Agri environmental management

special issue by VAKBLAD natuur bos landschap

The new agri-environmental management system

Better results, less paperwork

The psychology of agri-environmental management

This special issue has been published in May 2015 in Dutch by the Dutch *Trade journal nature forest landscape*

COLOPHON

Year 12 Number 115 May 2015

Vakblad Natuur Bos Landschap appears 10 x per year (not in July and August)

Editors
Ido Borkent (editor-in-chief), Geert van Duinhoven (final editor), Erwin Al, Joukje Bosch, Chantal van Dam, Bart de Haan, Marleen van den Ham, Jeroen van der Horst, Fabrice Ottburg, Anne Reichgelt, Pieter Schmidt, Renske Schulting, Martijn van Wijk.

with contribution by
Lotty Nijhuis (Stelling),
Fred Kistenkas (Juridica)

Lay-out
Aukje Gorter, aukjegorter.nl

Picture editors
Aukje Gorter and Fabrice Ottburg

Cover
photo Fabrice Ottburg

Translation
Iona taalbureau, Zeist,
www.ionataalbureau.nl

Abonnementenadministratie
Postbus 618, 6700 AP Wageningen
administratie@vakbladnbl.nl
www.vakbladnbl.nl
0317 466 439

Een jaarabonnement** (10 nummers) kost
- particulieren: € 50,-
- bedrijven: € 70,-
- organisaties die meer dan 25 abonnementen afnemen, betalen € 42,- per abonnement.
- studenten* / jongeren tot 18 jaar*: € 22,-

Als u toestemming geeft voor automatische incasso krijgt u € 3,- korting.

* Studenten moeten bij aanmelding en elk jaar uiterlijk op 31 december van het jaar ervoor een kopie van de studentenkaart opsturen naar het secretariaat. Jongeren onder de 18 jaar (zonder studentenkaart) kunnen een kopie van hun identiteitskaart opsturen.

** Een abonnement loopt in principe van 1 januari tot en met 31 december. U kunt een abonnement elke maand in laten gaan. U betaalt in het eerste jaar dan een evenredig deel van het abonnementsgeld. Na een jaar wordt uw abonnement automatisch verlengd. U kunt te allen tijde opzeggen met een opzegtermijn van 1 maand.

Advertenties
0317 466 432
adverteren@vakbladnbl.nl
U adverteert al vanaf € 150,-

Address
Postbus 618, 6700 AP Wageningen
redactie@vakbladnbl.nl 0317 465 545

Printer: Senefelder Misset, Doetinchem

This is an edition of Stichting Vakblad Natuur Bos Landschap.
In the board are represented: the KNBV, nature management organisations and Landschapsbeheer Nederland.
Boardmembers:
Harrie Hekhuis (chairman), Hans Massop, Hank Bartelink, Evelien Verbij and Hans Gierveld (treasurer)

This magazine is printed on FSC®-certified paper.

MIX
Papier van verantwoorde herkomst
FSC® C018185

contents

Foreword

Biodiversity and the environment have been under pressure for years: in countries with highly productive agriculture, but also in more extensive production regions. The challenge for the agricultural sector lies in playing a positive part in safeguarding our natural resources by providing public services. An effective implementation of ecosystem services such as agri-environmental and climate measures for example, is bound by regional cooperation. Furthermore, the motivation of farmers is usually stronger when they can share their achievements with other farmers. Historically, farmers have always been cooperating in order to gain their goals. We can discern two forms of agriculture; on the one hand there are roughly three types of cooperatives: a machinery pool, a manufacturing/marketing cooperative, and a Credit union. On the other hand, countries all over Europe have a history of common lands, mostly pastures, but also arable land and hay meadows.

With the support of the European commission, the Netherlands - initiated by farmer-groups – has developed a new voluntary regional approach for agri-environmental and climate measures based on a new role for the authorities: the collective approach. Building upon a long tradition of voluntary cooperation amongst farmers, the goal was to develop a regional voluntary system in order to achieve biodiversity and environmental goals.

The aim of this Nature, Forest & Landscape special is to elaborate on the topic of how farmers in the Netherlands can cooperate voluntarily to obtain goals for ecosystem services, by making use of collectives. Challenges preserving biodiversity and the environment on farmland cannot be tackled at a farm level, as the area of most farms is too small. Furthermore, tackling the problem by top-down steering of the government has also proven to be ineffective, as farmers usually do not like to be told what to do on their own land. Moreover, they do not always know what to do to preserve biodiversity and the environment.

This special does not contain any articles written by the government. The aim was to let the people that work together for more biodiversity and a better environment tell their story: farmers, volunteers, NGO's and scientists.

Ir. Peter Munters
Deputy director Nature and Biodiversity
Ministry of Economic Affairs

This special issue was achieved with a financial contribution of the Ministry of Economic Affairs, Agri-environmental and landsape management, Kennisnetwerk Ontwikkeling en Beheer Natuurkwaliteit and FrieslandCampina.

Dear reader,

In front of you lies a rather hefty special issue of the trade journal concerning agri-environmental management.
A number of years ago this particular topic frequently appeared in the news, as its implementation did not match the expectations. New times, new developments: a completely revised approach has been devised, and will be put into practice in 2016. This will be done primarily by the actual parties concerned instead of by the policy makers, which is, in itself, a positive change.
This special issue aims to present you with a state-of-the-art insight into these important developments: what does agri-environmental management entail, how does it work, what are its pitfalls, what are our opinions, and how can we utilise this opportunity to actually improve the sustainability of the biodiversity and landscape? Funds are available, as are plenty of good intentions... now we just need someone to hit the home run. In this case the batsmen are the managers and the policy makers as well, so you'd better step up too!
And not just reactively, as seen in the case of the weather loaches in glass jars on page 27, but actively as well, in finding ways for cooperation with the Collectives. Remember that word!
A slight, and sometimes slightly more intense, controversy has always existed between farmers with economic interests at heart, and landscape managers and their ecological concerns. I am under no illusion that this will vanish; however, with some mutual understanding (and the necessary resources!) we should be able to move forward. No matter how hard we toil managing forest, nature and landscape with relatively limited financial resources, success has been achieved, but the ongoing process of creeping decline and dilution of the nature quality in rural areas is sadly still apparent. I believe this is exactly where our chance lies to take action and to really turn this around. This issue of the trade journal is, in my opinion, a fantastic 'bookshelf' edition. Many thanks go to those who have made it possible: our sponsors, the authors and photographers of all the articles, and of course our guest editors: Anne Reichgelt (editor-in-chief ad int.), Judith Harrewijn, Karin Cox, Fabrice Ottburg, and Martijn van Wijk. Many thanks to Jan Gerrit van Deelen as well, for his contribution to the realisation of this edition. A job well done!

Ido Borkent, editor-in-chief

Cartoon Herman Roozen

photo's Fabrice Ottburg

The new agri-environmental management system: what can we expect?

From January 1st 2016 onwards a renewed system for agri-environmental and landscape management will be put into effect. Its goal is to make agri-environmental and landscape management more effective; formally, it is aimed at 67 species to which the Netherlands has European obligations. The management will be carried out by agrarian collectives, while the core responsibility is held by the provinces, and the state will be responsible for the system as a whole.

— Dick Melman (Alterra, Wageningen UR)

> The policy concerning agri-environmental management dates from 1975 when the *Relatienota*[1] was published. It was concerned with the protection of nature and landscape resulting from traditional farming. Originally, the policy was meant for 100.000 hectares of reserve and 100.000 hectares of management area, thus, 10% of the agricultural land. The nature reserves were purchased on behalf of terrain management organisations, and in the management areas farmers were able to match their farm to the natural surroundings. Participation in this agri-environmental management is voluntary, and there is a refund available that will at least compensate losses of income. Over the past years the rules for participation have changed several times. The minimum area conditions, the management conditions, the possibility for drainage, etc., have been adjusted to new insights in the field of ecology and the possibilities within operational management.
The agri-environmental management was mainly concerned with meadow birds and less with botanical values and elements of landscape (shrubs, puddles, etc.). At a later stage specific attention was given to ditch banks and field margin management. From the year 2000 onwards the focus shifted from individual parcels towards management on an area level. As it turned out, measures on parcel level did not work. With regards to the meadow birds, so-called management mosaics were created: a small-scale alternation of grassland in different stages of growth. As a result, meadow birds – and especially their fledglings – should always have sufficient coverage and food. As a basis, nest protection was also important, in which volunteers played a prominent role.
However, several studies showed that, on average, the agri-environmental management triggered an insufficient ecological effect, in spite of all these changes. In addition to this, the Council for the Environment and Infrastructure concluded in 2012 that management had to improve.

The Agri-environmental and Landscape Management 2016

Because of the shortcomings, both the state and the provinces have been working on a new system since 2012. Many consider this system to be the final chance of turning agri-environmental management into a mature, professional and society-supported activity.
Most importantly, clear goals will be necessary, which, strangely enough, did not exist up until now. The past few years the main focus was on the species of the Wild Birds and Habitats Directives, for which the Netherlands has an international responsibility. Based on these directives a list was made including 67 species of which it is presumed that agri-environmental management can provide a substantial contribution to a beneficial state of preservation. This will become the goal of the new system: the preservation and boosting of these 67 species, which are, apart from grassland, also found in fields, tall vegetation, ditches and puddles.
Further goals of the new system will be the reduction of the overhead expense, which previously scored above 40%. The new system must also provide a clearer distribution of responsibility between policy and management. The policy will primarily be concerned with the goals and with where they will be realised (the 'what' and

1 Note concerning the relationship between agriculture and nature and landscape preservation.

'where'). The managers will determine the way in which the goals will be realised (the 'how'). This means a greater responsibility will rest on the shoulders of the managers, and further professionalisation will be essential.
The government will facilitate agreements with forty established agrarian collectives. Collectives are associations of agrarians and other land users, and often consist of several Agri-environmental Associations. Terrain managers such as Staatsbosbeheer[2], Natuurmonumenten[3] and the provincial landscapes can also become members, in order to achieve the preferred spatial cohesion on an area level. The province will invite collectives to submit area proposals, in which they can indicate the nature goals they wish to realise, which activities will be necessary to obtain these goals, and what the costs of these activities will be. The province will review these proposals and decide whether they will be eligible for funding.
The provinces will consider the proposals based on their own provincial environmental management plans. In these plans we find a description of how the province will judge the proposals, and the spatial boundaries within which the management is allowed to take place. In order to make the care for the 67 species manageable, the species are divided according to the four agri-environmental types where they are mostly found: open grassland, open fields, dry interlacing networks (wooded banks, shrubs, pollarded trees), and wet interlacing networks (ditches, waterways). The criteria for these four nature types can be found on www.portaalnatuurenlandschap.nl, to which they must comply in order to be considered to be appropriate habitats for the target species. The collectives can use the ecological information on the 67 species and the four agri-environmental types when drawing up their proposals.

2 Forestry Commission
3 National Trust

The environmental management plans of the provinces

All provinces have drafted (provisional) environmental management plans. Alterra4 analysed the plans in March 2015 based on their expected contribution to the realisation of the goals of the agri-environmental management. They have investigated which target species of the list of 67 are included, which criteria are set to the areas that are to be managed, and what the boundaries will look like. Furthermore, collectives have been consulted about whether they are willing and able to carry out these provincial plans.
The outcome is that the provincial plans have been developed carefully, and include regular consultation with the future collectives in order to achieve a proper platform. The most important results are:

a) All plans combined include 66 species, noted once or more. The only species missing in the plans is the yellow-crowned wagtail. The overall impression is that all provinces give appropriate attention to the species that occur frequently within their boundaries. The distribution of the different nature types (grass, field, dry and wet interlacing networks) does not lead to any problems either.
b) The criteria of the habitats, as they have been available in completed form, have been partly included in the plans. The most detailed criteria are those concerning meadow birds. Criteria concerning dry and wet interlacing networks have hardly been incorporated. When comparing provinces, the level of detail of the criteria shows significant differences.
c) The boundaries of the provincial plans include ecologically promising regions as well as less promising ones. The boundaries are outlined with the most details when concerned with meadow birds, where in most cases a so-called core area concept has been drawn up. The boundaries for the dry and wet interlacing networks are very loose and meagrely detailed. It appears that not all promising regions have been designated.
d) The approached collectives are confident and able to carry out efforts to reach the goals. Their appreciation of the plans is strongly dependent on the extent of the prescribed criteria and measures. The plans that are appreciated most by the collectives are plans that rely on the skills and professionalism of the collectives and leave space for management based on their knowledge and expertise. A large proportion of the collectives consider the boundaries to be too narrow. They respect the fact that the province wants to focus on ecologically promising areas, but question whether the data used for designation is reliable and up-to-date. Another concern of the collectives is whether there are enough farms in the ecologically promising areas that are willing to participate. At the same time they predict a high risk of loss of goodwill and investments in the current participants since there might be many willing farms in the non-optimal areas, where no continuation is provided, as these areas are not designated.

Even though the analysis indicates that the provincial plans can be improved, it may be that the collectives create proposals based on their own knowledge and skills that are ecologically effective: the space provided by the provincial plans can be used to great advantage by the collectives. It is therefore hardly possible to say anything definitive regarding the validity based on the provincial plans. Once the area proposals of the collectives are completed, there will be a clearer view on the matter.

Social capital

When the state and provinces developed the system, its ecological efficacy was the main goal. A lot of effort has been put into incorporating the available ecological insights into the system. At

4 Institute for sustainable habitats; connected to Wageningen University.

4 agricultural nature types where the 67 species are mostly found.

photo Fabrice Ottburg

Open grassland

Open fields

photo Fabrice Ottburg

Dry interlacing networks

Wet interlacing networks

photo Jochem Sloothaak


photo Fabrice Ottburg

the same time, we must consider that participation in the scheme is voluntary for farms, but that the state cannot afford too few farms joining the scheme, since it aims to realise part of the international obligations. The farms constitute the social capital for the realisation of these nature objectives. However, they are first and foremost entrepreneurs, no matter how much they care for nature and landscape. If it is not possible within the scope of their business, they will not join the scheme. This means the scheme has to stimulate entrepreneurship. Sufficient compensation is important, but it is not the only issue. Preferably, the grants for management ought to work as a (preferably temporary) lubricant. The grants should enable farmers to implement the great importance of nature within their business. A new income model must be developed for this new position of nature within their businesses. For example, we already find farms that produce cheese while specifically incorporating care for nature and its values. Milking corporations have also started implementing the care for nature and landscape in their branding, for instance 'koe in de wei'[5]. Initiatives like these are supported by organisations like Vogelbescherming Nederland[6] and the World Wide Fund for Nature, another example being the 'de rijke weide'[7] initiative. In this way the consumer is included in the care for nature, and the agri-environmental management gets the recognition it deserves. It represents how we wish to produce food: by incorporating space for other species. Nature by way of the shopping bag!

Ecological insights and the unruly practice

Ecological research gives insights into the factors that are important when it comes to the preservation of species. For instance, high water levels are essential for meadow birds: 20-30 cm of drainage is better than 60 cm or more. The exact limit to performing a regulation will always be a matter of choice. When there is insufficient participation of farmers in wet areas, one will automatically shift to less wet areas. Boundaries that are strictly limited to the wettest regions will deprive farms of the opportunity to participate in the less wet, yet still promising areas. The same applies for factors like openness of the landscape and the degree of disturbance of the areas to be managed for meadow birds. Therefore, the question is: how do you obtain the best areas where, at the same time, sufficient participation can be found?
A second example: At this moment the national breeding population of the black-tailed godwit consists of 30.000-36.000 pairs. There is an annual decline of 5-7 percent of these pairs. The main causes for this decline are a lack of openness of the landscape , a lack of proper water conditions, a lack of serenity and a lack of proper management. In the search areas of the core regions (circa 100.000 hectares) approximately 21.600 pairs can be found. In order to sustainably preserve them there, an investment of around €30-35 million will be necessary on management and €100 million on natural planning (raising water levels, removing high vegetation). A hefty challenge indeed!

Learning management necessary

Based on the above, it is clear that the new system will most likely be a starting point rather than an endpoint. In order to move forward, so-called management by learning will be crucial. Through consultation and research, provinces and collectives can draw up better maps that reflect the chances for effective management. Monitoring and evaluation will render more detailed insights into what will work and what will not. Knowledge and information must be accessible in order to achieve this. For example, we already have a knowledge base for designing and evaluating management mosaics for meadow birds. Benchmarking (collectives that compare themselves with one another) can work as a stimulant with regards to this process. It is essential that efforts are focused on improvement, and not on judging one another. Learning management requires a good amount of flexibility of all those persons involved with the scheme: in this case that entails adjustment of management to new insights and terminating activities that prove not to be worthwhile.

What circumstances are necessary for progress? Under what circumstances can agri-environmental management become more effective and create a type of nature with a high recreational value?

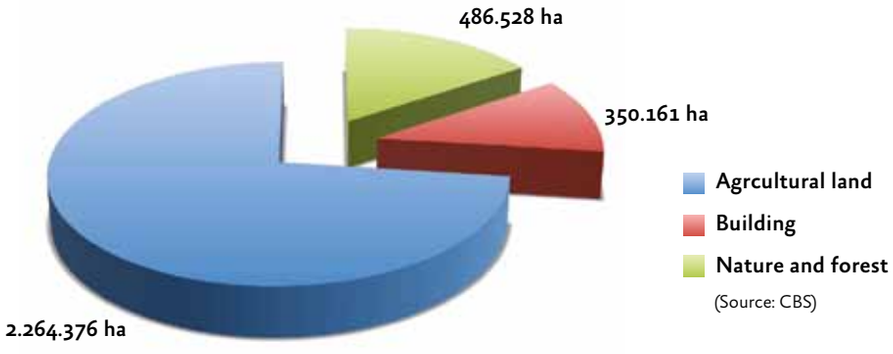
- Provincial plans give rise to general guidelines with clear goals and limited, simple criteria. The designated areas indicate ecologically promising conditions, and offer some 'leeway' for planning.
- Information on the occurrence of the target species and on the determined conditions is up to date and accessible. The collectives base their area proposals on this knowledge.
- Planning and management activities are monitored properly. From this, beneficial evaluations are drawn, and insights for new plans can be developed.
- Collectives are well-organised and are able to construct substantiated planning and management plans. The execution of these plans is well-organised. There is a good cooperation between volunteers and private data collecting organisations.
- Scientific input is essential as it provides innovative insights to the what, where and how. Input is created through the cooperation of farmers and researchers.
- Care for nature and landscape is naturally combined with food production, and contributes to an added value of food (marketing, pricing, license to produce). Nature and landscape care is not considered to be a handicap, but a part of entrepreneurship.<

dick.melman@wur.nl

5 'Cow in the pasture'
6 Bird Protection Netherlands
7 'The rich pasture'

Key figures agri-environmental

Soil use 2010



(Source: CBS)

Number of ha of agri-environmental management

In the Netherlands, the nett area of subsidised management from January first 2014 is over 569.000 hectares. Of the 569.236 ha of subsidised management, 57.805 ha are dedicated to agri-environmental management, over 10 % of the whole.

