The **Hungary** National Report

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EUROPE'S LIVING COUNTRYSIDE

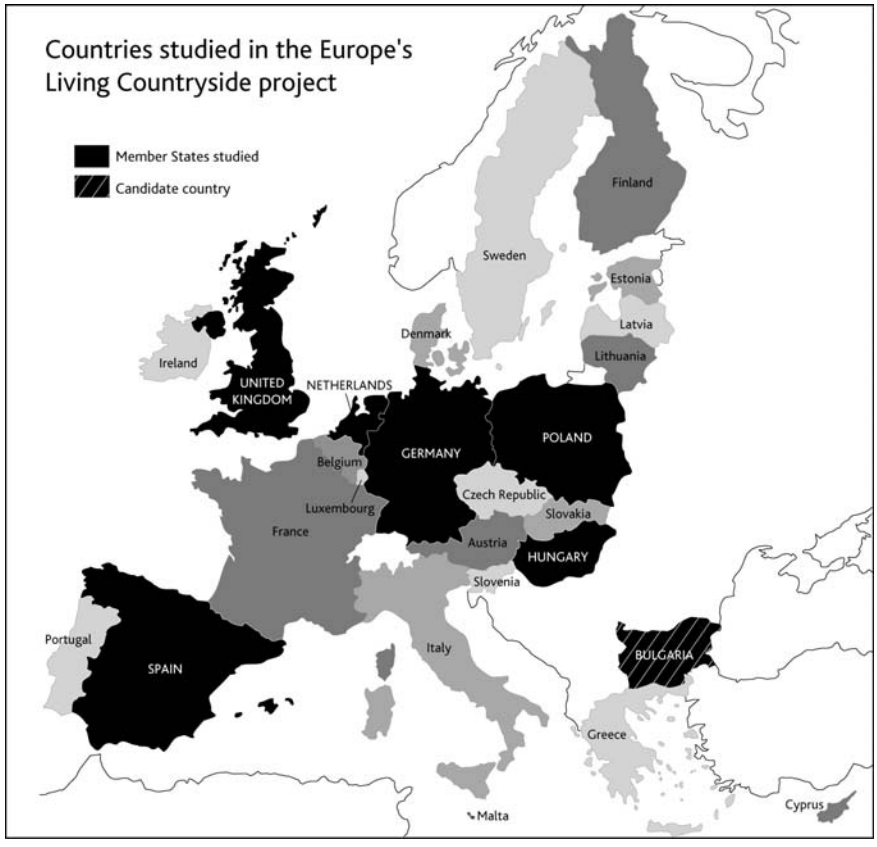
promoting policies for sustainable rural development

Cover photo: Greylag geese, *Anser anser*. WWF-Canon / Fred F. Hazelhoff

1. Preface

The second pillar of the CAP has been developed to contribute towards sustainable rural development and to help rural areas to adapt to changes in Pillar 1 support and to rural restructuring, particularly in the agricultural sector. The EU-15 Member States and the candidate countries developed and implemented a first generation of rural development programmes following the 1999 Rural Development Regulation and SAPARD. In 2005, the European Agricultural Fund for Rural Development (EAFRD) package of measures was agreed. This provides the basis for the second generation of rural development programmes in the enlarged EU-25. EC strategic guidelines for rural development will be published and will place a stronger emphasis on the need to achieve sustainable development and on EU policy priorities, which include environmental priorities. Overall the new Regulation requires Member States to take a more strategic, focussed and participative approach to rural development as they develop their plans in 2005-6 for the new programmes to be implemented for the 2007-13 period.

This study is part of *Europe's Living Countryside,* a pan-European research project sponsored by WWF Europe, the Land Use Policy Group (LUPG) of GB's conservation, countryside and environment agencies and Stichting Natuur en Milieu (SNM) in the Netherlands. National studies were undertaken in seven countries (Spain, Poland, the Netherlands, the UK, Germany, Hungary and Bulgaria – see map below). The aim was to review progress with developing and implementing rural development programmes and to explore in detail how environmental priorities and objectives might better be identified and addressed in the new rural development programmes.



Our research builds on *Europe's Rural Futures*, an earlier LUPG and WWF Europe pan-European project which analysed MSs' initial progress with developing and implementing the 2000-6 plans. Areas highlighted where improvements could be made included the need for a more strategic, coherent and integrated approaches to addressing environmental issues.

The *Europe's Living Countryside* national research was carried out using an agreed common framework. This included analysing the evidence on environmental data and trends, using the results of mid-term evaluations and holding discussions and/or seminars with key stakeholders to help identify environmental priorities and to consider how the tools in the new regulation might be used to address environmental priorities and improve integration of environmental issues. Each national study includes at least one local case study to illustrate how this could be achieved.

National experts from the LUPG, WWF and SNM partnership co-ordinated the in-depth national research, supported in some countries (Germany, the UK and Poland) by consultants commissioned to undertake the detailed work.

For further information about the *Europe's Living Countryside* project please see www.lupg.org.uk or www.panda.org/europe/agriculture or contact:

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2. Executive summary

2.1. Rural development programs in Hungary

The evaluation of the SAPARD program has shown that it has neither made a significant impact on the Hungarian agricultural sector as a whole, nor delivered anything towards the objectives of sustainable farming. It is due to the limited budget that was available, to the delay with which it was started and the lack of environmentally targeted measures implemented. However it has contributed to some extent to the development of Hungarian rural areas by the village renewal measure. But its delayed launch started to generate mistrust among rural communities towards EU rural funds.

Two Hungarian rural development programs funded by EAGGF were developed for the period of 2004-2006, the Agricultural and Rural Development Operational Program (ARDOP) and the National Rural Development Plan (NRDP). These were designed by different sets of people, without taking into account each other's objectives. The ARDOP is more focused on competitiveness; the NRDP has more relevance to environment. The first NRDP for Hungary was approved by the European Commission in July 2004.
The measures in the NRDP selected for implementation seem to show a fairly strong grasp of the environmental measures, with funds allocated for agri-environment and LFA amounting to more than half of the total budget. However the assessment of the plan showed that it lacks clear, quantified environmental objectives and the indicators to measure these. There are some very environmentally targeted measures, especially the agri-environmental ones, whereas for example the LFA scheme completely failed to address the issue adequately. In addition, the plan has an overall production-based approach with soil erosion being the top priority when environmental concerns are discussed.

The environmental analysis has shown that Hungary is a priority country for the EU in terms of biodiversity and that rural funds are more than relevant to preserve many of these values at least in their present state. Compliance with EU environmental legislation, with the Habitats and the Birds Directives and then with the Water Framework Directive are priority issues for the national administration as well as for stakeholders/NGOs. However, the ways to achieve this are not very well identified and the processes in both cases are very slow.

When delivery mechanisms were analysed, special attention was paid to the farm advisory services. These services proved to be a major weakness for the whole agricultural sector, but particularly for rural development.

- The service network operated by the Ministry of Agriculture and Rural Development usually lacks flexibility and innovative thinking. Members of this network are generally characterised by a fairly poor knowledge on rural development and environmental issues. However their role is to help farmers with applications. The efficiently operating regional rural development offices have been closed recently.
- Private extension services are in most cases specialised in products used in intensive agriculture, i.e. fertilisers, pesticides, seeds, machinery; they are actually representatives of agricultural companies.
- There is a new initiative to set up a national agri-environmental advisory service on a voluntary basis, supervised by the ministry.

No other delivery mechanisms are operated by the state at present. No regional planning is apparent, i.e. when the allocation of funds among the applicants is decided upon, only a single

national scoring system exists for each measure. Neither regional interests are taken into account, nor possible synergic effects of different measures (except in the case of LFAs).
On the non-state side some successful initiatives exist, driven by NGOs, local municipalities, or the so-called regional managers, in most cases using funds of the MEW or foreign sponsors.

Public participation mechanisms in Hungary do not have a long tradition. This was very clear in the way that the two rural development programs were drawn up. The process was hardly accessible to anyone, except the experts selected by the ministry for consultation. Very early versions of the plans were open to the public, without a real intention by the ministry to consider the comments. For the objectives and the design of some measures some stakeholders were asked. However, there was no overall strategy for involving them, it was very much dependant on the attitude of the official responsible for drawing up the measure. Last year the Ministry was heavily criticised by environmental NGOs and farmers' organisations for cutting the rural development budget without having proper public consultation beforehand. The European Commission's attention was drawn to the case, so the Ministry a consultation process and at the same time built up the group of stakeholders to be involved in different issues. Though the technical assistance measure has not yet been launched yet, there is a promise that it will enable the civil society, including environmental NGOs, to take part in the implementation phase of the program.

As for monitoring, only the initial steps have been made for a very limited portion of the programs. The selected indicators along which the monitoring can be carried out mostly concentrate on the direct outputs of the measures, so basically how these are taken up.

2.2. Environmental issues and objectives

On the basis of the analysis of environmental problems and pressures relevant to the Common Agricultural Policy, the objectives identified were classified as belonging to one of three major components of environment: biodiversity, water and forests.

The matrices show the environmental issues selected for the ELCo project, objectives and targets related to these and their possible policy solutions.

Environmental issues	***Objectives***	***Policy response***
Biodiversity		
loss of valuable semi-natural grasslands due to abandonment	• halt the loss of HNV grassland areas by 2010 • ensure the sustainable management of all Natura 2000 grassland sites by 2013 • 50% drop in the area of semi-natural grasslands affected by invasive plants by 2013	• agri-environmental schemes for extensive grasslands with payments high enough to generate take-up • special incentives to low income farmers to buy animals (e.g. traditional species) • incentives to milk companies to collect milk from remote areas • LFA payments to cover all

		HNV areas • GFP requirements or agri-environmental schemes to tackle invasive plant species • subsidies to unite small HNV farms that will not become viable • give priority to HNV farmers when selecting applicants given RD funds • Natura 2000 payments • reduce payments for planting fast growing, non-indigenous tree species
decrease in the number of farmland birds due to intensification and monocultures	• stop the decrease of specific farmland bird species by 2013 • 200 000 ha of arable land turned into extensive grasslands by 2013	• payments for crop rotation, integrated and organic farming • all the measures listed above to maintain the mosaic landscape with grasslands
Water		
diffuse pollution from intensive agriculture directly affecting rivers	stop intensive crop production in river floodplains by 2013	• set up agri-environmental schemes for all floodplain areas with high payment rates • adequate system to monitor diffuse water pollution
point source pollution from intensive livestock units affecting underground water	stop point source pollution of underground water from intensive livestock units by 2010	• payments for compliance with EU standards • adequate system to monitor point source water pollution
water consumption for agricultural purposes causing environmental problems in years and seasons of drought	water consumption do not harm the ecology of the Hungarian rivers by 2013	• effective measures (fines) against illegal water consumers • adequate system to monitor water consumption, restrictions when needed • give priority to water saving irrigation systems when distributing investment aids
Forests		
valuable forest habitats lost due to bad management practices	• cut the yearly level of afforestation with non-indigenous species by 50% by 2013 • ecological forestry practices introduced in 20% of the forested area by 2013	• substantial differentiation between grants for planting indigenous and non-indigenous tree species • agroforestry measures • development of Good

		Forestry Practices • Natura 2000 payments • environmental training for foresters

2.3. Recommendations

To make rural development programmes environmentally effective, we recommend using the following principles:

- Set up quantifiable environmental objectives, select and use measure to deliver against them;
- Integration among measures, make use of synergic effects;
- Start planning at a lower scale (regionally), then synthesise;
- Adjust the indicators to the quantified objectives;
- Use existing monitoring systems and networks;
- Improve the environmental knowledge of advisory services;
- Draw up a strategy for stakeholder involvement, keep planning process open from the first moment.

3. Introduction to the history of rural development in Hungary

Rural development programs were first introduced in Hungary in 2001, after the planning of the measures for the SAPARD instrument and before it entered into its implementation phase. During these years ca. □ 20 million was spent each year within the framework of the newly designed measures such as diversification, village renewal and rural infrastructure. Although high interest was shown for the program, the amount spent was not significant compared to the relatively high annual agricultural budget of □ 1 billion of the country at that time (NB it included measures which according to the current European terms fall under rural development, like investments in agricultural holdings, subsidies for processing, payments for setting up producer groups, the keeping of traditional animal breeds and a subsidy scheme for organic agriculture).

3.1. The National Agri-Environmental Program

In 2002 the government launched the National Agri-Environmental Program, for which □ 10 million was allocated in the first and around twice as much in the second year. The program should have been started 2 years earlier, according to the national legislation. It had been in development for years and was fairly complex. It included two subprograms, a zonal and a horizontal one, the latter comprising schemes for arable land, grasslands, wetlands, integrated and organic agriculture.

