	1.71	
Potatoes	16.6	17.5	1.05		
Vegetables	Asparagus	1.6	3.2	2.00	Perennial crop
	Broccoli	(0)	5.0	5.00	
	Carrot	50	70	1.40	
Oil crops	Sunflower	1.5	2.0	1.31	
	Rape	1.4	1.8	1.29	Winter crop
	Soybean	0.41	0.90	2.20	
Fodder	Maize, silage	14.9	25.0	1.68	
	Alfalfa	4.4	4.8	1.10	(Perennial crop)
<Reference-1>	Wheat, winter	1.7	2.7	1.59	
	Rye	1.6	2.0	1.25	(Yield in 2000 by a farmer.)
	Barley, spring	0.3	2.5	8.33	
<Reference-2>	Grain maize	7.20	9.56	1.33	
	Silage maize	46.11	59.18	1.28	
	Winter wheat	6.12	6.82	1.11	(Long term field trial for fertilization and irrigation: RIMLE)
	Spring barley	4.74	4.65	0.98	
	Sugar beet	44.86	64.55	1.44	
	Alfalfa	10.09	13.56	1.34	

<Notes>

The data were obtained by the interview survey to farmers and agricultural enterprises.
The data include farmers expecting value to irrigation.
Soil type, fertilization, etc. were not identified.

(9) Reasons not to Irrigate Winter Wheat

The following are major reasons not to irrigate winter wheat:

<Characteristics of winter wheat>

W. wheat is usually resistant to drought.

<Economic reasons / farming style>

Crops with more profit by irrigation are preferred <3>.

Irrigation is not profitable in w. wheat cultivation or can not cover its cost.

Irrigation is used for vegetable cultivation.

The farming was conducted in the natural reservation area.

<Water supply>

From the geographic location, irrigation is not required <3>.

Irrigation equipment is not enough to irrigate winter wheat <2>.

(10) Drainage Facilities and their Maintenance

Drainage facilities are owned and managed by PD. The facilities are composed of open canals and pipeline system. Some parts of open canals were not well maintained due to no weeding, and drainage functions would be appropriate, if they were well managed.

F.3.3 PRODUCTION

(1) Livestock Production

In the Zahorie major animals were milking cow, bull for meat, pigs and horses in limited cases. Dairy farming in Europe is traditionally performed for home consumption. Therefore, there are no fresh milk collecting system by milk processing companies. Since fresh milk is perishable and of heavy load, and milk processing requires various equipment with high cost, only large scale enterprises can manage their dairy farming. Yearly production of milk per head was about 5000 litre. Although it depends on variety of cow, quality and amount of feeds have large effects on the productivity. Considering the facts that productivity of milk in Austria is about 9000 litre/head /year, feeding techniques for the milk production will be required to be improved.

The raising of bull is losing popularity of farming unit interests due mainly to BSE. and lowering price of selling. Therefore, the production of bulls were about a half of the pig production. Number of bulls of the enterprises greatly varied, from 10 to 1214 heads, depending on the conditions of farming and feed production.

Hog raising was managed in large scale more than 1000 heads in minimum for the enterprises. Due to higher feed efficiency the hog raising are developing along with poultry farming. Selling price of pigs also increasing with forward winds of BSE of bulls.

Animal	Parameter	Enterprises		SHR	
		Average	Range	Average	Range
Milking cow	Yield (Lit/head/year)	4,958	4,156-6,855	-	-
	Nbs of animals (Head)	670	257-1,613	-	-
	Production (Klit./year) b	3,906	1,156-11,053	-	-
Bull <For meat>	Yield (kg/head/year) a	313	107-500	375	200-550
	Nbs of animals (Head)	508	10-1,214	8	6-10
	Production (t/year) b	103	5-272	2.7	2.0-3.3
Pig	Yield (kg/head/year) a	144	115-198	111	90-126
	Nbs of animals (Head)	1,707	1,048-3,004	37	13-95
	Production (t/year) b	227	128-345	4.4	1-12

a : Live weight of animal at selling.

b : Production was obtained by simple average of farming units. Therefore, the production was not equal to the products of Yield x Nbs of animals.

* : Young animals under production age were not included.

<data: interview data and MOA statistical data>

(2) Use of Manure

1) Number of Farming Units which Use Manure for Fields

Return of manure to fields is the best way to reserve the environmental conditions and maintain soil fertility by providing organic substance and plant nutrients to fields. About a half of the farming units use manure for fields.