Province	Staatsbosbeheer	Private sector nature management	Agri-environmental management	Management total
Groningen	13.413	10.333	5.162	28.908
Friesland	31.538	32.149	15.753	79.441
Drenthe	30.457	20.993	2.231	53.681
Overijssel	17.367	26.975	3.459	47.800
Flevoland	18.163	8.576	116	26.856
Gelderland	28.627	67.713	6.546	102.887
Utrecht	6.536	12.089	4.246	22.871
Noord-Holland	11.908	14.662	8.187	34.757
Zuid-Holland	11.941	17.228	6.664	35.833
Zeeland	7.753	10.016	928	18.698
Noord-Brabant	27.975	51.944	2.947	82.866
Limburg	11.284	21.790	1.564	34.638
Total 2014	**216.963**	**294.467**	**57.805**	**569.236**

* (source: Natuurmeting op de kaart (NOK 2014),

The table above is a summarising table, showing the nett value of subsidised nature management both inside and outside the EHS[1], with the exception of 17.967 ha of agricultural management 'ganzengedooggebied' (geese-permitted areas) and 7.429 ha of agricultural landscape management. The data presented by the NOK report show the amount of ha as formulated in the aims and goals of the provinces. Conversion factors have been used in the case of some management packages: regarding landscape, in order to convert metres into units, and regarding meadow bird management, in order to convert gross hectares into nett hectares. Agri-environmental management with a nett value of 57.805 ha roughly equals a gross value of 125.000 ha of agricultural lands.

1 Ecological Main Structure

Entrepreneurs and management contracts

Over
90.000
agrarian entrepreneurs in the Netherlands

Over
11.000
current individual subsidy contracts on agri-environmental management (12 % of all agrarians). All of these subsidies will have expired by 2021.

From 2016
39
agrarian collectives,

1
national collective: Collectief Deltaplan Landschap

Around
170
Agrarian Nature Organisations

Naturetypes and managementpackkages

Current SNL[2]

2 types of agricultural nature,

5 types of agricultural management containing

17 categories of packages and

68 management packages and package variations

ANLb2016[3]

4 types of agricultural nature,

10 types of management, and

36 management packages, in

123 package variations. *(The granting of subsidies is no longer based on the management package but on a habitat level. Water: green and blue services in cooperation with water boards)*

2 Subsidy system Nature and Landscape
3 Agri-environmental and Landscape management 2016

and landscape management

Budget

Budget 2015 and prior years:
around

46 million

per annum

Budget (2016-2021):

60 million

per annum (incl. co-financing by Brussels)

Water – hydrological agricultural measures:

4,2 million

(50% Pillar 2 Brussels en 50% water boards)
potentially complemented by provincial budgets

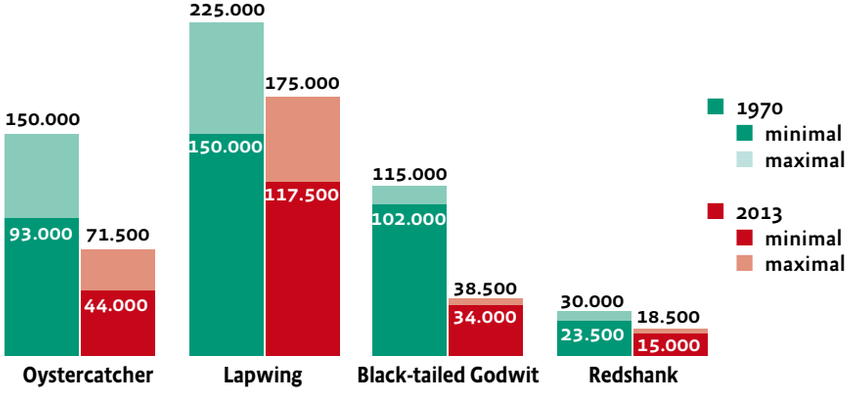
Policy monitoring:

0,8 million

per annum

Ecology/Effectiveness

Number of meadow birds in 1970 and 2013 | Source Sovon Vogelonderzoek Nederland



ANLb2016: **67** international target species: meadow birds, pastoral birds, amphibians, reptiles, butterflies, bats, etc. Qualitative and quantitative criteria: as formulated in provincial nature management plans. 60 million € is reserved for agri-environmental management by Brussels per annum. This adds up to 1/10 of the total income support from the Gemeenschappelijk landbouwbeleid (GLB: Communal agricultural policy) (Pillar 1).

Average expenditure on agri-environmental management per hectare from April 2015 onwards.

370 euros per hectare (gross size) is spent on average. The compensation per ha differs noticeably from one province to the other. Provinces with a relatively higher level of botanical management usually average above 1000.

Drenthe	924
Flevoland	562
Friesland	304
Gelderland	767
Groningen	388
Limburg	1.291
Noord-Brabant	498
Noord-Holland	186
Overijssel	744
Utrecht	251
Zeeland	1.448
Zuid-Holland	200
Grand total	**370**

“The new system of subsidies for agri-environmental management will be beneficial to nature”

Hundreds of agrarians and dozens of agri-environmental associations and collectives are hard at work to develop a new system for agri-environmental management. Everything must be perfect at a legal, financial and procedural level. But this amount of work can lead them to stray from the real issue: will the new subsidy system for agri-environmental management be better for nature?

— Lotty Nijhuis (journalist)

photo Fabrice Ottburg

Alex Datema, chair council of collectives Groningen

“Nature will improve in the appointed areas. It is questionable whether the nation-wide trend of species will improve in this manner”

“I can answer this question with a confident ‘yes’. There are two main improvements compared to the old system. The first is a shift in responsibility. Previously, the government would approve of a plan that subsequently had to be followed to the letter. With the new system, the collectives will be will be held responsible, and are allowed to be flexible when it comes to realising the plan. The expertise of the collectives is sometimes questioned. They possess a good deal of the required knowledge, but they must also be advised by professionals. In my experience a collective is really a promoter of the region. I expect they will include relevant workgroups and (nature) organisations, and will therefore live up to their responsibilities.
Secondly, there are many more options for regulating management. Instead of being limited to a single series of national directives, every province can shape and specify their plans to match their unique situation. Furthermore, management directives will no longer be secured for a duration of six years; it will be possible to adjust the directives each season as well as annually.
Preparations are not necessarily running smoothly; however, the collectives will be ready on January 1st 2016. The system will no doubt continue developing beyond this date. I am convinced that it will be an improvement for nature, at least for the appointed areas.
It is questionable whether the nation-wide trend of species will improve in this manner. I have my reservations concerning the sufficiency of the means and scale of the new system. Chances of improvement now lie with connecting it to the greening demands of the collective agrarian policy. This is a missed opportunity at the moment.”

Cees Witkamp, senior policy officer farmland birds Vogelbescherming Nederland[1]

“Whether the new system of subsidising will improve the quality of nature depends solely on the quality of the regional directives, and how those plans will be executed”

“In my opinion, the new system holds many advantages; for example, the use of core areas. Prior to the new system, funding was sometimes spent on plots where none of the protected species were found. This does mean, of course, that less money will now be available for regions outside of the core areas. Funding is limited in the new system at any rate. Therefore I am pleased that the focus lies on core areas: at least money will now be spent on areas where maximum results can be achieved. Furthermore, areas are selected on the basis of target species. This makes much more sense to farmers. Prior to the new system they simply had to follow orders. The Vogelbescherming is concerned about several matters, though. It is a good thing that in the new system agri-environmental management is embedded in the region: this way, people will be more inclined to act. This, however, does mean that many regional plans are now under pressure: will they really be supported by society? The time pressure associated with this might come at the expense of the correlation between measures and areas, and thus negatively affect the quality of the agri-environmental management. A combination of different measures in the right place is essential, especially for meadow birds. Furthermore, the collectives were founded under strict time constraints. Have they devoted sufficient attention to biodiversity goals, or has most of it gone towards the organisation itself? I also wonder who will review the regional plans, and how? The province must provide rules; for example, a set of criteria to clarify their acceptance or rejection of a regional plan. I do not think this is clear yet.
In short: whether the new system of subsidising will improve the quality of nature depends solely on the quality of the regional directives, and how they will be executed. It is still too soon to draw conclusions on this matter.”

1 Dutch bird protection association

David Kleijn, Alterra

"Farmers are not very eager to include nature organisations in their plans, probably due to fear of the costs"

"In my opinion the old system was insufficient for three reasons: the measures were too fragmentary, they were not implemented thoroughly enough, and they were executed insufficiently in the areas where the target species are found. In theory this new system is a definite improvement, due to the concentration of agri-environmental management in the most promising areas, aimed at target species, utilising a collective approach.
However, I do have concerns when it comes to the realisation of this system. The development of the area plans by collectives – solely farmers – is especially concerning. We could have made a great deal of progress if farmers and nature organisations had joined forces. This never happened, and it is a missed opportunity. The plans are now developed for small separate zones within an agrarian area. This will only yield limited profits for nature. We need more cohesion. Moreover, many nature values need measures on a larger scale; increasing ground water levels, for example. This is a radical measure, especially for dairy farms. In my opinion, collectives cannot implement such measures on their own, or be very motivated to do so.
Farmers are not very eager to include nature organisations in their plans, probably due to fear of the costs. Organisations, on their part, are also very hesitant. I find this odd, as the effectiveness of the management in their own region is strongly dependent on what happens around it. I expected provinces to have aimed more for this type of collaboration. However, this is hardly the case, if at all, and that is a pity.
Synergy between environmental management and agri-environmental management: this should be the main goal of the new system. If this can be achieved, it will be a major improvement. If not, I fear nothing will really improve the quality of nature."

Franck Kuiper, policy advisor for the Nature, recreation and landscape Sector, province of Noord-Holland

"Compared to the government, collectives are more aware of what is happening within a region, and are able to determine what is best for nature"

"The agri-environmental association as a collective will attain more responsibilities in the new system, which will benefit both farms and government. Compared to the government, collectives are more aware of what is happening within a region, and are able to determine what is best for nature. It also reduces hassle: instead of reviewing thousands of unique contracts in detail, these contracts will be reduced to several dozens, which in addition run via the collective, providing a local check for possible mistakes.
The new system might give rise to better results, but at the moment it still consists of mainly theory: farmers must put it into practice. I believe the new system is more attractive due to a simpler set-up and compensations that conform to market standards. It is true that collectives will gain more responsibilities, but they will gain more freedom for their own considerations as well. In short: agri-environmental management will mature!
We have thoroughly cultivated the core areas for meadow birds in the province of Noord-Holland. We would like to optimise the management in the areas inhabited by meadow birds. The motto is: Do more, in fewer regions. Only then will you obtain a better yield. As the agrarian market prices fluctuate increasingly, agri-environmental management as a stable source of income will become more appealing to farmers. The system will then reach its full potential: as a standard component of operational management. That is also how we must view things from nature's perspective: as part of the agro-economic complex. Agricultural nature serves specific nature, such as meadow birds. We must cherish that inherent quality. Farmers wished to be equal to terrain managers. However, instead of seeking confrontations, farmers too must find ways to cooperate: you, the terrain manager, will ensure proper nesting opportunities, and I, as a farmer, will provide a large amount of food. This will benefit nature as well."

Peter Bijen, farmer in Overschild

"At the moment the sole focus lies on areas with an already functional biotope. I do not think this is beneficial to nature"

"The most important gain of the agri-environmental associations over the past few years is a change in mind-set among farmers: attention is given to nature as well as to milking cows. This is very valuable. In Overschild we have started managing meadow birds as well, resulting in an increase in the number of nests. Sadly, last year was my final year. Of course, I will not just start mowing in straight lines again, I still try to go around the nests, but I know the hatchlings have a small change of survival now. Also, our confidence in the government with regard to sustained co-operation towards a common goal has not been improved by this knowledge. I believe willingness is decreasing among farmers. The new system demands another major policy adjustment. To this other factors can be added, such as, for instance, the annulment of the milk quota.
I understand that choices must be made. At the moment, however, the focus lies solely on the areas with an already functional biotope. I do not think this is beneficial to nature. This level of concentration will lead to certain risk factors playing a larger part. A nice feast for the fox: all of your eggs in one basket. Some willing farmers can no longer participate.
I believe more responsibility should be given to farmers. According to procedure, a calculation will determine when mowing is allowed: this determines the losses of income and thus the compensation. In this way, it may very well be that I am allowed to mow on June 8th, while there were still young birds walking around on June 7th. Compensation based on result would therefore be much better. Allow farmers to determine their own strategy. This will be easier for everyone, and who knows what this kind of creativity might lead to."

— Wouter van der Weijden (Centre for Agriculture and Environment Foundation (CLM Foundation)) en Adriaan Guldemond (CLM Research and Advice)

Effective agri-environmental management requires **adequate monitoring**

Our knowledge regarding the effectiveness of agri-environmental management is still incomplete. Therefore, monitoring must be improved.

> The Dutch government has been subsidising agri-environmental management by farmers since 1981. However, a fierce debate regarding its effectiveness has been going on for decades. This is, for a large part, due to the fact that the results of this type of management have not been systematically monitored, and some faunal groups (fish, for instance) have not been monitored at all. Consequently, it is often impossible to distinguish clear connections between management and changes in populations.
This is detrimental in three respects: Firstly, to farmland biodiversity. There is a risk that inefficient management might be allowed to continue for too long, or that the opposite happens and effective management ends up not receiving the recognition it deserves and being shut down. Secondly, it negatively impacts the motivation of the participating farmers and volunteers. Thirdly, it is harmful for the government and the taxpaying society, who want to know if their money is being spent effectively. If this remains unclear, agri-environmental management is at risk of being shut down.

New policies

Partly in response to all the criticism they received, the state and provinces decided in 2013 to revise the agri-environmental policy. The most important changes are the following:

- The policy focuses on (target) species to which the Netherlands has an international responsibility or that have a major international significance;
- Management will be concentrated in promising (core) areas.

The main goal is to make policies more effective. This can only be achieved if a better and more systematic type of monitoring is carried out. If not, another highly polarised debate on the effectiveness of agri-environmental management could arise by 2020, which could lead to the baby being thrown out with the bathwater.

Requirements for monitoring

There are two types of monitoring: policy monitoring and management monitoring.
The aim of policy monitoring is to test whether environmental goals have been achieved, and whether state funds have been well spent, hence, whether the new system is effective and efficient. This type of monitoring (see the box below) is under development by order of BIJ12[1]. The aim of management monitoring is to gain a better insight into the effects of management, and to optimize it if necessary. This type of monitoring is currently being developed by the Stichting Collectief Agrarisch Natuurbeheer[2] (SCAN), and will be the responsibility of the new agrarian collectives, who are also responsible for carrying it out. Both types of monitoring are essential and complementary.

Adequate monitoring must comply with at least eight requirements:

1. Adequate scale, dependent on the size of the area and the species group. For birds of grassland and arable land, areas over 100 hectares are necessary as the target species can move across a vast area, and (may) need different types of management during the different stages of their breeding cycle.
2. Adequate frequency, preferably annually in the case of management monitoring. This is necessary as the population of many plant and animal species may fluctuate from one year to the next, for instance due to differences in weather conditions. This is considered to be 'statistical noise' from a management's point of view. By counting annually, we would be able to separate the 'signal' from the 'noise'.
3. In the case of policy monitoring, so-called control areas must be monitored alongside management areas: areas that have similar conditions, but that are not managed. This is the only way to determine the added value of a certain type of management.
4. In the case of breeding birds, their breeding results must be monitored as well. In the case of meadow birds, these results can, for instance, be monitored effectively by counting birds that are alarming when having chicks.
5. Monitoring land use and management, in all its variations. The collectives know which management system will be implemented. The management schemes must subsequently be correlated with the population trends.
6. Monitoring environmental factors, such as the water level, that influence the trends that are observed as well as the type of management that should be implemented.
7. Standardisation of the methods of inventory, data collection and aggregation, data analysis, and statistics. This will enable valid comparisons between areas and management types over the course of several years.
8. Frequent analysis. Collected data must preferably be analysed annually, and the results must be communicated as feedback to the collectives, the agrarian nature associations, and the farmers. This will fuel the learning process.

Future policy and management monitoring

— André de Bonte, Aequator

The responsibility for carrying out policy monitoring lies with the provinces. They use the collected data for the evaluation of the effectiveness and efficiency of the new agri-environmental and landscape management. At the moment, BIJ12 provides the monitoring and evaluation tools that are required for this.