3.2. The SAPARD program

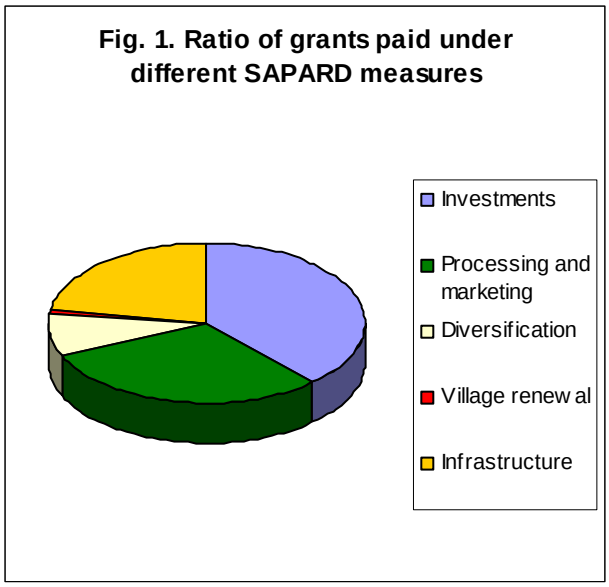
The SAPARD program was started after a huge delay, due to the difficulties in setting up the paying agency for its measures.

It had a dual objective:

- to provide assistance to the candidate countries in the implementation of the Acquis Communautaire, with special consideration given to preparations for receiving the European Agriculture Guidance and Guarantee Fund (EAGGF) and

- to contribute to the solution of problems through the establishment of sustainable agricultural and rural development.

The first payments were made in 2003, Hungary becoming the last country to start SAPARD implementation. Due to this fact the authorities wanted to spend the available resources as fast as possible and in the easiest way. Therefore only measures that created the least complications were accredited, with the simplest ones, i.e. investments, infrastructure and processing, being the first. Three measure have never been accredited, agri-environment was one of them. The ratio of funds paid to date under different measures as SAPARD aids are found in figure 1.



Owing to the limited budget available (□ 38 million/year), the whole SAPARD instrument has not made a significant impact on the Hungarian agricultural sector. However, it had one remarkable effect in some of the small regions of the country, as due to an early misinterpretation of the program design a bottom-up approach was taken by the authorities which encouraged local stakeholders to take part in the planning process and think it over for their region. As for the dissemination of sustainable land use methods, it has contributed a little, since no environmentally targeted measures were implemented. Only a small number of projects which were aimed at improving delivery against environmental standards were given subsidy. SAPARD has, to some extent, contributed to the development of Hungarian rural areas by the village renewal and diversification measures. But its delayed launch and the change in the method of the program design generated serious mistrust among rural communities towards EU rural funds.

3.3. Structural Funds criteria

The whole of Hungary falls under Objective 1 criteria of the Structural Funds, therefore EAGGF Guidance measures can be applied for in any part of the country.

4. Review of the current rural development programmes

The chapter below describes the design, the implementation, the strengths and the weaknesses of the current rural development programmes.

4.1. Program design

For the period 2004-2006, two national rural development programs were designed for Hungary: the National Rural Development Program (NRDP) for EAGGF Guarantee measures and the Agricultural and Rural Development Operational Program (ARDOP) for EAGGF Guidance measures.

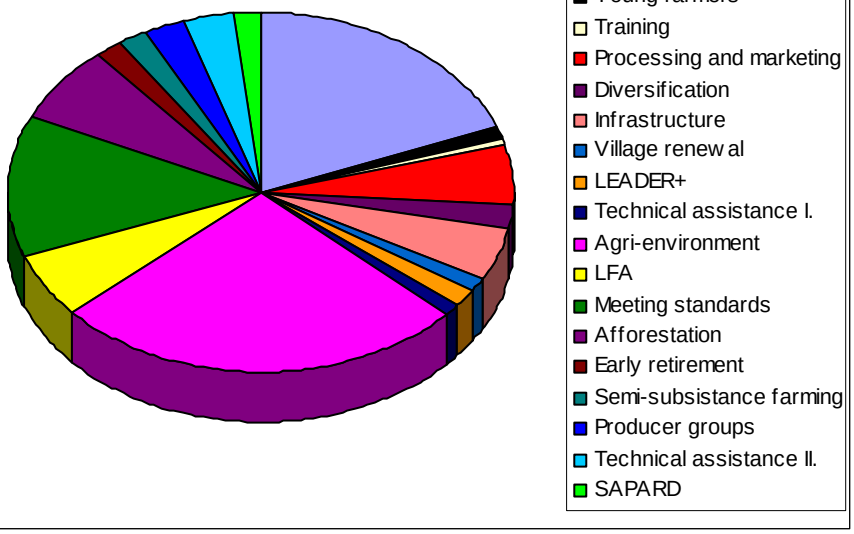
According to the programs, the objectives of the agriculture and rural development to be reached by the implementation of the ARDOP and the National Rural Development Plan are the following:

- improving the competitiveness of agricultural production and food processing,
- environment-friendly development of agriculture, rationalisation of land use,
- assistance to the realignment of rural areas.

Out of these three objectives the 1st and the 3rd are to be delivered by the ARDOP, whereas the second one is to be delivered by the NRDP and the environmental requirements built into ARDOP measures.

The proportions of the budget allocated to each of the European rural development measures are shown in figure 2.

Fig. 2. The ratio of funds allocated to RD measures



National Rural Development Plan

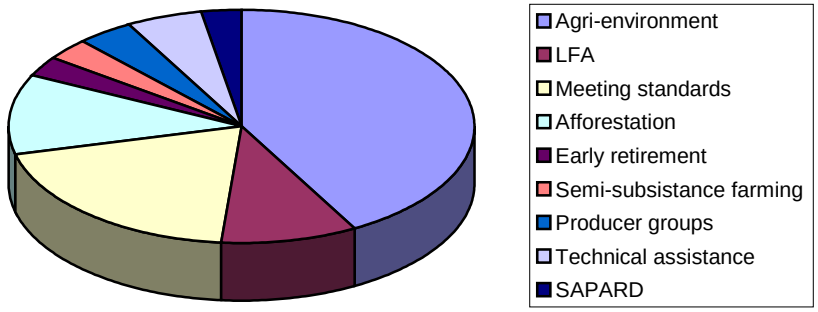
As the NRDP has more relevance to environmental issues and objectives in most of the cases this part of the rural development program will be discussed in more detail.

The general objectives identified for the NRDP are:

- To improve income and safeguard employment in rural areas;
- To ensure environment-friendly development of agriculture, rationalisation of land-use and to encourage landscape management;

The distribution of resources among the NRDP measures is shown in fig. 3.

Fig. 3. Ratio of funds allocated to different EAGGF Guarantee measures



LEADER+

Hungary is the first among the new member states to use the LEADER+ measure. The Hungarian LEADER+ measure consists of 4 major actions:

- Action 1: Acquisition of skills
- Action 2: Pilot integrated rural development strategies
- Action 3: Support for inter-territorial and transnational co-operation.
- Action 4: Networking for communication at European, national, and regional levels.

According to the plan, the measure has the following specific objectives:

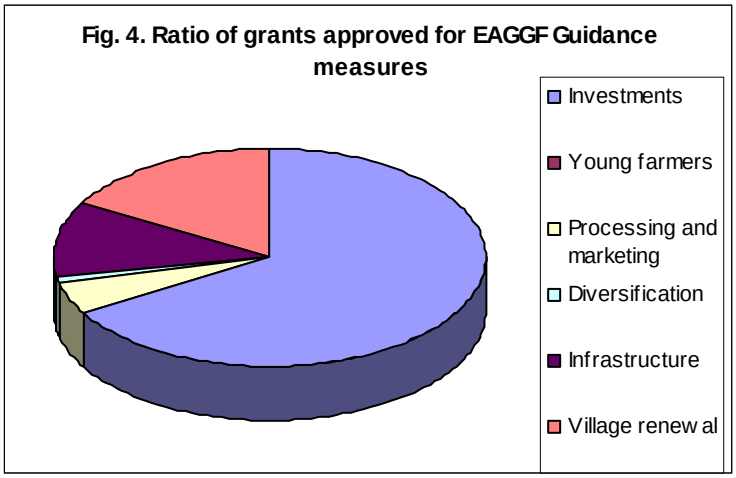
- to diversify economic activities;
- to improve the competitiveness of local products;
- to create and develop new / better quality services in line with local population demands;
- to provide proper methods and opportunities to improve local community participation and organisation in order to develop the rural environment;
- to motivate the participation of local actors in development in order to create and implement bottom-up initiatives.

It also has operational objectives, such as:

- to prepare the participants of regional community co-operations for the setting up Local Action Groups and appropriate operation of the LEADER+ approach, and for an active and efficient involvement into the LEADER+ measure,
- to formulate and implement rural development strategies of a limited number of appropriately qualified local pilot action groups,
- to develop co-operation between rural communities within Hungary and to develop co-operation between rural communities in Hungary other Member States,
- to transfer achievements, experiences and expertise and to make information and conclusions available through networking.

4.2. Implementation of the program

Out of the two rural development programs the implementation of ARDOP was started earlier and this is the one under which payments have already been made to date. Figure 4. shows the distribution of aids paid for the different EAGGF Guidance measures so far.



The implementation of the NRDP has been only partial with no payments made. The first call for applications was declared in autumn 2004. Just after the deadline for the submission of the applications, the Hungarian government decided to submit a proposal to the European Commission in which they asked approval for the reallocation of 25% of the resources (□ 56 million) available for the implementation of the plan for 2004 to the national top-up of the direct agricultural area payments as it is provided for in the Accession Treaty. After a long debate both in Hungary and between the Commission and Hungary the proposal has finally been approved, although there was no reasonable justification for the decision or evaluation of the impact it has on the rural development objectives. According to the communications of Ministry of Environment and Water (MEW), there was also a reallocation of funds within the NRDP (though it has never been voted upon in the Monitoring Committee and Ministry of Agriculture and Rural Development (MARD) remains silent about it), in which agri-environment has gained some more funds (due to the high take-up, especially of the basic, least effective scheme) and none of the Ministries asked knows yet which measures have lost out. All this suggests that environmental objectives do not really matter when talking about spending European money, the priority is to spend as much as possible.

Within the LEADER+ measure there has been a call for funding regarding the first action, acquisition of skills. There is no information available yet on how funds were used within the measure.

4.3 Strengths and weaknesses

The specific objectives of the program are the following:

- To extend and improve income opportunities, strengthen rural employment, establish new alternatives for agriculture in compliance with the requirements of environmental protection;

- To set up appropriate production structures which match the characteristics of the corresponding cultivated areas, to encourage environmentally aware farming and sustainable landscape management;

- To improve the quality of the environment and to reduce environmental contamination of agricultural origin;

- To strengthen the market position of producers;

- To improve the viability and the economic efficiency of farms;

- To increase forest cover and thereby improve the ecological conditions and strengthen the economic, social and public welfare role of forests as well;

Besides the general and the specific objectives priorities have also been identified for the plan, which should be put into force during the elaboration and implementation of the NRDP. These are the following:

1. maintaining and improving agricultural activities hereby providing additional income and job opportunities for farmers active in areas with less productive land.

2. supporting the conversion of the production structure towards a better match of ecological and market conditions,

3. increasing the economic viability, financial conditions and market positions of producers,

4. safeguarding and improving the conditions of the environment,

Although at the level of objectives the two programs seem to complement each other fairly well, the result of a lack of common planning can be easily observed. Among the selection criteria for projects funded under ARDOP there is no reference to whether the same applicant has been given grant from NRDP measures. Although this issue of integration was discussed in the ARDOP Monitoring Committee, and was recommended in the ex-ante evaluation, the proposal has finally been dropped.

In general terms, the ex-ante evaluation was relatively uncritical. The methodology is not based on a strong environmental approach, but it mainly gives priority to economic and administrative considerations (i.e. the measures should not support identical activities, clear definition of economic viability and the eligible costs under certain measures etc.). Issues discussed are mainly related to the consistency of the plan from different aspects: consistency of the plan with relevant European and national programs and consistency among objectives, measures and budgetary allocations.

LEADER+ does not have any impacts so far, as the program is only at the application stage. There are no environmentally driven objectives, which is a weakness.