Enterprise	6/11	55%
SHR	4/8	50%
Average	10/19	53%

2) Application of Manure by Crop and its Amount per Hectare by Farming Units

By interview the applied area of manure was only 1,850ha, about 7% of the total arable land. The value was much smaller than the ratio of the farming units which used manure. Amount of applied manure per hectare was about 30ha: 35 t/ha for enterprises and 29 t/ha for SHR.

Crop	Applied area of manure (ha)	Application (t/ha)	
		Enterprise	SHR
Maize	450	32	30
Other cereals	400	23	33
Asparagus	30	55	-
Sunflower	110	30	-
Rape seeds	720	25	20
Potatoes	140	43	33
Total/average	1,850	35	29

3) Effectiveness of Manure

The farming units answered that manure is effective to soil fertility, but that it is not enough to substitute fertilizers. They considered necessity of increasing the amount of manure to apply to fields.

<i>a</i>	Effective to soil fertility	- Yes: 71% - DK: 29%
<i>b</i>	Possibility of substitute to fertilizers	- Yes: 43% - DK: 57%
<i>c</i>	Future development	- "Optimum" area: 1/3 of the total. - More usage of urea.

(3) Crop Rotation and Cropping Calendar

1) Crop Rotation

The importance of crop rotation by crop seasons is well aware of by farmers, and established as traditional agricultural performance in this area. Therefore, different types of crops, cereals-tuber crops-oil crops, are usually cultivated in rotation. Three-year successive cultivation is sometimes observed in wheat, barley, rye, oat and alfalfa. Maize can be grown in 2 year succession. Oil crop rotation, ex. sunflower after rape, also observed.

Type of crop sequence	Cases	
	Numbers	Percentage
A. Cereals - cereals	28	44%
B. Cereals - broad leaf crops	26	41%
C. Broad leaf crops - broad leaf crops	3	5%
D: Alfalfa - alfalfa	6	10%
Total cases	63	100%

2) Cropping Calendar

Seeding time and harvesting time are indicated on the attached paper. If the crops are categorized to winter crops and spring/summer crops, as shown below, the ratio of the winter crops was 56.1% and the spring and summer crops were 43.9% in the cultivation area. Rainfall in autumn and winter and the relatively abundant solar radiation in summer are well utilized in the farming.

	Category	Crop	Ratio of cultivation area.
<i>a</i>	Winter crops	Winter wheat	18.4%
		Rye	16.7%
		Triticale/oats	4.6%
		Rapeseeds	11.1%
		Alfalfa (Perennial)	5.3%
		<Sum>	56.1%
<i>b</i>	Spring/summer crops	Spring barley	8.6%
		Maize(grain and silage)	26.5%
		Sunflower	5.8%
		Potatoes	0.7%
		Vegetables	1.7%
		Soybeans/others	0.6%
		<Sum>	43.9%

(4) Problems and Merits of Sandy Soils

<Demerits>		(%)	
<i>a</i>	drought	6	24
<i>b</i>	low absorption ability for nutrition/low soil fertility	6	24
<i>c</i>	wind erosion	4	16
<i>d</i>	lower grain weight	3	12
<i>e</i>	higher damages to machines	3	12
<i>f</i>	flooding	2	8
<i>g</i>	acidic soil	1	4
	sum	25	100
<Merits>		(%)	
<i>a</i>	lower energetic cost (fuel) for mechanization work	3	38
<i>b</i>	easier working (ex. soil preparation and seeding)	2	25
<i>c</i>	possibilities of working after rain	2	25
<i>d</i>	no-tillering farming	1	12
	sum	8	100

(5) Damages to Crops

The farming units were suffering from various crop damages, especially from drought and weed damages, although the damage levels were different. Flood damages happened in limited areas and times, but they were observed by the many farmers. Wind erosions/damages were found in various crops. Damages by Gypsies were limited in area, but were so serious that the production of maize and potatoes were abandoned by damages.