1 An implementing organisation for provinces
2 Collective Agri-environmental management Foundation

Volunteers sampling the fish population in the province of Flevoland

photo Fabrice Ottburg

This type of policy monitoring aims towards answering the question to what degree the agri-environmental management contributes to the conservation of the target species. Experts at Ravon[3], Sovon[4], Vlinderstichting[5], Werkgroep Grauwe Kiekendief[6], and the Zoogdiervereniging[7] are developing a monitoring network in collaboration with the CBS[8] and the Netwerk Ecologische Monitoring[9] (NEM) that will answer the following questions:

What is the numerical development connected to the distribution of the target species in the four habitats – open field, open grassland, and wet and dry interlacing networks – within the four provinces?
What is the numerical development connected to the distribution of the target species in the different core areas within the habitats?
Is there a difference in the numerical development connected to the distribution of the target species between habitats with or without agri-environmental management?

Information on and evaluation of the implementation of the management is necessary as well. The management monitoring required for this is developed by SCAN on behalf of the collectives. This type of monitoring must provide indications for adjustments of the management (content and placement), both during the season and annually.

3 A professional organisation that is concerned with the conservation of reptiles, amphibians and freshwater fish
4 A knowledge centre specialised in numbers, distribution, and trends of all Dutch bird species
5 Dutch Butterfly Conservation
6 Montagu's Harrier Foundation
7 Mammals Association
8 Statistics Netherlands
9 Ecological Monitoring Network

Three monitoring protocols are being developed for meadow birds, birds of arable land, and elements in dry and wet interlacing networks, such as hedgerows, ditches and pools, respectively.

Policy and management monitoring will be synchronised if possible, so that they can complement each other. Data that are now collected through meadow bird management are perfectly suitable for adjusting the management during the season, but not for determining statistically reliable trends of birds in open grassland.

How do we evaluate the monitoring setup for the ANLb2016[10]?

The setup has several strong points, for example the intention to carry out extra monitoring efforts while optimising the existing monitoring systems. (Further) standardisation of the methods is also pursued. In the case of meadow birds the breeding success is measured by counting birds that are alarming when they have chicks.

However, uncertainties and weak points can be found as well:

- The amount of additional plots that will be added to the agrarian area to adequately monitor the trends via NEM in both areas with agri-environmental management and areas without agri-environmental management is still unclear.
- No agreements have been made regarding the required frequency of the monitoring. The required knowledge is available, however.
- Thus far, too little synergy between policy and management monitoring exists. For example, the policy monitoring must meet a certain geographical level for the measured population development to be adequately correlated with the management measures.
- Registration of environmental factors has not been included in the monitoring, often making it impossible to adequately analyse the effectiveness of the management.
- The reproduction success of certain species groups, such as birds of arable land, can only be determined by costly in-depth research.
- No agreements have been made regarding the analysis of the results; this may come at the expense of overall comparability.

10 Agrarisch Natuur- en Landschapsbeheer 2016 = Agri-environmental and Landscape Management 2016

Budget

Adequate monitoring costs money. Calculations by Sovon indicate that the adequate monitoring of meadow birds alone will cost 0,5 to 1 million euros annually. This amount will easily triple when considering all different species groups, adding up to a total of approximately 1,5 to 3 million euros. Until now, however, the provinces have allocated only €800.000. This will pressure the provinces into cutting back on monitoring at the expense of effectiveness, for example, by only monitoring species and not land use, or by reducing the frequency of the monitoring.
Pressure is put on the budget for management monitoring as well. The monitoring must be carried out within 15 % of the collectives' (management) budget for implementation, and therefore competes with the budget for the management and all other execution costs. Consequently, the problem of haggling and confusion over the effectiveness of the agri-environmental management may very well be repeated in a few years.

Recommendations

1. For state and provinces: increase the budget for policy monitoring to 1,5 to 3 million euros.
2. For the collectives: ensure sufficient budget for adequate management monitoring, not in the least for their own good.
3. For both: if the budget is insufficient, choose to monitor a smaller area adequately instead of monitoring the whole area inadequately.
4. For the state: reserve sufficient budget for making adequate analyses of both policy and management monitoring.

We entertain no illusions that adequate monitoring can solve the debate on agri-environmental management. Besides facts, ratio and emotion, ideology and interests play a large part as well. The wide range of unfounded statements, however, can be significantly reduced. This will benefit all parties.<

wvanderweijden@clm.nl

photo's Fabrice Ottburg

Farming for Nature buffers between

— Judith Westerink, Anton Stortelder, Albert Corporaal and Fabrice Ottburg
(All connected to Alterra Wageningen UR)

Environmental management can become more effective by striving for better cohesion between nature reserves and agricultural areas. Both types of management are part of the same provincial environmental management plans, stimulating consultation between farmers' collectives and nature managing organisations and more connection and coherence within their management. Farms that operate according to the concept of Farming for Nature can deliver this connection and coherence. Since Farming for Nature was included in the Green-Blue Services Catalogue, it has become a real option for integrated area plans.

> Currently, the management of areas of transition between nature and agricultural areas is highly relevant. In many areas, the quality of nature reserves is constrained as a result of the significantly low ground water levels of the adjacent farmlands and the excess supply of nutrients via water and air. Neutralising the contrast between the management of nature reserves and the management of farmland can be realised by implementing extensive forms of agriculture that include higher ground water levels, such as Farming for Nature. According to the concept of Farming for Nature, a farmer must devote 10 percent of his land to 'natural' landscape elements, such as swampy zones, tree hedgerows, and gradually sloping ditch banks. It is the responsibility of the farmer to manage these elements. Farming for Nature enlarges habitats by connecting nature reserves to landscape elements and agricultural parcels with higher biodiversity.
A farmer who has adopted Farming for Nature will demonstrate low fertilisation rates, high ground water levels, and a high ratio of landscape elements. The low fertilisation rates are based

Within the scope of Farming for Nature on farmland, the Hagmolenbeek (Hagmolen brook) has been partly restored from a canalised and stowed brook to its original, natural state. In these restored parts, Alpine pondweed, Pond water crowfoot, and European bur-reed demonstrate a steady environment of nutritious brook water and oligotrophic water from the adjacent higher grounds.

nature and agriculture

on self-sufficiency in manure and feed (closed nutrient cycle). These components set Farming for Nature apart from regular agri-environmental management. All feed and manure must be produced on the farm, giving rise to diverse land use plans and a mixed farm, as well as stimulating the management of landscape elements and nature. A farmer who is part of Farming for Nature will distinguish between rich and poor soil, and use the scarce manure on the richer fields. Therefore, he will have a number of fields that are hardly fertilised or not fertilised at all. In addition, a farmer who has adopted Farming for Nature will be willing to contribute to the management of a nearby nature reserve to obtain biomass. Such a farmer will save on fertiliser and feed, but will see an increase in labour costs and a decrease in levels of food production. For this reason, and because of the provided green-blue services, farmers will receive compensation. The compensation for the current participants in Biesland and Twickel originates from regional funds provided by the Ministry of Economic Affairs, the provinces, city regions, municipalities, and water boards.

At this moment, Farming for Nature is being put into practice at five farms: since 2008 Hoeve Biesland near Delft and Erve Bokdam, Erve Loninkwoner and Landerije de Bunte on the Twickel estate, and the Natuurderij near Deventer since 2013. Until recently, further implementation was hindered by limited permission from the European Commission due to state support regulations. Today, Farming for Nature has become an option for other areas in the Netherlands as well, as it is now listed as a 'business system' cluster in the extended Green-Blue Services Catalogue. Collectives can draw information from this catalogue when developing their area proposals, in which they will now be able to incorporate Farming for Nature.<

judith.westerink@wur.nl

For more information:
http://www.boerenvoornatuur.nl/eng/eng-home
http://www.boerenvoornatuur.nl/eng/Publiactions/publications.

Agrarian Collectives lead to **better results** and **less paper work**

— Jos Roemaat

The transformation of the system for agri-environmental management is beginning to take shape. What will be the role of the established agrarian collectives? And what are the tasks of agri-environmental associations?

> Agri-environmental management – as well as the 14.000 agri-environmental managers – was in dire need of revisions. It was complicated, generated large overhead expenses, caused insecurities among entrepreneurs, and, sadly, generated insufficient results for nature and landscape. A report by the Council of Environment and Infrastructure in 2013 shows they were discontented with the results of the management. The system was dominating its contents. Surely it should be all about meadow bird management, enjoying the beautiful field birds, and landscape management?

Clear agreements

The principles of the new system are excellent: efficient, effective, applicable to the operational management, and generating little overhead expenses. The government will now have business relationships with only forty collectives. For the collectives and their members it is a matter of fulfilling the management agreements and answering to the government. This is where the strength of the new system lies. The collectives prepare regional applications, in which management is confined to the most promising regions. The focus on habitat management is an improvement. This should lead to more efficient management and better results. The collectives facilitate management agreements with the participants, and carry out management monitoring, surveys (field inspections), and level sanctions if necessary. RVO.nl[1] and NVWA[2] will carry out administrative and field inspections on the plots embedded in the collective's management plan. The Stichting Certificering[3] will carry out audits on professionalism.

The beauty of the new system is that clear agreements are made on how the local knowledge and network are implemented when drawing up the regional applications. Employees of the agri-environmental associations often work for and on behalf of the collective. Future years will show how the cooperation between agri-environmental associations and collectives will develop.

Knowledge development

Study groups focusing on the transfer of knowledge have always proved useful in agriculture and horticulture. The collectives will review the results in a similar way with their members. Entrepreneurs will stimulate each other to raise the agri-environmental management to a higher level. Agrarians are now able to substantiate

1 Rijksdienst voor Ondernemend Nederlands = Netherlands Enterprise Agency
2 Nederlandse Voedsel- en Warenautoriteit = Netherlands Food and Consumer Product Safety Authority
3 Certification Foundation

photo Farbice Ottburg

which kind of management will achieve the best results, which is a definite improvement. Practical knowledge, acquired by agri-environmental associations, takes precedence. By means of the new Deskundigenteam Cultuurlandschap of the OBN[4] the collectives wish to combine practical knowledge with knowledge of species and research.

Government

The function of the state and provinces will change with the introduction of the collectives. This can be challenging for some in this early stage: who will do what? The governing role lies with the provinces. Simultaneously, the provinces must provide space for the collectives to take their own responsibility. Still, we are all mutually dependent. For example, the government must make all the required decisions in order for the collectives to do their job. The regional applications must be submitted by the collectives before the first of July. The pre-financing of the invested time has not been organised yet. They will not receive their first resources until 2017: in two years' time! That is far too late. The plans that have been drafted in collaboration with the water boards – combining water and agri-environmental management – have fallen behind schedule, while the regional applications have to be filed now. Will everything be arranged by the first of January 2016?

The inspection arrangements with RVO.nl and the Netherlands Food and Consumer Product Safety Authority based on the control and enforcement policy for the ANLb2016[5] are truly suspenseful. In proposals for this we can see the taxing by rate of proven management errors of individuals against the availability of subsidies for the collective. The collective is responsible as it is the receiving party. If one manager makes an error it is considered an error of the region's whole collective. This might involve financial consequences. It is feared that the survival of a collective could be at risk because of this. A solution must be found at short notice.

Opportunities

The collectives act on their primary goal: contributing to the agrarian cultural and natural landscape. Their ambitions are, however, higher than the resources available for realising the government targets. Innovative ideas are needed for financing and collaboration with other partners. The current step of working together with the collectives seems to be the egg of Columbus. The first collectives are already establishing their role in the regional development: acquisition and management of nature in the agrarian cultural landscape. Perhaps they can play a part in the realisation of greening aspects of the Common Agricultural Policy. Perhaps they can participate in enhancing biodiversity and soil fertility for commercial chains such as Friesland Campina or Cosun. With regard to the forest and environmental managers the collectives can be seen as a new colleague in environmental management: a professional, certified organisation with its own specific expertise. The challenge lies in the aim of realising the goal together in mutual agreement: preserving biodiversity. It is clear that this is a growing process for both collectives and managers.<

jroemaatinfo@online.nl

Jos Roemaat is an agrarian farmer and has been on the board of many organisations concerned with agri-environmental management for over 25 years. He is chairman of the Netwerkoverleg Agrarisch Natuur en Landschapsbeheer, and board member of the Stichting Agrarische Collectieven Nederland, an organisation that enables the cooperation of umbrella organisations for agri-environmental management and LTO Noord, ZLTO and Natuurrijk Limburg.

4 Expert Team Cultural Landscape of the Dutch O+BN Programme, Knowledge Network for Restoration and Management of Nature in The Netherlands.

5 Agri-environmental and Landscape management 2016

Modern stable with a river orientated outlet

photo's Fabrice Ottburg

The strength of the Salland Deal

Working together on agriculture, water, nature and landscape

— Jaap Starkenburg (Stichting IJssellandschap[1])

Users and managers of Salland are working together on implementing sustainable management of the area. By combining agri-environmental management, landscape maintenance and water-related goals with agriculture, a green-blue network is created, yielding great ecological potential.

The Salland Deal is a platform of organisations and authorities. The platform concerns itself with articulating comprehensive plans for the rural area of Salland. The platform consists of IJssellandschap (manager of large estates), the tenant farmer association of Deventer and environs, LTO-Salland[2], Agrarische NatuurVereniging Groen Salland[3], Kostbaar Salland[4] (Fund for landscape maintenance), the municipalities of Deventer, Olst-Wijhe and Raalte, and the Water Board Groot Salland. The platform aims to achieve *favourable marks* for both Salland as a whole and for the participating organisations and the individual entrepreneurs. In the case of Salland, comprehensive, efficient and effective targets must be realised in the areas of agriculture, water, nature and landscape.

European ecological growth

The motivators that led to the Salland Deal were the new directives from the EU (Common Agricultural Policy) were formulated a few years ago, with ecological growth at its basis.
In order to qualify for income support (payment entitlements), farmers had to participate in greening projects. Initially, the EU agricultural commission aimed at creating fallow parcels or borders of agricultural fields, granting a permanent status to meadows. These fallow plots and borders are part of the *ecological focus area*, through which both environmental and ecological goals might be achieved.
Prior to finalising the plans, research was carried out in Salland. Participation in greening projects within a large collective was extensively analysed, especially concerning projects that included excluding field edges from the production in combination with landscape elements, forest edges, waterways, etc. Not only did our research show that Salland can be enriched with a green network, but such a network will result in more individual freedom and advantages for the participating farmers as well. Furthermore, a unique opportunity presents itself with EU regulations that actually support linear elements, as they are part of the ecological focus area. It will bring the

1 IJssel landscape foundation
2 Dutch Organisation of Agriculture and Horticulture of Salland
3 Agri-environmental Association Green Salland
4 Valuable Salland

worlds of agriculture, landscape and nature closer together!
We presented the bid book to the province of Overijssel in November 2014. It contains the ambitions, goals, and specific projects for the coming years. It is a dynamic programme of projects that come and go. An example: Salland is comprised of three large nature reserves, namely the river IJssel and its flood plains, the national reserve the Sallandse Heuvelrug, and the older humid heathland the Boetelerveld. The remaining nature is scattered throughout the region in small patches. The agri-environmental management will be carried out by collectives, uniting the disparate parts. The Agrarische Natuurvereniging Groen Salland is co-operating with other agri-environmental associations as a collective, but remains the most obvious representative in Salland.
This results in a brewing pot of opportunities: agri-environmental management linked to water management, linked to landscape management may yet yield potential ecological improvement and a strengthening on all fronts!

Short strokes and the long haul

A great source of inspiration when it comes to carrying out projects in Salland efficiently and effectively can be found in the villages. Villages can often manage larger projects by working together. For example, in the village of Broekland, we find a committee called the "korte klappen commissie", i.e. the "short strokes committee". This group carries out all sorts of maintenance operations and repairs within and around the village (paving, fixing children's playgrounds, pruning, etc.) No endless debating, just taking care of what needs to be done.
This inspires us immensely, taking care of whatever opportunity presents itself, instead of wasting time on lengthy procedures and meetings. It is more easily said than done though. We are trying to get things done from the bottom up, with easy internal communication. However, we are not able to anticipate the decisions made by municipalities, water board, or province in advance. The Salland Deal platform gathers all relevant projects, determines the overlap between the projects themselves and their relation to the different local interests, and decides on the manner of its implementation. The responsibility for carrying out the actual implementation will lie with one of the concerned organisations that agrees to take the lead. Funding will be provided for this organisation.
Certain issues are more lengthy affairs and require a new policy, approach or cooperation. These are projects of the 'long haul'. An example of this would be the strongly declining soil fertility, resulting in a loss of present minerals and water. The development of a new enriching system for the restoration of soil fertility of sandy ground is in everyone's best interest. It is not an easy task, though.

Future

The Salland Deal will succeed if we manage to achieve favourable marks for both Salland and its entrepreneurs: favourable marks for the short and long term, the immediate and distant future. Our focus is on achieving optimal cooperation for the benefit of agriculture, water, landscape and nature. Our goal is to contribute to the upcoming agricultural policy, both local and national. How will greening be realised, and in what way can it become a "license to produce" that will actually yield a greener landscape as well as thriving agriculture? This vision of a green landscape will be a challenge for all those involved within the area of Salland.<

jstarkenburg@ijssellandschap.nl

Jaap Starkenburg shows the editors of the Vakblad Natuur Bos Landschap around on his grounds.

Development of nature and recreation around De Natuurderij KeizersRande.

The Nederlandse Voedsel- en Warenautoriteit[1] (NVWA) supervises the implementation of agri-environmental management. In the new system the NVWA will work together with or supplementary to collectives that supervise their own members. But how do you supervise agri-environmental management? What do you look for, and what do you do if something is amiss? We had the opportunity to join Bennie Ludema, inspector of team Friesland for the NVWA, on a working day.

1 Dutch Food and Consumer Product Safety Authority

Not up to mark? No funds!

photo's Geert van Duinhoven

The tracks left by the liquid manure spreader clearly show that the farmer did not leave a wide enough margin along the ditch bank. Ludema always carries his 1 metre long ruler.

— Geert van Duinhoven (editor)

> It is early in the morning, and Bennie Ludema has laid out a few case files for our visits today. One part of the visits is selected at random from a pool of all participating farms using agri-environmental management. Another part of the visits is determined according to the participant's history. This means that anyone can end up being visited. However, if a farmer has a history of, for example, tardiness, faulty processing, or not living up to the requirements during the previous year, he is more likely to be paid another visit the following year. Ludema: "We will now visit a farmer who did not live up to the conditions for botanical management last year. I hope he is better organised this year."