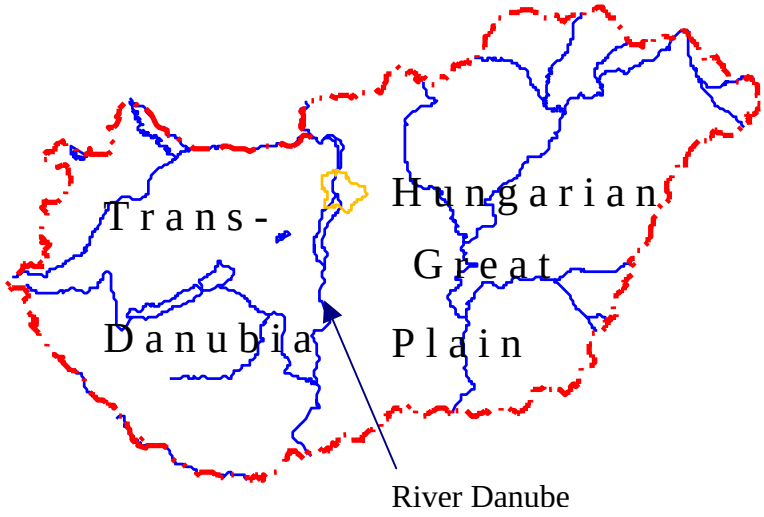
5. Environmental issues

The following chapter shows which environmental issues were identified by the project and how the present rural development programmes address these.

5.1 State of the rural environment

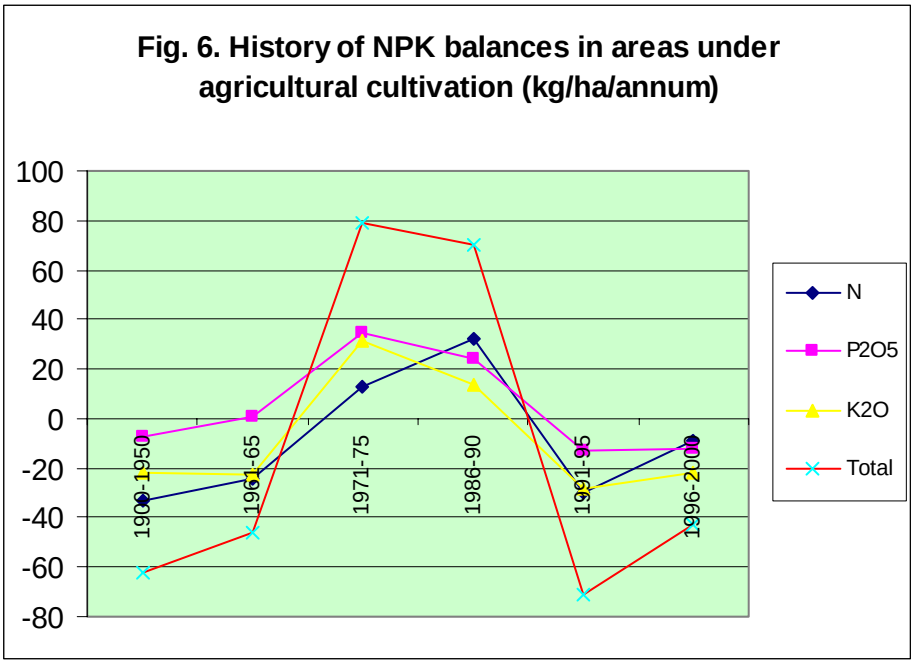
About 85% of Hungary's territory is suitable for different purposes in agriculture and forestry, depending on the fertility of soils. Accordingly, agriculture is the largest user of land in Hungary.

Fig. 5. General map of Hungary



After the implementation of privatisation, holdings became fragmented and the economic conditions of the sector deteriorated in parallel with the general state of the economy. That resulted in the general introduction of more extensive farming methods with much lower levels of pesticide and fertiliser use.

Today the primary problem is still not the environmental damage caused by excessive application of fertilisers but rather by the degradation of soils resulting from the lack of nutrient replenishment. The quantity and proportion of manuring, which improves and maintains the fertility and structure of soils has also dropped significantly during the last decade. In the period 1990 to 2000, the area treated with livestock manure dropped to a third, while the quantity of manure used dropped by 68% (relative to the period 1981-1985, that is equivalent to a reduction of 75%) (see fig. 6).



Risks are posed, rather, by the excessive fragmentation of production and, in some places, unprofessional production methods and agri-technological measures that fail to take environmental considerations into account. On the other hand, some prosperous farms in certain areas still apply no methods of environmentally sensitive farming and in those situations, the resultant environmental problems are still present (reduction of biodiversity as a result of the intensive use of pesticides and fertilisers, diffuse and point-source soil and water pollution).

In addition, the unfavourable effects that the agricultural processes of recent decades (in particular the conversion of valuable grasslands to arable land in the areas distributed in the compensation scheme) had on the landscape still await remedy.

5.1.1. Biodiversity and landscapes

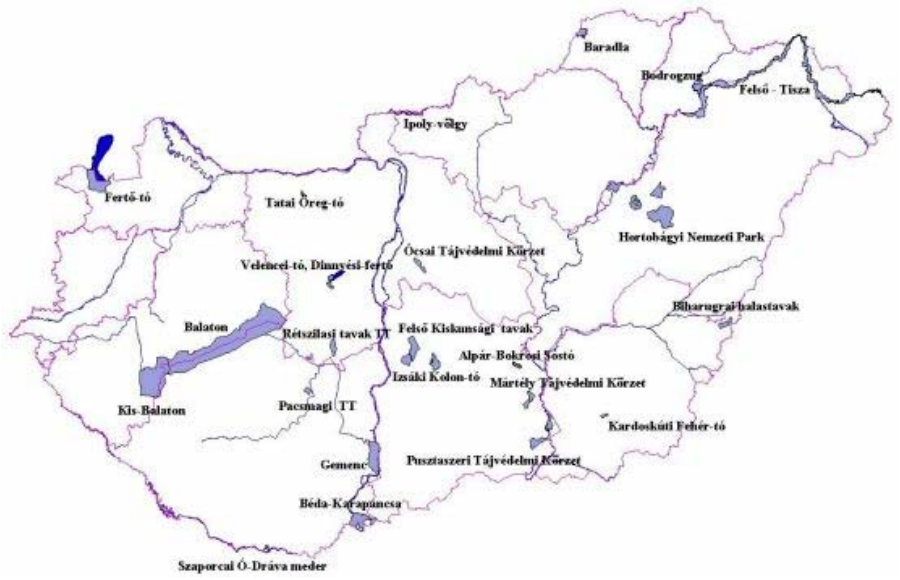
By the standards of the countries in the European Union, Hungary is among the areas with more valuable natural fauna and flora. Unfortunately, the pattern of the original natural habitats has changed greatly and the relatively untouched proportion of the country's area has decreased to 15% of the whole. Simultaneously, fragmentation is affecting habitats that used to be connected to each other in the past by continuous transitions. However, the country still has considerable natural assets by international standards. 695 plant species and 965 animal species enjoy protection by law and of those, 63 plant species and 137 animal species are under enhanced protection. In 2002 only 9.2% of the total area of the country came under nature conservation representing a natural area protected with an individual statutory regulation and, within that, 1.2% under enhanced nature conservancy protection. The share of protected areas in the region of North Hungary is the highest (13.4%) and in the region of South Transdanubia (see fig. 5) is the lowest (5.7%).

A network of wetlands accounts for a considerable part of the national ecological corridor system, but water habitats have been restricted to small areas due to the constructions of flood controls. The quality of these habitats and the quality network of wetlands has deteriorated significantly in the past decades due to drying out, eutrophication, construction, reservoirs, dyke systems to prevent floods etc.

Ramsar sites in Hungary

The strong link between biodiversity and water issues is clearly shown by the high number of sites designated according to the Ramsar Convention. To conserve these sensitive ecosystems altogether 21 areas are part of this network (see map on fig. 7.).

Fig. 7. Ramsar sites in Hungary



Forests

The forest land of the country is 1,823,400 ha corresponding to a percentage of 19,6%.
Approximately 70% is ranked as natural forests. In total about 80% of the forested area is used for economic purposes. There are 65 forestry reservations providing legal protection for the forests.
The share of state owned forests is 58,7%, and that of the private forests is 41,3%.
Distribution by tree species is: oaks 20,6%, Turkey oak 11,4%, Beech 6,1%, Hornbeam 5,6%, Robinia 22,3%, Hybrid Poplars 6,9%, Native Poplars 3,2%, Other hardwood 10,3%, Conifers 13,6%.
The annual growing stock is 12,3 million m^3, but the volume of timber harvest is only 7,0 million m^3.
In 2002 22,300 ha was categorised as forest regeneration, and there was 14,800 ha of tree planting.
Afforestation is performed in accordance with the National Afforestation Programme, primarily in areas which are less suitable for agriculture or have protection function.

Progress on Natura 2000

The national regulation on the designation and on the detailed rules concerning Natura sites entered into force in the autumn of 2004.

It affects approx. 20% of the country's territory, doubling the size of areas under some kind of nature protection.

Fig. 8. Map of Natura 2000 sites according to Directive 79/409 in Hungary

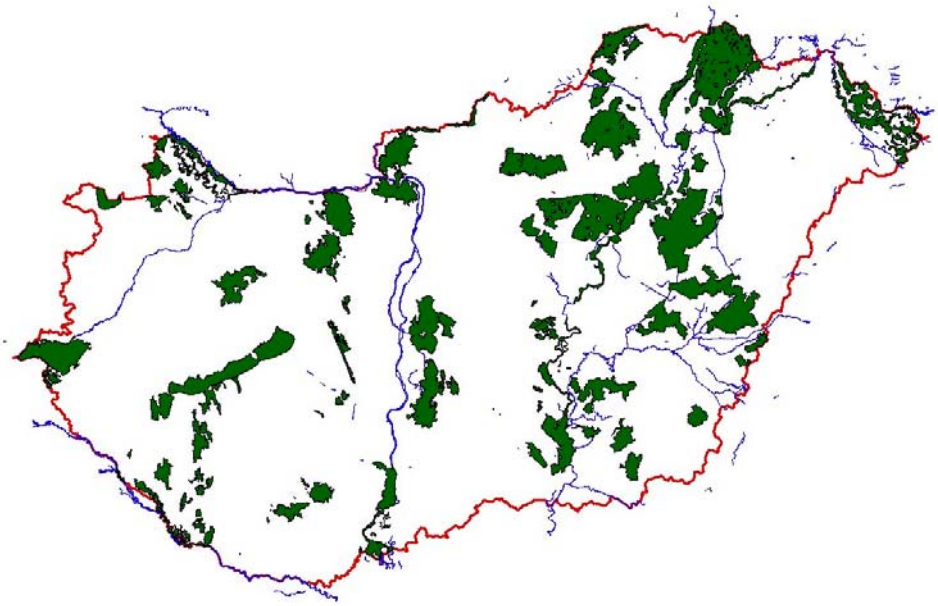
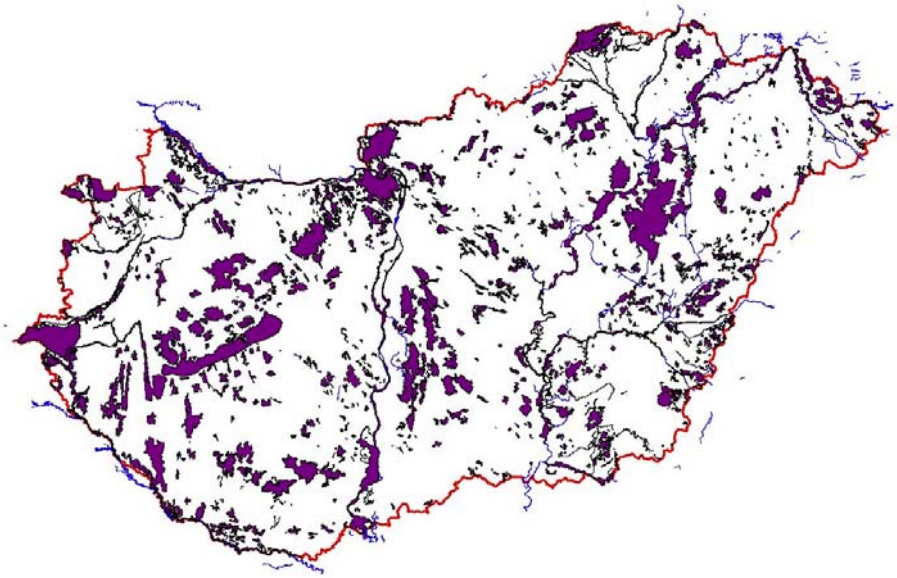


Fig. 9. Map of Natura 2000 sites according to Directive 92/43 in Hungary



National park directorates are responsible for developing rough guidelines for the management of specific habitat types and species and will supervise the management of all these areas. The guidelines are expected to be available in late 2005.

