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**AGRI-ENVIRONMENTAL MEASURES
EVALUATION**

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GLOSSARY

AEM	Agri-environment measure(s)
AID	General Inspection Service
CAP	Common Agricultural Policy
CBD	Convention on Biological Diversity
DLG	Government Service for Land and Water Management (<i>Dienst Landelijk Gebied</i>)
DR	National Service for the Implementation of Regulations (<i>Dienst Regelingen</i>) = NSIR
EAGGF	The European Agricultural Guidance and Guarantee Fund
EEB	the European Environmental Bureau
EC	European Commission
EU	European Union
FAO	UN Food and Agriculture Organisation
GAP	good agricultural practice
GFP	good farming practice
ha	hectare
kg	kilograms
LFA	Less Favoured Areas
LNV	Dutch Ministry of Agriculture, Nature and Food Quality
LU	Livestock Units
LUPG	Land Use Policy Group
mln.	million
MS	Member State
N	Nitrogen
N/A	not available
NI	not implemented
NGO	non-governmental organisation
NSIR	National Service for the Implementation of Regulations (<i>Dienst Regelingen</i>)
P	Phosphorous
RDP	Rural Development Plan
RDR	Rural Development Regulation
RSBP	Organic Farming Scheme (<i>Regeling Stimulering Biologische Productie</i>)
SAN	Farmland Conservation Scheme (<i>Subsidieregeling agrarisch natuurbeheer</i>)
SKAL	Foundation Hallmark for Alternative Agriculture
SZH	Foundation for Rare Domestic Breeds
WTO	World Trade Organisation

1. INVENTORY OF AGRY-ENVIRONMENT MEASURES IN THE NETHERLANDS

1.1 Terminology

Scheme: the three individual agri-environment subsidy schemes included in the Dutch Rural Development Plan (RDP).

Package: the individual agri-environment packages included in a subsidy scheme from which a land user can choose.

Designated area: the area designated for implementation of a subsidy scheme (measure) or of packages under a subsidy scheme.

1.2 Brief presentation of the schemes by type

According to those definitions the implementation of Council Regulation EC No. 1257/1999 is summarised in Table 1.

Table 1. Agri-environment schemes in the Netherlands (RDP period 2000-2006)

Scheme	Number of packages
Farmland Conservation Scheme (SAN)	41
Rare Domestic Breeds Scheme*	1
Organic Farming Scheme	2

* this scheme was co-financed by the EU before 2000, but has been continued from national budgets

Under EU Regulation 1257/99, the Netherlands has been implementing two agri-environment schemes co-financed by the EU (the Farmland Conservation Scheme and the Organic Farming Scheme) and one scheme that is nationally financed (Rare Domestic Breeds Scheme), which has been previously co-financed under Regulation 2078/92. For continuity reasons, this scheme is included in the evaluation.

In the 1990s, the Netherlands has also been introducing other agri-environment schemes under Regulation 2078/92 (demonstration projects, training courses, extensification of beef cattle, public access), but as those have not been continued or have been continued with adjusted objectives, they have not been included in this report.

In brief, the 3 schemes include the following:

- The Farmland Conservation Scheme (SAN) does not include a specific internal subdivision. In general, we can distinguish:
 - 24 packages aiming at biodiversity. These packages can be classified in the following clusters (NB: this is not a scheme classification):
 - ✦ grassland vegetation (entire fields and field margins; 10 packages)
 - ✦ grassland birds (7 packages);
 - ✦ arable land (flora and fauna, entire fields and field margins; 7 packages)
 - 14 packages for landscape elements;
 - 2 packages for farmland afforestation. As these are more or less a relict from the previous agri-environment programme under EU Regulation 2078/92 and have not been contracted under the current programme, these packages have been omitted from this evaluation;
 - 1 package for Less-Favoured Areas. As the LFA scheme is formally not an agri-environment measure, the LFA package is omitted from the evaluation.
- The Rare Domestic Breeds Scheme, including support for selected breeds.
- The Organic Farming Scheme, including 2 options:

- support for conversion to organic farming;
- support for continuation of organic farming.

The first scheme is a zonal scheme, requiring the designation of implementation areas. The second and third one are horizontal schemes.

Next to the Farmland Conservation Scheme, a subsidy scheme for nature (reserve) areas is in force. This also partly applies to farmland, but only if this land is:

- purchased by conservation organisations;
- sustainably (30 years) used as farmland with a primary conservation target.

As the main parts of this scheme are nationally financed and the majority of the area involved is not being farmland, it is not included in this evaluation.

1.3 Detailed description of the measures

1.3.1 Farmland Conservation Scheme (SAN)

The Dutch government has designated areas where farmers can conclude conservation contracts. Farmers can sign these contracts in so-called ‘management areas’ and in reserve areas as long as they are not purchased by a conservation organisation. Six year contracts can be signed on a voluntary basis in order to protect bird and/or plant life, or to create protection zones surrounding nature reserves as part of the National Ecological Network. The scheme has primarily a conservation objective; environmental targets are only secondary (‘beneficial side-effects’).

The Ministry of Agriculture, Nature and Food Quality has been allocating ‘hectare-quota’ to the 12 Dutch provinces, who are partners in the scheme. These quota have been based on:

- the national targets for certain species, groups of species and/or habitats;
- the existing contracts;
- the provincial potential for increase;
- the budgets available.

The national quatum equals 117,685 ha (Van Egmond & De Koeijer 2005). Based on their share in this quatum, the provinces have been designating areas where the scheme is in force and have been selecting packages from the national ‘menu’ that can be chosen by land users. This selection differs regionally, according to the ecological potential of the region. Some provinces have been designating relatively large areas, much larger than their hectare-quatum. Together, the provinces have been designating about 750,000 ha to contract the 117,685 ha quatum (Leneman & Graveland 2004).

Table 2 provides an overview of conservation packages available, and of their objectives. Some explanatory remarks:

- the landscape packages are a separate sub-section of the scheme, as is the LFA payment. The latter is not included in the evaluation and in most of the tables and figures presented later on;
- for most of the packages, no ‘qualitative’ objective is defined. The objectives in the second column of the table are free interpretations of the titles of the packages. Some packages include a quantitative objective in terms of plant species or bird populations. These are shown in the right column;
- if the package includes such a quantitative objective, this is also used to decide on the payment. That is to say:
 - the targets are used to assess beforehand if a package will be successful in a certain region. If an application is made, the Government Service for Land and Water Management (DLG) judges if a contract will be ‘delivering’;
 - if the target is not reached at the end of the contract period, the payment is reduced by 15% and the applicant can be forced to apply for a less ambitious package. In previous years, this ‘output-oriented’ approach was even a more leading principle,

but the European Commission has forced the Dutch government to reduce it. In all cases, the management prescriptions should be obeyed;

- for grassland birds, Dutch government wishes to enhance a more regional approach. Responding to the increase of farmers' cooperatives for nature conservation (see § 3.1), the 2000 scheme reform introduced large-scale (> 100 ha) packages for grassland birds. These packages include a mixture of 'light green' and 'dark green' protection measures, including options (such as nest protection) an individual farmer is not able to choose.

Table 2. The Farmland Conservation Scheme: (clusters of) packages* and their targets

Cluster and number of packages	Overall target	Specific target
Biodiversity		
1. Grassland vegetation (entire field) (6)	Development or maintenance of species-rich grasslands	Minimum of .. native species per 25 m ² **
2. Grassland vegetation (fields margins) (3)	Idem	Minimum of .. native species per 25 m ²
3. Grassland vegetation (1)	Maintenance of scenic value	--
4. Grassland birds:	Maintenance of bird populations	
a. postponed mowing (1)		--
b. postponed mowing (strips) (1)		--
c. temporary wetland conditions (1)		--
d. regional mosaic of measures (4):		Minimum of .. breeding birds per 100 ha
– nest protection		
– postponed mowing (entire fields and strips)		
5. Arable flora (entire field) (3)	Development or maintenance of species-rich arable fields	Minimum of .. native species per 25 m ²
6. Arable fauna (entire field) (1)	Development or maintenance of species-rich arable fields	Minimum of .. native species per 25 m ²
7. Arable flora (field margins) (1)	Development or maintenance of species-rich arable fields	Minimum of .. native species per 25 m ²
8. Arable fauna (field margins) (1)	Development or maintenance of species-rich arable fields	--
9. Arable fauna (hamster) (1)	Maintenance of regional hamster populations	--
Landscape (elements)		
1. Wooded banks and belts, coppice woods, timber lots, hedges, hedgerows (9)	Maintenance and active management	--
2. Pollard trees, fruit trees etc. (2)	Idem	--
3. Ponds (1)	Idem	--
4. Duck decoy (1)	Idem	--
5. Reed (fields, banks) (1)	Idem	--
6. Fence	(accompanying package)	--

* The packages for Less-Favoured Areas and for farmland afforestation have been omitted

** This numbers vary along the packages (from relatively low to relatively high)

1.3.2 Organic Farming Scheme

In 2004, the scheme consisted of two sections: *conversion* to and *continuation* of organic farming. The scheme is open to arable farming, horticulture in the open air (including fodder crops), horticulture under glass and fruit farming. Natural (not-improved, low-productive) grassland is not eligible, as are arable field margins under the Farmland Conservation Scheme.

The payment for *conversion* is €147,40 per ha per year for arable crops, hazel and vegetables, and €884,80 per ha per year for other fruit farming. For the 5-year period, there is a ceiling of €

181.500,- per farm. The payment is based on the loss of income resulting from the two-year 'waiting period', the time between the introduction of organic farming practices and the moment the produce can be sold under the organic label as laid down in Regulation 2092/91. The payment levels 65% of the total estimated income lost during those years, and is spread out over a five-year period.

The subsidy for *continuation* of organic farming is €136,20 per ha per year, no matter the crops involved, with a maximum (for the 5-year period) of €22.789,- per farm.

To receive payment, farmers should meet the following conditions (among others):

- farmers should be registered at SKAL (Foundation Hallmark for Alternative Agriculture);
- the production branch involved should be entirely converted;
- farmers should continue producing organically on the area involved for at least 5 years after payment;
- the application must involve a subsidy of at least €4.534,-.

1.3.3 Rare domestic breeds scheme

This scheme has been open only twice: in 1998 (co-financed by the EU) and in 2002 (from national budgets). The following breeds have been included (not translated):

- Cattle: Fries roodbont, Blaarkop, Lakenvelder, Brandrode rund (only in 2002).
- Horses: Gelders paard, Groninger paard.
- Goats: Nederlandse landgeit (only in 1998).
- Sheep: Mergellandschaap, Kempisch heideschaap, Veluws heideschaap, Schoonebeeker, Drents heideschaap.

The subsidy is €120,- per year per livestock unit (LU) of rare breeds. This is calculated as follows:

- adult cattle and horses older than half a year count as 1.0 LU;
- cattle between 0.5 and 2 years count as 0.5 LU;
- sheep count as 0.15 LU.

The subsidy continues for 5 years. During this period, the applicant must keep these animals, or an equivalent, under his management.

To be eligible for support, the national population of the breed must be less than 1.500 female animals for cattle, horses and goats, and 2,000 for sheep. These numbers are based on the minimum numbers to be maintained in order to keep the population out of the critical zone, including a safety margin of 500 animals. As soon as a population exceeds this number, the breed is omitted from the scheme. This happened to the goat breed included in the scheme in 1998.

Contrary to many other member states, the Netherlands have not been aiming at structural support for rare breeds. As many of the animals are kept in a hobby-like environment and - because of low revenues - not widespread on professional farms, the government has chosen to provide all interested holders with a one-time 'recognition' payment for a 5-year period. For this reason, the scheme will not be continued after the last (2002) subsidy round. The government is now considering other options (e.g. on project basis) to support rare breeds.

2. TYPOLOGIES OF ACTIONS AND MEASURES

Table 3 outlines a typology based on the environmental issues that the (categories of) activities address. This table provides a general overview of (intentional and unintentional) scheme effects that will be described and explained in more detail in the part on environmental evaluation questions (chapter 4, questions 1-7). An important remark beforehand is that the Netherlands have not been defining:

- environmental objectives and packages for its farmland conservation scheme (while other member states have been introducing measures for water quality etc.). The reasons are that the Dutch government is of the opinion that part of the actions required are already part of Dutch environmental legislation and another part lies within the responsibility of the farmers themselves (Polluter Pays Principle). As a result, the scheme's objectives are purely biodiversity ones;
- concrete environmental objectives for its Organic farming scheme.

Table 3. Dutch agri-environment measures and the environmental targets they address

	Flora & fauna	Habitats	Landscape	Genetic diversity	Water quality	Water quantity	Soil	Air	Energy
Farmland conservation scheme									
a. botanical grassland management	+	(+)	(+)	o	(+)	o	o	o	(+)
b. grassland birds:									
- nest protection	+	o	o	o	o	o	o	o	o
- postponed mowing	+	(+)	(+)	o	o	o	o	o	o
- temporary wetland conditions	+	(+)	(+)	o	o	o	(-)	o	o
c. arable flora	+	(+)	(+)	o	(+)	o	o	o	(+)
d. arable fauna	+	(+)	o	o	(+)	o	o	o	(+)
e. landscape elements	(+)	+	+	o	o	o	o	o	o
Rare breeds scheme	o	o	(+)	+	o	o	o	o	o
Organic farming scheme	(+)	(+)	(+)	o	+	o	+	+/-	+/-

Legend: + / - direct or intentional positive / negative effect
 (+) / (-) indirect or unintentional positive / negative effect
 o indifferent

Source: interpretation by Paul Terwan research & consultancy

Table 4 includes a classification of Dutch agri-environment measures into 'light green' (modest environmental contribution) and 'dark green' (substantial environmental contribution). For the Farmland conservation scheme, this has been done in two ways: for the actual contracted area and for the budgetary area the Ministry uses for policy evaluations. This distinction has to do with the substantial differences in 'budget share' between scheme packages, especially concerning the nest protection part of the regional bird protection packages (also see table 2 in chapter 1 and table 5 in § 3.4). We will come back to table 4 in the actual evaluation paragraphs in chapter 4.

Table 4. Division of the Dutch agri-environment measures in ‘light green’ and ‘dark green’ ones (excl. LFA contracts)

Cluster of packages	Budgetary area (ha)		Actual area (ha)	
	Light green	Dark green	Light green	Dark green
Biodiversity				
- Grassland vegetation (entire field)	--	13,448	--	13,448
- Grassland vegetation (fields margins)	--	2,236	--	2,236
- Grassland landscape	2,185	--	2,185	--
- Grassland birds:				
a. postponed mowing 23 May	1,440	--	2,880	--
b. postponed mowing 1-22 June	--	23,750	--	23,968
c. nest protection	5,605	--	78,970	--
d. temporary wetland conditions	--	16	--	16
- Arable flora/fauna (entire field)	--	1,664	--	1,664
- Arable flora/fauna (margins)	--	1,516	--	1,516
Old scheme contracts	--	3,293	--	3,293
Sub-total biodiversity measures	9,230	45,923	84,035	46,141
Landscape elements	--	6,467	--	6,467
Farmland Conservation Scheme (total)	9,230	52,390	84,035	52,608
Organic farming (conversion)	--	16,508	--	16,508
Organic farming (continuation)	--	13,768	--	13,768
Total	9,230	82,666	84,035	82,884

Source: interpretation by Paul Terwan research & consultancy

3. CONTEXT OF IMPLEMENTATION OF THE AEM: THE DUTCH AEM SCHEME

3.1 History of AEM implementation in the Netherlands

Farmland Conservation Scheme

The Farmland Conservation Scheme (SAN) originates from the 1975 Relation Paper (on the relation between agriculture and the conservation of nature and landscape) and has been adjusted several times. The first agreement was signed in 1981. The Regulation was originally financed nationally and was brought under EC co-financing in 1991 (Article 19 of Regulation 979/91, later 2328/91). In 1993, an adjusted programme to meet the requirements of Regulation 2078/92 was approved by the Commission.

In 2000, after a three-year preparation period, the scheme was substantially changed. The revised scheme was then brought under EU regulation 1257/99 under the umbrella of the Dutch RDP.

Since the early 1990s, farmers started to organise themselves in regional cooperatives for nature conservation. This new phenomenon, relatively rare in a European context, expanded rapidly. In 2004, an estimation of their importance (Oerlemans et al. 2004) learned:

- there are about 125 of these regional cooperatives. They are roughly situated in and around the areas where the farmland conservation scheme (SAN) is in force;
- they represent more than 9,000 farmers or about 10% of all Dutch farmers;
- they cover an area of about 1 million hectares, or 50% of all Dutch farmland. Their size varies from 200 ha to over 40,000 ha;
- many of them have the legal form of an association (with members), some form a foundation.