Unannounced

The NVWA's visits are always unannounced, so when we arrive at the farm, the farmer looks slightly startled. The large NVWA logo on Ludema's jacket leaves no room for mistakes. The inspector explains why we have come. The entrepreneur's words and body language already give away that his management does not differ from last year's. "My guess is that the young boys on their tractors do not fully understand all the regulations, so they have probably fertilised all the way up to the edge of the ditch."

We can already observe the clear straight tracks of a liquid manure spreader on the first parcel, all the way up to the ditch bank.

The agreement was that he would leave three meters up to the edge untouched, in order to create an uncultivated margin where various herbs may flourish. He most likely has not followed this through. Inspection time. The entrepreneur is allowed to follow us into the field, but he does not feel the need to do so. He will hear the verdict later on. The card reads: 15 contiguous parcels of approximately 4 hectares each. All of them are registered for botanical margin management. However, we can already observe the clear straight tracks of a liquid manure spreader on the first parcel, all the way up to the ditch bank. "That's not good", says Ludema. "I fear this parcel has been fertilised completely. In order to be sure, however, I have to check the entire parcel, so it will be a long walk. We will now check all the parcels, and determine which margins have been fertilised, and which ones have not."

Down to grains of fertiliser

The tracks on the first parcel are obvious, and on the second one as well. However, Ludema cannot conclusively determine whether margin four of parcel three has been fertilised or not. "I want to be as thorough as possible. This farmer has applied for subsidy for all margins. If it appears as if one of the parcels, or even only a part of the parcel, looks okay, I will report it, so that he will probably still receive a compensation for it. If we detect many instances where he left over a meter from the edge untouched, he might still be considered for a lighter package of funding. Whether he will receive it, I honestly don't know. I merely

observe; the RVO1 must determine whether the entrepreneur will receive funding or not."
In the end, what we feared becomes reality: after walking for more than two hours we have seen everything. One of the parcels has probably not been fully fertilised, and on another parcel we have not been able to decisively conclude whether fertilisation has taken place on one of the margins. On approximately half of the parcels we have even discovered grains of fertiliser. Is that not a bit harsh? We almost had to squat in order to detect those few grains of fertiliser. "No, that is definitely not harsh. This person has voluntarily applied for funding, it is not obligatory at all, let me make that perfectly clear. However, whether it is intentional or not, he is not following the requirements. Surely, there is no need to feel sorry for him, or say that I am being harsh on him. I merely report this to the RVO, and they will eventually determine whether this person will be granted funding or not. He will not be fined. It looks like this person just decided to give it a try. He probably estimated that his chance of being visited twice in a row was very slim. He applied for funding, hoping that he wouldn't be checked, so he would receive his money. Too bad for him we visited again: he will not receive anything now."

He does have a stippenkaart[2]

When we confront the entrepreneur with our findings later that morning, he does not seem very surprised. He does not make a fuss, but blames the 'young boys' once again. He does admit, however, that it was his fault that he did not adequately guide these young boys. He cannot actually tell us where it went wrong. The fact that he will not be receiving a few thousand euros for another year does not seem to affect him. Again, Ludema explicitly points out to the man that margin management is not obligatory, and that maybe he should simply not apply for it next year. This will not only save the NVWA and the RVO time and money, but the man as well. A short mutter is the only response.
"There are many farmers who gladly support nature. But not this man, I'm afraid, and he certainly is no exception. This is a problem, especially for botanical margin management. It's always the same story: the young boys on the tractor are to blame, or the contract worker, or pure happenstance. This is not what the subsidy regulation is intended for. And I don't get it: they do not have to participate; it is completely voluntary. So if you do not want to do it, why bother? Simply do not participate."
In order to end the visit on a high note, the entrepreneur shows his stippenkaart, the dot distribution map where he marked the spots of nesting meadow birds in his fields. He applied for nest protection on four parcels. He therefore needs to map the location of the nests precisely, which is usually checked by someone from the meadow bird groups. The map indicates four or five spots where birds are nesting. This means he will most likely receive management subsidy for nest protection. Ludema: "Nest protection is difficult to check. The dot distribution map is fine, but you should actually return once the fields have been mowed for the first time. The farmer has to leave 50 square metres of uncut grass around the nest. This can be checked, but it is difficult to find out whether there have been nests elsewhere. Besides, I have not seen any marking sticks on these parcels that indicate the nests marked on his dot distribution map."

Not in the yard

Alder rows and high hedgerows are easily checked as well: they are either there or they are not. At our second stop today we are concerned with two landscape elements. However, Ludema already anticipated a problem this morning: the high hedgerow, for which the owner has applied for a management subsidy, is situated in the yard, not in agricultural land. It will therefore not qualify for subsidy. That is odd, according to the owner, when he is confronted by Ludema. "I erected this hedgerow six years ago, and it was all fine back then. My agrarian nature association also said the hedgerow looked fine, and that it was in the right location."

Ludema already anticipated a problem this morning: the high hedgerow, for which the owner has applied for a management subsidy, is situated in the yard, not in agricultural land. It will therefore not qualify for subsidy.

"That may be so", answers Ludema, "and the hedgerow looks reasonably well, except that there ought to be a ditch in front of it. However, the regulations were altered a few years ago, and the hedgerow has to be in agricultural land specifically, not in the yard. Sadly, there is nothing I can do to change that."
Next, the owner gladly takes us across his land to show the effect of the three metres wide margin that has not been fertilised. In comparison to the middle part, the vegetation in the margins is much more sparse, and clearly of a different composition, containing different species of herbs. It is not blooming just yet, but in a matter of time these margins will look completely different from the middle part of the parcel. The man was visibly proud of his parcel. It was done neatly. The alder row complies with the requirements as well, which Ludema carries with him on a single sheet for reference: The ratio of alder trees in the row is high enough, the trees are not too old, and regular maintenance is clearly visible. The man will most likely receive funding for this row as well. Sitting at the man's kitchen table, Ludema writes a small report on his findings. The owner is allowed to include a reply. At the end of the year the owner will receive a little less funding from the RVO than he had probably hoped for, as the high hedgerow did not qualify. <

redactie@vakbladnbl.nl

1 Netherlands Enterprise Agency (Rijksdienst voor Ondernemend Nederland)
2 A 'dot map' that shows exactly where birds are nesting within a field.

This shows an acceptable mowing margin, often more than three metres from the ditch bank.

Above: Example of a proper reproduction biotope for the tree frog. *Right:* Sunbathing tree frog in thickets.

photo's Fabrice Ottburg

Cooperating with collectives on **'learning management'**

— Alex Schotman and Fabrice Ottburg (Alterra, Wageningen University) , Wiel Poelmans and Arno Teunissen (Province of Noord-Brabant)

In 2014 the provinces had to come up with a draft Nature management plan 2016. In this draft, the provinces indicated what they wished to achieve and where. Alterra aided the province of Noord-Brabant in this process. There was already a sound knowledge base regarding agri-environmental management in the province of Noord-Brabant. The main question was how to get this knowledge across to the new players, and how to formulate the new nature management plan in order for it to meet the demands of the newly revised system. It had to fit within both the 'corset' of the agri-environmental types and the national target framework. It has been a real quest for all parties, resulting/and it has resulted in an organisational aid for the collectives. This is 'customisation for Noord-Brabant'.

> The province of Noord-Brabant has plenty of experience with habitat approach, the so-called Leefgebieden Agrarisch Landschap[1] (LAL), which is why it was important not to "throw the baby out with the bathwater" when advising on and composing the plan. By the first of December 2014, the province had worked towards reaching an agreement with the collectives on the goals and criteria that had to be formulated in the Nature management plan, in terms of habitat and agri-environmental types. The finalisation of these agri-environmental types at a national level took until well into the fall of 2014. The regional process of achieving a support basis for the new management plan was initiated at a much earlier stage. Against this background, we offered advice on/regarding which goals could be achieved by the province and where, as well as supplying the appropriate rules.

Six 'habitats' have been distinguished for the province of Noord-Brabant, that build on existing policy, and fit within the national schemes of the four agri-environmental types. They describe the agricultural landscapes that are the most promising for national and provincial target species with an international importance. As an aid to the collectives that now face the challenge of submitting an area application, each of the different habitats has been given a short description, including information on the requirements for the target species. The most important ecotopes have been distinguished for each habitat, and the criteria for effectiveness have been formulated. These descriptions have been tailored specifically to Noord-Brabant, staying as close to the national criteria as possible. For details on each species, one is referred to the 'species index cards', made accessible by the Portaal Natuur en Landschap[2] (www.portaalnatuurenlandschap.nl), and species protection plans. The text of this organisational aid forms the basis for the Nature management plan of the province of Noord-Brabant alongside the format of SCAN.

Nature management plan 2016 Agricultural area

The province's Nature Management Plan limits the agricultural areas that can be subsidised for management and development of agricultural nature- and water management services. The Natuurnetwerk Nederland[3] (NNN) is not included. European policy, state policy and provincial policy for rural areas and water have been integrated. In Noord-Brabant they are supplementary to each other: on the one side there is the agri-environmental and landscape management from pillar 2 (SNL[4], POP3[5]) of the GLB[6], and on the other side there are the ecological improvements from pillar 1, and provincial regulations such as 'Stimuleringskader Groenblauwe Diensten[7] (Stika)', subsidy regulation 'connections and landscape', 'biodiversity and habitats' and 'Ecological Connecting Zones'. The evaluation of the agri-environmental management in Noord-Brabant led to the conclusion that the different levels of regulations should coexist, as it allows more flexibility. For this reason, with regard to the nature management plan, the possibility of different regulations outside these boundaries has been taken into account.

Nationally, four agrarian habitats have been appointed, also known as the 'agri-environmental types' of the Nature and Landscape Index 2016: open grassland, open field, dry interlacing networks, and wet interlacing networks. In addition, a category 'water' is in use. After the revision of 2010, the LAL of Noord-Brabant distinguished six habitats (subtypes of agrarian landscape, in fact), to which target species and measures are linked. In order to conserve as much of this well thought-out, substantiated policy as possible, these subtypes have been converted into the six 'habitats' of Noord-Brabant:

1. Open grassland / with wet interlacing networks
2. Open farmland (clay) with wet interlacing networks
3. Open farmland (sand)
4. Wet interlacing networks fen
5. Dry interlacing networks humid
6. Dry interlacing networks Maasheggen[8]

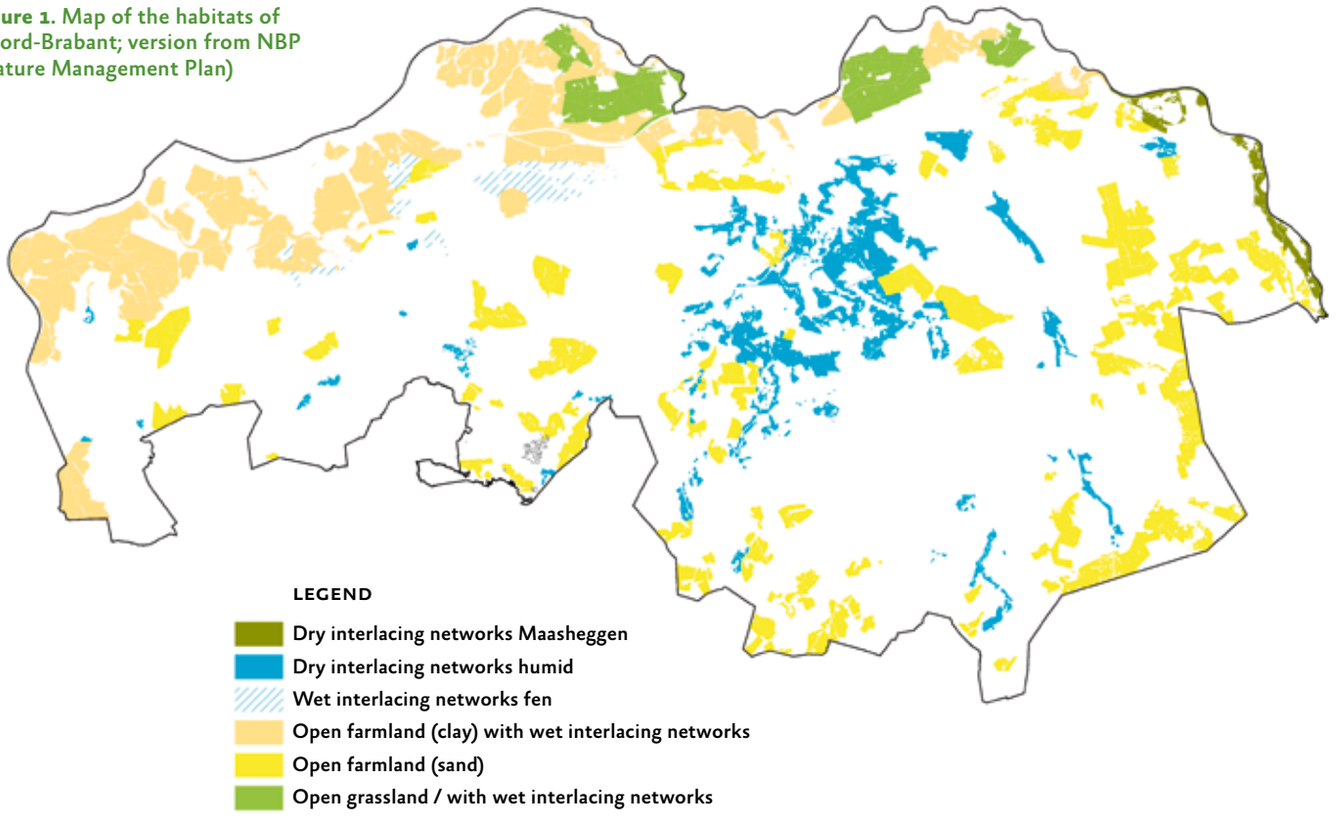
The value of these types of habitats in Noord-Brabant can be seen in the clear relationship with landscapes, which is lacking in the nationally determined habitats. In addition, clear arguments from the 'National Landscapes' policies and experiences in the field of meadow- and

1 Habitats Agricultural Landscape

2 Portal Nature and Landscape
3 Network for Nature in the Netherlands
4 Subsidistelsel Natuur en Landschap = Subsidy system Nature and Landscape
5 Plattelandsontwikkelingsprogramma = Countryside development programme
6 Gemeenschappelijk landbouwbeleid = Communal agricultural policy
7 Promotional Framework Green and Blue Services

8 A landscape and a chain of nature reserves in Noord-Brabant alongside the river Maas.

Figure 1. Map of the habitats of Noord-Brabant; version from NBP (Nature Management Plan)



field bird management are incorporated. These six provincial agrarian habitats are marked on the Nature Management Plan 2016 (figure 1). This also includes the boundaries of the four nationally determined agrarian habitats. For all of these habitats, criteria have been formulated, tailored specifically to Noord-Brabant, that relate to the minimal density of target species, the minimal area size, soil and landscape features.

A number of choices have been made to increase ecological effectiveness. For instance, the number of core areas, in which the budget for meadow bird management will be concentrated, has been reduced from six in the Agri-environmental Management Plan 2011 to two. These two areas yield the best results regarding meadow bird management, and concentrating the means in these areas offers the best guarantee of success. Well-substantiated rules have been included for meadow birds as well, which were also in effect in the previous nature management plan. For the management of target species of dry interlacing networks, two valuable landscapes in particular have been chosen: Het Groene Woud[9], supplemented by other regions of humid sand landscape, and the Maasheggen area. 'Spreading' the limited resources throughout the whole province must be prevented, instead focusing on the highest synergy within these areas through the nature and landscape policy in the Nationaal Natuurnetwerk[10]. In the open farmland (clay) in western Brabant a great amount of experience has been amassed on field margin management. This experience can be transferred to the new boundaries. The 'search area' of open farmland (clay) is still fairly broad, but criteria have been formulated for an effective concentration of measures: a comprehensive management plan has to be formulated, the fielding of resources must take place on at least 250 hectares, of which at least 5% should be dedicated to margin management, and the margins must be > 9 metres wide.

9 The Green Forest, a nature reserve located between the cities of Tilburg, Eindhoven and 's-Hertogenbosch.
10 National Nature Network

Formulating criteria to increase effectiveness proved to be much more difficult for dry and wet interlacing networks. However, a few result-based criteria have been formulated successfully for the province of Noord-Brabant. In this publication we will discuss three examples: for the ecotope thickets in the management type Maasheggen, for amphibian species that are bound to ponds, and for a relatively obscure target species: the European weather loach.