However, the designation of the Natura 2000 sites has not been completed, as the legislation mentioned only contains only indicative maps showing the locations of sites falling under the Birds and the Habitats Directives, (i.e. identical to the one seen in fig. 7 and 8). The maps do not show site boundaries, on the basis of which a farmer could figure out whether any part of his/her farm belongs to a Natura 2000 site. This is due to the fact that the geographical information system developed by the paying agency is not available for the conservation authority and therefore they could not synchronise the two systems.

The big challenge however, is the financing of the Natura 2000 network. According to rough cost estimates, the establishment and management of the network would cost ca. 8 million per year. According to the communication of the government, they plan to finance the implementation of Natura 2000 mainly from the rural development budget.

Nevertheless, the fact that the sites are not published in an adequate way, adversely affects the setting up of the whole ecological network with the necessary funds made available, as it makes Natura 2000 payments impossible according to Article 16 of the 1257/1999 Regulation, and the Natura 2000 sites can not be given priority when other rural development grants are decided upon.

The Hungarian government does not have the intention to include Natura 2000 payments in the NRDP until 2006, although they were lobbied by environmental NGOs to submit to the European Commission an amendment to the Plan addressing the issue.

Natura 2000 is included as a priority in the Hungarian National Development Plan for 2004-2006, under the Environment and Infrastructure Operational Program. Within that scheme aid is only given to national parks for activities such as restoration works, model projects and the creation of new wetlands.

The national biogeographical seminar for the Pannonian Ecoregion was held in September 2005. On the basis of the negotiations there, the authorities will propose the final list of sites falling under the Habitats Directive, and it will be approved by the European Commission this year. The present lack of information on the exact site boundaries significantly hinders the possibility of gathering information on management necessary to conserve high nature value Natura 2000 areas.

5.1.2. Water

Surface water

Due to the character of the country, basically a huge basin, the annual average water-flow per capita (120 billion m^3 p.a.) is one of the highest in the world. 96% of the surface water resources in Hungary originate beyond its frontiers. More than 90% of the water flowing through the country is concentrated in two main watercourses (the rivers Danube and Tisza). As a result of river regulation and flood control, the river sections in Hungary were shortened from 3,850 km to 2,200 km over 150 years. The shortened river systems resulted in an increased danger of floods due to faster flow, which meant that flood control system had to be reinforced. About one third of the country's arable land is in flood protected areas, 30% of the area of Hungary is subject to the threat of flood and 2.5 million people live in areas threatened by flood. The earlier peak flood levels have increased by nearly 1.5 m in recent years. The total length of flood-control works is

4,000 km, of which 62.4% meet the dyke length satisfying safety requirements. Flooding threatens the Eastern regions especially along the River Tisza.

Cyanide and heavy metal pollution of the River Tisza originated from neighbouring Romania and has caused massive economic damage to the country, and an increased risk of disastrous pollution. Devastating floods also come from countries upstream on the major rivers added to the damage. However, it must be noted that in general surface waters are more polluted at their points of exit from the country than where they enter. Therefore an appropriate surface water quality control policy is needed.

The damage caused by inland waters and floods has affected nearly 400 thousand hectares of agricultural land in recent years. Action in the field is needed as floods endanger the livelihood of a large number of people and the productive potential of mainly poorer areas of the country.

Waterlogged areas

About a quarter of the territory of Hungary consists of low-lying plains that have no natural drainage. Some 10-15% of the almost 5 million hectares of regularly cultivated arable land is affected periodically by inundation which is potentially harmful. The assessment of the data from several years indicates that the annual average area inundated (for a period of 2 to 4 months) is approximately 130 000 hectares. The area affected by inundation was exceptionally large in the year 2000, when 343 thousand hectares were under water at the beginning of the year. At present, a network of drainage canals totalling 27 500 km and 235 surface water reservoirs with a combined capacity of 259 million m3 are available for the drainage and storage of flood waters. The areas of the country that carry the highest risk of inundation are the Tisza valley and the lower-lying parts of the Danube valley.

Drought

In recent years, the risk of the occurrence of moderate droughts has increased significantly across all seasons, while the probability of severe drought in the spring and winter periods has also increased. A survey of the annual distribution of precipitation over the last hundred years indicates that there have been 17 favourable years, 32 dry years and 28 very dry years. The probability of severe drought is particularly large in the plains (though there are variations between regions); the Transdanubian region is subject to more moderate droughts. Droughts may occur every two years. The average period of recurrence of severe droughts is between 10 and 20 years in the Great Plain. In drier periods, actual quantities of precipitation remain far below the average, while in wetter periods, it may reach two to three times the average value. A review of the precipitation conditions of the growing season indicates that rain alone does not meet the water requirements of vegetation.

Ground water

More than 90% of the drinking water supply, as well as part of the industrial, irrigation and other water demand is provided by ground waters. The utilisation of thermal waters for medicinal and heating purposes is also significant. Approximately third of the sub-surface waters are vulnerable to pollution of surface origin. The confined waters found in deeper strata are in general protected. The quality of sub-surface waters is, in general, better than in numerous other

European countries and their adequate preservation should be considered. The implementation of the National Environmental Remediation Programme and the National Drinking Water Aquifers Protection Programme has been going on since 1997 and is expected to be completed by 2009. The proportion of irrigation in agriculture is lower than necessary and insignificant in comparison with the water resources potential.

Progress regarding the implementation of the Water Framework Directive

Harmonisation of the Hungarian legislation in accordance with the Water Framework Directive was completed in summer 2004. Concerning the WFD, Hungary is in a special position as its whole territory belongs to the Danube river basin. For planning, 17 smaller units were designated, which will be grouped in a way that integrated plans for 4 sub-river basins (Danube, Tisza, Drava and Balaton) will be drawn up.

The Ministry of Environment and Water (MEW) is responsible for the implementation, in co-operation with other ministries. Therefore an inter-ministry committee was set up with representatives of 9 ministries and NGOs have 3 seats in it. A concept is already designed for stakeholder involvement in implementation, information is available from a website and brochures are being produced.

The first country report on the implementation of WFD was submitted to Brussels earlier this year. The report underlines the lack of a monitoring system on biodiversity in surface waters. A project financed by PHARE will carry out a survey on the ecological conditions of surface waters in 2005, which is expected to provide data which has not been available before in Hungary. This will serve as a basis for the elaboration of the operative monitoring system. There is also a need to set up monitoring for water quality of smaller rivers, as there are quite a number of water bodies on which no data are available yet. For groundwater quality evaluation, the problem with the samples is that they are not taken from a layer close to the soil surface which is the most important zone concerning pollution. Another project is expected to tackle this problem this year.

The biggest expected difficulties identified for the future as regards WFD implementation are the following:

- carry out the hydromorphological risk analysis and classification;
- co-operation with farmers and landowners during large operations (e.g. restoration of river sections);
- carry out the national program on waste water management;
- find financial resources for implementation.

5.1.3. Soil

Treatment of contaminated land

There are a number of sites with industrial contamination which require restoration. Under the National Environmental Programme the following key areas for remediation have been identified: Uranium mines, Hungarian and former Soviet military bases, land owned by the Hungarian State Railway Company.

Agricultural land

83 % of the area of Hungary is suitable for cultivation. The physical, chemical and biological attributes determining the state of the soil are good, the rate of soil deterioration is relatively low and the soil condition in the country is better than in many of those in Western Europe.
However soil erosion caused by water and wind affects 40% of the country. The main reasons can be found in inappropriate cultivation techniques in agriculture and forestry combined with land use patterns in sensitive areas. The areas vulnerable to soil deterioration are found in North Hungary and Transdanubia. Acidification is primarily found in the regions of West Transdanubia and North Hungary as well as in the South-eastern part of the South Plain, and secondary salinisation is found in the North Plain.

5.1.4. Air pollution

Changes over the past ten years, including the notable decline in industrial production, the increase in motor vehicle traffic, the prohibition of the sale of leaded petrol, etc. have had a considerable influence on air quality. The emission levels of most of the traditional industrial air pollutants have decreased remarkably but emission of some transport related air pollutants has increased. Transport has became one of the most significant source of air pollution.

It can be stated in general that the concentration of the three most frequent air pollutants released in the highest quantities (sulphur dioxide, nitrogen oxides and solid particles) shows a decreasing tendency over the longer term. The air quality in Hungary can be considered to be at the medium level in international comparison.

The following tables (matrices) contain the most important environmental themes, in Hungary in a table format.

Matrix 1: Environmental themes in Hungary

	Main problems perceived by NGOs/stakeholders under each theme	National/regional priorities or strategies. Data availability.	Significance for EU environmental policy	Importance according to "objective expert opinion"
Biodiversity	Water management - irrigation, canalisation of freshwater habitats - problems of flood management, small size of floodplains Grassland management - absence of grazing by cattle, sheep - hay cutting absent or not adapted to the ecosystems needs Intensive agriculture and forestry - use of pesticides and fertilisers - habitat loss or degradation Illegal hunting, fishing Game management - overpopulation of deer, wild boar and fox - hunting in protected areas, disturbance Increasing human impacts - infrastructure development - tourism	National Environmental Program in place for a period of 5 years. National Biodiversity Action Plan being drawn up. Conservation law in place. Action plans exist for some species. Monitoring system being developed for birds and plant communities. Basic data already available.	Very important MS in terms of Habitats Directive and Birds Directive. Detailed designation of sites done and declared, though incompatible with IACS system (obstacle to payments). Natura 2000 sites extend on up to 20% of country territory. EU Wildlife Trade Regulation (adoption of CITES): Council Regulation (EC) No. 338/97 Commission Regulation (EC) No.1808/2001	Preventing biodiversity decline is a main environmental concern of NGOs, especially in the case of birds. It is also a major issue for the environmental authorities.

Forests	1. Forest coverage in Hungary is below the European average and less than the ecological potential **2. Forest management has negative impact on forest biodiversity** 3. Forest management planning lacks indicators regarding biodiversity 4. Forest biodiversity is not continuously monitored **5. Protected forests are not adequately safeguarded. With a few exceptions protected forest are also managed for wood supply** 6. Companies managing the state owned forests are not open for public demands/discussion **7. Unlike the agricultural sector, currently there are no subsidies for forest management** 8. State owned forests (60%) are managed in a "for profit" structure, which creates a big pressure on the managers, even though 60-70% of the Hungarian forests supply only low quality wood with low economical value, which creates a very unfavourable situation	1. Forest cover will increase in the next decade by 6-700 000 ha, to 25% of the land area. 2. It is not recognised as a problem by the Forestry authorities. 3. It is slowly changing, however most of the specialists think that Forestry engineers do not have the relevant knowledge. Training will be required. 4. Not considered a problem by Forestry Authorities. 5. Lot of debate around this issue. Legislation must be clarified and priorities set for different categories of forests (protected, protective, managed for wood supply). 6. Lot of pressure on them, hopefully it will change. 7. The ministry responsible for Forestry (Ministry for Agriculture and Rural Development) do not consider this a problem, other ministries involved (Ministry for		- The three most important problems: Nr. 2, 5, 7.

	for nature conservation. No or only basic environmental services are provided. 9. 50% of the Hungarian forests are plantation forest of exotic black locust and hybrid poplar species with very limited role in biodiversity conservation.	Environmental Protection and Water) do. State subsidy will be needed to finance the environmental services of forests and the "for profit" structure has to be changed. 8. The ministry responsible for Forestry (Ministry for Agriculture and Rural Development) do not consider this a problem, other ministries involved (Ministry for Environmental Protection and Water) do. State subsidy will be needed to finance the environmental services of forests and the "for profit" structure has to be changed. 9. Authorities do not consider this a problem.		
Water resources	10. Impacts of dam building on river habitats. 11. Point source pollution from intensive animal farms. 12. Overuse of water by irrigation. 13. Illegal water extraction for municipal and agricultural purposes	23. National legislation different from integrated river basin planning 24. Flood prevention plan for river Tisza: still unclear how much focus on sustainability and land use changes	WFD is not very well known, though first report has been produced.	A key theme for the region, but data is lacking. The main issues are also covered under Biodiversity.

	14. Floods cause water quality deterioration (chemicals) and contaminate floodplain vegetation (waste carried) 15. Pollution by waste disposal 16. Municipal waste water polluting soil and living waters 17. Constructions and tourism affecting lakeside ecosystems 18. Oxbows used as intensive fishponds 19. Oxbows degradation due to lack of water supply 20. Excessive water extraction for mining purposes 21. Chemical and heat pollution of living waters, mainly rivers, by industrial companies 22. Threat: intensification of agriculture will cause diffuse pollution by fertilisers and pesticides	25. Insufficient data in most areas, lack of monitoring system and capacities. Problem not even recognised		
Soil	Some concern about erosion. Not a major issue for NGOs/stakeholders, but it is for the government. Municipal solid waste leakage Acidification of soils Degradation of soil structure	Data and maps available, agri-environmental scheme measures developed to tackle problems. Significant part of the agri-environmental program for three years.	EU soil strategy is being drawn up.	Soil erosion and compaction are problems, some NGOs work on it.
Climate change	Unknown impacts on Hungarian habitats and agriculture	VAHAVA project has been launched by Hungarian gov't and the Academy in order to assess the impacts and propose solutions to avoid/minimise	Nothing really about dealing with impacts on EU level.	