Many cooperatives also welcome citizens as a member. Under the Farmland Conservation Scheme (SAN), many cooperatives function as a collective applicant and receive the grant decision from the National Service for the Implementation of Regulations. The actual payments, however, are made to the individual farmers, as the cooperatives are not recognised as final beneficiaries under EU Regulation 1257/99. Almost all of the 91,500 ha of the large-scale regional contracts for grassland birds (table A2) are applied for by these cooperatives, together with a number of small-scale (individual) contracts included in the collective application.

The cooperatives have their own umbrella organisation, which is merely independent (only slightly tied to) the National Farmers Union.

Rare Domestic Breeds Scheme

This scheme has been prepared from 1992 on and is based on the Rio Convention on Biological Diversity (1992). The first scheme was brought under EU Regulation 2078/92. However, the first application period was only in 1998. The second application period followed in 2002, but at that time the scheme was no longer brought under EU co-finance.

Organic Farming Scheme

The organic farming scheme was introduced by the Dutch government in 1994. The scheme originally only covered arable farming. An additional part for livestock farming (fodder crops) was introduced in 1996. The scheme was revised again (payment levels, farm ceilings, possibilities for starting farms) in 1999

3.2 Main target of the AEM of the RDR in the Netherlands

As stated before (chapter 2), the Netherlands has not been defining specific agri-environment objectives. Two of the six priority objectives of the Dutch Rural Development Plan (RDP) can be classified as such:

- development of sustainable farming;
- increasing the quality of nature and landscape.

The Organic Farming Scheme is mainly contributing to the first objective, while the Farmland Conservation Scheme (not including environmental objectives) mainly contributes to the second. The Rare Breeds Scheme indirectly contributes to the second objective, if we broaden 'nature' to 'biodiversity'.

Quantitative targets

The Dutch government has not been specifying quantitative targets (participants, areas, budgets) for the RDP period 2000-2006. The situation is as follows:

- for the Farmland Conservation Scheme, the number of participants is no longer officially monitored since the introduction of the large-scale 'collective' packages in the new (2000) scheme. The expectation of the additionally contracted area and the budget available is included in the Ministry's yearly budget publication (table 5);
- the Organic Farming Scheme has no quantitative yearly targets, only a budget reservation. Due to differences in budget estimation techniques, these are not very well comparable between the years. The scheme is supposed to contribute to the national (broader) target of realising 10% organic farmland by 2010.

Table 5. Farmland Conservation Scheme: estimated area and budgets

year	Estimated area (ha)	Estimated budget (mln. €)
2002	63,000	34.3
2004	62,000	49.6
2005	85,500	56.7
2006	90,000	60.0

Source: yearly budgets of the Ministry of Agriculture, Nature and Food Quality

The more specific targets of the schemes and packages included, are described in § 1.3 and chapter 2.

3.3 The organisation of the implementation at national and regional level

3.3.1 Organisation and control

Overall organisation and control

For the overall control on the Dutch RDP, including the agri-environment part, the RDP Control Agency (*Regiebureau POP*) has been established. The staff and finance are provided by both the national government and the twelve Dutch provinces. The RDP Control Agency's tasks are:

- Supervising the implementation
- Altering the RDP
- Implementing accompanying programmes
- Evaluation of the RDP
- Allocating budgets
- Regular reporting
- Organising the meetings of the Monitoring Committee.

Agri-environment Schemes

All three agri-environment schemes are executed by the National Service on the Implementation of Regulations (NSIR; Dienst Regelingen), one of the two Dutch Paying Agencies. Other government and NGO parties involved are:

- for the Farmland Conservation Scheme:
 - the Ministry of Agriculture (Nature Conservation Directorate) allocates the area-quota to the 12 provinces;
 - the provinces designate appropriate areas and allocate the several management packages;
 - the Government Service for Land and Water Management (DLG) assesses the applications received and controls the compliance to the scheme obligations;
- for the Rare Breeds Scheme: during the first (1998) application period, the NGO Foundation for Rare Domestic Breeds was responsible for scheme control. During the second (2002) application period, this task was shifted to the governmental General Inspection Service (AID);
- for the Organic Farming Scheme, the control lies with the Ministry's General Inspectorate (AID).

3.3.2 Monitoring

The Farmland Conservation Scheme is being monitored in the following way:

- monitoring takes place in terms of hectares of the different types of biodiversity the packages are aiming at (National Service for the Implementation of Regulations, Dienst Regelingen);
- in case the package includes a quantitative target, monitoring takes place to judge whether the target has been realised (Government Service for Land and Water Management, DLG);
- there is no systematic monitoring of biodiversity effects of the scheme. The overall monitoring programme intended at the start of the scheme in 2000, is not yet operational.

The Rare Domestic Breeds Scheme is monitored as the number of granted animals is concerned. These numbers are compared to the database on rare domestic breeds (FAO and Foundation on Rare Domestic Breeds) to judge whether there is any influence on national populations, or whether a population has increased in such way that it is no longer eligible under the scheme.

The Organic Farming Scheme is only monitored as to the number of farms and areas involved (scheme statistics).

3.3.3 Level of development of the good agricultural practice documentation

The Dutch government has decided to define Good Agricultural Practice in terms of maximum compliance to legal requirements. For this reason, there are no additional GAP obligations to farmers. Or the other way round: every environmental service exceeding legal requirements can be paid for. However, the discussion on GAP levels is still continuing. The compliance with GAP is monitored by the Ministry's General Inspectorate, which is fully equipped to enforce legal obligations.

Annex 4 of the Dutch Rural Development Plan includes the types of legislation relevant to all RDP measures and schemes:

- on manure and fertilisers (application rates, application periods, application methods, application on slopes and on frozen or snow-covered land, storage);
- on pesticide use (pesticides permitted, use in specific circumstances, e.g. in areas with special environmental protection);
- on animal health and animal welfare;
- on biodiversity (especially Flora and Fauna Act);
- on spatial planning and settlement of farms;
- on sprinkling;
- on waste disposal and surface waters.

The annex describes the elements of legislation included in Good Agricultural Practice. The focus is on the application of manure and fertilisers, related to the EU Nitrates Directive.

There is no booklet of other written information to communicate the exact content of GAP to farmers, as they are supposed to be aware of legislation relevant to their sector.

3.4 The level of implementation of the measures

3.4.1 Farmland Conservation Scheme (SAN)

Table 6. Development of the uptake of the Farmland Conservation Scheme from 1996 to 2004 (excluding LFA payments and landscape packages)

	Area (ha) under old scheme	Area (ha) under new scheme*		Total area (ha)	
		actual	budgetary	actual	budgetary
1996	43,320	--	--	43,320	43,320
1999	71,578	--	--	71,578	71,578
2003	20,267	65,711	36,469	85,978	56,736
2004	3,293	126,883	51,885	130,176	55,178

* the division between actual and budgetary area was introduced with the scheme review in 2000, introducing a number of regional (large-scale) packages including a mixture of different conservation measures. These hectares count – with an eye to the agreed policy targets and budgets – only as parts of hectares

Sources: National Service for the Implementation of Regulations (DR) and Government Service for Land and Water Management (DLG)

As shown in tables 6, 7 and 8:

- the total actual uptake is now just over 130,000 ha, with the old scheme fading out and the new (2000) scheme still increasing. In budgetary (policy) hectares, the uptake is around 55,000 ha. These figures are without LFA and afforestation hectares;
- there has been a serious ‘fade out - fade in’ problem with the transition from the old to the new scheme. In the first few years of the new scheme, many old participants were reluctant to join the new scheme, thus causing a serious continuity risk. Only thanks to intensified DLG intervention, motivating farmers to join the new scheme, a higher uptake rate from previous participants has been realised;
- there is a dominating (97,5%) focus on grassland, especially on grassland bird management (83%). Because there is a large share (72%) of only one light-green measure (nest protection), in policy terms not counting as ‘full’ hectares, the grassland bird focus is considerably lower (around 45%) when we look at the budgetary areas;
- the landscape packages were covering almost 6,500 ha, with a strong accent on ‘woody’ elements.

The total number of scheme beneficiaries was 12.500 in 2004.

Table 7. Breakdown of the participation in biodiversity packages in 2004 under the new scheme (actual contracted area), excluding LFA scheme and landscape packages

Type of contract	Area (ha)	Share of total area (%)
Grassland		
a. botanical management	15,520	12
b. field margins	2,236	2
c. grassland birds:		
- postponed mowing (individual)	14,471	11
- temporary unmown strips	19	0,01
- temporary wetland in spring	16	0,01
- collective (regional) contracts	91,441	72
Arable land		
a. whole-field management	1,627	1
b. field margins (flora and fauna)	1,516	1
c. hamster conservation (regional)	37	0,02
	126,883	100

Source: National Service for the Implementation of Regulations, Roermond

Table 8. Breakdown of the contracts for landscape features in 2004

Type of contract	Number, length, area	All converted to area (ha)	Share of total area (%)
Woody elements			
- wooded banks, coppice woods, timber lots, etc.	679 ha	679	10
- wooded belts, hedges, hedgerows	1,803 km	4,507	70
- pollard trees, fruit trees / orchards	125,149	835	13
Wet(land) elements			
- ponds	1,978	396	6
- duck decoy	25 ha	25	0,5
- reed (fields, banks)	25 ha	25	0,5
Fences	2,258 km	--	--
Total		6,467	100

Source: National Service for the Implementation of Regulations, Roermond

3.4.2 Rare Domestic Breeds Scheme

Table 9. Applications granted for rare domestic breeds in 1998 and 2002, and animals, livestock units (LU) and budgets involved

	1998				2002			
	Appli- cations	Ani- mals	LU	Budget (€x 1,000)	Appli- cations	Ani- mals	LU	Budget (€x 1,000)
Cattle								
Fries roodbont	2	36	28	37	n.a.	40	35	21
Blaarkop	28	1.033	799	1,059	n.a.	373	322	194
Lakenvelder	50	300	236	313	n.a.	441	377	227
Brandrode rund	--	--	--	--	n.a.	128	115	69
Horses								
Gelders paard	23	59	59	78	n.a.	212	212	127
Groninger paard	5	13	8	11	n.a.	123	122	73
Goats								
Nederlandse landgeit	6	71	9	12	n.a.	--	--	--
Sheep								
Mergellandschaap	2	373	56	74	n.a.	419	63	38
Kempisch heideschaap	2	705	54	72	n.a.	1,045	157	94
Veluws heideschaap	0	0	0	0	n.a.	433	65	39
Schoonebeeker	3	273	6	8	n.a.	744	112	67
Drents heideschaap	5	147	20	27	n.a.	804	121	73
Total	126	3,010	1,275	1,689	320	4,762	1,699	1,022

Sources: Van Kerkhof & Van Bodegraven (2000) (1998 figures) and Ministry of Agriculture, Nature and Food Quality (2002 figures).

For the 1998 application period, a budget of €149.750,- per year was reserved. Over the 5-year contract period, a budget of €766.600,- has been paid to 110 granted applications. There was much more interest in the scheme, but due to budget restrictions, 106 applications worth €441.500,- were rejected (Van Kerkhof & Van Bodegraven 2000).

Table 9 shows that in 1998 over 80% of the budget is allocated to cattle and even 61% to one breed (Blaarkop). Although the 1998 scheme has been supporting about one-third of the Dutch population of the breeds involved, only 10% of the potential applicants has been reached (Van Kerkhof & Van Bodegraven 2000).

During the 2002 application period, 380 applications have been made for a total of 6.724 animals. To enhance a better balance between the breeds, a ceiling of 30 subsidised livestock units per breed per applicant was introduced. Because the budget applied for exceeded the available budget of €907.560,-, but the Ministry wished to 'serve' as many potential applicants as possible, the budget has been raised by 35% to a maximum of €1,225,133,-. Eventually, 320 applications of 305 applicants were approved, involving 4,762 animals and €1,021,463,- (for 5 years). Due to the ceiling per breed, there now is much more balance between the breeds.

3.4.3 Organic Farming Scheme

Since its introduction in 1994, the Organic farming Scheme has been supporting 610 converting farms, covering an area of 16,508 ha, and 629 existing farms totalling 13,768 ha (table 10). The total budget spent from 1994 to 2004 (11 years) is around €28 mln.

The statistics on organic farming in the Netherlands (*EKO-Monitor* 2005) show a number of 1,469 organic farms in 2004, covering 48,155 ha. This equals 1.75% of all Dutch farms and 2.4% of the total agricultural area. This would mean that the Organic Farming Scheme has been supporting about 40% of the converting farms and one-third of the converted area. More than half of the conversion support and an even larger share of the continuation support concerned fodder crops (tables 11 and 12; Arendse et al. 2002).

Table 10. Granted applications for conversion to and continuation of organic farming, and areas and budgets involved, between 1994 and 2004

	conversion		continuation		total		
	Applications	Area (ha)	Applications	Area (ha)	Applications	Area (ha)	Budget (mln €)
1994	9	132	111	1,425	120	1,557	1.2
1995	4	21	4	186	8	207	0.2
1996	5	102	16	230	21	332	0.3
1997	9	121	123	2,905	132	3,026	2.3
1998	12	222	74	1,816	86	2,038	1.6
1999	48	2,005	36	711	84	2,716	7.7
2000	254	6,647	160	4,566	314	11,213	7.7
2001	127	3,994	50	926	177	4,920	2.8
2002	92	2,145	29	534	121	2,679	1.8
2003	0	0	0	0	0	0	0
2004	50	1,119	26	469	76	1,588	2.5
Total	610	16,508	629	13,768	1,239	30,276	27.9

Sources: Arendse et al. (2002), Taen et al. (2004), Ministry of Agriculture, Nature and Food Quality (written communication)

Table 11. Breakdown of the converted area (ha) according to the crops involved between 1994 and 2004

crop	1994-1999	2000-2004	Total
Arable crops	1,677	4,003	5,680
Fodder crops	--	9,054	9,054
Vegetables	--	319	319
Horticulture open air	703	309	1,012
Horticulture under glass	4	22	26
Fruit	228	187	415
Hazel	--	1	1
Blackcurrant / sour cherry	--	8	8
	2,612	13,903	16,515

Sources: Arendse et al. (2002); Ministry of Agriculture, Nature and Food Quality (written communication)

Table 12. Breakdown of the sustained organic area (ha) according to the crops involved in 2000 and 2001

crop	Area (ha)	Share (%)
Arable crops	405	7
Fodder crops	4,871	89
Vegetables	74	1
Horticulture open air	93	2
Horticulture under glass	2	0,1
Fruit	30	0,5
	5,475	100

Source: Arendse et al. (2002)

As shown in table 10, there was an application peak in the period 1999-2001. This was mainly caused by the fact that an increase in payment levels has been in discussion for several years, causing postponing of applications until this policy adjustment was realised.

In 2006, the RSBP scheme will be replaced by a new scheme. This will no longer include conversion payments, but focus on continuation payments according to the organic area under the umbrella of so-called ‘green’ or ‘environmental’ services. The Ministry decided so for the following reasons:

- conversion support appears to have played a rather marginal role in the decision to convert the farm; market incentives and prospects are far more important;
- supporting the suppliers may have the risk of creating overproduction.

The scheme will be simple and will require lower administration costs than the previous schemes (*Beleidsnota Biologische Landbouw 2005-2007*, 2004). For the period 2005-2007, about €4 mln. will be available for continuation payments.

4. ANSWERS TO EVALUATION QUESTIONS

4.1 Theme n° 1: Environmental impacts of agri-environmental measures - Sub-theme n° 1: biodiversity

Preliminary remarks

In order to judge the environmental effects of the agri-environment measures involved, it is often hard to assess the concrete effects on land use. For example:

- in case of the Farmland Conservation Scheme, the scheme content has a direct effect on land use, except when the land user does not have to change anything because he is already farming in compliance with the scheme obligations. Under the Dutch circumstances, this is only the case for a minority of the participants;
- in case of the Organic Farming Scheme (RSBP), the scheme itself is only stimulating farmers to convert to organic farming or to continue to farm organically. The effect is then twofold:
 - the effect of the scheme on the decision to convert. Evaluations show that the scheme influence is only limited here;
 - the environmental effects of organic farming as such. If the decision to convert is only partially a scheme effect, the environmental effects of organic farming can only partially be contributed to the scheme.

In this evaluation we describe the environmental effects of farmland conservation and organic farming as if they were scheme effects. However, the reader should bear in mind the previous remarks.