Example: ecotope thickets

The Maasheggen habitat is situated on the bank of the river Maas in Noord-Brabant, from the towns Maashees to Cuijk. It is part of the flood area of the Maas. The landscape consists of a dense network of thicket hedges with occasional trees and bushes. The hedges are kept low and narrow as per the current management. Subsequently, they take up little space, but have a low value for the preservation of biodiversity. No data on breeding birds was used for defining the boundaries here, as has been done for open farmland and open grassland. The area has been

Maasheggen.

photo Hans van den Bos, Bosbeeld

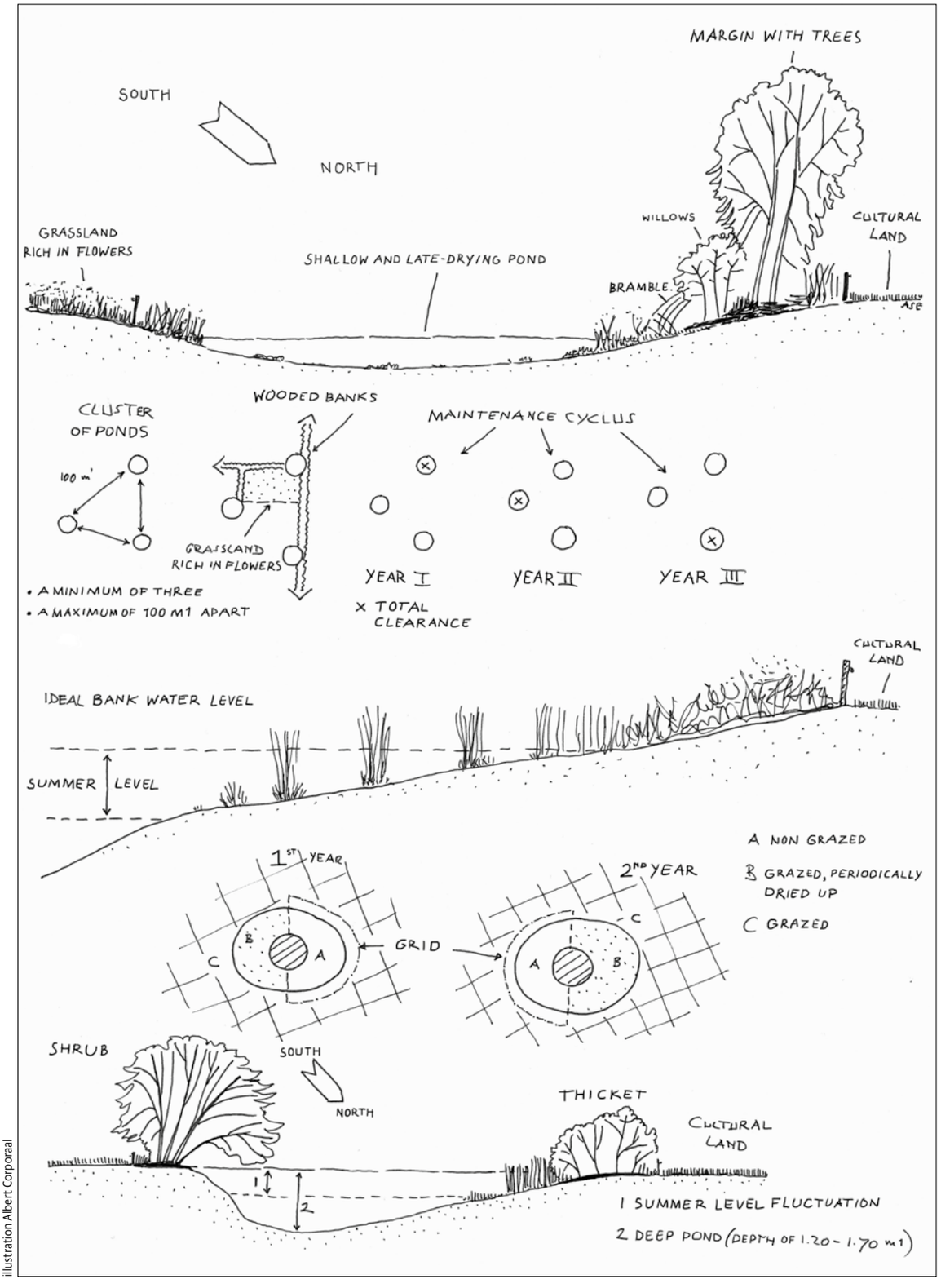


illustration Albert Corporaal

Illustration of the text concerning location, shape and positioning of a pond, and the maintenance of a network of ponds and an individual pond.

defined on the basis of the presence of networks of the cultural-historically special 'maasheggen' ('maas hedges') to which specific fauna is connected. The main target species of this management type are a number of farmland plant species, birds found in thickets (such as the lesser whitethroat and the red-backed shrike), farmland birds such as the little owl and the grey partridge, and also a number of other bird species, such as the common redstart and the yellowhammer. Botanically rich grasslands are also included in this management type. As well as being important for flowers, the thickets form important foraging areas for birds, amphibians and mammals, because of their rich insect diversity and soil life. Badgers and small mustelids are important mammals; the brown hairstreak is an important insect.

The most important ecotopes within the Maasheggen dry interlacing networks are the thicket hedges. The guidelines for the highest effectiveness are: regularly managed units of at least 50 hectares, management for at least 2 kilometres every 100 hectares, of which at least 50 percent includes a floral margin or field margin, and 75 percent has a management cycle of 5 years or more. To test the criteria, management within the framework of the Stika in adjacent reserves will be included.

Impression of the remarkable landscape of Maasheggen along the Maas. Photo: Integraal gebiedsprogramma Maasheggen, Dienst Landelijk Gebied (Integral area program Maasheggen, Rural Area Service).

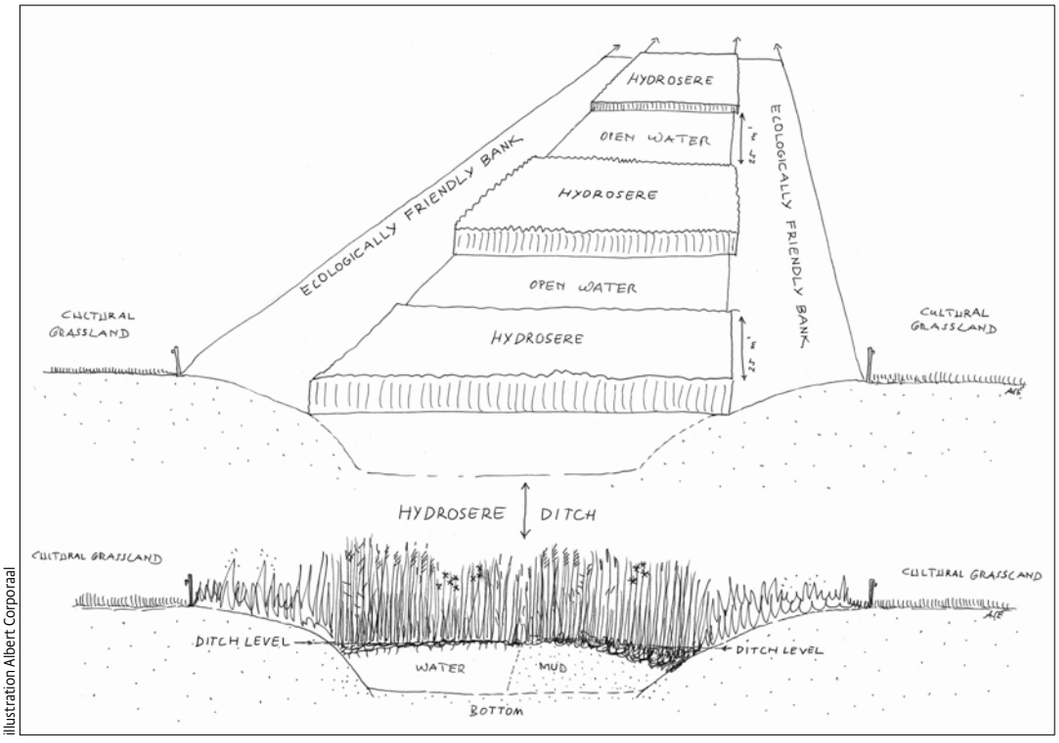


illustration Albert Corporaal

A hydrosere ditch, and optimal cyclic management for the European weatherfish.

Example: amphibians group

The national management type 'ponds' is included in national criteria for effectiveness in both dry and wet interlacing networks. In Noord-Brabant ponds are mostly found in 'dry interlacing networks humid'. Species such as tree frogs and northern crested newts need ponds with a specific water quality and size, and nearby landscape elements such as thickets and hedgerows or forest. General rules on maintenance, management and spatial configuration have been included for groups of amphibians and plants bound to ponds:

- Clusters of at least three ponds, less than 400 metres apart from other clusters
- If different clusters are more than 1 kilometre apart, 5 to 10 ponds must be aimed for, making an individual cluster sustainable.
- A comprehensive management plan must exist, in cooperation with other terrain owners
- Ponds are not connected to open water, no inflow of fertilisers or toxins. Clean subsoil
- Cyclical maintenance every three years, occasionally longer, decreasing the frequency of the maintenance (customisation)
- Dimension, exposure, location, and environmental features are aimed towards local target species
- In the case of intensive grazing, the pond must be provided with a grid. Extremely extensive grazing (horses/ponies) is beneficial for tree frogs.

An example of how ditches can be managed in temporal and spatial phases for the benefit of the European weatherfish.

photo Fabrice Ottburg

Example: target species European weatherfish
Some target species are relatively unknown to agrarians, and require special attention. Because of the great importance of western Noord-Brabant (core area) for the European weatherfish, special attention has been given to this species in the organisational aid. The recommendations can be applied to other provinces as well. Target species of wet interlacing networks occur in three out of six habitats in Noord-Brabant. General qualitative criteria for ditches have been formulated for these target species. If European weatherfishes occur, additional requirements are necessary. (Dead end) waterways that benefit the European weatherfish are provided with:

- Bank management to prevent the inflow of fertilisers
- A dense and varied vegetation of water plant species and/or waterside plant species
- Maintenance in phases and on a small scale, always keeping parts of the ditch closed to other fish species that feed on young European weatherfishes.
- A water level that is as natural as possible

Rules a guarantee for effectiveness?
The organisational aid clarifies a number of things in Noord-Brabant. On the level of the area as a whole, the province has included a few new criteria for true effectiveness in the nature management plan. As the size of the search areas is limited, it indicates where the measures will be most useful. By describing the ecotopes without mentioning the management measures, ultimate goals are indicated. But will the new system eventually be more effective? This depends on whether the collectives will be able to formulate answers to these questions:

- Where do the target species occur? Will any efforts have an effect on this location?
- What does this location require? Which measures? Intensity? Scope?
- What will the expected effect be of the efforts on the target species?
- After the effort: to what extent were our expectations realised (relating efforts to results, evaluation)?
- How do my efforts compare to others people's efforts?

Naturally, collectives are not expected to be able to answer these questions directly, but only when they are will it be possible to start working effectively. In order to answer any unanswered questions, collectives must look to cooperate and devise a proper plan for monitoring.

Factors for success
Which conditions must be fulfilled by future progression of this project in order to make the revision of the current system a success?

- It must be clear where the best chances of success will lie. At the moment this is often unclear. The boundaries of promising areas are often not as clear-cut in other provinces in comparison to Noord-Brabant
- Details on the distribution of target species are often insufficiently known. How will collectives find the most promising areas? How will they know which measures are the most effective? In short, where are the hotspots of species, and which type of action must be undertaken (planning, management, or both?)
- Agrarian collectives cannot remain solely agrarian. Collaboration with local workgroups of interested parties is necessary, for example volunteer work in determining the breeding success of meadow birds. Cooperation on management monitoring is essential.
- The provinces cannot sit back and leave the ANLb[11] to the collectives. They must constantly challenge the collectives to continue to work efficiently and achieve their goals. The risk of management budget being spent on trivial matters is too high. Noord-Brabant solves this by formulating rules.
- At the moment, the focus is on biodiversity goals. In the long term, further integration of landscape, water and recreation targets is essential.
- Starting collectives are, potentially, the basis of economically sound regional organisations that have the financial power over the management and quality of the green areas. However, it is still essential that an actual market will develop for the green services on a broad public level. This has not yet happened in either Noord-Brabant or anywhere else in the Netherlands.

Thus, action must be undertaken. Not only by the collectives, but by local workgroups and the provinces as well, if necessary by cooperating with ecological consultancies and / or Individual Data Management Organisations. Essentially, it comes down to the entire Dutch society. Only by 'learning management' will this have a chance of success.<

Alex.Schotman@wur.nl

For more information:
Alterra report 2598 "Naar effectief gebiedsgericht agrarisch natuurbeheer in Noord-Brabant"[12].
This report can be downloaded via www.alterra.wur.nl


photo Fabrice Ottburg

Two European weatherfishes (European weather loaches) in a jar. The animals used to be kept like this and were used as barometers by farmers. When atmospheric pressure changes, these fish become very active, which is a harbinger of bad weather.

11 Agrarisch Natuur- en Landschapsbeheer = Agri-environmental and Landscape management

12 "Towards effective, regionally aimed agri-environmental management in Noord-Brabant"

The psychology of Dutch agri-environm

There are alternative guidelines for motivating farmers to take up agri-environment schemes besides financial compensation. Research at Wageningen University has shown that the form of guidance needs to be customised for different forms of agri-environmental management for it to be effective. A better understanding of the psychology of farmers is therefore required in order to develop effective guidance for achieving the desired agri-environmental and landscape management behaviour.

— William van Dijk (Wageningen University)

photo's Fabrice Ottburg

> Despite the long history of agri-environment schemes (AES) in the Netherlands there has been much criticism over the past ten years concerning their effectiveness in conserving agrobiodiversity. In order to improve the effectiveness, which is a major goal of the new agri-environmental programme, the current AES need to be critically analysed. A critical point when it comes to improving AES is that the government depends on the willingness of large numbers of farmers to adjust their farming practices; therefore, factors underlying farmers' motivation to take up AES need to be better understood.

Theory of planned behaviour

Based on a frequently applied psychological model – the theory of planned behaviour – researchers have investigated which factors play a part in Dutch farmers' motivation to perform collective AES, and how the so-called environmental cooperatives affect this. Environmental cooperatives are large regional collectives of farmers that coordinate and facilitate collective AES that are performed jointly by groups of farmers. Examples of collective AES in the Netherlands are ditch bank management, aimed at conserving the plant species of wet meadows, and the protection of meadow birds.

The theory of planned behaviour proposes that a person's willingness to perform a certain type of behaviour depends on three underlying variables: 1. Attitude: the rational consideration between the positive and negative aspects of the behaviour; 2. Social pressure: the perceived expectations of important people regarding the demonstration of certain behaviour.; 3. Perceived behavioural control: the perceived ability to successfully carry out the behaviour. In addition to these three, a number of other variables have been added over time, of which self-identity is the most important. Self-identity determines to what extent a person considers the behaviour to be part of his identity.

Customisation

In a recent study, researchers determined how these variables influence the willingness of farmers to participate in three different forms of AES: collective ditch bank management, collective meadow bird management and voluntary unsubsidised agri-environmental measures. The latter entails, for example, maintaining a hedge or having pollard trees or stacks of branches on the farmyard, but also concerns the implementation of measures on a smaller scale, such as hanging nest boxes.

The results of this study show that for different forms of AES different variables determine farmers' intentions to carry out the management. For collective ditch bank management the most important variable is attitude, the rational consideration between the positive and negative

ent schemes

aspects of ditch bank management. In the case of meadow bird management, more complex variables play an important role, such as social pressure from fellow environmental cooperative members, facilitation by environmental cooperatives and farmers' self-identity. However, for voluntary unsubsidised measures, self-identity, not attitude, proves to be the crucial factor. The influence of self-identity indicates that the extent to which farmers consider the performance of these measures as part of their identity as a 'good farmer' has a major influence on their willingness to carry out the measures. The results of this research also show that, in the case of unsubsidised management, environmental cooperatives have a positive influence on the willingness of farmers to perform them, even though these measures are not the primary responsibility of the environmental cooperatives.

Ditch bank farmer

The logical next question is: how can we translate these findings into guidelines for motivating farmers to increase their efforts to improve agri-environmental management? First, customised guidelines depending on the type of management are required. In the case of ditch bank management, if farmers were to monitor the ditch bank vegetation themselves, this might have a positive influence, as they would directly see the results of the measures, making them potentially more positive about ditch bank management. In the previous agri-environmental programme (*Programma Beheer*, between 2000 and 2009) this already happened through result-oriented remuneration. In this system, the amount of subsidy farmers received was based on the number of plant species per kilometre ditch bank associated with their land. However, from 2010 onwards this system was abolished and farmers received a subsidy based only on the management they carried out. If result-oriented remuneration is to be reintroduced, it has to be supported by both policy makers and the environmental cooperatives that have to be willing to apply for and coordinate the work again.

In order to motivate farmers when it comes to meadow bird management or additional unsubsidised measures, alternative options are possible, aimed more at the self-identity of a farmer. In social psychology, Stryker's identity theory proposes that a person's self-identity consists of several identities, dependent on the social role fulfilled by the person at that moment. Therefore, in different situations the behaviour will be determined by different identities. Depending on the situation, a farmer can take up the identity of a father, nature enthusiast, member of an agricultural environmental association, or entrepreneur. Current AES focus strongly on compensating the farmer's loss of income caused by AES. This emphasises identities linked to finance and entrepreneurship which might give rise to a situation where a farmer, when considering carrying out AES, feels that the identity of a 'good entrepreneur' is much more important than the identity of, for example, a nature-lover.

Emphasising or 'labelling' the nature-friendly identities of farmers may be a way to highlight other environmentally friendly identities and make AES less about financial decisions. 'Labelling' has already taken place to some extent by the use of the term 'meadow bird farmers' for farmers who perform meadow bird management. 'Meadow bird farmers' emphasises an identity for farmers that is directly connected to AES. This may partially explain why self-identity was associated with the intention to perform meadow bird management but not with ditch bank management. Meadow bird management may have become part of one of the identities of a farmer. For other forms of environmental management, labels like 'nature farmer' or 'ditch bank farmer' could possibly have this effect as well. It might even be possible that labelling farmers as 'environmental cooperative members' could have a positive influence on a farmer's nature-friendly identity.

Environmental cooperatives: an obvious platform

The results of this study highlight starting points for increasing the effectiveness of Dutch AES; The environmental cooperatives can play a vital role as a regional partner between farmer and policy makers, assisting with the communication and facilitation of the management. The new Dutch agri-environmental programme *Subsidiestelsel Agrarisch Natuur- en Landschapsbeheer 2016*[1] seems to be a step in the right direction by endorsing and strengthening this role. Within this new system, the environmental cooperatives provide the most logical platform for improving the motivation of farmers for AES, which could make them more effective where it concerns the conservation of conserving the biodiversity of the Dutch agricultural landscapes.<

william.vandijk@abdn.ac.uk

van Dijk, W.F.A., Lokhorst, A.M., Berendse, F., de Snoo, G.R., 2015. Collective agri-environment schemes: How can regional environmental cooperatives enhance farmers' intentions for agri-environment schemes? Land Use Policy 42, 759-766.