	Problems with legal categorisation of energy plantations for biomass production (to be used for energy production to replace fossil fuels) Problems about the impacts of biomass plantations on biodiversity and on soil features	negative effects – national plan on climate change adaptation. Results are expected to come out next year. Steps were made to enable such plantations to get financial support from area payment similarly to "normal" agricultural plantations There is intention to change Hungarian law on forests to facilitate the establishment of tree-like biomass plantations A project has been launched in Pécs with a number of participant organisations to study the effects of "energy grass". Results are to come out this year. There is no such a project on tree-like plantations. No data, no legal obligation for monitoring, or cutting plantations even if the owner is unable to do that (to prevent potential invasion or "genetic pollution of native species").	The proposal is discussed in the Commission. Nothing.	
Landscape	Some concern, but NGOs give far more importance to wildlife.	No regional strategy or data.		Local NGOs active in protecting landscape values.

The following matrix shows examples of habitats and species which are threatened by present practices and these threats have relevance to rural development.

ELC matrix 2: Biodiversity - selected priority habitats/species, status, and pressures

Habitats/species and associated land-use category		**Pressures**	**EU policy reference**
Great bustard	Mosaic landscape with arable and grasslands	Intensification, monocultures, inappropriate cultivation methods	Annex 1 bird
Mountain hay meadows	Mowing	Abandonment, declining numbers of livestock, lack of professional knowledge, afforestation	Annex 1 habitats
Colchicum arenaria	Sandy grasslands used for grazing.	Declining grazing activity, encroachment by invasive weeds, shrubs and forest	Annex 2 plant
Mountain oak and beech forests	Forest management	Improper management (clear-felling), excessive game populations	Annex 1 habitats, Annex 1 birds and Annex 2 plants
Floodplain grasslands	Grazing	Drainage, droughts, abandonment, invasive plant species	Annex 1 habitats, Annex 1 birds and Annex 2 reptiles
Stone curlew	Grazed sandy and alkaline grasslands	Cessation of cultivation	Annex 1 bird
Oxbows with wetlands formed due to canalisation of rivers	Extensive fishing, hunting, recreation, some grazing	Local intensification, drainage, turning into intensive fishponds	Annex 1 habitats, Annex 1 birds and Annex 2 reptiles
Wooded pastures	Grazing	Abandonment, encroachment by forest	Annex 1 birds, Annex 2 plants
Small songbirds	Forests, mixed areas	Illegal hunting	Annex 1 birds

5.2 Key environmental issues

The following matrix contains the most important environmental issues that to some extent have relevance to rural development policy. The main policy and non-policy drivers are identified in the table and the potentially desirable policy response is given.

ELC matrix 3: Environmental issues, drivers, policy response and RD relevance

Problems + pressures = issues	**Land uses/activities**	**Non-policy drivers**	**Policy drivers**	**Preferred policy response – RD relevant or not?**
Abandonment of HNV farmland, loss of grassland habitats (mountain and lowland, wooded pastures), decline of endangered species.	Hay meadows and grazing.	Economics of traditional dairy farming, lack of local processing units. Knowledge and tradition lost over time, lifestyle in itself not attractive. Small farms: lack of capital to invest in livestock, insufficient viability to get bank loans.	Area payments, LFA aids and broad agri-environmental schemes not eligible to maintain HNV farming systems. LFA not designed according to HNV needs. 'Deep' agri-environmental schemes extended to very limited areas. Excessive hygiene standards for milk.	LFA scheme really targeted on 'maintaining and promoting sustainable farming systems which in particular take account of environmental protection requirements' (RDR) Extend deep agri-environmental schemes to cover larger proportion of HNV areas. Higher extensification premia on grazing livestock. Grants for companies collecting milk in remote areas. RD very relevant
Point-source pollution of groundwater by intensive animal farms	Intensive pig and poultry farms.	Market demand for products. Foreign investments. Insufficient monitoring system for groundwater.	Export subsidies, investment and infrastructure aids, national subsidies.	Setting up a comprehensive and reliable monitoring system on groundwater quality. Creating more take-up for 'meeting standards' measure by communication. Elimination of export subsidies. Better targeted investment and

				infrastructure aids. RD relevant
Loss of biodiversity and landscape due to lower groundwater level, droughts	Drainage of extensively farmed areas in favour of intensive arable fields.		Structural funds New Vásárhelyi Plan on flood management.	Regional SEA needed for such investments taking external costs into consideration. RD partly relevant
River canalisation affecting protected bird, reptile and plant species and riverine habitats.	Canalisation, riverbank clearance. Dam building.	Strong political lobby of water engineers, financial interests.	Structural and cohesion funds. New Vásárhelyi Plan.	Thorough SEA needed. Biodiversity monitoring needed. Water retention techniques given investment aids. RD partly relevant.
Mosaic landscape providing habitat for endangered species disappearing due to intensification and concentration	Grasslands and arable fields with crop rotation, shelter belts.		Direct payments, intervention prices and export subsidies make monocropping profitable in areas with diverse, not the most favourable ecological conditions.	Changes to LFA: target the maintenance of HNV systems and practices. More extensive deep agri-environmental schemes. Conservation plans for key HNV areas. RD very relevant.
Inappropriate forest management (black stork, golden eagle, lynx, wolf)	Scrub and deadwood clearance, clear felling, plantation with non-native species. Forests composed of only very young stands. Intensive game management.	Personal links between forest companies and seedling producers. Present structure and habits of hunting, using national resources for private benefit.	Subsidy given for market based activities that hold no social benefit. Subsidies support species that hold ecological risk. Administration is based on the present bad forestry practice.	Much higher payments needed for planting native species, for plantations according to conservation criteria and for shelter belts. Advisory services and training for conservation forestry. Payments should not be given for drainage and compensation of damage caused by game. RD very relevant.
Diffuse pollution of rivers, wetlands and	Intensive cropping in river valleys, irrigation.	Market demand for products. Cheap water for agricultural use.	Subsidies on arable crops. Investment and infrastructure	Currently only a threat, but a likely one.

groundwater.			aids. Weak GFP.	Water prices for agriculture regulated at EU level. Stricter GFP with clear link to WFD.

The fourth matrix below, developed by the project, shows what potential new factors will affect rural areas after 2007, and how policy should react to them.

ELC matrix 4: Biodiversity - selected issues and potential RD responses

Issues	Potential new factors for 2007-13	Potential RD policy responses
Abandonment of HNV farmland, loss of grassland habitats (mountain and lowland, wooded pastures), decline of endangered species.	Decoupling might accelerate abandonment of HNV grasslands. Natura 2000 payments might help save HNV grasslands. Agroforestry measure might help save wooded pastures.	Extend agri-environment schemes to cover more HNV farming areas. Use agro-forestry measure for wooded pastures. Use new N2000 measure, on the basis of management plans. Target LFA scheme on HNV systems.
Point-source pollution of groundwater by intensive animal farms	Probability that animal farms less intensive due to economic factors. However, the remaining ones might get more intensive and bigger. More will be compliant to EU standards.	Set up comprehensive monitoring system of pollution of water resources from agricultural sources. Use report on implementation of WFD, later river basin management plans to lay down strict rules at river basin level. Use 'Meeting standards' and 'Modernisation of farms' measures to comply with standards.
Loss of biodiversity due to drainage, canalisation of rivers and dam building	More resources from the Structural Funds for the New Vásárhelyi Plan (flood management) More RD resources for drainage	Turn the focus of the New Vásárhelyi Plan on sustainable agriculture: set up agri-environmental (HNV) schemes for the reservoirs, include them in the LFA scheme etc. Thorough SEA on each drainage investment project
Inappropriate forest management (black stork, golden eagle, lynx, wolf)	Forest-environment measure might improve the ecological value of some forests. State forests (ca. 60% of total) are not eligible for EAFRD grants, they are even more likely to be managed for profit. Increased role of forests due to WFD and the New Vásárhelyi Plan. Increased demand for energy biomass from forests.	Introduce targeted forest-environment measure for conservation forestry. Use state funds on state forests for conservation forestry. Amend EAFRD to make state forests eligible for forest-environment schemes and Natura 2000 payments. Stop giving grants for non-native and fast-growing species, including those suitable for energy biomass production. Include biomass forests in the direct payment scheme (1st pillar).

5.3. Proposal of objectives and targets on the environmental issues selected

The following table shows the possible objectives and targets identified for the environmental issues which are the most important and most relevant to rural development policy in Hungary.

Environmental issues	***Objectives***
Biodiversity	
loss of valuable semi-natural grasslands due to abandonment	• halt the loss of HNV grassland areas by 2010 • ensure the sustainable management of all Natura 2000 grassland sites by 2013 • 50% drop in the area of semi-natural grasslands affected by invasive plants by 2013
decrease in the number of farmland birds due to intensification and monocultures	• stop the decrease of specific farmland bird species by 2013 • 200 000 ha of arable land turned into extensive grasslands by 2013
Water	
diffuse pollution from intensive agriculture directly affecting rivers	stop intensive crop production in river floodplains by 2013
point source pollution from intensive livestock units affecting underground water	stop point source pollution of underground water from intensive livestock units by 2010
water consumption for agricultural purposes causing environmental problems in years and seasons of drought	water consumption not to harm the ecology of the Hungarian rivers by 2013
Forests	
valuable forest habitats lost due to bad management practices	• cut the yearly level of afforestation with non-indigenous species by 50% by 2013 • ecological forestry practices introduced in 20% of the forested area by 2013

5.4 Evaluation of the program for the period 2004-2006

According to the environmental analysis in the NRDP the following issues were found to be the most significant:

	Denomination Area concerned	Environmental significance	In total
1. Wind and water erosion	+++	+++	6+
2. Reduction of biodiversity in valuable natural areas due to the cessation of cultivation	++	+++	5+
3. Soil compaction	+++	++	5+
4. Destruction of natural assets caused by intensive farming	+	+++	4+
5. Landscape destruction caused by changes in (the intensity of) land usage	++	++	4+
6. Water pollution from agricultural sources (nitrate and phosphate infiltration)	+	++	3+

As seen in the table, the most important issues are: erosion, biodiversity loss and soil compaction. This ranking shows on the one hand that designers of the program used a production-based approach, and on the other that, the most detailed analysis is presented for which issue the most data were available on.

The description covers all the environmental issues listed as important and relevant for rural development programs with the one exception of water quantity. This might be rooted in the lack of data available.

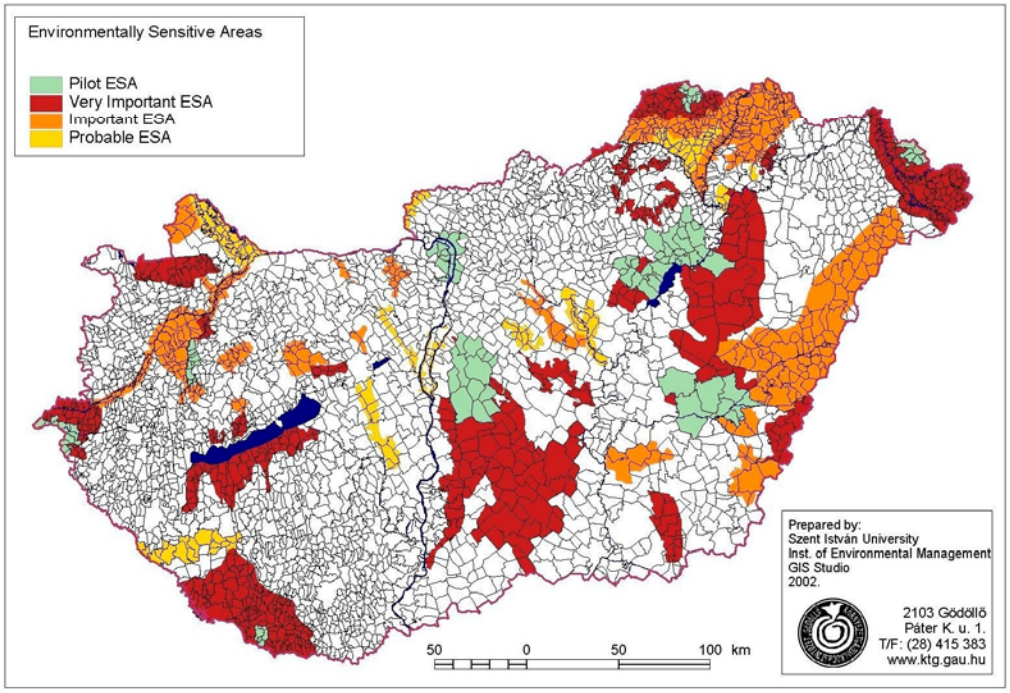
The objectives for agri-environmental schemes (Annex 2.) target many of the environmental problems that exist already or likely to occur in the near future. However, the objectives remain quite vague, no environmentally valuable quantification can be found either in the description of the measures or where objectives are listed.