The Netherlands has not been elaborating and implementing an agri-environment programme like some other member states have. The three schemes included in this evaluation are relatively separate schemes, operated by separate divisions of the National Service for the Implementation of Regulations and co-ordinated by separate policy divisions within the Ministry of Agriculture. Two of the schemes have been brought under EU co-finance in the Dutch Rural Development Plan under the chapter agri-environment measures. For this reason, we cannot always treat the schemes as a coherent cluster of agri-environment measures.

In 2000, the Farmland Conservation Scheme, consuming about 90% of the total agri-environment budget, has been drastically changed. Since that year, contracts under the old scheme are slowly fading out, the last contracts being transferred to the new scheme by 2007. As the old and the new scheme have different administrators and the scheme packages are hard to compare, the old scheme is only included in this evaluation as it comes to the total area involved (§ 3.4.1). Evaluation questions requiring analysis or interpretation of the scheme (such as those in § 4.1 to 4.3) have been based on the new scheme only.

In case of the new Farmland Conservation Scheme, the 2004 uptake statistics have been used in order to be as 'updated' as possible, especially as the area involved is increasing rapidly, partly due to transfers from the old scheme (see point 3). In case of budgets spent, however, the 2004 spending (€25.8 mln.) relates to the 2003 contracts. As a result, the uptake and budget cannot be related 1:1. Absolute figures on budget shares of packages under this scheme (§ 4.1 - 4.3) have no relation with the areas involved. In § 4.4.2 (table 23), we estimate the budget for the 2004 contracts under this scheme, using the 2003 average ha-payment. However, the resulting estimate of €38.6 mln. cannot be used for analysis because of lack of a financial breakdown per scheme package.

4.1.1 Q 1: To what extent has biodiversity (species richness) been maintained or enhanced by agri-environmental measures ?

➤ **Criterion 1. The environmental issues at stake were defined as a preliminary by the member state**

Of the three agri-environment measures involved in this evaluation, only the Farmland Conservation Scheme (SAN) is aiming at biodiversity (flora and fauna). However, also the Organic Farming Scheme has biodiversity side-effects (see table 3 in chapter 2).

The Netherlands has not been defining biodiversity targets for the Farmland Conservation Scheme as such. There is only a scheme area target (117,000 ha for the time being) and there is a national (area) target breakdown in slightly more detail from the policy paper *Natuur voor mensen, mensen voor natuur* (2000), reflected in table 13. These policy targets are national ones and are not related to the Farmland Conservation Scheme. For this reason, they are not very adequate for a policy evaluation.

A number a scheme packages include specific biodiversity targets in terms of numbers of plant species or nesting birds (see table 2).

Table 13. Farmland Conservation Scheme: contracted area (budgetary area, new scheme) versus policy targets, excluding LFA scheme and landscape packages

Type of contract	Policy target (ha)*	Contracted area (ha) (budgetary)
Grassland		
a. botanical management (entire fields)	20,000	17,756
b. grassland birds:		
- non-critical species	70,000	13,922
- critical species	50,000	17,007
Arable land	n.a.	3,180
Total	140,000	51,865

Source: *Natuur voor mensen, mensen voor natuur* (2000)

* Note: these targets are national ones and not defined for the Farmland Conservation Scheme as such

➤ **Criterion 2. Biodiversity is taken into account in the catalogues of measures proposed in the member state**

In this respect, only the Farmland Conservation scheme is relevant. Except for the LFA package (excluded from this evaluation anyway) and for the landscape elements, all scheme packages are aiming at flora and fauna; also see table 2 in chapter 1. This means that 24 scheme packages are targeting at biodiversity and about 95% of the total contracted area is covered by contracts aiming at maintenance or improvement of (conditions for) flora and fauna (see criterion 3).

➤ **Criterion 3. Level of implementation**

In 2004, a total of 126,883 ha was actually contracted under biodiversity packages. This equals 95% of the total scheme area (table 14) and 6% of all Dutch farmland. A budget of €24.1 mln. was involved, equalling 85% of the total agri-environment budget.

The uptake statistics show a strong accent on grassland birds (tables 4 and 7). Although this corresponds to the importance of the Netherlands for this group of species, arable biodiversity seems to be somewhat under-represented. For arable biodiversity, no policy targets have been defined (table 13).

The share of contracted land within Natura 2000 areas is relatively low (no statistics are available here), as in the Netherlands Natura 2000 hardly includes farmland.

Table 14. Farmland Conservation Scheme: Implementation and share of biodiversity packages (situation 2004)

	Conservation of farmland biodiversity
Total contracted area (actual ha)	126,883
Proportion of total AE budget spent (%)*	85%
Proportion of 'dark green' measures (% of area contracted)	36%
Proportion of all farmland (%)	6

* figure based on the spending in 2004, concerning the 2003 contracts

Source: National Service for the Implementation of Regulations

To which extent have the policy targets been realised?

The policy target for the Farmland Conservation Scheme (117,000 ha) is defined in 'budgetary' hectares and includes LFA hectares. If we add the 15,568 LFA hectares to the 55,178 'budgetary' scheme hectares, the total of 70,746 ha cover 60% of the 117.000 ha policy target. This is a relatively high uptake, also due to the long scheme existence (since the early 1980s). Since the introduction of a drastically revised scheme in 2000, scheme uptake has been developing as follows:

- a decline in contracts under the old scheme not being continued under the new scheme. Due to this factor, scheme uptake in terms of budgetary hectares has been increasing not as strongly as the Ministry was aiming at. In other words, the net area of 'dark green' management (especially postponed mowing) has hardly been increasing;
- a strong increase in 'light green' management in the context of regional (> 100 ha) management mosaics.

Balance between 'light green' and 'dark green' measures

To judge the share of 'light green' and 'dark green' scheme content, the complex difference between budgetary (policy) hectares and actually contracted hectares is relevant (see table 4 in chapter 2):

- of the budgetary contracted area, about 15% can be classified being 'light green' and 85% being 'dark green';
- the actual contracted area shows a quite different picture: about 60% of the area can be classified 'light green', about 40% 'dark green'. This is caused by the large area under nest protection, an option open to farmers applying for the large-scale regional packages.

A 'mosaic' of light and dark green measures has been actively advocated for grassland bird conservation. If we look at the share of dark green packages in the total area under grassland bird contracts (23% according to table 4: 23,984 ha out of 105,834 ha), it is argued that this might be insufficient to safeguard bird populations. We will come back to this later.

➤ **Criterion 4. These measures are implemented mainly in areas with a corresponding environmental problem**

The 12 Dutch provinces designate the areas for the implementation of the Farmland Conservation Scheme and decide which of the 38 packages can be chosen. In this way, a rather selective implementation is possible. In practice, the situation is as follows:

- the 'important grassland bird areas' are estimated to cover approximately 750,000 ha. This area is much larger than can be covered by the scheme;
- on the other hand, research shows that most of the grassland bird contracts are situated in these important bird areas. However, within these areas they are not always situated on the right fields (see criterion 9: research findings);
- for grassland vegetation and arable flora and fauna, the focus is much more on development than on conservation (as with grassland birds), and the environmental problem (or rather: biodiversity perspective) is not always taken into account.

➤ **Criterion 5. The appropriate areas were identified in advance by the member state**

The designation of areas for the Farmland Conservation Scheme started already in 1977 with a solid inventory of ‘priority areas’. The current designation still builds on this first inventory. The provinces have some freedom to apply their own designation policy. In practice, there are roughly two approaches:

- regional fine-tuning by using regional ecological monitoring data to decide on the designation;
- designating relatively large areas (with a smaller hectare-quotum) as to serve as many motivated participants as possible.

Both approaches have their pros and cons. In practice, however, as it comes to grassland birds, most of the contracts are situated in the appropriate areas. Also see criteria 4 and 9.

➤ **Criterion 6. The measures represent a change of practice or the maintenance of practices which encourage common biodiversity**

As land use in the Netherlands is relatively intensive in the European context, many of the measures represent a change in land use, especially the contracts requiring postponement of mowing dates and reducing or avoiding the use of fertilisers and/or pesticides. However, there is continuing debate on the cases where contracts are relatively easily applied, for example in cases where land use is already extensive because of traditional farming practices (e.g. by older farmers) or because of tenancy restrictions (e.g. in nature reserve areas). Nevertheless, in these cases the scheme contributes to the continuation of these practices.

➤ **Criterion 7. The first controls on the measure suggest that the implementation corresponds well with what was agreed**

According to the control visits, the compliance to the scheme rules is good – generally speaking. Each year, a limited number of warnings or penalties is given to the participants, especially for mowing before the allowed date.

The continuation of scheme participation is relatively good. Except for the scheme transition from 2000 on, the share of scheme terminations at the end of the contract periods lies within a range of 1-2%.

➤ **Criterion 8. The efficacy of the measures is certified**

The development of scheme packages has been supported by extensive research examining the effects of single measures or packages (see criterion 9, point 3). However, this has not always proven to be a guarantee for explicit scheme success (also see criterion 9).

➤ **Criterion 9. Specific research shows how the programme has conserved common biodiversity**

Since 1997, the Ministry of Agriculture has no longer been monitoring the biodiversity effects of the **Farmland Conservation Scheme**. With the introduction of the new scheme in 2000, a national monitoring programme was announced, but this is still not operational. In the autumn of 2005, a government project on the evaluation of biodiversity effects will be launched.

The effects of the ‘old’ scheme have – on the basis of many regional studies – been evaluated and summarised in 1996 (Wymenga et al. 1996). The results are roughly:

- the effects vary substantially between regions;
- for grassland birds, the scheme seems to have prevented further decline of populations (stabilisation). In some regions, an increase was realised;
- the effects of botanical management on flora (species diversity and abundance) take a long time to show and are still hard to judge.

In later years, the effects on *grassland birds* have been studied in a more incidental way. There are roughly three types of studies:

- Studies comparing nesting densities in contracted fields with those in reference fields (no management) in one year (e.g. Kleijn et al. 2001; De Molenaar et al. 2005). These studies

found no significant differences between contracted and reference plots. However, this methodology is severely criticised (e.g. by Terwan & Guldemond 2001).

- Studies comparing the trends in conservation plots and reference plots (e.g. Willems et al. 2004). For some species (e.g. Black-tailed Godwit, Redshank), the trend in conservation plots appears to be more positive. However, the authors state that this might also be an effect caused by differences in the departure situation (abiotic circumstances, foregoing management, farmer's attitude to conservation). A recent study (Van Egmond & De Koeijer 2005) reveals a slightly positive scheme effect on population trends;
- Studies examining the effects of separate measures included in the Farmland Conservation Scheme:
 - the effect of nest protection (creating enclosures around nests during field activities) has proven to be effective to increase hatching success (Teunissen 2000; Teunissen & Willems 2004). There is no significant effect on actual reproduction: after hatching, the chicks might not survive due to predation or follow-up field activities (Teunissen & Willems 2004; Johnson & Oring 2002);
 - postponing of mowing the first grass cut from May to June has proven to be relatively effective in order to increase hatching and reproduction (e.g. Schekkerman & Müskens 2000b; Melman et al. 2004). Also selective grassland strips mown later (functioning as a refuge for the birds during and after mowing) have proven to fulfil this function, provided they have sufficient width (Schekkerman & Müskens 2000a);
 - creating temporary small-scale wetland situations (by pumping up water) has proven to attract large numbers of birds for foraging and sleeping, but it is still uncertain if this increases settlement (nesting densities) in the neighbourhood (Effectiviteit van agrarisch natuurbeheer 2002).

This leads to the conclusion that there seems to be sufficient evidence on the effectiveness of most of the individual measures included in the packages for grassland birds, but (except for some more incidental proof) clear evidence is lacking on the effects of the scheme as a whole on regional level. This could indicate problems related to the mixture of measures in conservation packages (especially the large-scale regional packages) or to the targeting and situation of contracts and the designation of areas:

- several studies indicate that 'light green' management as such is insufficiently effective to maintain bird populations. On the other hand, an adequate spatial mix of light and dark green measures is considered to be potentially very effective, provided there is a sufficient share of dark green management;
- although the majority of the designated areas are situated in 'recognised' meadow bird areas:
 - the contracts are not always situated at favourable locations. It is estimated that about 40% of the contracted areas are less suitable for birds due to traffic disturbance, lack of openness of the landscape, high predation rates and/or low water tables (Melman et al. 2004; Melman et al. in prep.);
 - the spatial pattern of contracts is sometimes sub-optimal. Model studies show considerable (potential) increase in biodiversity benefits in case of a carefully tailored contract 'mosaic' (e.g. Geertsema 2002; Geertsema et al. 2004).

Also the effects on *grassland vegetation* are rather incidentally studied. The few relevant sources point at the following results:

- for entire fields, the contracts aiming at sustaining (existing) species-rich grassland are relatively successful: contracted fields represent more plant species and a higher nature value. This can, however, also be attributed to the management history of the fields involved and the location of the contracts (Van Egmond & De Koeijer 2005). Management aiming at the development of such grassland is less successful: in this case, more attention should be paid to

the removal of nutrients and biomass in the first years, requiring early or relatively frequent mowing (Effectiviteit van agrarisch natuurbeheer 2002);

- for field margins, especially those along watercourses, there can be a relatively quick increase in the number and abundance of plant species (Melman 1991; Witkamp & De Boer, oral communication).

However, there is a rather high degree of consensus on the botanical scheme packages; the dispute focuses on the grazing densities allowed.

There is only few evidence of scheme effects on *arable land*. A regional study on the effects of arable field margins managed with an eye to fauna, indicates that invertebrates clearly benefit from this type of management (Haveman et al. 2005).

The **Organic Farming Scheme** has no biodiversity objective and is perceived to have a modest role in the decision whether or not to convert (Arendse et al. 2002; *Evaluatie ketenaanpak en RSBP* 2002). Foreign research (Hole et al. 2005; Fuller et al. 2005) provides proof of biodiversity benefits to several groups of species, with a significant effect on plant species. In the Netherlands, the results of research comparing organic and conventional farms are far less clear (*De invloed van biologische landbouw op natuur en milieu*, 2003; Guldemond et al. 2005):

- organic arable farms harbour more, resp. higher densities of bird species like skylark, lapwing and linnet (Kragten 2004);
- the organic production protocol requires a minimum area share of nature elements, causing (on average) a higher share of natural elements on organic farms.

There is no evidence that the **Rare Domestic Breeds Scheme**, or the presence of rare breeds, affects (wild) flora and fauna. Some people claim differences in grazing behaviour, but this has not been supported by research. Their share in areas of conservation interest is higher than on 'regular' farmland, but this is not a biodiversity benefit of the scheme or the breeds as such.

4.1.2 Q 2: To what extent have habitats been maintained or enhanced by agri-environmental measures?

- **Criterion 1. The environmental issues at stake were defined as a preliminary by the member state**

When it comes to habitats, the Farmland Conservation Scheme (SAN) and the Organic Farming Scheme (RSBP) are relevant. Both schemes do not include explicit habitat targets. However, the Farmland Conservation Scheme:

- includes prescriptions aiming at adequate habitat conditions for the biodiversity targets;
- includes exceptional (rare, endangered) species in the specific quantitative targets for bird protection in the regional grassland packages;
- includes one package for an exceptional species, at least in the Dutch context (Hamster).

The Organic Farming Scheme is not aiming at habitats, but does affect habitat quality by stimulating a reduction of inputs.

- **Criterion 2. Habitats are taken into account in the catalogues of measures proposed in the member state**

The Farmland Conservation Scheme includes 19 packages (out of 24) that are implicitly aiming at habitats. Next to that, about half of the 14 landscape packages can be perceived to support small-scale habitats (hedges, ponds, reed lands etc.). The other two agri-environment schemes do not include any habitat issues.

- **Criterion 3. Level of implementation**

All of the 'dark green' packages included in table 4 (over 46,141 ha in 2004) include a habitat component. If we add half of the landscape packages area (almost 3,250 ha), almost 50,000 ha is

covered by a habitat-like contract. This is almost 40% of the total (actual) contracted area and 90% of the total budgetary area.

As the scheme has no designation accents in ‘classified areas’ (Natura 2000, National Parks etc.), it is hard to say to which extent they contribute to conservation goals in areas of special conservation interest.

➤ **Criterion 4. These measures are implemented mainly in areas with a corresponding environmental problem**

For many of the habitat-like packages under the Farmland Conservation Scheme, the text of § 4.1.1., criterion 4, applies. The hamster package is the only exception, as this is clearly aiming at Hamster habitat in a specific region (one of the last Dutch Hamster biotopes).

The Organic Farming Scheme is a horizontal scheme, not aiming at specific regions or habitats.