Cause	"Yes"	No answer	Crops and damage level.
<i>a</i> Drought	79%	21%	All crops (30-50% decrease in crop yield)
<i>b</i> Weed damages	63%	37%	Sunflower, soybeans others
<i>c</i> Flood damage.	42%	58%	Sometimes.
<i>d</i> Wind erosion	21%	79%	Maize, rye critical mustard rapeseeds others
<i>e</i> Wind damage	21%	79%	Barley cereals
<i>f</i> Cold damage	16%	84%	Frost damage to fruits, maize
<i>g</i> Water erosion	11%	89%	Not significant.
<i>h</i> Gypsies	-	-	Maize, potatoes
<i>I</i> Wild animals	-	-	All crops

F.3.4 MARKETING

Marketing is one of the most tough problems in the development of market-oriented farming. There are 4 to 5 major trading companies in SR, and they are involved in the transactions with farming units: providing agricultural materials to farmers with credits and purchasing agricultural products from farmers. Although the Zahorie is located close to large consuming areas, still farmers need outside marketing channels for selling. Vegetable growers often sell their products by their own marketing channels, or seek for more advantageous buyers in Bratislava.

From the results of interview survey, the following marketing style are estimated as a typical case: the farming units grade and sort their products mainly by themselves and form lots by their own products; they also sell their products by themselves through their own marketing channels without brand.

Parameter	Answer
<i>a</i> Grading	All of them were "Yes" by their own or official standards.
<i>b</i> Lot formation	Most of them were made by their own products.
<i>c</i> Brand	Almost no brand
<i>d</i> Middleman	Only 29% of them used middlemen.
<i>e</i> Selling	About 67% of them sold products by themselves.

F.3.5 ECONOMIC MATTERS AND ACCESS TO INFORMATION

(1) Capital Formation

1) Ownership of Capital <For 10 enterprises>

Usually owners of enterprises hold 100% of capitals. It is rather rare that the enterprises depend on the outside stockholders.

Owners: holding 100% of capitals.	7/10
Owners: holding more than a half of capitals.	1/10
Outside stockholders:	
Slovakian stockholders share more than a half of capitals.	1/10
Foreign stockholders share more than a half of capitals.	1/10

2) Average of Capital Values

Capital values of the enterprises were 43,300 thou. SKK on average, and that of SHR was 850 thou. SKK. The enterprises were usually established from agricultural cooperatives which were large scale, having as large as several thousand hectare of farmlands. Therefore, the enterprises generally own large assets.

Enterprises	Average	43,300 th. SKK	(250 th-270,469 th. SKK)
SHR	Average	850 th. SKK	(400 th-2,300 th. SKK)

(2) Credit

1) Current Credit Use

Most of the enterprises had debt by credits; on the other hand, SHR had usually no debt by loan. SHR own about a half of their farm lands, and run their business mainly by their own capitals.

	Farming unit	Debt by loan	No debt by loan	No answer
Enterprises	(11 units)	73%	27%	0%
SHR	(8 units)	13%	75%	13%

2) Difficulties in Credits

Almost all the enterprises feel difficult to obtain credits. The high ratio of rental farm land by the enterprises causes the difficulty in preparation of security for loan. The low liquidity of farm land also a high hurdle for credits. High interest rate is also an inhibitory factor to credits. SHR had much less difficulty in credits.

	Farming unit	Not difficult	Difficult	No answer
Enterprises	(11 units)	9%	91%	0%
SHR	(8 units)	38%	50%	12%

Items	Enterprises	SHR
Institutional limitations	30%	12%
Limited loan amount	30%	0%
High interest rate	60%	25%
Security conditions	80%	38%

3) Interest Rate

Interest rates of public loan and private loan are rather high, as high as 15% at the highest level. The high interest rate produces a difficult access to credits. SHR often obtains loan with low interest rates from their family groups.

Type of loan	Interest rate	
Commercial bank	12.80%	(11.5-14.0%)
Agricultural bank	11.00%	(5-14.5%)
Private loan	15.00%	-
Others	5%	<From family, etc.>

(3) Information

1) Information Sources

In SR extension system for agricultural techniques by governmental organizations does not exist due to rapid development of privatisation in agriculture. Therefore, farmers have to tackle for necessary information through various information channels. In the interviews of the survey various business chances such as seeds, fertilizers and machinery suppliers have useful functions to be information sources. Professional staff of enterprises can obtain new techniques and distribute to their fields in needs. In agricultural production necessary performance is usually composed of both materials and information. Therefore, practical information is provided through their business channels.

- a. Own information channels
 - Seeds, fertilizers and machinery suppliers at transactions.
 - Traders, buyers and end users of their products,
 - Specialized organizations with which they have connection
 - Business partners .
- b. Agricultural newspapers and magazines.
 - Ex. Rolnicke noviny (RNO)<Daily>,
 - Rolnicky novinky <Weekly>
- c. Government publications

2) Farmers Requiring Information

Agriculture is a production industry; therefore, priority area of information is production, species/variety and cost of inputs. Marketing and machinery are following. Different from expectation export/import, EU accession and management have low interests to farmers. There is not much difference between the enterprises and SHR in the necessity.