Specific sectors (e.g. grazing systems, extensive fishponds, sustainable forestry) important to protect the environment or preserve biodiversity are not specified for the objectives.

As the majority of the applicants want to join the most general 'entry level scheme' (see Annex 1.), there is a serious threat that a fairly high proportion of the NRDP budget on agri-environment will go into the scheme which has the least environmental impact (it prescribes to carry out a soil analysis, draw up a nutrient management plan and contains basic restrictions on fertiliser and pesticide use). In case clear and quantified environmental objectives were in place, this situation could not occur.

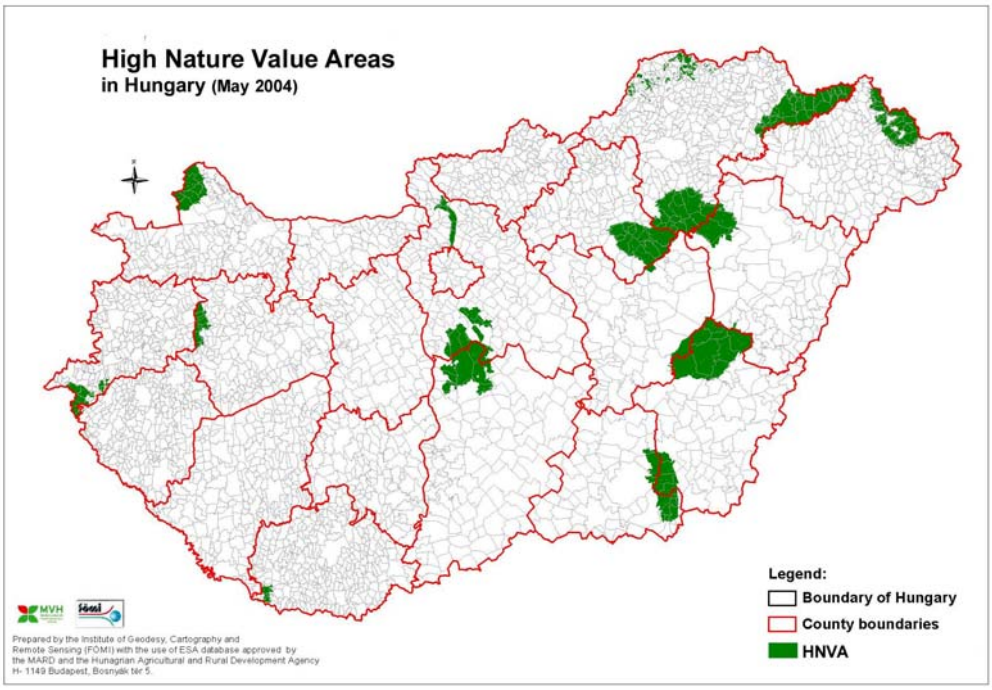
The areas that are in the highest need of well-targeted agri-environmental schemes were already identified in 2002, when the National Agri-Environmental Program was launched. Fig. 10 shows the map of Environmentally Sensitive Areas as declared by a governmental decree. These are areas where mostly extensive land use types dominate, where the main goal should be to maintain traditional farming, to conserve biodiversity, to protect habitats, landscape and cultural heritage.

Fig. 10 Map of designated ESAs in Hungary



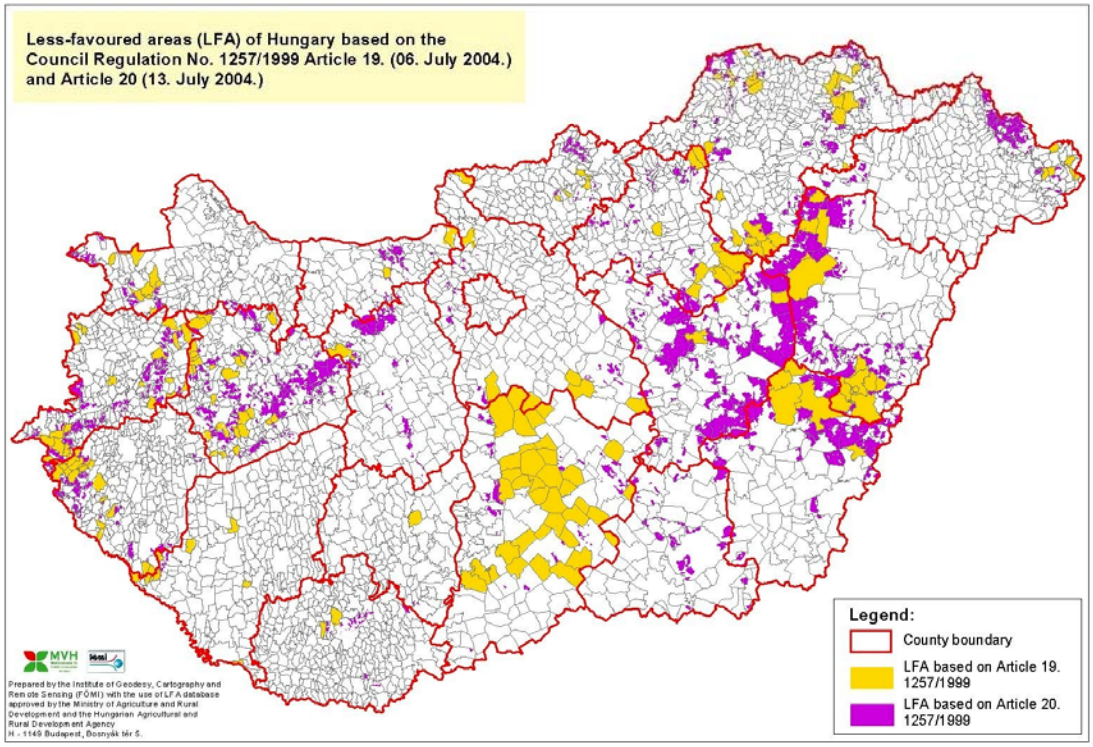
The map of High Nature Value areas (fig. 11.) (As the European terms have also been changed in the meantime from ESA to HNV) show the areas that are finally targeted by special agri-environmental measures in the NRDP. As it is seen on the map, there are only a few new areas that have been added to the pilot ESA areas selected already for the National Agri-Environmental Program, so the program still comprises only a very small proportion of the area of 'Very important ESAs'.

Fig. 11. Map of HNV areas designated according to NRDP



Geographic areas are also specified for the LFA scheme (see fig. 12.). 395 488 thousand ha (4.25% of the country) have been designated as LFA according to Article 19 of the RDR and 488 thousand (5.24% of the country) ha according to Article 20.

Fig. 12. Map of Less Favoured Areas designated according to NRDP



The identification of Article 19 areas is based upon soil quality, farm income and population size of the area. For Article 20 areas the RDR points out that these should be designated '*in order to conserve or improve the environment, maintain the countryside and preserve the tourist potential of the area*'. Despite all this, the natural value and the presence of traditional land use types in the area are not taken into account at all as factors for designation. These areas were selected on the basis of severe soil conditions (acidity, salinity, water management and physical character), which is quite a production based approach. Comparison between the LFA map and the HNV map clearly show that there are serious deficiencies in the designation of LFA areas as regards the maintenance of HNV farming systems. All this resulted in a designation of Less Favoured Areas in which for example one of the most prominent vine regions where the best quality red wines of Hungary are produced is within LFA, but other regions in the southwestern part of the country with large areas of extensive livestock systems are not. However, it should be noted that the lack of adequate data makes it difficult to find the right criteria to use.

The MARD is planning to put forward a proposal to the European Commission that would amend the designation criteria for Hungarian LFA areas soon. Nevertheless, the reason behind this amendment is not due to difficulty in identifying areas for designation, but a wish to designate the largest area possible with the aim of attracting more resources from Brussels.

The indicators for even most targeted schemes only include output type indicators. The need for a proper monitoring system is not mentioned.

6. Addressing environmental issues

The chapter below shows how the project recommends to tackle environmental problems through rural development programmes: how measures can be used, what delivery mechanisms should be in place, how public participation processes and the monitoring should work.

6.1. Main factors in Hungarian agriculture and rural development

There are certain factors that should be taken into account when the environmental issues discussed above are addressed. The most important are the following:

The size of the farms

In Hungary, as in every former communist country, the statistics on the size of farms show two poles. On one side, there are the former co-operatives and state farms with huge sizes. Most of them are very profitable; their main profile is usually crop production (especially wheat, maize). On the other, there are very small farms (subsistence farms) with an average size of 1 ha. Most of these farmers work part-time on their farm, but this produce for their own consumption or sold locally still helps them a lot to earn their living. However in the long term, these farms will not viable. The future of these farms is not clear, no strategy seems to tackle this problem, which will lead to social problems, and makes the planning of environmental protection more difficult.

Lack of knowledge on traditional land use types

As under the past regime the co-operative system was the dominant structure in agriculture, with intensive crop production and animal keeping, the traditionally very important extensive livestock keeping has mostly been forgotten. Only old people in villages have the knowledge in this field, so even most of the advisors have to learn these methods from books. There are very few young farmers who have the skills, the capital and the willingness to keep grazing animals. There are no possibilities in the European Union to get subsidies to buy animals, and bank loans put a very serious burden on farmers. The number of animals kept in Hungary has drastically decreased since the political change and these reasons still hinder its increase.

6.2. Proposals how to address selected environmental issues

The following table contains the most important environmental issues identified by the project, that can be tackled by rural development programmes, possible objectives regarding the solution of these issues and the desired policy response to these.

Environmental issues	***Objectives***	***Policy response***
Biodiversity		
loss of valuable semi-natural grasslands due to abandonment	• halt the loss of HNV grassland areas by 2010 • ensure the sustainable management of all Natura	• agri-environmental schemes for extensive grasslands with payments high enough to generate take-up

	2000 grassland sites by 2013 • 50% drop in the area of semi-natural grasslands affected by invasive plants by 2013	• special incentives to low income farmers to buy animals (e.g. traditional species) • incentives to milk companies to collect milk from remote areas • LFA payments to cover all HNV areas • GFP requirements or agri-environmental schemes to tackle invasive plant species • subsidies to unite small HNV farms that will not become viable • give priority to HNV farmers when selecting applicants given RD funds • Natura 2000 payments • reduce payments for planting fast growing, non-indigenous tree species
decrease in the number of farmland birds due to intensification and monocultures	• stop the decrease of specific farmland bird species by 2013 • 200 000 ha of arable land turned into extensive grasslands by 2013	• payments for crop rotation, integrated and organic farming • all the measures listed above to maintain the mosaic landscape with grasslands
Water		
diffuse pollution from intensive agriculture directly affecting rivers	stop intensive crop production in river floodplains by 2013	• set up agri-environmental schemes for all floodplain areas with high payment rates • adequate system to monitor diffuse water pollution
point source pollution from intensive livestock units affecting underground water	stop point source pollution of underground water from intensive livestock units by 2010	• payments for compliance with EU standards • adequate system to monitor point source water pollution
water consumption for agricultural purposes causing environmental problems in years and seasons of drought	water consumption do not harm the ecology of the Hungarian rivers by 2013	• effective measures (fines) against illegal water consumers • adequate system to monitor water consumption, restrictions when needed • give priority to water saving irrigation systems when distributing investment aids

Forests		
valuable forest habitats lost due to bad management practices	• cut the yearly level of afforestation with non-indigenous species by 50% by 2013 • ecological forestry practices introduced in 20% of the forested area by 2013	• substantial differentiation between grants for planting indigenous and non-indigenous tree species • agroforestry measures • development of Good Forestry Practices • Natura 2000 payments • environmental training for foresters

6.3. Public participation

When national plans were drawn up in Hungary, methods to involve the different layers of the society either in the planning process or in the implementation phase had not been used for a very long time. All the institutions used to work on their own, in a highly centralised way. As more and more strategic plans were written and the civil society gained more and more power, and especially when plans started to be elaborated for the European funds with the obligation of public involvement, the usual practice of the authorities has changed. There are very good and very bad examples for this change. Unfortunately most of the authorities consider this requirement something that only needs to be fulfilled in a way that is adequate simply for reporting purposes.