➤ **Criterion 5. The appropriate areas were identified in advance by the member state**

As it comes to habitats and exceptional biodiversity, the first priority areas in the Netherlands are nature reserves, of which parts are part of the Natura 2000 network of areas under the EU Birds and Habitats directives. Although these areas include farmland as well, in most cases another subsidy scheme is in force, which is not included in the Dutch agri-environment measures. There is only a small minority of nature reserve areas where the Farmland Conservation Scheme is applied.

As a result, many of the farmland habitats at stake in this evaluation are situated outside of areas especially selected for their habitat quality. However, we can say the following as to their designation:

- the most specific habitat conservation package (Hamster) is a regional, well-targeted one;
- most of the areas designated for grassland bird conservation are situated in important bird areas. However, the location of contracts can still be improved (see § 4.1.1, criterion 9);
- the same goes for grassland vegetation. As species-rich grasslands have become very rare in the Netherlands, these packages can be chosen in areas largely exceeding the area of valuable grasslands. In these cases, a critical judgement is needed of the area applied for.

➤ **Criterion 6. The measures represent a change of practice or the maintenance of practices which encourage common biodiversity**

As land use in the Netherlands is relatively intensive in the European context, many of the measures represent a change in land use, especially the contracts requiring postponement of mowing dates and reducing or avoiding the use of fertilisers and/or pesticides. However, there is continuing debate on the cases where contracts are relatively easy applied, for example in cases where land use is already extensive because of traditional farming practices (e.g. by older farmers) or because of tenancy restrictions (e.g. in nature reserve areas). Nevertheless, in these cases the scheme contributes to the continuation of these practices.

➤ **Criterion 7. The first controls on the measure suggest that the implementation corresponds well with what was agreed**

According to the control visits, the compliance to the scheme rules is good – generally speaking. Each year, a limited number of warnings or penalties is given to the participants, especially for mowing before the allowed date.

The continuation of scheme participation is relatively good. Except for the scheme transition from 2000 on, the share of scheme terminations at the end of the contract periods lies within a range of 1-2%.

➤ **Criterion 8. The efficacy of the measures is certified**

The development of scheme packages has been supported by extensive research examining the effects of single measures or packages (see criterion 9, point 3). However, this has not always proven to be a guarantee for explicit scheme success (also see criterion 9).

➤ **Criterion 9. Specific research shows how the programme has conserved exceptional biodiversity**

The schemes have in the following ways been contributing to habitat conservation or improvement:

- there is one regional measure aiming at restoring a specific (Hamster) habitat. Up to now, this has not been very successful for this species, but has creating an interesting habitat beneficial to other biodiversity as well (Witkamp & De Boer, oral communication);
- the scheme includes landscape packages, aiming at sustaining and improving the quality of small-scale elements that in many cases are specific (wooded, marshy and/or aquatic) habitats. As shown in table 7, they total an area of almost 6,500 ha. The table also shows that the marshy and aquatic habitats (ponds, reed lands) are relatively poorly represented (only 7% of the total area);
- especially in arable fields, the prescriptions for organic farming (low-input, omitting the use of artificial fertiliser and pesticides) create habitat conditions comparable to those under the Farmland Conservation Scheme.

4.1.3 Q 3: To what extent have genetic resources been maintained or enhanced by agri-environmental measures through the safeguarding of endangered breeds or plant varieties ?

➤ **Criterion 1. The environmental issues at stake were defined as a preliminary by the member state**

The *in situ* maintenance of rare domestic breeds is considered to be an important issue, as shows from the Ministry of Agriculture's Strategic Action Plan on Biological Diversity (1995). The Rare Domestic Breeds Scheme is introduced to help maintain endangered breeds. Although the scheme does not include a specific (quantitative) target, breeds are omitted from the scheme if their population is no longer critical. In this way, the scheme aims at increasing populations until they are out of the critical zone.

➤ **Criterion 2. Cultivated biodiversity is taken into account in the catalogues of measures proposed in the member state**

The Rare Domestic Breeds Scheme includes 12 breeds to be supported. The other two agri-environment schemes do not include any elements of cultivated biodiversity.

The Netherlands has not been introducing a similar scheme for plant varieties, because the conservation of these is considered to be more adequate and cheaper in seed banks (*ex situ* conservation).

The 1998 scheme was brought under EU co-financing, the 2002 scheme was financed nationally. The scheme will not be continued (see § 1.3.3). The Dutch government is now considering other options to support the maintenance of rare domestic breeds.

➤ **Criterion 3. Level of implementation**

The general scheme uptake figures have been presented in § 3.4.2. In budgetary terms, the scheme is a minor one, with 0.7% of the total agri-environment budget. The 2002 scheme application involved 11 breeds, all part of the FAO list of endangered breeds (table 15). The 1998 and 2002 scheme application periods succeeded in supporting 7,800 animals or about 80% of the Dutch population of the breeds eligible under the scheme (table 16). This is a relatively high reach.

Table 15. Rare Domestic Breeds scheme: breeds involved and budget share (situation 2004)

	cattle	sheep	goats	horses	pigs	poultry	total
Proportion of total agri-environment budget	0.35%	0.15%	--	0.15%	--	--	0.7%
Number of breeds involved	4	5	--	2	--	--	11
Of which included in EU or FAO lists	4	5	--	2	--	--	11
Of which traditionally reared	N/A	N/A	--	N/A	--	--	N/A

Source: Ministry of Agriculture, Nature and Food Quality

➤ **Criterion 4. These measures are implemented mainly for defined threatened races/varieties**

The Rare Domestic Breeds Scheme is implemented only for carefully defined breeds - also see criterion 5 and table 16.

➤ **Criterion 5. The threatened races/varieties were identified in advance by the member state**

The breeds to be involved in the scheme were carefully selected:

- on the basis of the population size: only endangered or critical populations were selected. This is the reason that no poultry breeds have been added and one goat breed was deleted from the list in 2002. The Dutch Foundation for Rare Domestic Breeds assisted in selecting the breeds;
- all the breeds involved are on the FAO list of rare domestic breeds.

Table 16. Estimated national populations of rare domestic breeds (female animals) and share of the applications (male and female animals) in this population

	1998			2002		
	Population	Animals granted	Share (%)	Population in 2000	Animals Granted in 2002	Share (%)
Cattle						
Fries roodbont	65	36	55	99	40	40
Blaarkop	1,000	1,033	100	1,000	373	37
Lakenvelder	900	300	30	1,076	441	41
Brandrode rund	--	--	--	141	128	91
Horses						
Gelders paard	600	59	10	243	212	87
Groninger paard	200	13	5	90	123	100
Goats						
Nederlandse landgeit	1,060	71	1	n.a.	--	--
Sheep						
Mergellandschaap	1,500	373	25	1,507	419	28
Kempisch heideschaap	1,745	705	40	1,800	1,045	58
Veluws heideschaap	1,500	0	0	1,391	433	31
Schoonebeker*	134	273	100	1,296	744	57
Drents heideschaap	804	147	15	1,126	804	71
Total	9,508	3,010	32	9,769	4,762	49

* for this breed, no reliable population figure was available in 1998

Sources: Van Kerkhof & Van Bodegraven (2000) (1998 figures) and Ministry of Agriculture, Nature and Food Quality (2002 figures).

➤ **Criterion 6. The measures represent a change of practice or the maintenance of practices which encourage genetic resources**

As described before, the Dutch government has chosen for a one-time incentive to breeders, which – as such – can hardly be expected to have a substantial or sustainable effect on populations. However, the incentive appears to be appreciated by the breeders, has motivated breeders to

continue their profession or hobby and has certainly led to a professionalisation of breeder's organisations (pedigrees) - also see criterion 9. Now that the scheme will not be continued, the numbers are expected to decline again (Cnossen., oral communication).

➤ **Criterion 7. The first controls on the measure suggest that the implementation corresponds well with what was agreed**

The controls were aiming at guaranteeing that the breeds and animal numbers granted by the scheme, were indeed present at the applicant's farm. The controls have been showing that for the majority of the applicants, this is true.

➤ **Criterion 8. The efficacy of the measures is certified**

The scheme is well-targeted, but the effectiveness of a one-time incentive (although for 5 years) is being questioned.

➤ **Criterion 9. Specific research shows how the programme has conserved genetic resources**

The scheme effects are estimated as follows (Van Kerkhof & Van Bodegraven 2000; Cnossen, oral communication):

- because of the relatively low economic profits of rare breeds, the scheme has been supporting the maintenance and sometimes increase of populations, making them genetically less vulnerable. Or the other way round: if the scheme would cease to exist, the number of animals is expected to decrease;
- the scheme is perceived to be a 'government recognition' of the importance of rare breeds, where before it was rather done in the individual interest of breeders;
- the scheme and its conditions have been encouraging the development and professionalisation of breeders' organisations (pedigrees) and of the breeding itself;
- the scheme has been encouraging conservation organisations to choose rare breeds to graze their nature reserves.

The scheme has been encouraging a more general increase in interest by Dutch society in rare breeds.

4.2 Theme n° 1 : environmental impacts of agro-environmental measures – Sub-theme n° 2 : natural resources

4.2.1 Q 4 : To what extent have agro-environmental measures maintained or improved water quality ?

➤ **Criterion 1. The environmental issues at stake were defined as a preliminary by the member state**

None of the Dutch agri-environment schemes include explicit water quality objectives. However, the general objective of the promotion of organic farming is an environmentally sustainable agriculture (in all respects). There are two schemes (Farmland Conservation and Organic Farming) influencing water quality by prohibiting the use of fertilisers and/or pesticides, thus reducing leaching to groundwater and run-off to surface water.

- **Criterion 2. Water quality is taken into account in the catalogues of measures proposed in the member state**

Table 17. Farmland Conservation Scheme packages affecting water quality by avoiding the use of fertilisers and/or pesticides

Type of contract	Number of packages	Area (ha)
Grassland		
botanical management	7	15,520
field margins	3	2,236
Arable land		
whole-field management	4	1,627
field margins (flora and fauna)	2	1,516
hamster conservation (regional)	1	37
Landscape elements	14	6,467
Total	31	27,403

Source: interpretation by Paul Terwan research & consultancy

There are no schemes and no packages directly aiming at water quality. However:

- all Farmland Conservation Scheme packages reducing the inputs of fertilisers and/or pesticides are affecting water quality. This applies to 14 out of 24 biodiversity packages and for all 14 landscape packages (table 17);
- the Organic Farming Scheme, or better: organic farming as such, contributes to water quality due to fertiliser and pesticide restrictions. This applies to the total scheme area of 30,276 ha.

- **Criterion 3. Level of implementation**

A water quality effect occurs in case of contracts where the use of fertilisers and/or pesticides is reduced or banned. Table 17 shows that this is the case on 27,403 ha under the Farmland Conservation Scheme, equalling about 20% of the actual contracted area and almost 50% of the budgetary contracted area. The Organic Farming Scheme accounts for 30,276 ha, totalling almost 57,680 ha. Table 18 shows the breakdown of this area as to water quality effects, showing that:

- two-third (€19 mln.) of the total agri-environment budget is spent in a way influencing water quality, affecting 3% of all Dutch farmland;
- 17% (€4.9 mln.) of the total agri-environment budget is spent on field margin management (Farmland Conservation Scheme), directly affecting run-off to surface waters.

Table 18. Agri-environment schemes and packages affecting water quality by avoiding the use of fertilisers and/or pesticides

	N and/or P reduction	Pesticide reduction	Reduced N/P transfer to surface water	Reduced pesticide transfer to surface water
Budget share (%)	67%	67%	17%	17%
Area involved (ha)	57,680	57,680	3,752	3,752
% of all farmland	3%	3%	not applicable	not applicable
% of problem areas	N/A	N/A	N/A	N/A

Sources: Ministry of Agriculture, Nature and Food Quality, and National Service for the Implementation of Regulations

- **Criterion 4. These measures are implemented mainly in areas with a corresponding environmental problem**
- **Criterion 5. The appropriate areas were identified in advance by the member state**

Water quality aspects have played no role in the designation of areas under the Farmland Conservation Scheme. The Organic Farming Scheme is a horizontal scheme.

➤ **Criterion 6. The measures represent a change of practice or the maintenance of practices which encourage the quality of water**

As land use in the Netherlands is relatively intensive in the European context, many of the measures represent a change in land use, especially the contracts requiring postponement of mowing dates and reducing or avoiding the use of fertilisers and/or pesticides. However, there is continuing debate on the cases where contracts are relatively easy applied, for example in cases where land use is already extensive because of traditional farming practices (e.g. by older farmers) or because of tenancy restrictions (e.g. in nature reserve areas). Nevertheless, in these cases the scheme contributes to the continuation of these practices.

➤ **Criterion 7. The first controls on the measure suggest that the implementation corresponds well with what was agreed**

For the Farmland Conservation Scheme: yes (see § 4.1.1, criterion 7). The compliance to the production protocol for organic farms is being controlled by the national certification organisation for organic farming (SKAL). Their controls show only incidental breaching of the prescriptions relating to fertilisers and pesticides. However, none of the controls take into account water quality aspects.

➤ **Criterion 8. The efficacy of the measures is certified**

As the schemes and scheme packages were not designed to improve water quality, this criterion is not applicable here.

➤ **Criterion 9. Specific research shows how the programme has conserved the quality of water**

General statistics on the (national) use of fertilisers and pesticides cannot be used to judge the scheme effects, as they are merely a result of national environmental legislation rather than of agri-environment schemes. On local and regional level, scheme effects could be significant, but no regional figures on fertiliser and pesticide use are available.

As there is hardly any research on the environmental side-effects of the Farmland Conservation Scheme, it is hard to judge to which extent the conservation measures affect water quality. However, research in field margins showed that pesticide emissions to surface water were reduced quite effectively: by 95% using a 3 m wide buffer strip and even up to 100% in case of a 6 m wide strip (De Snoo 1995). In grassland margins, fertiliser reduction strongly decreases the nitrogen emissions to surface water (Melman et al. 1990).

For organic farming, there is evidence from Dutch research on the differences in nitrogen emission between organic and conventional farms (Snijders, P. & H. Everts 2000; Bokhorst, J.G. & C.J. Koopmans 2001; Spruijt-Verkerke et al. 2004). The research indicates the following:

- pesticide use is much lower or even completely absent on organic farms. The emissions to groundwater and surface water are substantially reduced;
- on arable farms and dairy farms, nitrate losses to groundwater are (much) lower than in conventional farming. More in general, nitrogen losses on farm level are lower (based on measurements);
- due to the obligation to create an outlet to the open air on pig and poultry farms, nitrate losses are supposed to be larger than on conventional farms, but this assumption is not based on actual monitoring.

For phosphorus, there are no valid monitoring figures to show significant differences.

4.2.2 Q 5 : To what extent have the agro-environmental measures maintained or increased the volume of water?

Water quantity is not an objective of the Dutch agri-environment schemes. The schemes have no or hardly any side-effects on water quantity aspects, and there is no research known into water

quantity effects. Over the last few years, a conservation package to raise water tables has been considered, but up to now this has not been introduced.

The other way round, we find a high uptake of the Farmland Conservation Scheme in areas with relatively high water tables. In this way, the scheme helps to maintain farming in these wet areas.

The only scheme package including a water quantity obligation is the Less Favoured Area payment. Although this is effectuated under the Farmland Conservation Scheme, the LFA packages is omitted from this evaluation (see chapter 1).

For this reason, the 9 criteria for evaluating the effects on water quantity are not applicable here.

4.2.3 Q 6 : To what extent have agro-environmental measures maintained or improved soil quality and prevented soil erosion ?

➤ **Criterion 1. The environmental issues at stake were defined as a preliminary by the member state**

None of the Dutch agri-environment measures explicitly targets soil quality. However, the integral sustainability objective of (promotion of) organic farming also includes soil quality or soil life. Soil quality did not play a role in the designation of scheme areas. However, elements of the schemes have side-effects on soil quality (see table 3 in chapter 2).

Of all the subjects related to soil quality (erosion, organic matter / life support system, acidification, soil pollution), only soil organic matter, resp. soil life and (to a lesser extent) erosion are relevant in the Dutch situation.

➤ **Criterion 2. Soil preservation is taken into account in the catalogues of measures proposed in the member state**

No, there are no schemes or scheme packages directly aiming at soil quality.

➤ **Criterion 3. Level of implementation**

Under the Dutch schemes, the main soil effects originate from the reduction or abolishment of fertilisers and/or pesticides. The level of implementation is therefore identical to the implementation with an eye to water quality (§ 4.2.2), involving two-third (€19 mln.) of the total agri-environment budget and affecting 57,680 ha or 3% of all Dutch farmland (table 19).