Category	Enterprises		SHR	
	Urgent	Others	Urgent	Others
<i>a</i> Production	9	1	7	0
<i>b</i> Marketing	8	1	6	1
<i>c</i> Processing	6	3	4	3
<i>d</i> Export/import	3	6	1	6
<i>e</i> Machinery	8	2	7	0
<i>f</i> Species/varieties	9	1	6	1
<i>g</i> Cost of inputs	9	0	5	2
<i>h</i> Management information	6	3	3	4
<i>I</i> Accession to EU	4	5	2	5

<Necessity>	Urgent:	production, species/variety, cost
	Medium:	marketing, machinery, management, processing,
	Low:	EU accession, expoprt

3) Expect to the Following Media

<i>a</i>	Government publications:	legal regulation
<i>b</i>	Newspaper, TV and radio:	business information
<i>c</i>	Seminars and conferences:	human resources development, education

F.3.6 FUTURE DEVELOPMENT

(1) Appropriate Scale of Farming

In the Zahorie all the promising farmlands had already been leased. Therefore, most of the farming units, both enterprises and SHR, has no more intention to extend their farmland. Their major answers were "Maintain", and the areas of their farm land were 2,820ha for the enterprises and 192 ha for SHR, respectively. From these data, appropriate scales of farming are estimated to be about 3,000 ha for enterprises and 200ha for SHR.

Future development	Enterprises	SHR
Maintain the current scale.	70%	71%
Increase farm land	30%	29%
* Area of the units answering "Maintain"	2,820ha	192 ha

(2) Products to be Increased in the Future <Results from the Duplicate Answers>

For the future development various crops and animals were considered as promising items. Cereals, livestock and fodder were major items. Among them maize, spring barley, soybeans and pigs were put high priority. From these data the mixed farming of cereal production with animal husbandry will be developed in the future through the improvement of production of sale-supplied feeds. Vegetables, oil crops and fruits were also interested for the future development. These crops will be used for the diversification of cash crops. Higher importance will be put to more profitable crops and agricultural products.

Category	Answers	Major crop	Answers
<i>a</i> Cereals	12	maize	7
		s. barley	3
<i>b</i> Livestock	10	pigs	4
		cattle	2
		milking cow	1
<i>f</i> Fodder	6	soy beans	3
<i>c</i> Vegetables	5	<various kinds>	
<i>e</i> Oil crops	3		
<i>d</i> Fruits	2	<various kinds>	
<i>g</i> Others	1		

(3) Agricultural Techniques to be Intensified in the Future <By Duplicate Answers>

The development of agricultural techniques are also important as well as agricultural products. Cropping techniques had high priority to improve soil fertility and irrigation. Livestock and feed production are also important. Techniques to increase profitability such as marketing, processing and appropriate pricing had high interests to farmers.

<i>a</i>	Crop production	17 <31%>	
	cropping	2	crop rotation
	irrigation	5	irrigation networks, crops
	soil fertility	6	use of manure, fertility
	drainage	1	
	wind erosion	1	
	environment	2	
<i>b</i>	Livestock and feeds	5 <9%>	
	livestock	2	
	feed production	3	use of meadows
<i>c</i>	Marketing and processing	8 <15%>	processing of fruits and vegetable.
<i>d</i>	Information	2 <4%>	plant nutrition, experience
<i>e</i>	Economic matters	11 <20%>	
	price	6	input prices, product price
	profitable crops	2	
	credit	3	
<i>f</i>	Policy making	8 <15%>	development plans
<i>g</i>	New area	3 <6%>	agro-tourism, small farmers
		54 <100%>	

(4) Expects to EU Accession

The EU accession is one of the most important policy matters in the SR. The farming units have also interests for the development of this influential topic. Generally they welcome the accession, and at the same time they indicate risks in marketing of agricultural products.

<i>a</i>	General expectation		
	Hopeful	8	
	Not hopeful	1	

<i>b</i>	Profits and risks		
	Market expansion	yes : 8	no : 0
	New business chance	yes : 7	no : 1
	New technology	yes : 6	no : 2
	More competitiveness	yes : 7	no : 0
	Cost up	yes : 7	no : 2