Different methods are used to involve people.
- Public consultations are usually organised throughout the country but results of these are doubtful. Most of the people invited have very little information on the issues discussed. Remarks made during these events rarely have significant effects.
- At certain stages the strategic documents, plans are put on a web-site and comments can be made to the different issues discussed. These are available in most cases for a very limited period (e.g. 5 days in the case of the NRDP), which is not enough to give a thorough opinion about it.

As for rural development planning for the 2004-2006 period, stakeholder participation was minimal. Despite the initial approach taken when SAPARD planning started, both ARDOP and NRDP were planned in a very centralised way, basically by the ministry itself. Experts were selected by them for different issues; the rest of the public was not invited or was even excluded. Any information gained or influence made was highly dependent on the attitude of the person responsible for the issue in the ministry.

There is an overall lack of intention in the MARD to draw up a strategy for public participation that could be used for any kind of planning process. As last year the ministry was heavily criticised by environmental NGOs and farmers' organisations for cutting the rural development budget without having proper public consultation beforehand. Even the European Commission's attention was drawn to the case, so MARD started a consultation process with certain selected stakeholders. At the same time a bigger group of stakeholders to be involved in different issues has been started to be built up.

For the new planning period it would be important to make the planning process open. To achieve this, a detailed strategy should be drawn up, and the identification of all the stakeholder groups in different issues should be finalised rapidly. The planning should be undertaken together with the representatives of these groups from the very first moment.

6.4 Delivery mechanisms

Traditionally, agricultural extension services in Hungary have comprised two institutions: the agricultural chambers and the village farm advisors.

The Hungarian Agricultural Chamber carries out its advisory activities as public service. The Chamber is divided into 20 County Chambers of Agriculture

The network of village farming advisors is operated by MARD and its county based network. Chief village farm advisors are seated in the MARD offices in each of the 19 county capitals. The village farm advisors are responsible for 4-5 villages on average. Their task is to give advice to farmers on a daily basis and on request from the farmer. They also organise trainings and help the farmers with a number of issues, mainly with filling in application forms for agricultural subsidies. They keep the registry of farmers, and inform MARD on the current situation on the fields. They are supposed to help with the formation of family farms, interpreting legislation, inform farmers on market conditions etc. but they hardly find time to complete all their duties. They are usually not very highly qualified and only rarely have a good understanding of environmental issues or deep knowledge on the natural heritage in the area concerned.

As these are two semi-nationally-financed structures with very similar activities, they tend to compete for the same resources. Both institutions have certain political links: the chambers are somewhat connected to the left-wing, the village farm advisors to the right-wing parties, at least this is what their financing implies under the changing governments.

Extension services on forestry are provided by the State Forest Service (SFS). The SFS is a governmental (budgetary) organisation working under the direct control of the Ministry of Agriculture and Rural Development. The sphere of activities of SFS covers the total area of the country. The SFS consists of ten directorates and the headquarters. The main tasks of SFS are covering the following fields:

- Forest inventory on the forested area of the country (Annually the forest inventory is carried out on one tenth of the total forested area.);
- Preparation of district forest plans to be approved by the Minister of Agriculture and Rural Development and constitute the base for obligatory forest management plans related to the activities of forest managers;
- Base and thematic mapping, including the interpretation of aerial photos, GPS and geodesic measurements;
- Management of the National Forest Stand Database, updated annually and providing information services;
- Supervision of forest management, including the following:
    - Approval of annual operational plans;
    - Control of forest management practices (silvicultural and felling activities);
    - Management of the forestry related financial means and subsidisation system;
- Forest health monitoring according to the manual of ICP Forests (International Co-operative Programme on Assessment and Monitoring of Air Pollution Effects on Forests launched and operating under the Convention on Long-Range Transboundary Air Pollution of UNECE); SFS is the National Focal Centre;
- Collection of data and data processing for statistics on forestry and primary forest industry;
- Development of application software and GIS application;
- Cooperation with international organisation (among others FAO, ECE, OECD EUROSTAT, etc.);

- Providing information on the actualities and development of forest resources to governmental organisations and to the public;
- Providing information to – primarily private – forest owners (professional publications, technical expertise), who often have no professional (forestry related) background;
- Tasks related to the EU subsidised forestation of agricultural lands;

Agri-environmental extension services have basically no history in the Hungarian agriculture. The first attempt was made by the Department of Agri-environment in 2004 to set up a network of certified advisors (AIR) who were supposed to work on a voluntary basis. Originally this network was planned by the Department to be financed by the Technical Assistance measure of the NRDP later. As there is a lack of willingness on both sides to co-operate with he department responsible for the whole NRDP, the measure was designed in a way, which did not allow this network to receive funding from this source. However, the AIR initiative is still operating with some funding allocated in the NRDP for monitoring, its main service is a website where all issues concerning agri-environment, LFAs and many other rural development issues, such as technical assistance, monitoring and technical issues are discussed in detail and all the latest information on open calls and other pieces of legislation are available.

According to requirements set in the call on the setting up of advisory service networks, advice can only be given by advisors belonging to so-called umbrella organisations, and an advisor is only eligible if he/she can give advice as a full time job, he/she is not allowed to pursue any other permanent job. The call was open until early September, and no decision has yet been made on who the beneficiary umbrella organisations will be. As the AIR network did not have any official legal form and mainly worked in a voluntary basis with part-time advisors (i.e. advisors have another job), it did not fulfil the criteria for application. There is a serious threat that the knowledge most of these voluntary advisors have will not be applied.

In the medium term, taking into consideration the present conditions in terms of power and influence, the two bigger institutions are the most probable to carry on doing their advisory activities and dominate the market. Therefore it is essential to give these advisors training courses in environmental issues, make them understand the environmental objectives the programs have, increase their knowledge of local natural values, and make them familiar with EU environmental legislation. It is also of primary importance to enable them to think at a regional level to solve environmental problems at a wider scale.

6.5. Indicators and monitoring

Indicators

The indicators used by the NRDP are mostly output type indicators. The majority of them are the extent to which measures are taken up, which shows the overall attitude towards European funds: the more spent the more successful the program is. These indicators are generally not suitable to evaluate progress against objectives.

Therefore, the project has developed a number of indicators which might be used in future programming, as far as environmental objectives are concerned. They are classified according to the priority environmental issues identified by the project and are the following:

	outcome indicators	output indicators
Biodiversity	➢ number of farmland birds, particularly in HNV areas ➢ area affected by invasive plants in floodplains ➢ Existence of a mosaic type landscape in HNV areas ➢ State of targeted grassland type plant communities	➢ Number of HNV farmers given other grants (investment aid, infrastructure etc.) ➢ Monitoring system for farmland bird species in HNV areas in place ➢ Conservation plans for key Natura 2000 species and habitats in place
Water	➢ Quality of water in NVZs ➢ Area of arable land in Hungarian floodplains	➢ Monitoring system for water use in place ➢ Monitoring system for the quality of underground water in place ➢ Monitoring system for the ecological status of surface water bodies threatened by animal farming units in place
Forests	➢ % of land afforested with non-indigenous species ➢ % of dead wood left after felling ➢ ecological status of the forest ➢ area of forests ecologically suitable for the climatic zone ➢ number of large ruminant game	➢ area where ecological forestry practices are used ➢ training scheme for foresters in ecological forestry in place

Monitoring

There is no official information on how monitoring is being implemented on rural development programmes in Hungary. The indicators proposed by the project could be monitored either using

existing or planned monitoring systems, or using existing networks (national parks, forest services etc.)

To supervise the implementation of the programmes, there are two Monitoring Committees set up, one for each programme. There is an ongoing debate on the composition of the NRDP and the ARDOP Monitoring Committees. NGOs complain that MARD and the state sector have a majority in it, which makes voting predetermined. MARD argues that the most of the bodies represented in the committees are NGOs. However, most of these NGOs were selected in a way, that ensures that governmental proposals can have a majority at the vote. It is shown in the results of two votes, when the Monitoring Committee responsible for rural development spending voted for the reallocation of some of the NRDP budget to the top-up (national part) of the direct payments.

7. Recommendations

Based on experiences from planning for the present period it is recommended to draw up a single rural development program with well-defined environmental objectives.

Using the existing network of farm advisors paid by the state as a basis, and the funding possibilities of the technical assistance measure, an effective system should to be developed for rural development. The training of both private and state paid advisors in environmental and rural development issues is essential, a national training program should be launched for this purpose, in which NGOs should be given an important role. Farmers should be reimbursed for the costs of environmental advisory services and for having an environmental management plan drawn up for his/her land.

Until the proper extension services start to operate a communications campaign is definitely needed to improve take-up in the case of certain measures, such as 'Compliance with EU standards'. The campaign might use the classical means of communications (leaflets, seminars etc.) and can be carried out by the central administration.

To identify the most effective delivery mechanisms, regional thinking is desired, with appropriate knowledge on the environmental issues of the region. This way the environmental and agricultural authorities implementing the program can take advantage of the synergic effects of using different measures for the same area to achieve the environmental objectives set.

Appropriate ways to involve stakeholders as well as the whole society in the planning process need to be worked out. These include the following:

- ensure proper balance among farming organisations, state administration and the civil sector within the monitoring committees for rural development programs,
- put the latest version of the plan on the official internet home page of the ministry,
- identify the group of stakeholders to work with on different issues, provide them with the necessary information, build up and use their capacities.

When trying to achieve environmental objectives, the selection of adequate and possibly measurable outcome indicators is of outstanding importance to run successful programs. As there are many institutional structures and operational strategies lacking for successful delivery, it is also important to include the existence of these among the indicators besides purely environmental ones.

8. Case study – Gerechát

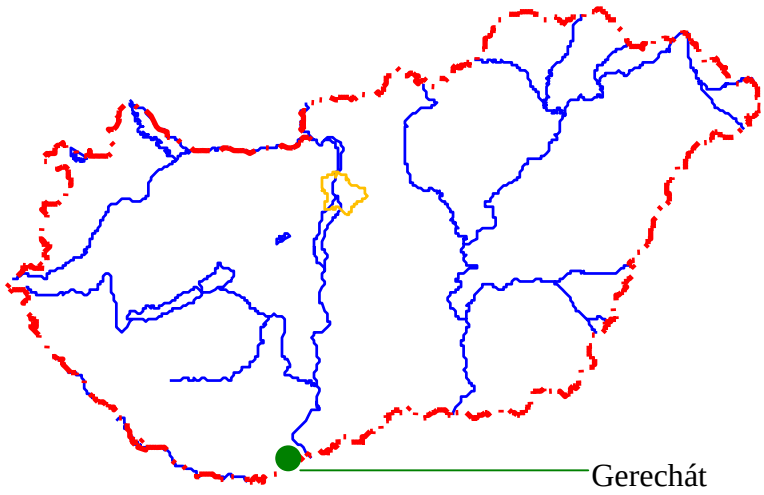
Gerechát is a natural beauty, where, despite the intensive agricultural systems operated, thousands of wild geese gather in autumn, rare songbirds nest in the reeds, and wild water-lilies flower in the wet ditches and canals.

Fig. 13. View in Gerechát **Photo: Endre Sztrelik**

8.1. Land use types in the area

The area lies on 775 ha, south-east of the town Mohács, along the very southern stretch of the Hungarian part of the Danube. It once used to be a Danube floodplain, and is enclosed by the area of the Danube-Drava National Park from all sides. Now its fields are protected from the river by dikes, but internal soil water levels still correlate to the river water levels.

Fig. 14. Location of Gerechát in Hungary



Before 1945, the area was highly dependent on the Danube: some parts of the area were flooded, and used by extensive farming methods, other parts, at higher elevations were suitable for cropping. The farm that used the area produced the following crops in its whole farm in a fairly even distribution:

Crops	
Firstly	maize, wheat, hops
secondly	oats, rye, barley, hemp
Fodder crops	
Firstly	beetroot, field-beans, mixed clover and grass, alfalfa, vetches
secondly	maize for fodder, setaria and millet

After 1945, the huge state owned farm turned all the area into intensive arable land. Large parcels for crops were formed, most of the roads, ditches, reeds and forests were eliminated (Fig.2). First the extensive, then later the intensive livestock units were abolished. Intensive cropping methods involve the use of fertilisers and pesticides. Crops produced: soybean, maize and wheat.