Table 19. Agri-environment schemes and packages affecting soil quality by avoiding the use of fertilisers and/or pesticides

	Reduction of N, P and/or pesticides
Budget share (%)	67%
Area involved (ha)	57,680
% of all farmland	3%
% of problem areas	N/A

Sources: Ministry of Agriculture, Nature and Food Quality, and National Service for the Implementation of Regulations

➤ **Criterion 4. These measures are implemented mainly in areas with a corresponding environmental problem**

As the implementation of agri-environment measures is not aiming at solving soil quality problems, there is no geographical targeting to areas with soil-related problems. The other way round: certain packages under the Farmland Conservation Scheme have a relatively high uptake in the very southern, hilly part of the Netherlands where water erosion is a serious issue and soil prevention measures are stimulated (also see criterion 9).

➤ **Criterion 5. The appropriate areas were identified in advance by the member state**

Soil quality has played no role in the designation of areas under the Farmland Conservation Scheme. The Organic Farming Scheme is a horizontal scheme.

➤ **Criterion 6. The measures represent a change of practice or the maintenance of practices which encourage soil quality**

As land use in the Netherlands is relatively intensive in the European context, many of the measures represent a change in land use, especially the contracts requiring postponement of mowing dates and reducing or avoiding the use of fertilisers and/or pesticides. However, there is continuing debate on the cases where contracts are relatively easy applied, for example in cases where land use is already extensive because of traditional farming practices (e.g. by older farmers) or because of tenancy restrictions (e.g. in nature reserve areas). Nevertheless, in these cases the scheme contributes to the continuation of these practices.

➤ **Criterion 7. The first controls on the measure suggest that the implementation corresponds well with what was agreed**

According to the control visits, the compliance to the scheme rules is good – generally speaking. Each year, a limited number of warnings or penalties is given to the participants, especially for mowing before the allowed date.

The continuation of scheme participation is relatively good. Except for the scheme transition from 2000 on, the share of scheme terminations at the end of the contract periods lies within a range of 1-2%. However, none of the controls take into account soil quality aspects.

➤ **Criterion 8. The efficacy of the measures is certified**

As the schemes and scheme packages were not designed to improve soil quality, this criterion is not applicable here.

➤ **Criterion 9. Specific research shows how the programme has conserved soil quality**

Erosion

In the very southern, hilly part of the Netherlands, soil erosion in times of heavy rainfall is a serious problem. Although the scheme effects on this aspect have never been studied, it is plausible that the Farmland Conservation Scheme has had beneficial effects by:

- maintaining grass cover, resp. preventing grassland from being converted to arable land;
- providing natural barriers in the form of hedges and hedgerows, maintained under the scheme.

Soil life / Life Support System

The effects on soil life or soil organic matter can be classified as follows:

- Main soil effect of the farmland Conservation Scheme is the reduction of artificial fertiliser under a number of scheme options, stimulating soil life and enhancing 'natural' nitrogen delivery by leguminous species. However, this effect is relatively limited.
- Organic farms pay relatively large attention to soil life. Dutch comparative research on organic and conventional farms (Schouten et al. 2002; Breure et al. 2003; Smeding et al. 2005) show that the soils on organic farms are richer in soil organisms, both in the number of species and in the abundance of species (biomass). Organically farmed soils have a better balance between the different groups of soil organisms with a focus on valuable worms, bacteria and nematodes. Organically farmed soils include four times more earthworms and three times more earthworm biomass.

4.2.4 Q 7 : To what extent have agro-environmental measures had an impact on other environmental resources not covered above (for example air) or other unmentioned environmental impacts ?

➤ **Criterion 1. The environmental issues at stake were defined as a preliminary by the member state**

For none of the schemes, other environmental targets (air quality, energy saving, production of renewable energy) have been defined. Control of forest fires is not an issue in the Netherlands.

However, the Organic farming Scheme has important side-effects on air quality and energy consumption; the Farmland Conservation Scheme also has energy effects (see table 3 in chapter 2).

➤ **Criterion 2. Other environmental stakes are taken into account in the catalogues of measures proposed in the member state**

No, there are no schemes or scheme packages explicitly targeting other environmental resources.

➤ **Criterion 3. Level of implementation**

A rough estimate of the effects of the agri-environment schemes on other environmental resources (air quality, energy consumption) would be (see table 20):

- as to air quality (emission of ammonia and greenhouse gasses), the Organic farming Scheme is relevant. We assume that all the scheme area (30,276 ha or 1.5% of all Dutch farmland) contributes to air quality. This corresponds to 9% of the total agri-environment budget;
- as to energy consumption, we assume that all the measures and packages reducing fertiliser and pesticide inputs contribute to (indirect) energy savings. In this way, the same area as contributes to water quality (§ 4.2.1) is involved: 57,680 ha or 3% of all Dutch farmland, and the same share of the total agri-environment budget (67%).

Table 20. Agri-environment schemes and packages affecting other environmental resources (air quality, energy consumption etc.)

	Air quality (ammonia, greenhouse gasses)	Energy consumption (direct and indirect)	Renewable energy	Forest fires
Budget share (%)	9%	67%	not applicable	not applicable
Area involved (ha)	30,276	57,680	not applicable	not applicable
% of all farmland	1.5%	3%	not applicable	not applicable
% of problem areas	N/A	N/A	not applicable	not applicable

Sources: Ministry of Agriculture, Nature and Food Quality, National Service for the Implementation of Regulations and interpretation by Paul Terwan research & consultancy

➤ **Criterion 4. These measures are implemented mainly in areas with a corresponding environmental problem**

The implementation is not in any way targeted to air quality or energy consumption. The Organic Farming Scheme is a horizontal scheme. And the Farmland Conservation scheme is mainly implemented in areas with no specific air quality problems (except perhaps for methane emission from dairy farming). On the contrary, in the regions with the highest ammonia emissions (concentrations of pig and poultry farms), scheme participation is relatively low.

➤ **Criterion 5. The appropriate areas were identified in advance by the member state**

Other environmental stakes have played no role in the designation of areas for the implementation of the Farmland Conservation Scheme.

➤ **Criterion 6. The measures represent a change of practice or the maintenance of practices which encourage other environmental resources**

As land use in the Netherlands is relatively intensive in the European context, many of the measures represent a change in land use, especially the contracts requiring postponement of mowing dates and reducing or avoiding the use of fertilisers and/or pesticides. However, there is continuing debate on the cases where contracts are relatively easy applied, for example in cases where land use is already extensive because of traditional farming practices (e.g. by older farmers) or because of tenancy restrictions (e.g. in nature reserve areas). Nevertheless, in these cases the scheme contributes to the continuation of these practices.

➤ **Criterion 7. The first controls on the measure suggest that the implementation corresponds well with what was agreed**

For the Farmland Conservation Scheme: yes (see § 4.1.1, criterion 7). The compliance to the production protocol for organic farms is being controlled by the national certification organisation for organic farming (SKAL). Their controls show only incidental breaching of the prescriptions relating to fertilisers and pesticides. However, none of the controls take into account water quality aspects. However, none of the controls take into account aspects or air quality or energy consumption.

➤ **Criterion 8. The efficacy of the measures is certified**

As the schemes and scheme packages were not designed to improve air quality or reduce energy consumption, this criterion is not applicable here.

➤ **Criterion 9. Specific research shows how the programme has preserved other environmental resources**

Air - ammonia

As ammonia emissions are concerned, there are two detrimental effects: the emissions are lower because of the lower densities (in terms of livestock units per ha), but higher in case the animals are kept outside instead of inside. A higher ammonia emission has been proven on organic pig and poultry farms. This has to do with the stable outlet and the lower level of emission reducing measures in the stables (Spruijt-Verkerke et al. 2004).

Air - greenhouse gases

The same report by Spruijt-Verkerke et al. (2004), summarising all research findings, shows:

- the emission of CO₂ and N₂O is lower on arable and dairy farms. This is not proven for CH₄, for which the dairy emissions could theoretically even be higher;
- on organic poultry farms, the CO₂ emission is supposed to be similar or even higher than on conventional farms.

Energy consumption

The indirect energy consumption (energy used for the production of fertilisers and pesticides) is lower on organic farms than on conventional farms. For the direct energy consumption however, the picture is diverse: there are findings of lower and higher consumption (Spruijt-Verkerke et al. 2004). Due to the reduced consumption of artificial fertiliser and pesticides under parts of the Farmland Conservation Scheme, also this scheme contributed to savings in indirect energy consumption. However, this scheme effect has never been studied.

4.3 Theme n° 1 : environmental impacts of the agro-environmental measures - Sub-theme n° 3 : landscape

4.3.1 Q 8 : To what extent have the agro-environmental measures preserved or improved the rural landscape ?

- **Criterion 1. The environmental issues at stake were defined as a preliminary by the member state**

None of the three schemes involved includes explicit landscape objectives. However, the farmland Conservation Scheme includes a specific section of landscape packages requiring a specific landscape designation by the Dutch provinces. Perceived in this way, one of the scheme objectives, although not specifically defined, is clearly also the maintenance and improvement of the rural landscape.

Next to that, the biodiversity packages under the farmland Conservation Scheme, the Organic Farming Scheme and the Rare Domestic Breeds scheme have side-effects on the rural landscape (see table 3 in chapter 2).

- **Criterion 2. Landscape is taken into account in the catalogues of measures proposed in the member state**

The Farmland Conservation Scheme includes 14 separate landscape packages (targeting small landscape features) and one grassland package aiming at ‘landscape value’ of the grassland involved (enhancing grassland with more colours than green). This means that there are 15 packages out of 38 scheme packages are directly targeting at landscape. Next to that, 19 biodiversity packages have landscape side-effects. In total, 34 out of 38 packages affect landscape (table 21).

Table 21. Farmland Conservation Scheme packages affecting landscape (quality)

Type of contract	Area (ha)
Grassland	
botanical management	13,448
‘landscape’ management*	2,185
field margins	2,236
postponed mowing (1, 8, 15 or 22 June)	23,968
temporary wetland conditions	16
Arable land	
entire fields (flora and fauna)	1,664
field margins (flora and fauna)	1,516
Landscape elements*	6,467
Total	51,500

* intentional landscape effect

Source: interpretation by Paul Terwan research & consultancy

- **Criterion 3. Level of implementation**

As the landscape effects of organic farming and of rare domestic breeds are relatively unknown or rather subjective (also see criterion 9), we focus on the landscape aspects of the Farmland Conservation Scheme (also see table 22):

- if we select the ‘entire field’ scheme packages with a landscape effect from table 21, they cover over 45,000 ha (2.3% of all Dutch farmland) and consume 72% of the total agri-environment budget;
- the separate scheme packages for landscape features cover 6.467 ha and consume 6% of the total agri-environment budget.

Table 22. Agri-environment schemes and packages affecting landscape

	Diversification of rotations and maintenance of grasslands	Maintenance or creation of landscape elements	Maintenance of endangered perennial crops	Continued farming in zones of agricultural decline
Budget share (%)	72%	6%	not applicable	not applicable
Area involved (ha)	45,033	6,467	not applicable	not applicable
% of all farmland	2.3%	0.3%	not applicable	not applicable
% of problem areas	N/A	N/A	not applicable	not applicable

Sources: National Service for the Implementation of Regulations; interpretation by Paul Terwan research & consultancy.

➤ **Criterion 4. These measures are implemented mainly in areas with a corresponding environmental problem**

The location of the biodiversity packages for grassland and arable land with landscape side-effects is not targeted to or especially contracted in specific landscape areas. The packages for individual landscape elements have been targeted to specific areas (see criterion 5), although this targeting is relatively rough.

➤ **Criterion 5. The appropriate areas were identified in advance by the member state**

The landscape packages know two types of targeting:

- before 2004, the landscape packages under the Farmland Conservation Scheme were (in the scheme itself) tied to specific landscape type according to a national policy paper on landscape (Nota Landschap, 1992). This was done to avoid ‘a-typical’ elements from being supported. In 2004, this ‘filter’ was removed, because it had been proven to be rather unpractical and too restrictive;
- next to that, the provinces decide on the regions where the packages can be contracted and which packages can be chosen. Implementation of the landscape part of the scheme requires a separate area designation, thus enabling the provinces to selectively target regions and elements to be supported. Critics state that this designation is merely inspired by budget and/or ‘quota’ motives rather than by the urgency from a landscape point of view.

➤ **Criterion 6. The measures represent a change of practice or the maintenance of practices which encourage landscape**

As land use in the Netherlands is relatively intensive in de European context, many of the measures represent a change in land use, especially the contracts requiring postponement of mowing dates and reducing or avoiding the use of fertilisers and/or pesticides. However, there is continuing debate on the cases where contracts are relatively easy applied, for example in cases where land use is already extensive because of traditional farming practices (e.g. by older farmers) or because of tenancy restrictions (e.g. in nature reserve areas). Nevertheless, in these cases the scheme contributes to the continuation of these practices.

➤ **Criterion 7. The first controls on the measure suggest that the implementation corresponds well with what was agreed**

According to the control visits, the compliance to the scheme rules is good – generally speaking. Each year, a limited number of warnings or penalties is given to the participants, especially for mowing before the allowed date.

The continuation of scheme participation is relatively good. Except for the scheme transition from 2000 on, the share of scheme terminations at the end of the contract periods lies within a range of 1-2%.

However, the controls for the biodiversity packages do not take into account landscape aspects. The controls of the landscape packages indicate a good overall compliance to the prescriptions and a good quality of regular maintenance activities.

➤ **Criterion 8. The efficacy of the measures is certified**

The landscape packages have been designed on the basis of long-term experience (national and regional schemes for landscape elements have been existing since the 1970s) and there is hardly any doubt on their effectiveness. Until 2003, the scheme packages included rather strict descriptions of each element involved (standards as to the dimensions of the element to qualify for scheme support). These were removed or simplified because they were experienced to be rather ‘technocratic’ and excluded elements considered to be worthwhile to support.

Except for one, the biodiversity packages have not been designed with an eye to landscape, so this criterion is not applicable here. The landscape value grassland package includes no landscape prescriptions (other than maintenance of the grassland character, like all grassland packages), but has a relatively low ‘biodiversity target’ (in terms of species), reason why it has been labelled a landscape package.

➤ **Criterion 9. Specific research shows how the programme has conserved landscape**

There is no systematic monitoring of, or research into, the landscape effects of the different Farmland Conservation Scheme packages. This also goes for the specific landscape packages. But as the landscape packages have been designed on the basis of long-term experience, there is hardly any doubt on their effectiveness.

As grassland is concerned, the management contract discourages the farmer from converting grassland to other fodder crops, especially maize. It is not known whether farmers are actually discouraged, i.e. to what extent farmers nonetheless convert their non-management land.

The Rare Domestic Breeds Scheme has enriched the landscape by creating more variation in grazing animals. There is no research supporting this, but we assume - according to the growing popularity of rare breeds - that the public appreciates the livestock diversification.

As to organic farming, comparative studies in two Dutch regions show that organic farms contribute more to the regional landscape quality and characteristics than conventional farms. They appear to be better able to stress the typical spatial and temporal relations of the region (Hendriks et al 2000; Stobbelaar & Hendriks 2001).

4.4 Theme n° 2a : institutional and contextual questions to establish the success of the agro-environmental policy

4.4.1 Q 9 : To what extent have the institutional structures and working methods at all levels in the Member State facilitated or hindered the construction of good quality agro-environmental programmes and measures ?

➤ **Criterion 1. Drawing up the agri-environmental diagnosis of the territories and definition of priority problems**

In the Dutch Rural Development Plan (RDP), the Netherlands has been diagnosing the status quo in a sectoral way (separately for agriculture, the environment, biodiversity and landscape). There is no specific focus on the interface between farming and the natural environment. As described before, the RDP does also not include specific agri-environment objectives, but uses a more integrated approach in its targeting. The agri-environment measures are included in two of the six main targets: promotion of sustainable agriculture and improvement of nature and landscape quality. The 2000-2006 RDP is merely an umbrella programme for previously existing schemes and measures and has not been used to develop new policy instruments. As described earlier, the three agri-environment schemes involved already existed before (under Regulation 2078/92 or even earlier, like the Farmland Conservation Scheme).

As to the separate schemes, the definition of objectives is as follows:

- the *Farmland Conservation Scheme* (SAN) has no overall objective, other than an area one (117,000 ha to be realised). However, a number of conservation packages include quantitative targets in terms of numbers of plant species or bird densities;

- the *Organic Farming Scheme* includes no quantitative environmental objectives or area objective. However, the scheme is meant to contribute to the national target: to realise 10% of all farmland to be farmed organically by 2010;
- the *Rare Domestic Breeds Scheme* has no explicit quantitative objective as well, but includes an implicit one: to stabilise or increase the populations to a level where they are no longer critical. But because the Dutch government has chosen for a one-time incentive, the objective is rather to provide a government ‘recognition’ than to sustainable support rare breeds.