1 System of subsidies for Agrarian Nature and Landscape management 2016

Management measures for the improvement of water quality and ecological values in ditches will be incorporated into the Agri-environmental and Landscape Management from 2016 onwards. Water boards and agrarian collectives will be working together towards creating a chemically and ecologically sound water condition (aquatic framework directive), and the realisation of a robust, sustainable and climate-resilient water system. Both Europe and the national water boards pay an annual 2.1 million euros in order to achieve this. Agrarian water management has been incorporated into the provincial agri-environmental management plans, which allows agri-environmental and landscape management and water management directives to supplement each other when possible. Three water boards elaborate on how they develop the 'blue services' in cooperation with the agrarian collectives.

— Geert van Duinhoven (editor)

Agrarian collectives and the

Hollands Noorderkwartier Water Board

— Henk Bouman

Since 2014, farmers of the agri-environmental and landscape association Water, Land & Dijken[1] (WLD) have provided services for the Hollands Noorderkwartier Water Board that contribute to the improvement of water quality.

Blue services

We, as Water Board, have requested the creation of a cohesive package of water services in 2014. It concerns auxiliary services that decrease the runoff of fertilisers and pesticides, or services that improve the habitat of aquatic organisms in and around ditches. Since 2014, farmers have been carrying out the following services on our behalf:

- executing yard scans to check the runoff of hazardous substances from the farmyard and subsequently taking action.
- Composting grass clippings and using it to improve the soil, thereby decreasing the runoff and leaching of hazardous substances.
- Making sure that existing banks are more environmentally friendly.
- Carrying out the maintenance of ditches and banks at certain intervals, and by using nature-friendly machinery for ditch cleaning, minimising the ecological damage.
- The laying-out of field margins and buffer strips in between fields and ditches.

The agreement is that, by the end of 2015, 10 yard scans will have been made, 25 km of nature-friendly bank will have been realised, 122 km of ditch will have been maintained in an ecologically sound manner, and 50 km of field margins will have been laid out.
The Hollands Noorderkwartier Water Board aims for measures that are in the interest of farmers as well, but these will not come into being without guidance or a financial contribution. If a deteriorating bank is transformed into an environmentally friendly bank, it will create a stable bank for the farmer. Furthermore, less soil will slide off into the ditch, and the formation of mud will decrease. In addition, a field margin full of flowers populated by useful insects leads to a biological balance in their crops, making it possible to reduce the use of chemical pesticides. If farmers are convinced of these 'win-win situations', they will be more willing to carry out water services. This also increases the chance for continuity if the financial contribution should be terminated.

Optimal effectiveness

A number of services have a synergetic connection with other policy goals of agri-environmental management. The construction of floral field margins is not only effective for water goals, for example, but also offers nest protection and foraging areas for birds and land animals. WLD combines the construction of economically friendly banks for the Hollands Noorderkwartier Water Board with water level measures for the 'Kwaliteitsimpuls weidevogels'[2] project, which is carried out for the Gebiedscommissie Laag Holland[3]. This is made possible by the unrestricted search area for water services, consisting of all the agrarian land within the region of the Hollands Noorderkwartier Water Board. A wide search area such as this is possible because we have formulated the systematic approach for water management to be: "water flows".

From 2016 onwards, we will apply the same course for the agrarian collectives Noord-Holland Noord and Texel[4].

1 Water, Land & Dykes

2 Quality impulse meadow birds
3 Area commission Low Holland
4 The province of Noord-Holland North, and the island of Texel.

photo's Fabrice Ottburg

water board

Rivierenland Water Board

— Ton van der Putten

From the 1st of January 2016 onwards, the Rivierenland Water Board is looking to collaborate with the three agrarian collectives in its management area: Rivierengebied, West Brabant and Stichting Alblasserwaard Vijfheerenland[5].

Insufficient knowledge of the Flora- en Faunawet6

The Rivierenland Water Board, particularly the Afdeling Beheer en Onderhoud[7] and the portfolio managers, has not yet experienced the – limited – cooperation with agri-environmental associations in a positive way. This is unfortunate. A pilot project on maintenance, carried out by an agri-environmental association, ended with a breach of trust. The evaluation showed that the work that was done was not always of sufficient quality. Sometimes the wrong equipment was used to carry out the work, there was an occasional lack of knowledge on the Flora- en Faunawet, and personal operational management was sometimes prioritised above the agreed obligations. There are therefore reservations regarding the knowledge and professionalism of the agri-environmental associations in their current form. For this reason we have decided to summarise the cooperation with collectives as follows: 'Start small, earn trust, and slowly expand'.

Low risk profile

The Rivierenland Water Board has been having positive experiences with field margin management (buffer strips in between parcel and ditch) since 2000. Agrarians share this enthusiasm. The buffer strips contribute to the improvement of water quality, as they limit the emissions of fertilisers and pesticides into ditches. The funding regulations for field margins (recruitment, the drafting of contracts, supervision, payment) have been carried out within our own management. These regulations in particular are suitable to be carried out by collectives from 2016 onwards, as the regulations have clear conditions, are relatively easy to monitor, and have a very low risk profile (no risks for water management). In 2016 we wish to start the blue service 'processing ditch clipping'. The current situation is that we transport the clippings of environmentally friendly ditches to a composting facility. The blue service would imply the transportation of these clippings to the farmers who wish to use it as an organic soil improver on their farms. This measure aims at preserving organic substances and minerals within the natural cycle, and creating healthy soil and subsequently healthy surface water. This type of arrangement can be found throughout the country. We believe that these are the blue services that can be carried out by collectives. By investing in cooperation within an area, we believe that even more support and understanding will arise for measures that contribute to the realisation of our mutual tasks.

5 The River region, Western Brabant and the Alblasserwaard Vijfheerenland Foundation.
6 Dutch Flora and Fauna legislation
7 Department of Management and Maintenance

Rijnland Water Board

— Marinus Bogaard

Several years ago, Rijnland gained experience on assigning agrarians to ecological ditch management. It has become clear to Rijnland that this can contribute to the realisation of the water board's water tasks: plant growth has become more diverse in ditches and more insects have appeared in the bank zones of ditches. The spined loach has even been spotted. The agreements do need to be personalised for each farmer, including inspections and formalities. This resulted in such an increase in administrative burdens that the project had to be terminated. The newly founded collectives of agrarians and other land users offer a great solution for the continuation of ecological water management.

Social relevance

According to Hans Schouffoer of the water board this method fits perfectly within the new role of the government, and therefore the water board. "We return the responsibility of the quality in ditches to the owners and tenants. Why should we take on the care for water quality by ourselves? Landowners have the responsibility for the execution of regular maintenance on ditches and are often better qualified for carrying out any additional quality measures, at lower costs. Moreover, there are funds available. I consider funding to be proof of social relevance. Nonetheless, I believe that the participation of the inhabitants in the rural region is even more important. Prior to the project, we asked people to send in a photograph of what, in their view, constitutes a perfect ditch. This yielded much response. Ditches are dear to them, they believe it is important to maintain them, and these sentiments are noticeable in the agrarians that have started working on this project.

Measures

Rijnland would like agrarians to handle their ditch maintenance in a different way. Most agrarians still empty the ditch completely, removing all plant growth. The water board prefers agrarians to use the dredge to slightly deepen the middle of the ditch, thus creating shallower banks. On these banks all sorts of (rare) plants species can grow that additionally purify the water. In ditches with clean water and a diverse plant growth there is enough room for different sorts of fish, dragonflies, and other animal species.
Rijnland would also prefer agrarians to abstain from cleaning both sides of the ditch over a long stretch in one go. This may be more efficient for the farmer, but, for all sorts of animals these interventions have such an impact that animals will die or move away instantly. Therefore, it is better to clean the ditches in stages, for example leaving a strip undisturbed every 50 or 100 metres, or mowing one bank one year, and the other bank the following year.

Cost-effective

Agrarians who carry out the management measures will receive compensation by Rijnland. It is not a large compensation, but it is cost-effective. However, according to Theo van Leeuwen, chair of the regional collective De Groene Klaver[8], "We are not living in a glass house. The collective is situated close to Leiden, an area that is frequently visited by people who love walking, cycling and other recreational activities. Those people want a beautiful agrarian landscape, and we can provide that. A positive reputation is becoming increasingly important to us, and definitely to agrarians selling various regional products from their farms as well. Therefore, we definitely are not participating solely for the financial compensation".
As far as Van Leeuwen is concerned, agrarians should carry out even more measures, especially for Rijnland and subsequently for society. "However, this is dependent on two factors. It has to be possible within the operational management of an individual entrepreneur, and a reasonable compensation must be available. Of course, it is important that our realised nature values do not form an obstruction for our businesses: we do not want to be impeded in our management by the ecological measures we have created ourselves."<

redactie@vakbladnbl

8 The Green Clover

photo Fabrice Ottburg

photo Frans Eijgenraam

What will be the next step in meadow bird management?

— Wolf Teunissen (senior researcher Sovon Vogelonderzoek Nederland[1])

Meadow birds are often connected to the ultimate feeling of spring: tumbling northern lapwings, calling black-tailed godwits, and singing Eurasian skylarks accompany us when we are walking through the polders. In reality, however, large parts of the agrarian area have currently become very quiet. The major decline in the number of meadow birds speaks for itself: the management has not been effective up to this day. Where is it going wrong, and how can we do better?

> The common meadow birds living in Dutch grasslands – northern lapwings, black-tailed godwits, ruffs, common snipes, common redshanks, Eurasian oystercatchers, Eurasian curlews, Eurasian skylarks, meadow pipits, western yellow wagtails, tufted ducks, northern shovellers and garganeys originate in tundra's, steppes, marshes and floodplains along rivers. Especially the latter habitat is what makes the Netherlands so attractive for these species. The cultivation of these areas by farmers made them even more suitable. It has resulted in open grassland areas, and the strong increase of fertilisation in the previous century majorly benefited soil and insect life: the food for meadow birds. The number of meadow birds in the Netherlands increased over that period. But it will not continue to do so for much longer.

1 Sovon Dutch Centre for Field Ornithology

The number of meadow birds is declining markedly.

Since the sixties reliable data has been available concerning the development in numbers of oystercatchers, northern lapwings, black-tailed godwits and common redshanks (figure 1). Up until 1990 the number of both northern lapwings and oystercatchers was increasing, while black-tailed godwits and common redshanks were already in decline. In this period a re-division of land enabled the continuation of the draining of wet grasslands. Oystercatchers and northern lapwings thrived on these developments, as they prefer dryer grasslands. Black-tailed godwits and common redshanks, however, prefer wetter grasslands. After 1990 we see a decline in all species. The continuing intensification of land use and a steady low ground water level play a part in this decline. This, in combination with the increase in fertilisation, has brought the date of the first mowing forward by more than a month since 1900. The result is that the period in which meadow birds can find a nesting place, hatch their eggs and raise their young without disturbance has been drastically shortened – with all

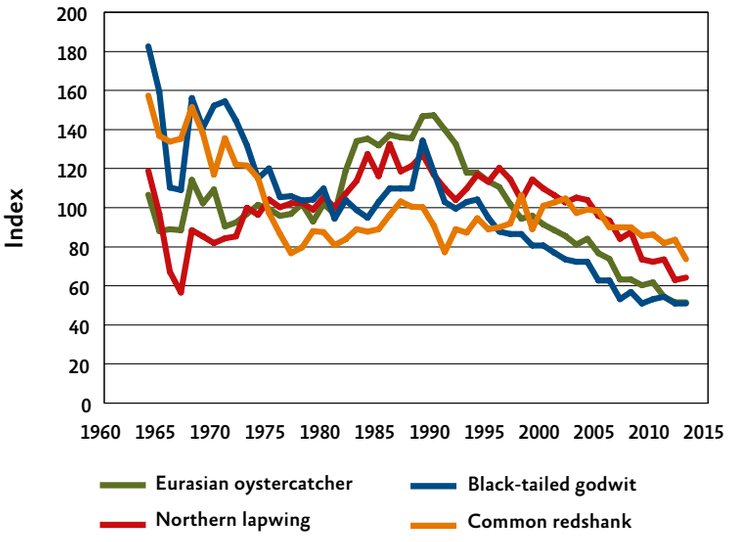
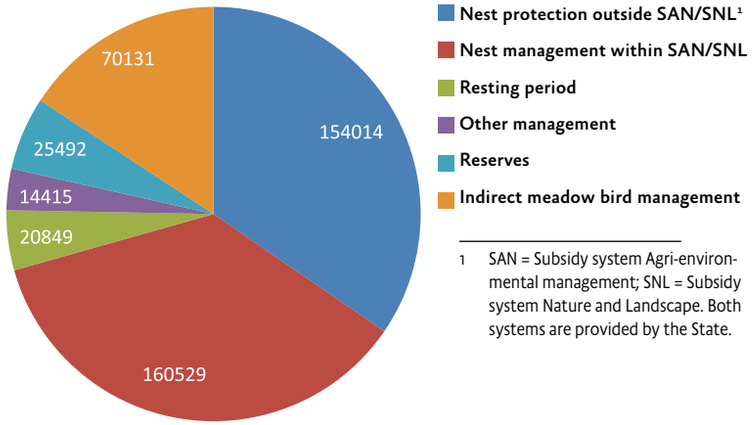


Figure 1. Development of the numbers of four waders in the Netherlands. For a better comparison between the species the average index value for every species has been set to 100. The population size in 2013 was estimated to: Eurasian oystercatcher 44.000-71.000, Northern lapwing 117.000-176.000, Black-tailed godwit 34.000-38.000, and Common redshank 15.000-18.500. (Source: Netwerk Ecologische Monitoring [Sovon, CBS, provinces]).



1 SAN = Subsidy system Agri-environmental management; SNL = Subsidy system Nature and Landscape. Both systems are provided by the State.

Figure 2. The size of different forms of pasture management (total of 445.430 hectares) in the Netherlands (data for 2011). The resting period concerns all management schemes including a postponed mowing date. Other management entails measurements such as plas-dras, collective agreements, grasslands abundant in herbs, etc. Measures that are not primarily aimed at meadow birds are placed in the category indirect meadow bird management, such as hay fields, (semi) natural grasslands, valuable grasslands, etc.

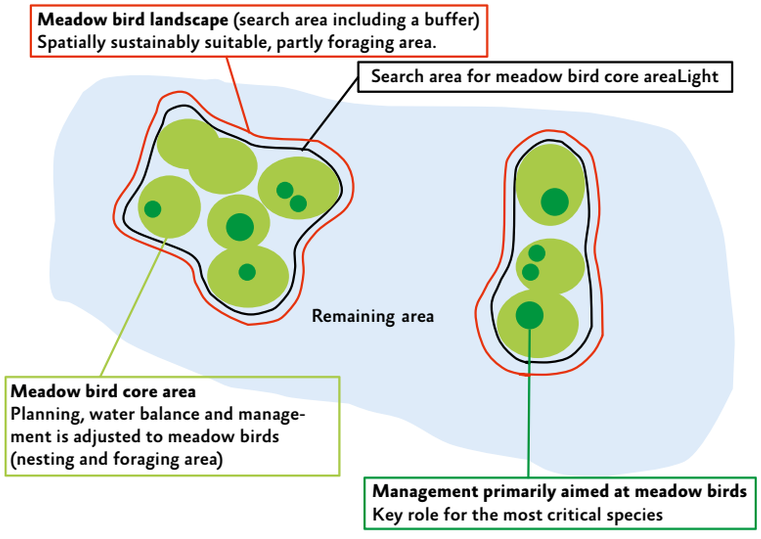


Figure 3. Illustration of the concept of meadow bird landscape, in which core areas are distinguished. Within the core area, all factors are ideal: openness, absence of disturbance, water level and management. In order to guarantee the openness of the landscape a buffer is present around the area, in which upright elements such as trees or buildings are missing and tranquillity is guaranteed. The core areas can contain so-called 'super cores' (mostly in reserves) that are fully arranged and managed according to the needs of the most critical species, such as ruff and common snipe.

the associated risks. At the same time, the breeding areas have shrunk due to the expansion of cities and infrastructure; for instance, permanent grassland has nearly been reduced by half: from 1.3 million hectares in 1970 to 0.7 hectares in 2012. This reduction is partly due to the conversion to temporary grassland (grassland that is re-sown within five years). Especially those grasslands, but permanent grassland as well, have deteriorated in quality. Fewer herbs, which are essential to the growth potential of young birds, can be found in grassland nowadays. Herbs attract many insects, resulting in a diverse food supply.

Current meadow bird management

With the implementation of the Relatienota[2] in the seventies, professional meadow bird management was introduced to an extent of circa 64.000 hectares up to the year 2000. This type of management has been replaced by new regulations since the beginning of this century, in which the input of farmers was increased significantly. Approximately three quarters of the present meadow bird management (in an area close to 450.000 hectares) consists of the protection of nests (marking the nests and placing nest protectors), which is done by volunteers and farmers (figure 2). Slightly more than a quarter consists of measures that are included in agri-environmental schemes (AES), such as a resting period in which no grazing or mowing is allowed, flooding parts of meadows (plas-dras)[3], the creation of grassland with a high abundance of herbs and management consisting of measures that are not primarily aimed at meadow birds, but still do profit meadow birds (certain forms of botanic management, for instance). Besides this AES we still find reserves that are managed by terrain managers such as Staatsbosbeheer[4], Natuurmonumenten[5] and the provincial landscapes.
In spite of all these efforts we still see a decline in the number of meadow birds in the Netherlands. In the reserves the number of birds remains fairly steady, but the numbers are declining in agrarian areas and even in areas under the auspices of AES. One of the reasons for this decline is that approximately 40 percent of the management measures are not implemented in the right places for birds to effectively profit from them. Much energy is put into protecting the nests, but there are insufficient opportunities for the hatchlings to grow, due to a lack of food of the appropriate quality. Simply mowing the grasslands at a later date is not sufficient.