Fig. 1: Land use types in Gerechát in 1881

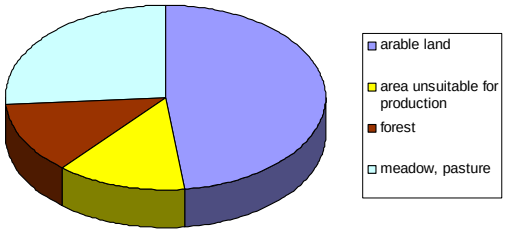
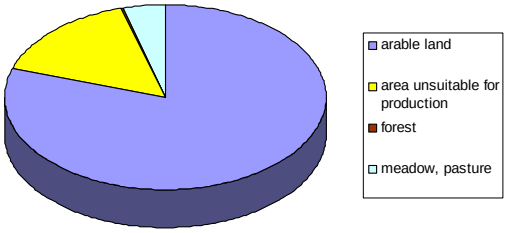


Fig. 2: Land use types in Gerechát in 2004



8.2. Property and management rights in the area

State and private farms are both found in the area. The biggest property belongs to the state owned Bóly Shareholders' Company, which acts as an integrator for many of the producers.

Most of the area is used for the production of arable crops; the reeds are mainly used and managed for hunting purposes. Besides small grasslands and forests, also used for hunting, biodiversity rich wetlands, some roads and channels are found. The most important game are wild boars (*Sus scrofa*) and red dear (*Cervus elaphus*), hunting rights belong to Gemenc Shareholders' Co. The drainage system is maintained by the local water management association, which has local farmers and agricultural companies as members. The water pump which has a deep impact on the water regime of the area is also operated by them.

8.3. Impacts of the present farming systems on the environment and biodiversity

The area is used for intensive agricultural production, which has significant impact on the natural resources and the biological diversity.

Intensive agriculture involves the use of fertilisers and pesticides. In earlier times (30-40 years ago) these chemicals were used in an excessive quantity as they were cheap and guaranteed high yields. In the 60's even DDT was used in Gerechát, the residues of which can still be found here. Some of the chemicals are leached into the soil, where they might accumulate. The soil is in connection with the living waters in the area. Moreover, when the chemicals are dispersed, there is a certain danger of drifting to high nature value areas surrounding the arable fields. Most of the chemicals significantly threaten organisms living in the water.

The drainage system operated together with the water pump is used to eliminate water from the lower parts of the arable parcels. These deeper parts usually show that formerly an oxbow, ditch or marsh had been found there. They all had their special fauna and flora in accordance with the soil type and depth. Now temporary ponds are formed here, which still have fairly diverse pond flora, water insects and sometimes even fish spawn in them. They are used by greylag geese (*Anser anser*), ferruginous ducks (*Aythya nyroca*) and lapwings (*Vanellus vanellus*) for feeding. The drainage rapidly eliminates these feeding areas.

Fig. 15. Greylag geese Photo: WWF-Canon / Fred F. Hazelhoff

The pumping of the water has other serious effects on and water quality. The water is pumped into a protected Boki oxbow, taking all the soluble agricultural chemicals there, damaging its sensitive ecosystems on the one hand. On the other hand, the water level of the oxbow is significantly risen. If this happens in early spring, the nest and/or the hatch of many waterfowl are perished. Egrets, herons, bitterns, greylag geese, ducks and black terns nest in the oxbow, they are all sensitive to the water level. There were years when 90% of the nests of greylag geese were destroyed.

The maintenance of the drainage system involves the mowing of the grass along the channels, the scouring of the main channels and the clearing of the smaller ditches from woody plants. These maintenance works cause such a disturbance that prevents the development of stable water ecosystems. It may also lead to the elimination of marginal zones which act as important green corridors.

Auditory game repellents to protect arable fields from red deer are also harmful at nesting time.

Burning the stubborn and the reed also cause significant damage to biodiversity. On the one hand, it prevents the nesting of many birds that use the old reed as nesting place (e.g. moustached warbler and bluethroat). On the other hand, it kills all the insects which the birds (e.g. tits, lesser spotted woodpeckers and bearded reedlings) could feed on.

8.4. Root causes of the environmental impacts

Most of the harmful environmental effects in the area are caused by intensive agriculture. It involves mainly crop production on large parcels but intensive game management also belongs here, as the number of game is much higher than it would ecologically be desirable (for the forests etc.). Therefore all the impacts due to the infrastructure that serves these purposes are basically related to the fact that this intensive (in terms of energy, chemicals, nutrients) way of production is still more or less viable despite the high costs. It means that the existing rural development measures still do not offer a good option for a change or at least they are not communicated convincingly enough by the government and the extension services.

8.5. The proposed land use change using rural development measures

When river basin management plans under the Water Framework Directive will be drawn up and become obligatory, the environmentally damaging practices described above will not be acceptable anymore. Intensive farming is only hardly viable here because of the high operational costs of the water pump. Therefore our proposal is to turn the arable fields into extensively used areas.

To create ecologically valuable wetlands a certain change is needed in the operation of the pump (it would become cheaper) and some earthworks should also be carried out. These costs should be financed either from the investment aid measure or the agri-environmental measure (creation of wetlands – existing scheme in the current programme).

The existing drainage system should not be eliminated, rather used as a two-way flowing channel system. By this, it can be ensured that the deeper parts of Gerechát would temporarily be covered

with water. This not only provides great opportunities for nature, but farming can also be more diverse and more viable in the long term.

In areas which are temporarily flooded, energy crops can be planted such as willow trees. These can be used either 1. (preferably) locally, in case a small-scale powerplant is built from the investment aid measure or the infrastructure measure of the EAFRD; or 2. in the huge power plant near Pécs (large city in south Transdanubia). The agri-environmental measure should include a scheme on conversion from arable land to energy plants (with the necessary restrictions on the use of chemicals, on the use of invasive plants etc.).

There are other possibilities for the diversification of farming activities, e.g. extensive livestock production, plantation of traditional orchards, beekeeping or reed management; all of them are included in the agri-environmental measure. These changes would be socially very positive, as these land uses involve a higher rate of human workforce, thus could tackle unemployment in the area.

Owing to the high biodiversity, the area should be designated as High Nature Value area, for which the agri-environmental measure provides the farmers with higher payments in case requirements are complied with.

The area should be designated as a Natura 2000 site, as well. After its management plan is drawn up (the basis of which is already carried out by a local NGO) from the relevant measure of the rural development programme, farmers could get compensation for the costs incurred and also for the income lost under the Natura 2000 measure of the EAFRD.

These positive changes definitely lead to an increased tourism potential in the area, which could involve the use of other rural development measures (e.g. diversification, infrastructure).

The whole process can only be started if the main producer in the area is ready for the change. WWF Hungary is working together with them to make this project real and create a model for all the similar areas along the Hungarian rivers.

8.6. Costs and benefits

The proposed changes would cost ca. HUF 40 million (□ 160.000), which under the present conditions of rural development payments would not be compensated. On the other hand, the currently growing amounts of direct payments provide the farmers with such a security that makes the change difficult.

However, in the long term, with the further reform of the Common Agricultural Policy, these payments will become less and rural development measures gain more respect among farmers.

The benefits of such a change for the society are obvious. It not only creates better environment and more jobs for local people, but also helps small communities develop.

9. Glossary

Abbreviations used in the text:

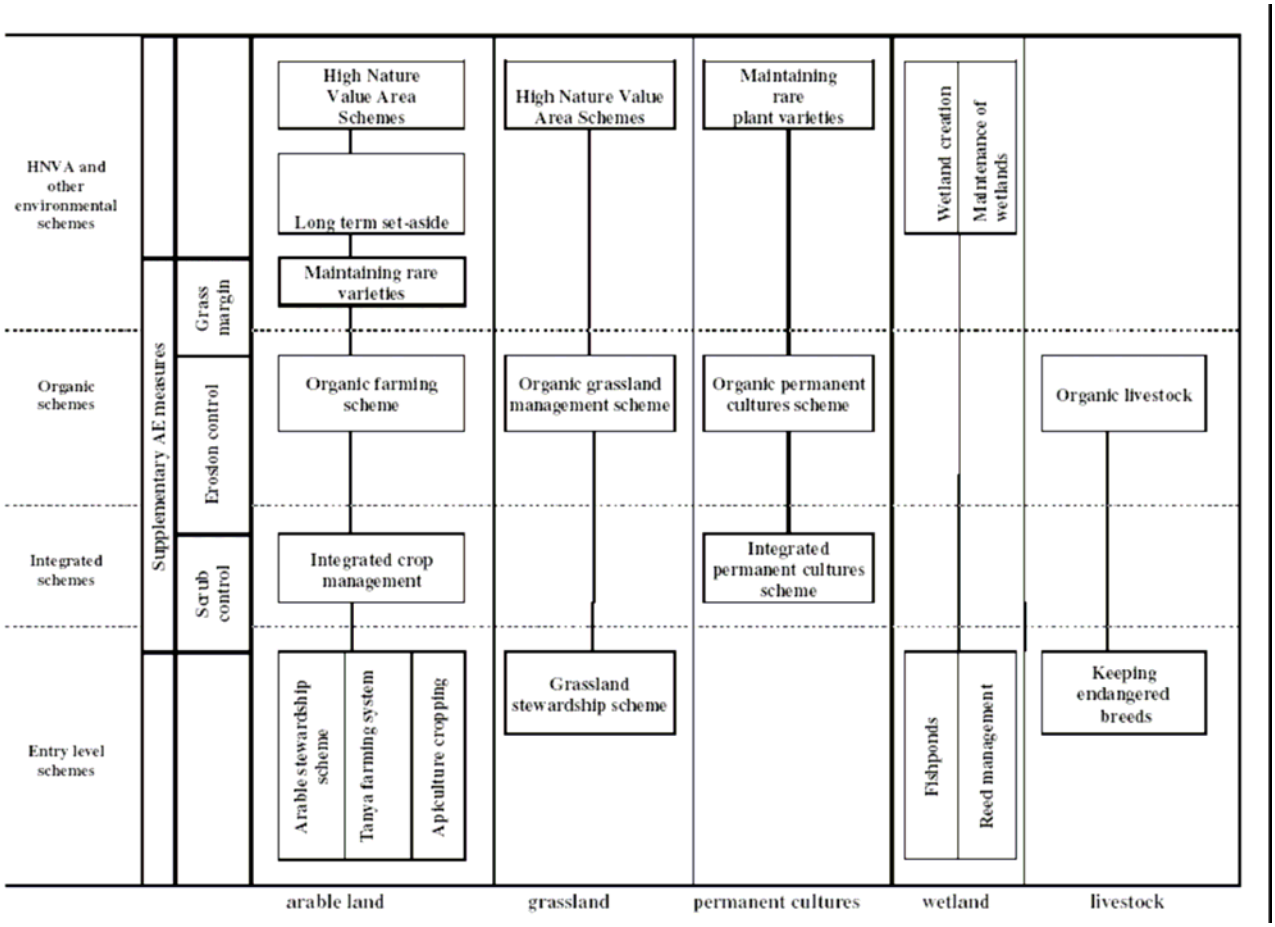
ARDOP – Agriculture and Rural Development Operational Programme

MARD – Ministry of Agriculture and Rural Development

MEW – Ministry of Environment and Water

NRDP – National Rural Development Programme

Annex 1. The system of agri-environmental programmes



Annex 2. Objectives for agri-environmental schemes

General objectives:

- · To maintain and improve the quality of environment, reduce the environmental pressure of agricultural origin;
- · To enhance agricultural practices based on the sustainable use of natural resources (biodiversity, landscape, soils and water resources and genetic diversity);
- · To change land use to correspond to agro-ecological conditions towards environmentally aware farming and sustainable landscape management;

Specific objectives:

- · to protect and improve physical, chemical and biological soil conditions
- · to preserve traditional low input farming systems and traditional landscapes
- · to provide alternative use for areas with low potential, preserve valuable grassland habitats and arable land through extensive cultivation methods or landscape management
- · on High Nature Value Areas preserving and protecting biodiversity, sensitive habitat types and specific rare species
- · provision of effective tools for the implementation of the NATURA 2000 network.

Operational objectives:

1. Entry Level Schemes

- to encourage farmers to introduce environmentally friendly farm management and maintain environmentally and culturally important low input farming systems in each agricultural land use.

2. Integrated Crop Management Schemes

- to encourage farmers to use integrated farming methods particularly by reduced and optimised use of chemicals and applying all available means of sound farming,

3. Organic Farming Schemes

- to encourage farmers to convert their production systems to organic production,

4. High Nature Value Area Schemes and environmental set-aside

- to encourage farmers to apply specific farming methods directly aiming at the conservation of important bird species and habitat development in designated areas,
- in designated zones of vulnerable freshwater aquifers the protection of long term supplies of drinking water to exclude environmental pressure from pesticides and fertilisers.

5. Supplementary Agri-environment Schemes

- encourage farmers to apply farming methods that help combating soil erosion, preserve biodiversity and landscape.

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WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption

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