The absence of clear objectives sometimes hinders an adequate monitoring and evaluation (also see question 11).

➤ **Criterion 2. Designing the agri-environment measures**

The *Farmland Conservation Scheme* already exists since the early 1980s and has been changed several times, the most drastically in 2000. The 2000 revision has caused more complexity, but brought important innovations:

- a more result-oriented approach, in terms of concrete targets per package and of payment. Due to criticism from the European Commission, the degree of result-orientation has been reduced in 2003;
- the introduction of regional large-scale packages (> 100 ha) for grassland birds, including a broad number of conservation options to choose from.

The 2000 scheme change has been deterring a number of ‘old’ scheme participants, causing a serious ‘continuity break’. But at the same time, it has been substantially increasing the uptake by farmers’ cooperatives on nature conservation (see § 3.1), especially where the regional large-scale packages are concerned.

The Organic Farming Scheme was introduced in 1994 and has been changed several times, but merely on small issues. A major beneficial change was the expansion to fodder crops in 1998, thus providing opportunities for livestock farms to participate. A second major change still has to come: the termination of the conversion part of the scheme from 2006 on. Generally speaking, after the introduction of fodder crops there has been relative satisfaction on the scheme design.

The Rare Domestic Breeds Scheme has been designed in close co-operation with the NGO on this subject and has been functioning well in terms of selection of breeds and payment levels. The main criticism to the scheme design includes:

- the character of the incentive: one-time instead of structural support. In this respect, the scheme differs from the other two schemes (and from many of the schemes in other member states);
- the omission of plant varieties. Some NGOs have been in favour of including them in the scheme as well. As stated before, the Dutch government is of the opinion that plant varieties can be better and cheaper preserved in gene-banks (*ex situ*).

➤ **Criterion 3. Negotiation on the content**

The *Farmland Conservation Scheme*, and especially the 2000 scheme revision, has been elaborated in after consultation of stakeholders, and partly even in cooperation with some of them (e.g. the Farmers Union and the umbrella organisation of farmers cooperatives for nature conservation). Especially the latter have been able to influence the content of the scheme and the packages. However, there is continuing – but decreasing – criticism on the scheme implementation. Scheme changes are consulted with an Advisory Committee in which all relevant stakeholders participate.

The *Organic Farming Scheme* has been negotiated with the national Farmers Union (section for organic farming) and with *Biologica*, the national platform for organic food and farming. Their pleas to include fodder crops in the scheme have been successful. The organisations are very disappointed that the conversion part of the scheme will not be continued.

The *Rare Domestic Breeds Scheme* has been elaborated in cooperation with the NGO in this area, the Foundation for Rare Domestic Breeds (SZH). Up to now, this Foundation was relatively satisfied on the scheme content, but also here there is disappointment as to the termination of the scheme.

➤ **Criterion 4. Coherence between national and regional levels**

The *Farmland Conservation Scheme* is a co-production of the Ministry of Agriculture and the twelve Dutch provinces. This cooperation concerns the following scheme aspects:

- the allocation of hectares (quota for each province) and packages (the provinces designate the eligible areas and packages);
- the scheme content. There is some room for introduction of new, regionally tailored packages, but this is generally perceived to be (too) small.

From 2007 on, the scheme will be almost fully delegated to the provinces, creating increasing room for regional accents.

The farmers' cooperatives for nature conservation have been advocating more room for regional accents in scheme implementation (actual management, payments etc.) by functioning as regional intermediaries, but this has been disapproved by the European Commission.

The other two schemes are horizontal schemes without any regional accents or aspects.

➤ **Criterion 5. Informing and training farmers**

➤ **Criterion 6. Supporting farmers during the contracting phase**

As to the Farmland Conservation Scheme, there has been an important policy change in 2000, when the government attitude changed from 'selling' contracts to farmers (in order to fulfil the national biodiversity policy targets) into subsidising applicants. For this reason, the Government Service for Land and Water Management (DLG) was no longer allowed to provide 'one-to-one' advice to potential applicants (acquisition), as it also had a role in assessing the applications. It was still allowed to provide scheme information to individual farmers or groups of farmers. The individual advice was privatised to the increasing number of farmers' cooperatives on nature conservation and to commercial consultants. As a result, farmers appeared to be reluctant to collect individual advice and had to rely stronger on written and oral (telephone) information. This has been severely criticised (e.g. Hilhorst et al. 2003). In recent years, some improvements have been realised: the Ministry has been concentrating all oral information in one information office (*LNV-Loket*) and has been supporting the establishment of regional information and support centres.

As to the Organic Farming Scheme and Rare Domestic Breeds Scheme: here, stakeholder organisations have been playing an important role in the information on the schemes. In case of the Rare Domestic Breeds scheme, the pedigree organisations have been crucial to inform their members.

The Ministry has been publishing information booklets on all three schemes. These seem to be adequate, except for the complicated Farmland Conservation Scheme. For this scheme, more extensive information has been advocated:

- more appealing scheme information in more compact leaflets on the different scheme sections (like for instance the UK has been publishing);
- more educational leaflets on how to achieve best biodiversity or landscape results. This kind of leaflets is completely lacking now.

Training in agri-environment is not perceived to be a (sole) government task, but the Ministry has been co-financing training courses on farmland conservation and on organic farming. These courses have been provided or facilitated by agricultural colleges, private consultancies and farmers' cooperatives for nature conservation.

➤ **Criterion 7. Monitoring of the implementation**

The scheme monitoring will be evaluated in more detail under question 11 of this evaluation. In short:

- the lack of a systematic monitoring of the outputs of the Farmland Conservation Scheme (in terms of biodiversity and landscape) hinders scheme development and enhances polarised discussions on the benefits of such schemes (e.g. Kleijn et al. 2001; Terwan & Guldmond 2001);

- although monitoring and control of the Farmland Conservation Scheme are the task of the National Service for the Implementation of Regulations (DR; uptake monitoring) and the Government Service for Land and Water Management (DLG; scheme control), there is an increasing demand from the farmers' cooperatives for nature conservation to delegate large parts of this task to them, as they are closer to the participants and better acquainted with the region and the contracted locations. Proposals for a division of tasks have been made, but have not yet been agreed upon.

➤ **Criterion 8. Paying grants**

Among participants in the Farmland Conservation Scheme, there has been much dissatisfaction on (e.g. Hilhorst et al. 2003):

- the slow process of application assessment under the new (2000) scheme. In many of the preceding years, applications from December, promised to be decided upon before 1 April, were only decided on in the course of the summer or even in the autumn. Meanwhile, the applicants had to decide whether or not to carry out the conservation measures on their own risk. However, the assessment speed has been improving substantially;
- the payment procedure. Compared to the procedure under the previous scheme (before 2000), the current procedure:
 - has a lower payment frequency: from 4 times a year to once a year under the new scheme);
 - pays late, after the activities have been carried out. The payment usually is done in autumn, forcing participants to 'pre-finance' the conservation measures.

Although the first factor has considerably improved, both factors have not been contributing to an enthusiast scheme uptake or to a positive scheme image.

➤ **Criterion 9. Control of the implementation**

When it comes to institutional arrangements of the scheme control, the main discussion is whether non-government organisations can have a role. This applies to:

- the Farmland Conservation Scheme, where the farmers' cooperatives for nature conservation wish to carry out the 'primary' control of their members, being 'double-checked' by the Government Service for Land and Water Management (certification of their control protocol and actual double-check of 5% of the farms involved). The cooperatives' claim their controls can be more effective, as they are closer to the participants and better aware of the local situation. The government claims that their controls are less expensive;
- the Rare Domestic Breeds Scheme, where the 1998 application round has been controlled by the Foundation for Rare Domestic Breeds and the 2002 round by the Ministry's General Inspectorate. Also here, financial / efficiency motives have played a role.

In general, the effectiveness of controls by such organisations is not questioned, but their costs: as such controls are more intensive and often include discussion with and guidance of participants, they can be more time-consuming.

4.4.2 Q 10 : To what extent is funding for the programmes and agro-environmental measures adequate (for example, as regards the EU contribution, Member State budget, regional budget) and how has the level of funding influenced the uptake and quality of the programme ?

➤ **Criterion 1. The financing available for the implementation is sufficient**

For the Farmland Conservation Scheme, the available budget has never been limiting the scheme uptake. In the first years of the scheme, the uptake was limited due to a rather reluctant farmer's attitude. In later years, the uptake increased substantially, but in case of budget problems the Ministry has been increasing the budget according to the number of applications. The same goes for the second application period of the Rare Domestic Breeds Scheme, while in the first application period a large number of applications had to be rejected for budget reasons. Eventually, the budget seems to have been sufficient to provide a large share of rare breed holders with a modest one-time incentive.

The Organic Farming Scheme started slowly, but in later years, especially in 1999 and 2000, the number of applications increased sharply, of which a part had to be rejected. Also in later years, the scheme sometimes closed a few days after it had been opened, due to budget restrictions. This has not been contributing to a positive scheme image.

Summarising: except for the Organic Farming Scheme, the available budgets seem to have been sufficient to serve eligible applicants.

As table 23 shows, the total agri-environment expenses in 2004 were €41.2 million, of which the Farmland Conservation Scheme has far-out the largest share (93%). As this scheme is administered by two different government services (old and new scheme), the scheme's expenses have been estimated as follows:

- the 2004 expenses under the new scheme (concerning the 2003 contracts) were € 25.8 mln. This figure has been used for calculating the budget shares in the paragraphs 4.1 to 4.3. Divided by 36.469 scheme hectares (table 6), the average ha-payment is about €700,-;
- as the contracted area has considerably increased between 2003 and 2004, this average ha-payment is used for all scheme hectares in 2004 (55,178), thus estimating a total expenditure of €38.6 mln. for the 2004 contracts.

The Organic Farming Scheme accounts for €2.5 mln. or 6% of the total agri-environment budget. In an EU context, this is relatively low (e.g. Lampkin 2002).

Table 23. Agri-environment budgets spent in 2004

Scheme	Budget in 2004 (mln. €)	Budget share in 2004 (%)
Farmland Conservation Scheme*	38.6	93.5
Organic Farming Scheme	2.5	6
Rare Domestic Breeds Scheme	0.2	0.5
Total	41.3	100

* estimation (see above text)

Source: Ministry of Agriculture, Nature and Food Quality

➤ **Criterion 2. The EU contribution is sufficient**

The Farmland Conservation Scheme and the Organic Farming Scheme are co-financed by the EU. The Ministry has not been including the 2002 application period of the Rare Domestic Breeds Scheme in the EU-cofinanced part of the Rural Development Plan, as it feared to implement drastic scheme changes to be eligible for EU support. In the end, the EU state aid rules also urged scheme changes almost similar to those when applying for EU co-finance.

In the 2004 revision of the Dutch Rural Development Plan, the total agri-environment government expenses for 2000-2006 are estimated at €203 mln., with an EU contribution of €94 mln. (46%). The Ministry is rather satisfied with the level of EU contribution (which will increase slightly anyway in 2007), or is at least the opinion that a higher contribution would not automatically increase scheme quality. Environmental NGOs have been advocating a higher EU contribution for

agri-environment measures (and an accompanying higher national contribution) in order to expand the scheme to a wider range of valuable landscapes.

➤ **Criterion 3. The financial contributions of the member state and regions do not present a problem**

Half of the expenses under the Farmland Conservation Scheme and the Organic Farming Scheme and all of the expenses under the Rare Domestic Breeds scheme are paid by the Dutch Ministry of Agriculture, Nature and Food Quality. Other co-financers (provinces, municipalities, private finance) are not relevant in this context; all the schemes are paid entirely from EU and national budgets. Only recently, the discussion started whether regional governments should financially contribute to farmland conservation packages with a relatively high regional character. This discussion is anticipating the new RDR period, when the Dutch provinces will acquire a more important role in the implementation of the Farmland Conservation Scheme.

➤ **Criterion 4. The scheme quality has not suffered from any funding problems**

As to the Organic Farming Scheme and the Rare Domestic Breeds Scheme, the budgets seem to have been sufficient to ensure adequate schemes.

The Farmland Conservation Scheme seems to include a rather adequate balance between ‘light green’ (relatively cheap) and ‘dark green’ (relatively expensive) packages: in 2004, the light green packages corresponded to about 15% of the total scheme budget. Any imbalance or imperfection in the scheme packages is usually not perceived to be caused by budgetary reasons. However, there is a number of valuable scheme expansions that have not (yet) been realised or have been delayed for budgetary reasons, such as:

- packages for the maintenance of cultural heritage features;
- aquatic packages (water bodies);
- specialised (mosaic-like) or regionally targeted grassland bird packages.

➤ **Criterion 5. The farmers have not been limited by shortages in the level of aid in concluding agri-environment contracts**

As to the Farmland Conservation Scheme, the Ministry considers the satisfactory uptake rates to be the best proof of sufficiently high payment levels. This might be true, but an important question might then be if the participants form a representative cross-cut of Dutch farming society. In other words: if the scheme attracts the right participants. There are indications from several regions that ‘retiring’ farmers are over-represented in the scheme, while ‘modern’ farms are under-represented. It is often stated by younger, more modern farmers that the payments provide insufficient incentive to actively take up nature conservation.

The payments under the Organic farming Scheme are considered to be adequate to compensate for the loss of income during the first years after conversion. The Rare Domestic Breeds scheme payments are merely perceived to be a nice gesture of government recognition of their importance; their level does not fully compensate for the additional costs (low revenues).

We will come back to the payment discussion under evaluation question 14.

4.4.3 Q 11 : To what extent are the monitoring, evaluation and supervision of the agro-environmental measures in place in the Member States fit for the purpose ? To what extent have the results of monitoring and evaluation been used to improve the programmes ? What lessons can be learned from best practices as regards monitoring, evaluation and supervision?

➤ **Criterion 1. The monitoring system should take account of the details, of the implementation and supply the evaluation system with impact indicators**

The general principles of scheme monitoring have been described in § 3.3.2. The ‘basic statistics’ of the schemes are available in an organised way; these are being used for the regular (half-year) reports to the European Commission. This monitoring is done by the national Service for the Implementation of Regulations (NSIR; *Dienst Regelingen*). The statistics include:

- number of applications (made and granted);
- number of hectares, crops and/or animals involved;
- budgets spent.

In case of the Farmland Conservation Scheme, many of these figures are available at the level of the 38 separate packages. For many of these packages, the following figures are monitored as well:

- for 14 packages: the number of native plant species per 25 m²;
- for 4 grassland bird packages: the number of breeding birds per 100 ha.

These figures are being monitored by the applicant and sent to the scheme administrator; they are selectively controlled by the Government Service for Land and Water Management (DLG).

The actual scheme impact in terms of environmental outputs are much harder to judge, due to the following reasons:

- in many cases, clear and operational targets are lacking (also see evaluation question 16). This is a serious handicap for measuring the scheme outputs;
- in many cases, the reference ('nil') situation before scheme implementation is not known;
- in case of the farmland Conservation Scheme, systematic biodiversity monitoring was terminated in the late 1990s. Since, only incidental proof of biodiversity effects is available.

These omissions are not typical for the agri-environment measures as such, but apply to almost all measures under the Rural Development Plan (*Mid-term evaluatie etc.* 2003).

More specifically:

- Adequate monitoring of the Farmland Conservation Scheme requires a comparison of biodiversity trends on contracted land versus those on non-contracted land ('autonomous development'), excluding all other factors that might be influencing the trends. Methodologically, this is very complex research requiring substantial time and budget - one of the reasons why the systematic research was terminated.
- It is hard to quantitatively assess which role the Organic Farming Scheme has been playing in the decision to convert, or which role the Rare Domestic Breeds Scheme has been playing in the maintenance of rare breeds. Such evaluations require more in-depth research.
- Judging the environmental effects of the Organic Farming Scheme requires, next to the questions raised under point 2, a comparison between organic and conventional farms. On a number of items, this research is available. Knowledge is scarce when it comes to biodiversity, air quality and energy consumption.