Other management measures are necessary

What kind of management measures will be necessary? Firstly, the landscape has to be attractive for birds to settle in. The landscape must be

2 Note concerning the relationship between agriculture and nature and landscape preservation.
3 The deliberate flooding of lower areas for several months or even year-round.
4 Forestry Commission
5 National Trust

open (predation losses will be far lower) and the ground water level must be high enough. With high ground water levels, worms living underground and larvae will be within reach of the (mature) birds, and vegetation will have a lengthened development time. The level of fertilisation must be adjusted to this, of course. Due to these measures, the vegetation will develop a more heterogeneous structure that enables young birds to move around and take shelter in the case of imminent danger. In these more heterogeneous, wet grasslands (which are also essential to insects) there will be a sufficient amount of food available for young birds. Serenity is an important factor during the whole breeding season.

A new approach

It has become evident that the above-mentioned requirements for a sound habitat demand a lot more than what is currently possible through AES and – in some cases - in reserves. If such measures are to be attractive for farms, it is important that a realistic compensation can be provided. This implies that, if the present budget remains the same, management can only take place on a much smaller scale than is shown in figure 2. This observation led to the concept of core areas (see figure 3): areas within a suitable habitat for meadow birds, which are managed to such an extent that the growth in the number of hatchlings is at least sufficient to compensate the mortality of mature birds. These will serve as source areas. Birds will disperse from the source area to surrounding areas, where meadow birds will continue to occur as well.
In order to achieve the greatest possible effect of the conducted management for the national population, the potential core areas are preferably regions with a high density of birds. Subsequently, the potential core areas are examined in order to ascertain to what extent they already match conditions such as openness of the landscape (the view of the birds is not disturbed by trees, buildings, etc.), water level and the abundance of herbs. If areas do not meet these conditions, measures must be taken in order to fulfil the requirements. When enough managers (farmers and reserve managers) are willing to implement the necessary measures, managers may enter into a management contract for maintaining the proper conditions in the area for meadow birds.

Is there still a future for meadow birds in the Netherlands?

Yes, there is. Just the fact that we could never a ccept that meadow birds might disappear from the Netherlands is enough to continue the efforts to improve the situation. Luckily there are examples of reserves and farms that do accommodate high densities of meadow birds within their areas, and where the growth in young birds is enough to maintain those numbers. We must not give up. With the outlined method of core areas, meadow birds will remain in the Netherlands. It does, however, require an open mind on the part of farmers and managers. There is too much blaming each other in the case of failure, and parties state the failure of the other party as a reason not to continue either. In this way, meadow birds cannot, of course, be maintained in the Netherlands. Now that we increasingly begin to understand the factors that are important when it comes to meadow birds, the challenge is to jointly find a way to accomplish the preservation of meadow birds. We have to accept, however, that the density of birds we were accustomed to from the past will not be achieved for the time being.<

wolf.teunissen@sovon.nl

For meadow birds like the black-tailed godwit it is imperative that the landscape is attractive for settling. The landscape has to be open and ground water level must be high enough.

photo above Frans Eijgenraam
large photo Fabrice Ottburg

In the Netherlands, for a long time little attention was given to field birds. Over the past 50 years the Eurasian skylark population has declined by 96 percent. It is of great importance to implement the proper measures in order to stop this negative trend.

The Eurasian skylark needs more than just faunal buffer strips

photo Marije Kuiper

— Marije W. Kuiper (Plant Ecology & Nature Conservation, Wageningen University)
Henk Jan Ottens (Stichting Werkgroep Grauwe Kiekendief[1])

> When compared to the protection of meadow birds, the protection of field birds is still at a preliminary stage. Partly due to international commitments, primary attention was given to waders like the black-tailed godwit. However, the extensive arable areas of the Netherlands are home to specific species that have been declining even more strongly than the black-tailed godwit. The Eurasian skylark is one of these species. Only decades ago this bird was the most widespread species in the rural parts of the Netherlands. Over the past fifty years the population has declined by 96 percent; a loss of almost a million breeding pairs. Large agrarian populations are now only found in agricultural areas in the east of the provinces Groningen and Drenthe, and the south of the provinces Limburg and Zeeland.
In order to understand this decline, extensive research has been done on a population of Eurasian skylarks in Oldambt in Eastern Groningen. Originally Oldambt was an arable agricultural area, but over the past decades the percentage of grassland has increased to approximately a quarter of the agrarian lands, changing it into an area of mixed farming. The research was initiated by Sovon[2] in 2006, and from 2009 onwards continued by the Werkgroep Grauwe Kiekendief in collaboration with Wageningen University. Special attention was given to the research of buffer strips, a measure that was implemented on a large scale within the framework of agri-environmental management. A buffer strip is a strip consisting of herbs and grasses along the border of a field (figure 1). In the research area these strips had a width of twelve metres, and they were maintained for a period of at least six years. One of the most important functions of the buffer strip for birds is to provide food: mice for birds of prey, and insects for the smaller field birds.

The amount of food

Insect sampling showed that the amount of food present in buffer strips is indeed higher than in crops. Compared to winter wheat, there are almost five to ten times more insects present in the buffer strips. However, habitats containing large amounts of food are not always used by the target species, because aspects such as location and vegetation are crucial as well. Eurasian skylarks need open and not too high vegetation in order to find food on the ground. To find out whether Eurasian skylarks actually use buffer strips, 73 breeding pairs were observed. Eurasian skylarks find food for their young usually within a range of 250 metres from the nest, and are therefore easily followed using binoculars. As it turned out, buffer strips were without a doubt the most popular foraging habitat of the Eurasian skylark (figure 2). Also, banks of ditches and verges were frequently visited. On the basis of surface area, lucerne and grassland were visited as frequently as anticipated, while corn and wheat were strongly avoided. This pattern coincides with the amounts of food within the different habitats: buffer strips, banks of ditches and verges were the most insect-rich, followed by (chemically untreated) lucerne and grassland, while the annual grains yielded the least nutrition.

Harvestmen, cicadas and caterpillars

As research on the diet of Eurasian skylarks had never been carried out in the Netherlands, the faeces of nine adult Eurasian skylarks and the hatchlings of 66 nests were collected. From the prey remnants in the faeces it was determined that half of the intake of insects consisted of beetles. Flies, spiders, and larvae of sawflies made up 30 percent of the total. The remainder consisted of larvae of butterflies, snails, woodlice, grasshoppers and harvestmen. Buffer strips had an interesting effect on the diet: hatchlings receiving food from buffer strips had a significantly more varied diet than hatchlings that did not receive food from buffer strips. Because the ground is not annually ploughed and no pesticides are used, certain insect groups can live in buffer strips that are hardly present in crops, like grasshoppers, harvestmen, cicadas, caterpillars and other larvae. Theory tells us that a varied diet will benefit the growth and development of young birds in general. Each insect group contains different nutrients, elements and amino acids that are essential for the development of for instance the feathers and the immune system.

Clutch size and nestling weight

Based on the results of the research up to then it seemed evident that buffer strips would have a positive influence on the weight of the young, and maybe even on their survival in general. This was not the case, however. Between 2007 and 2012, a total of 237 Eurasian skylark nests were found, and of a large amount of these nests the breeding success was monitored. In addition, the hatchlings of 121 nests were weighed. The results showed that hatchlings that were raised in wheat fields weighed significantly less than hatchlings in grasslands and lucerne fields. This can be explained by the previously mentioned low food availability in grain fields. A clear effect of the presence or surface area of the buffer strips could not be found, even if solely the nests within wheat fields were taken into account. The reason for this remains a mystery – perhaps the Eurasian skylarks searched for other food-rich spots in the absence of buffer strips, like the banks of ditches or verges.

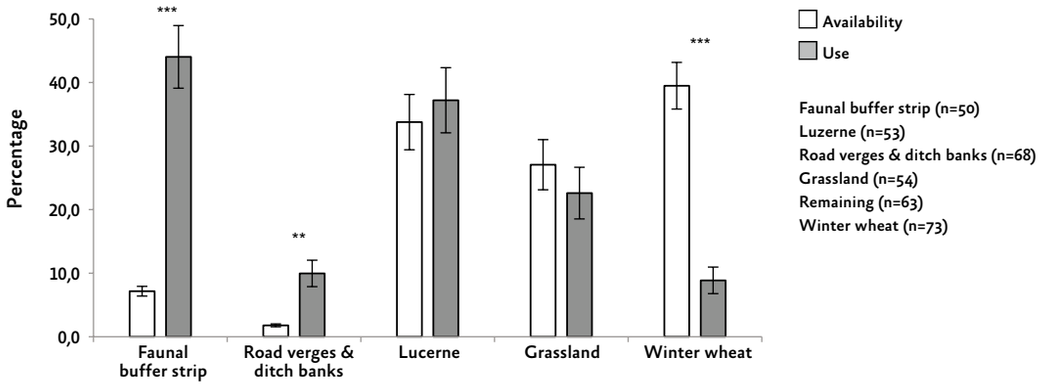
Nesting vegetation

The analysis of nest survival rates illustrated the major influence of the breeding crop once more. The survival rate within grasslands was alarmingly low: only 4 percent of all laid eggs produced fledglings. This was mainly caused by the highly frequent mowing of grasslands. The survival rate within wheat was 21 percent, and within lucerne 29 percent. The main reason for the loss of nests in these crops was predation. The survival rate within buffer strips and set-aside[3] was 10 percent, however, based on only sixteen nests, this percentage is less reliable compared to the other vegetation types. Taking all nests and all vegetation types together, the average survival rate was only 13 percent, while in order to obtain a stable population, a survival rate of at least 28 percent is necessary. Indeed a drastic decline in the studied population was visible during the six-year research period. Buffer strips appeared to have no effect on the survival rate. Malnutrition of young birds was the reason for failed nests in some cases, but on average other factors – mow-

1 Dutch Montagu's harrier foundation
2 Dutch Centre for Field Ornithology
3 Fallow arable land inhabited by breeding field birds.

< Figure 1. Buffer strip containing grasses, herbs and cereals in the first year after sowing. Ganzedijk (Groningen), July 2010.

Figure 2. The average surface area percentage of five habitat types within the territories of 73 breeding pairs of the Eurasian skylark, and the average use of these habitat types for foraging (percentage of the total number of foraging flights). Bars are displayed with standard error; significant differences are shown in the figure (**P < 0,01 ***P < 0,001).



ing and predation – were far more important. In spite of the low nest survival rate, grasslands remained very popular for brooding. Eurasian skylarks produce three nests on average per season, and are mainly attracted by low vegetation. In the beginning of the breeding season many pairs make their first nest in winter wheat, which is still low at that time. From the second half of May onwards, winter wheat becomes too tall and Eurasian skylarks will search for other nesting vegetation. In areas with little crop diversity they will mostly settle in grasslands.

Safe nesting habitat essential beside buffer strip

Summarising all results, we can state that buffer strips fulfil their objective, namely to offer an attractive foraging habitat rich in insects. Eurasian skylarks eagerly use the buffer strips that are close to their nests. However, in order to maintain the Eurasian skylark within the intensive agrarian areas, buffer strips alone will not suffice. Besides food, the Eurasian skylark requires a suitable and safe nesting habitat. Within meadow areas and mixed farming areas it will be necessary to adjust mowing regimes to the Eurasian skylark breeding cycle. It is particularly important to increase the time span between subsequent cuttings in order to give the birds sufficient time to raise three subsequent clutches. In 2015, experiments took place to investigate the effects of postponed mowing on nestling survival, the results of which will be available soon.
Another measure that would probably benefit the Eurasian skylark is expanding the surface area of lucerne. Lucerne is very popular for nesting during the whole breeding season, and the survival rates were highest of all vegetation types. It is of importance, however, that lucerne is not mowed more than twice a year. Crops are only safe for nesting when no mowing or soil treatments are performed for at least 45 days.

Specific management schemes

Currently, management schemes for field birds are very broad and aimed at benefiting a wide range of species. We conclude from our research that besides these general measures, it is necessary to implement management schemes that focus on specific species or groups of species. Such species-specific schemes can tackle the exact problems that declining species cope with, also increasing the effectiveness of the general measures in the same area. In the case of Eurasian skylarks in North-eastern Groningen, a scheme is needed that improves the availability of safe and suitable nesting habitat. This can be achieved by adjusting the mowing regime of grassland on the one hand, and increasing the surface area of favourable breeding crops (such as lucerne) on the other hand. It is likely that similar measures will benefit the Eurasian skylark in other parts of the Netherlands as well, although additional or different measures may be needed depending on the local situation.<

marije.kuiper@yahoo.com

Within meadow areas and mixed farming areas it will be necessary to adjust mowing regimes to the Eurasian skylark.

photo Matthias Buschmann

Agrobiodiversity and ecosystem services

Photo 1. A field margin in the Hoeksche Waard that is sown with a flower mixture that stimulates natural enemies of pests (like aphids) in the adjacent wheat field. The flower mixture has visually attractive flowers to enhance the quality of the landscape.

photo Willemien Geertsema

The call for agricultural systems that have less negative impacts on the environment and biodiversity has grown in recent years. There is a need for farming systems that increasingly use ecological processes, like natural pest control and pollination. The biodiversity in a landscape determines to what extent these processes can be used for ecologically intensive agriculture. The Hoeksche Waard[1] has experience with the use of functional biodiversity in farming.

— Willemien Geertsema, Wopke van der Werf, Felix Bianchi, Walter Rossing and Joop Schaminée (Wageningen UR)

> Ecosystem services are benefits that people obtain from ecosystems. Examples of ecological processes that are beneficial to humans are the development of vital soils, the pollination of crops, and the suppression of pest populations by natural enemies such as ladybirds or parasitic wasps. In this paper we will discuss why the restoration of biodiversity to support ecosystem services in ecologically intensive agriculture should be important to farmers as well as other landscape managers.

Ecosystem services and agriculture

There are four types of ecosystem services: production, regulating, supporting and cultural services. Production services consist of agricultural production, production of crops for food, feed or bio-energy, hunting and fishing. Examples of regulating services are pollination, natural pest control, enhancing soil quality, and purification of surface water and ground water. Supporting services are for example soil formation and the nutrient cycle. Finally, cultural services are for example cultural history, recreation, reflection and aesthetic values. Cultural services do not physically support agricultural production, but they are valuable to society. In this article we will focus on the regulating services of pollination and natural pest control.

Ecosystem services and agrobiodiversity

Plants and animals provide ecosystem services that contribute to agricultural production. Solitary bees, bumblebees and hoverflies are, next to honeybees, essential for the pollination of certain crops. Several insect groups and spiders are crucial to natural pest control. For example, ladybirds, hoverflies, parasitic wasps, ground beetles and spiders suppress aphids, caterpillars and larvae of other harmful insects.

For the supply of ecosystem services, functional diversity is more important than the diversity of the species. This means that for the provisioning of an ecosystem service (e.g. natural pest control) it is better to have a number of species that provide the service in different ways (flying parasitic wasps, flying predators such as ladybirds, and ground dwelling predators such as ground beetles for instance) than to have a high number of spe-

1 A polder landscape in the province of Zuid-Holland, dominated by arable land use.

cies providing the service in a uniform way. Pollination and pest suppression are needed within the agricultural fields. However, due to the intensive management, uniform conditions, and frequent disturbances, many beneficial insects depend on the surrounding landscape in order to complete their life cycle. Many insects rely on wild plants species. They use pollen as a source of protein (which is essential for reproduction) and nectar as an energy source. Parasitic wasps, for example, live longer when they can feed sufficiently on nectar. Increased longevity increases the effectiveness of the parasitic wasps to suppress caterpillars and aphids. Larvae of certain hoverfly species are carnivorous, but adult hoverflies feed on pollen and nectar. In addition, wild plants often supply prey and hosts for predators and parasitic wasps when these resources cannot be found in the agricultural fields (e.g. after pesticide application or after harvest). Finally, nature reserves and semi-natural landscape elements, such as wooded banks, thickets, ditch banks and roadside verges, supply shelter and wintering habitats for beneficial insects.

The extent to which semi-natural landscape elements support beneficial insects strongly depends on the composition of the vegetation. The flowering period of the plant species, the flower shape, and the available nectar and pollen determine the extent to which they can support the insect groups with nectar or pollen.
The spatial dynamics of pollinators and natural enemies generally exceed the scale of individual farms. This means that the different conditions needed to complete the life cycle of beneficial insects do not necessarily have to be realised within one farm. Therefore, collaboration between farms and managers of the surrounding landscape offers a promising way to stimulate beneficial insects. Collaboration on a landscape level is important for other ecosystem services as well, for instance for biodiversity, water regulation and recreation.