➤ **Criterion 2. The evaluation system should allow a judgement on the agri-environment scheme implementation**

The following scheme evaluations are already available:

- the Rural Development Plan 2000-2006 has been subject to an ex-ante evaluation, but this evaluation does not explicitly target the agri-environment part;
- the Farmland Conservation Scheme has - together with the parallel scheme for nature (reserve) areas, been evaluated in 2003 in the context of the RDP Mid-Term review (Hilhorst et al. 2003). However, this evaluation only included a selection of topics. The preceding scheme has been evaluated several times in the 1980s and 1990s. An ecological evaluation is scheduled for autumn 2005, a complete final scheme evaluation for 2006 (with a eye to the new RDP period). The evaluations are instigated and financed by the Ministry, but are (sometimes entirely, sometimes partly) carried out by 'external' consultancy agencies;
- the Organic Farming Scheme has been thoroughly evaluated, sometimes as such (Arendse et al. 2002; *Evaluatie ketenenaanpak en RSBP* 2002a and 2002b), sometimes as part of the evaluation of policy papers on organic farming (Bok & Lössbroek 2000; Kersbergen & Leferink 2004; Taen et al. 2004). The evaluations have been instigated and financed by the Ministry and have mainly been carried out by the Ministry's Knowledge Centre with contributions from external consultancies;

- of the Rare Domestic Breeds scheme, only the first (1998) application period has been evaluated by the Ministry's Knowledge Centre (Van Kerkhof & Van Bodegraven 2000);
- the first two schemes are also included in the overall mid-term evaluation of the Dutch Rural Development Plan (*Mid-Term evaluatie etc.* 2003).

As the Rare Domestic Breeds Scheme will cease to exist and the Organic Farming Scheme will be drastically changed, no additional evaluations of the current schemes are expected.

The evaluations have - in general - been generating scheme improvements. A few examples:

- for the Farmland Conservation Scheme: packages proven insufficiently effective have been omitted from the scheme, selective quantitative targets have been introduced (and modest penalties if the targets are not realised) and the 'bureaucracy' in scheme implementation has been reduced;
- in the Organic Farming Scheme, fodder crops and ceilings per farm have been introduced;
- in the rare Domestic Breeds Scheme, ceilings per breed have been introduced to better balance the grants per breed.

➤ **Criterion 3. The control system enables the reality of the implementation of the measures to be verified and the main problems encountered to be addressed, to improve the programme**

The basic principles of the scheme control are described in § 3.3.1. For the separate schemes, the experience with controls is as follows:

- The control of the Farmland Conservation Scheme is done by the Government Service for Land and Water Management (DLG):
 - the controls are adequate for easily 'visible' scheme obligations like nest protection and mowing dates, but are harder for obligations in terms of fertiliser use and cattle densities;
 - the farmers' cooperatives for nature conservation have been proposing to perform a large part of the control, as they are more familiar to the area and more frequently in the field. They would then be 'double-checked' by the relevant government agency. Although this could be an efficient way of implementing the controls, proposals have not yet been agreed upon (also see § 4.4.1, criterion 9).
- The Organic Farming Scheme is controlled by the Ministry's General Inspectorate, with additional controls by the organic certification organisation (SKAL) to judge if the farms comply to the production protocol. These controls are rather effective.
- Under the rare Domestic Breeds Scheme, the control was first executed by the Foundation on Rare Domestic Breeds. This was later taken over by the Ministry's General Inspectorate. In both cases the control is aiming at guaranteeing that the breeds and animal numbers applied for, are actually present at the farm. Controls indicate that for the majority of participants, this appears to be the case. The controls are effective, but time-consuming.

4.4.4 Q 12 : To what extent have the degree of application and environmental effectiveness been influenced by other implementation factors or other relevant factors (such as the attitude towards the agro-environment, knowledge of the agro-environment at all levels within the Member State, the extent of GAPs, other CAP /EU measures, 5-year minimum contracts, limitation of beneficiaries to farmers only etc.)

➤ **Criterion 1. The attitude towards agri-environment measures**

At the time of the introduction of the first *Farmland Conservation Scheme* around 1980, the majority of Dutch farmers, used to intensification and rationalisation of production, were not yet ready for the turn to nature conservation. For this reason, the scheme start was rather modest and a

lot of government effort was put into acquisition of participants. Ten years later, and especially with the increase of the farmers' cooperatives for nature conservation in the 1990s, the interest and motivation for nature conservation increased substantially and the scheme became a success. And in spite of the serious 'transition problem' from participants from the old scheme, this success was even further increased by the introduction of large-scale regional packages for bird protection in the new 2000 scheme. The reasons to join the scheme are roughly threefold:

- conservation activities strengthen the image of farming and the relation with society;
- conservation activities are an economically interesting side-activity;
- conservation activities are a good 'transition' to retiring from farming.

The attitude towards organic farming has largely been determining the participation in the *Organic Farming Scheme*. Also here, the reluctance to convert to a completely other way of farming has originally been causing a slow start. Now that organic farming has become a regular phenomenon in Dutch agriculture, economic considerations are predominant in deciding whether or not to convert, and market perspectives are the main factor in the conversion decision. However, the number of farmers terminating organic production has been increasing. the picture is not quite clear, but there are serious indications that between 5 and 10 years after conversion, 20 to 50% of the farms (depending on the farm sector) has stopped (Arendse et al. 2002).

➤ **Criterion 2. The knowledge of agri-environment measures**

As for the Farmland Conservation Scheme, there are two kinds of knowledge problems:

- the farmer's ecological knowledge. Although the scheme packages include management prescriptions, compliance to these is often not enough to create optimal scheme benefits (in biodiversity terms). Although a lot of effort is put into education (several farmers' cooperatives even require an obligatory training course to become a member), ecological knowledge is still perceived to be insufficient for a maximum scheme output (e.g. Kleijn & Sutherland 2003);
- the knowledge of the scheme itself and of its history. As the scheme details and its history are rather complex and the (government and NGO) staff involved changes rather quickly, there is an expertise problem within the Ministry and the government agencies and NGOs involved.

As for organic farming, excellent training courses exist. The knowledge problem here is rather one of prejudice beforehand: there is quite some misconception of the concept of organic farming and of the possibilities to properly run a farm, especially as weed control is concerned.

➤ **Criterion 3. The extent of GAP**

As described in chapter 3, the Dutch government has been defining Good Agricultural Practice at the level of full compliance to legislation. Although this is a rather modest level, problems arise from:

- the periodical reduction of payments due to stricter environmental legislation, e.g. concerning manure and emissions to watercourses (affecting payments for field margins). Although the reduction is a logical consequence of the choices made, the reductions are not favouring the scheme's image;
- as to the protection of grassland birds, there are severe discussions on the protection level required by the new Flora and Fauna Act, which is not completely clear in the protection level required by law and the protection allowed to pay for. In its extreme consequence, this discussion might result in abolishment of large parts of the payments for bird protection (now being the core of the Farmland Conservation Scheme);
- more in general, environmental NGOs have been advocating a higher level of GAP (above legal obligations), inevitably leading to reduced payments, resp. less conservation measures to be remunerated.

➤ **Criterion 4-6. Relations with EU Regulation 1257/99 and other CAP measures**

The Netherlands has been experiencing problems with the following aspects of the **EU Rural Development Regulation (1257/99)**, almost all related to the implementation of the Farmland Conservation Scheme:

- the definition of beneficiaries. The farmers' cooperatives for nature conservation have been advocating to function like 'intermediary' beneficiaries in the distribution of contracts and payments to the individual land users (members of the cooperative), but the Regulation does not allow this (the payment has to be paid to individual land users and the cooperatives are not allowed to function like paying agencies);
- the contract period allowed (5-10 years). The Netherlands now uses six-year contracts, but for some purposes (e.g. botanical management, requiring long-term agreements) a longer period would be convenient. Stretching the contract period to 10 years requires solid argumentation, while longer periods are not even possible;
- the method of payment calculation. We will come back to this under evaluation question 14;
- input-output-orientation. The Netherlands have been trying to put more emphasis on the scheme outputs (actual biodiversity benefits) than on the scheme inputs (measures to be taken). The idea was that this would challenge the participants to realise the biodiversity targets in ways that fit them best. However, this approach was not allowed by the European Commission: as the payment is calculated according to measures (causing income foregone and/or additional costs), these measures should minimally be complied to. See also question 14.

Also due to insufficient compliance to EU obligations, the Netherlands has been changing the scheme rather frequently over recent years: after the scheme review in 2000 already three more times, even infringing on existing contracts. This has been creating considerable commotion among participants and additional work for the farmers' cooperatives for nature conservation.

As to organic farming, there is a beneficiary problem as well, as the EU Regulation is primarily focusing on farmers, i.e. primary producers, while the Dutch government is in favour of stimulating the demand side of organic food production (by influencing consumer behaviour and stimulating projects in the organic food chain). These groups are not defined being beneficiaries in the EU Regulation. The new Regulation (2007-2013) seems to provide some more opportunities here, but the possibilities are still modest (oral information M. de Lange, Ministry of Agriculture). Meanwhile, the EU Action Plan for Organic Food and Farming (2004) calls on member states to use the rural development instruments to stimulate organic farming.

As to other CAP measures: in some regions, the Farmland Conservation Scheme has to compete with the maize premium. Because of the rather high support for this fodder crop, this competition is not easy.

4.5 Theme n° 2b : economic efficiency of the measures. Method of calculation.

4.5.1 Q 13 : What differences are there in terms of budget spending and administrative effort between different measures having identical environmental results ? How can we improve the effectiveness of certain measures ? What can we learn from the very efficient measures (better practices) ?

All three schemes involved are operated by one of the Dutch Paying Agencies, the National Service for the Implementation of Regulations (*Dienst Regelingen*), but the implementation takes place quite separately and not as a 'cluster' of agri-environment measures. Apart from the general coordination by the central RDP office (*Regiebureau POP*), there is no national guidance as to the joint agri-environment measures.

Because of the separate implementation and the very different character of the three measures involved, it is not possible to provide a sensible comparison of the agri-environment measures in

terms of administrative costs. However, we will describe some considerations to the administration of the separate schemes and (in case of the Farmland Conservation Scheme) of the different parts of the scheme.

Farmland Conservation Scheme

Since the 2000 scheme reform, the administration costs have been attracting constant attention. For every interim scheme change, the administration costs are being calculated and taken into account. Some figures to start with:

- the interim evaluation of the scheme (Hilhorst et al. 2003) shows that the overall implementation costs (of the two conservation schemes, including the one for nature reserve areas) have been increasing substantially between 2000 and 2002, to a total of almost €15 mln. in 2002 on a total granted budget of almost €90 mln. This is a 15% overhead, which seems quite reasonable;
- the applicant shares in the administrative burden: he spends over €700,- per year for scheme administration (€240,-) and biodiversity monitoring (€490,-) (Hilhorst et al. 2003). Assuming an average payment of €3.100,- per applicant (Silvis & Van Bruchem 2003), this amounts almost 25% of the payment. we will come back to this under evaluation question 14.

Generally speaking:

- relatively 'simple' packages like postponing the mowing date carry a low overhead: they are easily controlled and require no biodiversity monitoring;
- all packages including biodiversity targets require a substantial effort from the applicant (who has to register the plants and birds present) and the control agency (which has to check whether the farmer's registration is correct);
- all packages requiring written registration of the location of nests (nest protection packages) or contracts allowed to change place every year (some field margin packages) require solid registration by the applicant and additional efforts (farm visit, registration check) by the control agency.

In spite of these differences in scheme administration, the Ministry remains in favour of a mosaic-like management for grassland birds and packages including concrete outputs, as these are perceived to be the best way to guarantee biodiversity benefits.

Organic Farming Scheme

The implementation costs of the Organic Farming Scheme have been fluctuating between 11 and 53% of the budget granted to farmers. In recent years, the implementation costs (*overhead*) are between 10 and 15% (Arendse et al. 2002; Taen et al. 2004). The implementation has been relatively costly because of:

- the frequent scheme adjustments;
- the complexity of the scheme (many agricultural branches);
- the relatively high rate of negative decisions (in some years up to 40% of the applications received), causing an imbalance between implementation costs and scheme expenditure, and also causing a considerable number of written appeals to be dealt with.

Also for the applicants, the administration costs were rather high: they spent quite some time filling in forms.

For the Ministry of Agriculture, the administrative burden has been one of the reasons to terminate the current scheme and announce a new, simplified support scheme.

4.5.2 Q 14 : Is the present method of calculation (on the basis of costs incurred and losses of income and if necessary an incentive element) suitable for achieving the desired environmental outcome ? Do the payment levels reflect the costs incurred and the lost income ? When there is an incentive payment, is it justified ? Can improvements in the method of calculation be suggested which will maintain compatibility with the WTO rules ?

➤ **Criterion 1. Payment calculations of the schemes involved**

All of the three schemes involved are – according to the obligations under the EU Rural Development Regulation – based on income foregone and/or costs incurred:

- most of the biodiversity packages under the Farmland Conservation Scheme are based on income foregone:
 - for dairy farms: lower nutritional value of the grass harvested, causing additional roughage or concentrate expenses;
 - for arable farms: lower crop production). Some of them also include a ‘costs incurred’ component;
- the landscape packages are all based on costs incurred, capitalising the costs of labour and machinery involved;
- the organic farming payments are based on the income loss during the first years after conversion (before a higher market price is realised) and pay 65% of this loss;
- the rare domestic animal payment is based on the average difference in revenues between regular and rare breeds.

The biodiversity packages under the Farmland Conservation Scheme include on average a 15% incentive payment.

Except for the Organic Farming Scheme, compensating only 65% of the total income loss, the schemes are considered to compensate all income loss and/or additional costs caused by scheme participation. For the Farmland Conservation Scheme, a special committee regularly considers the need for payment changes.

➤ **Criterion 2. The desired scheme results are described in the programming documents of the member state or the regions involved**

As appears from the previous answers (§ 4.1 to 4.3, criterion 1) and will appear in § 4.7:

- the Netherlands has not been elaborating a specific agri-environment programming document. The Rural Development Plan does not include a specific agri-environment chapter and no specific scheme outputs, but only qualitative targets as to sustainable farming and improvement of the quality of nature and landscape;
- also the schemes themselves do hardly include explicit (quantitative) output targets, except for a number of biodiversity packages under the Farmland Conservation Scheme.

➤ **Criterion 3. The arrangements for calculating payments are appropriate for the scheme objectives**

Over the last few years, the criticism on the current payment system is increasing (e.g. Terwan et al. 2003; Terwan & Van der Weijden in prep.):

- The approach is not flexible and targeted. While the schemes are uniform and the payments are nationally standardised, the regions and farms involved differ substantially. However, there is no room to negotiate with farmers to attract more farmers and/or meet regional or otherwise specific conservation goals. For example: under the Farmland Conservation Scheme, the current payment for grassland bird conservation by a ‘dark green’ measure like postponed mowing enables farmers to engage 30-40% of their farmland in this measure. For a larger farmland share under this measure, which might regionally be needed to safeguard bird populations, it has been estimated that a 2.5 to 3 times higher payment per hectare is needed (Van Egmond & De Koeijer 2005).

- The system is not anticipating the future. Like the Pillar 1 de-coupling, agro-environment payments should be entirely decoupled from primary production and be coupled to a newly developed market for environmental goods and services.
- The compensation of ‘income foregone’ hardly contributes to the income capacity of farms – except for the additional incentive (this is – by the way – exactly what the WTO is aiming at). For this reason, they hardly contribute to a broader, less vulnerable economic basis of rural areas.
- In the income foregone approach, the prices for public goods follow the prices for primary products and inputs. In times of falling farm revenues and a stronger reliance on contractors than on ‘own’ labour, payments easily fail to be effective, i.e. to attract a sufficient number of farmers.
- By means of modulation, former production support is partly shifted to rural development support, in many countries focusing on Axis 2 measures. In this way, support payments directly contributing to farm economy are transformed into support payments compensating for farm income loss due to agri-environment measures. This does not contribute to improving the farmers’ still reluctant attitude to modulation. Above that, this is not an attractive model for future expansion of modulation or other shifts from Pillar 1 to Pillar 2 support.

Over the last few years, it is getting rather broadly recognised that environmental services should be rewarded as a public good under appropriate market conditions for public goods. A broadening range of European institutions and NGOs has been advocating the development of alternative payment systems, such as BirdLife International (Vision for Rural Europe 2004), the European Environmental Bureau EEB (Hontelez 2004) and the UK Land Use Policy Group LUPG (*A European Agricultural and Rural Development Fund etc.* 2004). The discussion focuses on

- Output-related payments: changing the payment basis to an output-based one. This requires a feasible valuation of environmental goods and services in economic terms. The mechanisms developed in traditional environmental economics usually fail to serve well here. Thus, other valuation mechanisms should be further developed and applied.
- Market-oriented payments: there are no fixed prices, but there is room for negotiation (supply-demand considerations) or value-for-money considerations. They include tendering, auctioning, varying payments to attract a sufficient number of farmers or any other ‘exchange’ mechanism, and can include elements of competition. Perhaps the new Rural Development Regulation for 2007-2013 will open new perspectives here, stating in article 37: “Where appropriate, the beneficiaries are selected on the basis of calls for tender, applying criteria of economic, environmental and animal welfare efficiency.”

➤ **Criterion 4. Underpayment or overpayment?**

In terms of the EU Regulation, it is hard to judge whether underpayment or overpayment is taking place. The other way round: land users perceiving the payment to be too small will not enter the scheme, while land users perceiving profits will join. Recent studies on the types of farms joining the *Farmland Conservation Scheme* show that the scheme is now succeeding in attracting a representative mixture of farms (Leneman & Graveland 2004), although small farms and older farmers are still somewhat over-represented (Berkhout & Van Bruchem 2004). In general, there is rather broad dissatisfaction on the fact that the payments are only compensation and hardly provide additional income (see ‘criticism’).

Anyway, the payment lacks two components:

- in case of landscape elements, the scheme is sometimes perceived to be underpaying, as the land claim of the elements involved is not included in the payment;
- the administration costs for the farmers are not compensated for. These costs (25%, as described earlier) even exceed the 15% incentive payment.

The payments for botanical grassland management are broadly considered to be insufficiently attractive to convert highly productive grassland to botanical grassland. As a result, mainly fields are being contracted that are less important to production.

There are no indications whether the *Organic Farming Scheme* is under- or overpaying, but it is clear that – partly due to the payment levels – the role of the scheme in the conversion decision is rather limited. However, research into conversion motives shows a mixed picture: although many farmers state that the market perspectives are far-out the most important factor in the decision whether or not to convert the farm, one-third of the organic farmers also state that the scheme has played a role (or even an important role) in their decision. This role has been relatively modest for horticulture under glass and relatively large for fruit farmers (*Evaluatie ketenaanpak en RSBP 2002a*). About half of the *potential* converters states that they would not convert if the scheme did not exist (because of the financial risks of conversion) (*Evaluatie ketenaanpak en RSPB 2002b*). It is rather clear that the payments under the *Rare Domestic Breeds Scheme* were – because of their level and their one-time character – not sufficient to sustainably support the maintenance or rare breeds. However, this has never been the Ministry's intention.

➤ **Criterion 5. The additional incentive payments are necessary and well-argued**

The 15% incentive payment for the biodiversity packages under the Farmland Conservation Scheme has been justified by:

- the need to also attract modern, relatively intensive farms;
- the need to provide room for regional differences (the Netherlands has been introducing nationally standardised payments, while there are important regional differences).

It has been estimated that the abolishment of the incentive would decrease the feasibility of 'dark green' grassland management by 10% (from - on average - 35 to 25% of the farm area) (Van Egmond & De Koeijer 2005).

➤ **Criterion 6. Scientific studies demonstrate some of these affirmations**

Yes – see the literature mentioned in the answers to criteria 3 and 4.

4.6 Theme n° 3 : The socio-economic impact of agro-environmental measures

4.6.1 Q 15 : To what extent have agro-environmental measures provided farmers with lucrative employment (by supplying environmental services)? To what extent have they contributed to an improvement in the image of agriculture as a supplier of services to society ?

➤ **Criterion 1.1. The farmers consider that they are fairly remunerated for supplying environmental services**

Among farmers, the **Farmland Conservation Scheme** does not have an image of being fairly remunerating 'green services' (also see § 4.5.2) or being largely contributing to farm incomes. For this reason, the national farmers union and the umbrella organisation for farmers' cooperatives for nature conservation have been advocating another payment system, no longer based on compensation of primary production (losses).

As the conservation measures cost money, this payment is not the net additional income. The Dutch Institute for Agricultural Economics has been calculating for 2003 that a conservation budget of €30 mln. creates an additional income of €12 mln. (Berkhout & van Bruchem 2004). This at least nuances the criticism that the payment is purely compensation and delivers no income at all: in theory this is true, in practice, participants join who perceive to get any financial benefits from the scheme.

As to the **Organic Farming Scheme**: farmers already converted or in the process of conversion, consider the scheme as a worthwhile signal from the government to the primary sector, which takes the largest financial risk. The scheme plays a modest role in the decision whether or not to convert, but market perspectives and tax measures are more influential. If market perspectives are good, about half of the farmers states not to need government support. In this respect, government efforts

to influence consumer behaviour is considered to be at least as important (*Evaluatie ketenaanpak en RSBP* 2002a and 2002b; Arendse et al. 2002). Creditors consider the RSBP premia of low importance when deciding on credit applications for organic farms (Taen et al. 2004).

The **Rare Domestic Breeds Scheme** is not perceived to be delivering a substantial contribution to farm incomes, as the premia were incidental (one-time) and many beneficiaries were part-time or hobby-farmers (much more than under the other agri-environment schemes).

➤ **Criterion 1.2. The farmers regard the schemes as an activity which can diversify their source of income**

In 1999/2000, the average payment per farm under the **Farmland Conservation Scheme** amounted € 3.100,-, a slight increase compared to the previous year, but still only 2% of the total farm revenues (Silvis & Van Bruchem 2002). The 2004 figure is assumed to be quite similar: if we simply divide the expected 2004 expenditure (ca €40 mln.; see table 23) by the 2004 number of participants (ca 12,500), the average payment would be €3,200,- per farm. In economic terms, nature conservation is still a marginal activity.

The Organic farming Scheme helps to reduce the negative farm savings in the two years after conversion (depending on the agricultural sector between 3 and 50%) and increases farm savings in year 3 to 5 after conversion. However, the positive effect of a higher market price for organic products introduced two years after conversion is far more important for farm economics. (Zaalmink et al. 2000, cited in Arendse et al. 2002).

➤ **Criterion 1.3. Scientific studies on this subject prove the same thing**

Yes – see the literature mentioned under criteria 1.1 and 1.2.

➤ **Criterion 2.1. The farmers believe that their image in society is improved thanks to the schemes**

The Farmland Conservation Scheme has certainly been contributing to the image of farming in society. Research into the public image of farmers shows that farmers are perceived to be important ‘landscape managers’, but this is not attributed to participation in agri-environment schemes. The other way round, image reasons are mentioned as a participation motive by participants themselves (Leneman & Graveland 2004). However, in recent years the image has somewhat been damaged by the large-scale negative publicity on the alleged negative scheme results (e.g. Kleijn et al. 2001). The Organic Farming Scheme, or rather organic farming as such, has certainly be contributing to the public image of farming.

➤ **Criterion 2.2. Studies or evaluations on this subject prove the same thing**

See the literature mentioned under criterion 2.1.

4.7 Theme n° 4 : Objectives and choice of agro-environmental measures

4.7.1 Q 16 : How clear are the environmental objectives of the agro-environmental measures? To what extent have the Member States and the regions chosen to target their agro-environmental measures according to fields and themes covered by EU environmental legislation or EU environmental objectives?

➤ **Criterion 1. The schemes have clear environmental objectives**

As described before (chapter 2, § 3.2), none of the schemes has clearly defined environmental goals:

- the schemes have policy targets in terms of hectares or animals under the scheme;

- a number of packages under the Farmland Conservation Scheme include concrete biodiversity targets.

As a result, the accountability in terms of actual environmental outputs is complex.

However, for all three agri-environment schemes covered here, the scheme content is rather clear in its intentions and the separate scheme elements are clearly targeted to their goal (e.g. bird protection, maintenance of landscape elements, conversion to organic farming), but in a merely qualitative way rather than a quantitative way - except for a range of packages under the farmland Conservation Scheme. This is a clear handicap when evaluating the schemes as to their environmental outputs.

➤ **Criterion 2. The environmental programmes of the member state or the regions have clear and quantified environmental objectives**

The main environmental policy plans for the Netherlands are:

- for nature and landscape: *Natuur voor mensen, mensen voor natuur* (2000). This policy plan includes targets in terms of hectares of habitats to be realised (see § 4.1.1, table 13). These targets are not directly related to the Farmland Conservation Scheme, which ‘hectare-quotum’ of 117,000 ha has not been divided in separate habitat types;
- for the ‘grey’ environment: the 4th national environmental policy plan *Een wereld en een wil...* (2001) includes quantified environmental objectives for agriculture in terms of quantified emission reductions of nutrients, ammonia and greenhouse gasses. The plan also includes targets for genetic diversity (genetic erosion), but these are not quantified. The ‘grey’ targets are not directly related to the Organic Farming Scheme, but organic farming is considered to be one of the means to realise the environmental targets. The organic farming target (10% of the farmland area by 2010) is part of a separate policy plan for organic farming (e.g. *Beleidsnota Biologische Landbouw 2005-2007*; 2004).

➤ **Criterion 3. The schemes complement Good Agricultural Practice covering the demands of EU legislation**

In general, the schemes avoid elements that are also part of EU legislation – this is one of the basic principles of the Rural Development Plan. It is hard to judge whether the schemes nonetheless include elements of EU legislation. This could be the case for some field margin packages (alongside watercourses) under the Farmland Conservation Scheme, which are at risk of being partly overlapping with the Nitrates Directive (incl. Good Agricultural Practice) and/or with national environmental legislation. Since the Netherlands quite recently reached an agreement with the European Commission on the implementation of the Nitrates Directive, the Ministry has started to adjust the relevant packages to the latest policy changes. However, as the Netherlands have been avoiding scheme packages for environmental purposes (e.g. water quality), the potential overlap is limited.

➤ **Criterion 4. The member state has clearly targeted its measures**

Notwithstanding the lack of clear quantitative objectives, all three Dutch agri-environment schemes are – as such – clearly targeted and contributing to international (EU and global) policies:

- The Farmland Conservation scheme is targeting at biodiversity and landscape features and contributes to the 1998 EU Biodiversity Strategy and the 2001 EU Biodiversity Action Plan for Agriculture. Its contribution to Natura 2000 (Birds and Habitats Directives) is modest, as Natura 2000 designations in the Netherlands include only a small area of farmland.
- The Organic Farming Scheme contributes to the 2004 European Action Plan for Organic Food and Farming. It also helps to realise the Nitrates Directive targets, but as it lacks environmental goals, the contribution is not quantifiable.
- The Rare Domestic Breeds Scheme is targeted at *in situ* genetic diversity and contributes to the 1998 EU Biodiversity Strategy and the 2001 EU Biodiversity Action Plan for Agriculture.

5. CONCLUSION AND RECOMMENDATIONS

In the Netherlands, three agri-environment schemes are in force under the EU Rural development Regulation: the Farmland Conservation Scheme (SAN), the Organic Farming Scheme (RSBP) and the Rare Domestic Breeds Scheme. The first two are receiving EU co-finance, the third has been doing so under Regulation 2078/92, but is now financed from national budgets. For continuity reasons, it is nonetheless included in this evaluation. All schemes already existed before Regulation 1257/99 came into force; the Farmland Conservation Scheme already started in 1980. In 2004, the total scheme expenditure was about €52.5 mln., of which the Farmland Conservation Scheme is far-out the largest (95%) consumer. The Organic Farming Scheme consists of two elements (conversion and continuation), of which only the second will be continued in a simplified way. The Rare Domestic Breeds Scheme was last open in 2002 and will not be continued; after 2006 the existing grants will cease to exist.

Scheme targets

All three agri-environment schemes have policy targets in terms of uptake (hectares or animals involved), but lack quantitative environmental objectives. However, a number of management packages under the Farmland Conservation Scheme include concrete biodiversity targets (numbers of plant species or bird densities to be realised), including a modest penalty if the targets are not realised. It is recommended to introduce overall operational objectives for each agri-environment scheme in order to be able to better evaluate their environmental benefits.

Farmland Conservation Scheme

The Farmland Conservation Scheme (SAN) is quite a success as to the actual area involved: excluding Less Favoured Area payments, almost 130,000 ha were contracted. This is 6.5% of all Dutch farmland. As a large share of this area (84,000 ha) is counted as 'light green' management (including 79,000 ha of nest protection by creating exclosures while harvesting), the Dutch government has created a division between actual and budgetary hectares. In budgetary terms, about 61,000 ha have been contracted, of which over 80% 'dark green' management. Also due to a serious continuity problem related to a drastic scheme review in 2000, the actual area of 'dark green' management has not been increasing over the last years.

The ecological benefits of the scheme are subject to severe discussion, especially as grassland birds are concerned. As the systematic government monitoring was terminated in the late 1990s, evidence is rather incidental and not conclusive. While most of the individual measures involved have proven to be effective or are considered to be so, the combined effect does not always show substantial differences with reference plots not involved in the scheme. The explanations focus on the adequacy of the mixture of 'light' and 'dark' green measures and on the location of the contracts; for meadow birds, up to 40% of the contracted area is perceived to be less or not suitable for birds. It is highly recommended:

- to pay more attention to the location of contracts. Not by more selectively designating areas, but rather by a better ex-ante assessment of the locations applied for;
- to resume the systematic monitoring of scheme effects, also in a comparative way (although such comparative research is methodologically very complex).

Although the Farmland Conservation Scheme now has a rather high quality, further improvements of the scheme and its outputs could include:

- including quantitative targets in every scheme package;
- improved fine-tuning of the large-scale regional packages for bird protection;
- introduce new packages for valuable elements like water bodies and cultural heritage;
- improve the availability of written and oral information on scheme content and on possibilities to improve scheme outputs;
- further / advanced training and education.

Organic Farming Scheme

Under the Organic Farming Scheme, over 30,000 ha have been supported, of which 55% for conversion to and 45% for continuation of organic farming. Fodder crops contribute to about 60% of the total scheme area. More than half of all organic farmers have been receiving scheme support. The scheme has hardly increased the conversion rate, except for a sharp peak in 2000, which was merely due to a foreseen beneficial scheme change causing postponed applications. Although the scheme grants are appreciated, market perspectives appear to be a much more important factor in the conversion decision.

The Dutch government has not been formulating specific scheme targets. There is a general organic farming target (10% of the agricultural area by 2010; in 2004 its share was 2.5%) and the scheme contributes to the rather general RDP environmental objective of 'sustainable production'. However, the environmental effects of organic farming in the Netherlands are relatively large, because a serious shift in farming practices has to be made. The environmental performance of organic farms (as far as known from the relatively limited research) is good, except (in some cases) for ammonia and energy consumption. The biodiversity effects (compared to conventional farms) are not very well known.

Producers and environmental NGOs are worried about the termination of the conversion part of the scheme. In whatever way the scheme may be continued, it is recommended that more operational and accountable environmental targets are defined for organic farming.

Rare Domestic Breeds Scheme

Under the Rare Domestic Breeds Scheme, 7,800 animals or 80% of the Dutch population of the breeds included in the scheme, received support. Although the scheme was well-designed as to the breeds involved, the choice to only grant a one-time 'symbolic' payment has not been attributing to sustainable maintenance of the populations involved. The main government argument was that many holders were not professional farmers but rather hobbyists. Nevertheless, as the scheme contributes to important EU and FAO policy fields, it is recommended that other government incentives are introduced to maintain and increase populations. The Ministry of Agriculture is already preparing new incentives.

Tensions with EU obligations

Scheme quality, uptake and outputs are sometimes sub-optimal due to EU obligations. Problems arise as to:

- the definition of beneficiaries. Scheme uptake and output would benefit from extending the definition as to farmers' cooperatives (or other intermediary parties) and to other parties in the agricultural chain (the latter especially in case of organic farming);
- contract length. In cases where long-term continuity is important (e.g. botanical management), a more than 10 year contract period could help;
- the payment calculations allowed for. The current system, and especially the 'income foregone' approach, coupling environmental payments to primary production, is perceived to not anticipate the future and withhold farmers from substantial additional income from environmental services. It is highly recommended to develop and introduce output-related and/or market-oriented remuneration systems;
- as a consequence of the latter, the input-orientation of the schemes (focus on measures instead of outputs) should be reduced to the benefit of a stronger output-orientation..

APPENDICES

Annex 1: Bibliography

Annex 2: List of people consulted

Annex 1: Bibliography

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Annex 2: List of people consulted

Ministry of Agriculture, Nature and Food Quality:

- Mr. J. Rietema (Farmland Conservation Scheme, SAN)
- Mr. K. Spek (rare domestic breeds);
- Mrs. M. de Lange (organic farming).

Government Service for Land and Water Management (DLG):

- Mr. C. Witkamp
- Mr. T.F. de Boer

Non-Governmental Organisations:

- Mrs. B. Rodenburg (Natuurlijk Platteland, umbrella organisation of farmers' cooperatives for nature conservation);
- Mr. F. Melita (Biologica, producer platform for organic food and farming);
- Mrs. H.F. Cnossen (Foundation for Rare Domestic Breeds, SZH).