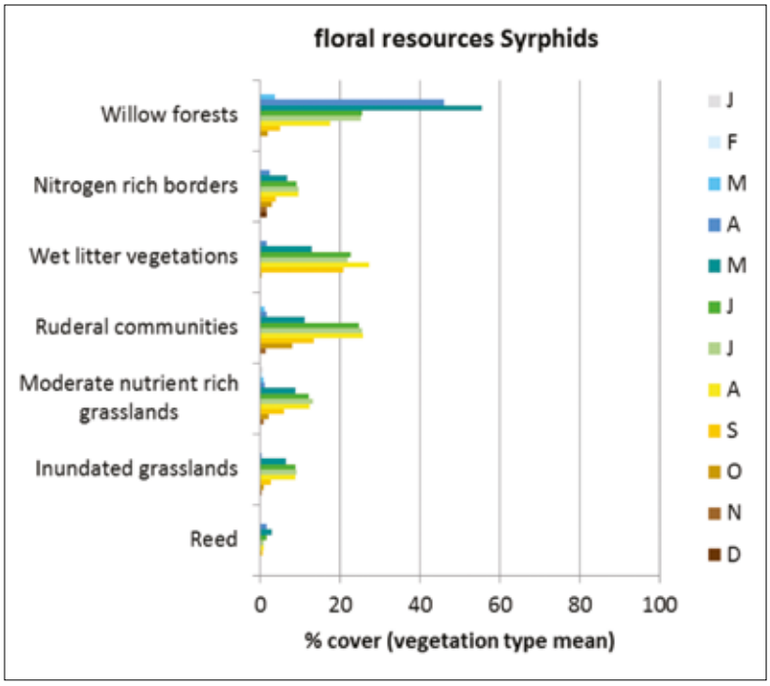
The Hoeksche Waard

In the agricultural landscape of the Hoeksche Waard farmers and other stakeholders stimulate ecosystem services. The Hoeksche Waard consists of a number of ancient polders, mainly agricultural in character, surrounded by dykes and intersected by creeks. Farmers (individual farmers and farmers represented by LTO[2] and the agri-environmental collective De Rietgors) have been working together for over a decade with the Hoekschewaards Landschap[3], the province of Zuid-Holland, municipalities, and the waterschap Hollandse Delta.[4] Their common goal is to maintain profitable agricultural production as the main land use in the area, while at the same time they aim to enhance landscape quality and improve biodiversity and aesthetic quality of the landscape. The Argusvlinder project and the Vliet-project for example, restored banks along creeks by creating wetland zones to stimulate biodiversity, aesthetic quality and water quality. Farmers are supported with subsidies of the province, water board and municipalities to create field margins. They sowed the field margins with different mixtures flower and grass species to strengthen the functional agrobiodiversity to support natural pest control. The farmers and other stakeholders aim to improve the spatial cohesion between field margins and (semi) natural vegetation, such as bank zones of creeks. The agri-environmental collective De Rietgors together with the Stichting Hoeksche Waard op de Kaart[5] coordinated the

2 Land- en Tuinbouw Organisatie Nederland = Dutch Agriculture and Horticulture Organisation

3 Landscape Hoeksche Waard (the local landscape and nature conservation organisation)
4 Dutch Delta water board
5 Hoeksche Waard on the Map Foundation

Figure 1. Flowering plants that provide pollen and nectar for hoverflies in 7 common vegetation types in the Hoeksche Waard. The cover of potentially flowering plants in each vegetation type is shown for each month.



creation and management of the field margins and the applications for funding. The composition of the flower mixture sown in the margins is adjusted to the aim of the margins: they consist of plant species that supply pollen and nectar for beneficial insects, as well as visually attractive species (photo 1). Over the past years approximately 450 kilometres of field margins of circa three metres wide were created in this way.

Fewer pesticides

Flower strips have proven to be effective on a number of farms. Especially the control of aphids in potato and wheat by natural enemies proved to be effective. In many cases farmers decreased the number of pesticide applications, in some cases no pesticides were used at all. The flower strips contribute to natural pests control, future-proof sustainable farming, and a more attractive landscape. However, these benefits do not balance the costs for creation and management of the margins and the yield loss due to loss of cropped area. For this reason, subsidies are still needed to stimulate farmers to take these measures.
Some farmers have created margins to stimulate farmland birds. These margins consist of plants that contain nutritious seeds, and are left on the field during winter. No systematic monitoring takes place, but the margins are frequently used by birds throughout the winter. There are also examples of margins that are combined with biomass from ditches in order to improve the soil organic matter content in the fields. These measures were developed only recently, and it is therefore uncertain to what extent they will prove to be effective.

The importance of the surrounding landscape

Field margins alone are not enough to stimulate beneficial insect species on a regional scale for several reasons. Firstly, there are several fields without adjacent field margins with sufficient nectar and pollen, also in the Hoeksche Waard. Secondly, not all field margins offer adequate shelter against disturbances (for example pesticide drift). Thirdly, not all field margins offer nesting or hibernation habitat. To complement the field margins with alternative food sources and shelter, semi-natural landscape elements like ditch banks, dykes, shrubs, bank zones and thickets are crucial.

We explored the potential of the surrounding landscape around arable fields to supply nectar and pollen in the Hoeksche Waard. For that aim, we evaluated the most common vegetation types in the area as suppliers of pollen and nectar for different groups of beneficial insects. For each vegetation type we analysed the amount of flowering plants during the year. This was done separately for flowers that support bumblebees, solitary wild bees, hoverflies and parasitic wasps. Figure 1 shows the results of this analysis for hoverflies. Willow forests are relatively important as producers of pollen during spring. In summer and late summer, wet litter vegetations and ruderal communities are potentially more important. All values in the figure indicate potential values, as the possibility for the plants to actually flower depends on the management of the vegetation. From the figure we can conclude that a diversity of vegetations with different flowering times are needed to support continuous nectar availability through the flying season of the hoverflies. In herbaceous vegetations flowering is stimulated by mowing (but not during flowering!) with removal of the hay. When this type of management is applied in phases it facilitates undisturbed patches for insects and other fauna.

Implementing vegetation management that actually supports insects is a challenge. In the Hoeksche Waard it is applied on a small scale in road verges and dyke taluds by removal of the hay instead of using a flail mower. This stimulates more flowering plants and prevents dominance of grass species that do not provide nectar. Vegetation management that aims at flowering of plants from spring to fall not only stimulates natural pest suppressors and pollinators, but butterflies and other insects as well. This supports other biodiversity; the insects provide a food source for insectivorous birds for example. Landscape management aiming at continuous (food) sources for beneficial insects can turn agricultural landscapes from a barrier to a connection between nature reserves and increases the aesthetic quality of the landscape for recreation at the same time.

The Hoeksche Waard is a nice example of how coordinated management and planning of both field margins and the surrounding landscape can stimulate ecosystem services. Ecosystem services that contribute to ecologically more intensive agriculture as well as ecosystem services that contribute to the quality of the landscape for our entire society.<

willemien.geertsema@wur.nl

photo Willemien Geertsema

Photo 2. Ditch banks and willow thickets support populations of natural enemies in spring that will suppress pest insects in the adjacent potato plot at a later stage.

photo Fabrice Ottburg

Experts and journalist at work in the field, Krimpenerwaard.

Scientific knowledge concerning agri-environmental management **should be accessible to farmers**

New: **OBN Deskundigenteam**

1 Expert Team Cultural Landscape of the Dutch OBN Programme, Knowledge Network for Restoration and Management of Nature in The Netherlands.

For over 25 years the OBN has functioned as a knowledge centre for managers, policy makers and scientists with the aim of generating practical knowledge for management purposes. However, the OBN has not paid any real attention to agrarian nature. This is about to change, as the board members of a new Expert Team Cultural Landscape have been appointed last April, chaired by Douwe Hoogland. "We could not have wished for anyone more suited for the job", says Teo Wams, chairman of the Adviescommissie[2] OBN.

2 Advisory Committee

— Geert van Duinhoven (editor)

> According to Teo Wams, everything came about as a matter of chance. For some time, a sentiment prevailed that the knowledge network OBN should involve itself with the issue of nature in agrarian areas. The timing turned out to be perfect. Wams: "A lot of labour has gone into the formation of a new organisation for agri-environmental management in 2014 and 2015. Next to this, the Knowledge Network OBN re-evaluated its tasks and a new Knowledge Agenda was formulated. This coincided with the OBN's new organisational structure: the national government is now no longer the owner of the network; instead, ownership is shared by the provinces. We noticed that a sound knowledge base is a crucial factor within agri-environmental management, as well. Matters were too often part of a polarised discussion: you were either for them or against them. This prompted us to decide the following: let us form a team of experts concerned with nature in the agrarian landscape and in doing so further the development of agri-environmental management".

According to Jan Jacob van Dijk, deputy of the province Gelderland and IPO-portfolio Nature holder, this is a fine idea. "In about one and a half years the Agri-environmental and Landscape Management must be up and running. The year 2015 was all about the collectives. This is the right moment to put time and, most of all, quality into the realisation of the plan. There is work to be done in order to make agri-environmental management more effective and more efficient. I think it would be a sensible decision to form a team of experts within the OBN, focusing solely on agri-environmental management. Such a team could monitor the effectivity of measures, advise on policy and test new methods. It is crucial for the different provinces to pool their experiences and knowledge, now that they must all formulate their own policies and will most likely encounter the same kinds of issues. The provinces are already composing a list of current knowledge questions. I think the role of the OBN should be one of coordination: what kind of knowledge is already available and what should be further developed?"

Ecology and economy

The board of the new Expert Team Cultural Landscape was formed in mid-April, and is chaired by Douwe Hoogland from Aldtsjerk, an established name in agri-environmental management. In 2006, for example, he founded the agrarian nature organisation the Noarlike Fryske Wâlden. During that period he turned his intensive agrarian company into a biologically sound company, as he had serious concerns about the landscape and the quality of the soil in particular, saying "farmers deplete it more and more. I think a team of experts could be very important for agri-environmental management. We, in the Friese Wouden, utilise alder rows and wooded banks intensively. This works well for us. But if you would ask how a hedge of hawthorn functions ecologically, we would not be able to provide the answer. Why does the common redstart frequent these hedgerows? Why not? Which locations need hedgerows and which could do without? I want to understand these kinds of issues! If we could receive more information on such matters, it would be easier to persuade fellow agrarians to participate. Another example is the question in what way an agrarian can guarantee an ample food supply for meadow birds. We mow, we fertilise, but what is the optimal approach?

According to Hoogland, A second important aspect for the team of experts to look into is the implementation of agri-environmental management in corporate management. "We should always realise that agri-environmental management must be implemented by people who must also earn a living. These are ecosystem services, of course: in bog meadows the carbon sequestration in relation to the level height is a crucial factor, but water storage and soil health are also subjects that are vital to agrarians. However, insufficient practical knowledge is available on these subjects.

Science instead of ideology

Agri-environmental management has been the subject of fierce debates for a long time. It was said to be unfeasible, and it was supposedly just a front for subsidies for farmers. The other side claimed that studies had been badly executed, and that they were not based on real life practice, etc. Wams: "Discussions are fine; they are even essential in a team of experts. But in the Expert Team Cultural Landscape the discussion will be based on the results of scientific research and we will use this data to accurately judge management measures. It will not be based on ideology but rather on knowledge.

Hoogland: "Jelle de Boer of Natuurmonumenten[3] has a farm in our neighbourhood and there are a lot more meadow birds on his land than on the lands of regular farmers. The implication of this is, in my view, that we, as agrarians, could learn from people like him. A joint effort has to be made for biodiversity by both nature managers and agrarians. The Expert Team Cultural Landscape is a great starting point for this."

Together with others

When the ownership of the OBN was transferred to the provinces, they stated that the knowledge transfer between the teams of experts and the practice had to be improved. The existing teams are working hard to accomplish this. How does Hoogland intend to accomplish this with his team of experts? And how does this relate to the task of the Collective Agri-environmental Management Foundation (SCAN)? Hoogland: "We have not yet started as a team so I am unable to say much about that. The transfer of knowledge within our agrarian nature organisation works fairly normally through the discourse between our members. I furthermore think that study groups that have always functioned adequately in the agrarian field could play an important part in this process.
Concerning the collaboration with the SCAN, I can fortunately ascertain that it functions well. Last year, The SCAN started a project concerning the professionalisation of the collectives. The work done by our Expert Team Cultural Landscape fits in neatly with this. They underline the importance of the lasting aspect of all knowledge and measures that we develop for farmers. Apart from this a professorship of agri-environmental management will be created.It will most likely focus on the socio-economic aspects of agri-environmental management. This will tie in neatly with the rest."

Dick Melman of Alterra will serve as vice-chairman of the board of the OBN Expert Team Cultural Landscape, alongside Douwe Hoogland and secretary Astrid Manhoudt of 'Veelzijdig Boerenland' and SCAN. The three of them will then put together the rest of the team, including members from management, policy and research.
The first meeting of the Expert Team Cultural Landscape will take place on the 25th of June.<

redactie@vakbladnbl.nl

3 Society for the Preservation of Nature

Cultuurlandschap[1]

Maasheggen, Vierlingsbeek.

photo Hans van den Bos, Bosbeeld

photo's William Hoogteyling

Biodiversity governs flexibility dairy farms

Taking care of natural capital contributes to economically solid dairy farms and forms the basis for public appreciation. For this reason, dairy cooperation FrieslandCampina has included nature and landscape in its quality and durability program, called Foqus planet. This results in the contribution of dairy farms to the improvement of biodiversity and the halting of regression in the sector. Logically, dairy farms that make an effort for biodiversity are rewarded.

— Martijn van Wijk (editor Vakblad Natuur Bos Landschap)

> Biodiversity is one of the focus points of FrieslandCampina, next to returning the percentage of grazing to 81 percent (the level of grazing in 2012), a climate-neutral growth of agrarian businesses, the reduction of the use of antibiotics and the improvement of the average age of cows. Guus van Laarhoven, projectmanager Biodiversity at FrieslandCampina, is convinced that biodiversity could result in an economic surplus: "Taking care of natural capital contributes to economically solid dairy farms and forms the basis for public appreciation."

Not just meadow birds

A lot of effort has gone into attempts to halt the loss of biodiversity within agrarian businesses in the past decades. The overall success of these attempts has been partial at best. Biodiversity for dairy farms is more than just the protection of meadow birds or the maintenance of wooden hedges, at least according to Van Laarhoven. "Increase of scale and intensification are factors that threaten biodiversity and could be detrimental to the vitality of dairy farms. Dairy farmers are nevertheless able to improve biodiversity in their businesses by improving the fertility of the soil, decreasing the loss of minerals in surface water and enabling their cattle to graze. Biodiversity and the dairy farm are not mutually exclusive. One could even say that the diversity of species on a dairy farm has a direct influence on its versatility and pliancy. Biodiversity is our ecological currency.

Necessary cooperation

Van Laarhoven considers cooperation with nature associations, the World Wide Fund, Rabobank and even its own members to be of vital importance. It is essential to include nature associations, as members of FrieslandCampina are a part of them. For example, their first-hand experience with mineral management and landscape management is invaluable. Van Laarhoven: "They definitely know how to decrease the negative impact of their corporate management on the environment and, in particular, biodiversity. Their enthusiasm can be an inspiration to fellow dairy farmers. The World Wide Fund, critical in their analyses and very knowledgeable, is a fierce advocate in favour of connecting biodiversity and agriculture. Rabobank is a financial partner who can indicate in what way biodiversity can positively influence the economic continuity of a business. We, in cooperation with these parties, have been looking in the past year for a set of indicators geared towards measuring biodiversity on dairy farms. Merely judging the matter by looking at management schemes is too coarse. The aforementioned indicators are concerned with the impact that dairy farms have on biodiversity. Energy usage, greenhouse gas emission, land usage, water and soil quality are some of the aspects of this impact.

Clear-cut steps

Important progress has been made in the past year. Inspired by the pioneering work of the three Frisian agri-environmental societies, ANV (Agri-environmental Association) Gagelvenne, ANV Skriezekrite Idzegea and ANV Noordelijke Friese Wouden, with a combined surface value of 64.750 hectares, a plan has been formulated containing clear-cut steps that can be taken towards conserving and improving biodiversity in Dutch meadows. An example from this plan is a summary of weak and strong points of the different dairy farms with regards to biodiversity and a subsequent overview of possible improvements. Lay-out (including landscape management, cultivation, fertilisation, mowing schemes and grazing are all indicators of the intensity of a business and, in extension, deciding factors with regard to the level of biodiversity. The aforementioned plan will be field tested in the coming year in cooperation with dairy farmers who are members of agri-environmental associations. A study will be conducted on the connection between businesses with a high mark for the indicators of biodiversity and the actual realisation of biodiversity in their business. The results will also be tested against the (economic) corporate results.

Rewards via Foqus planet

FrieslandCampina rewards dairy farmers that have demonstrably invested in the preservation of agri-environmental elements. Foqus planet, FrieslandCampina's programme for quality and sustainability, is responsible for handing out these rewards. FrieslandCampina, through the programme Foqus planet, measures the ecological efforts of their dairy farm members in relation to the number of hectares of agri-environmentally managed elements. This is then expressed as a percentage of the total surface of the businesses. The higher the results, the more points are scored. By linking dairy farmers to Foqus planet, it becomes possible to observe the joint efforts of dairy farmers on biodiversity. In the end, the number of points gathered by a dairy farmer (including on subjects like sustainability, grazing, energy usage, etcetera) determines the price paid for their milk.

Results in the yard, the basis of economic success

Though funding is a stimulant, it does not contribute to a structural solution on the preservation of biodiversity. It is very dependent on the whims of current political trends, and may be put to a halt at any time. The cooperation connects dairy farmers and the company in a much more profound way. The company gives value to the milk produced by members of the cooperation by processing it and selling the products to consumers and companies all over the world. Van Laarhoven: "A dairy farmer is often a member of a cooperation from generation to generation. This connection will never exist between a dairy farmer and a subsidising agency. FrieslandCampina encompasses the entire production process. "From grass to glass" is a powerful branding tool, especially abroad. A company like FrieslandCampina highly values the efforts of dairy farmers regarding sustainability, grazing, transparency and quality control." The work done by dairy farmers in their own yard forms one of the building blocks of the company's economic success. The quality of the milk, the health of the cattle, attention to nature and landscape and the progress in making the whole chain sustainable are favourable points in the minds of buyers and consumers. It is a goal of FrieslandCampina to combine the developments in sustainability of dairy farm members with the positive influence on biodiversity. The moment these developments yield financial benefits for dairy farmers a foundation will have been laid for further improvement of biodiversity on dairy farms. This will include those businesses that have not yet received any funding for agri-environmental management as well. Van Laarhoven: "In this way biodiversity is a double-edged sword. On the one hand we are able to stimulate dairy farmers to manage their environmental elements and landscape elements, and on the other hand we are able to show the contribution made by dairy farms to the preservation of biodiversity. This benefits the image of the entire sector in an important way. Dairy farms are appreciated by both market and society for its natural essence.<

redactie@vakbladnbl.nl

Zuivelcoöperatie FrieslandCampina

Zuivelcoöperatie FrieslandCampina U.A. is a cooperation of dairy farmers in the Netherlands, Germany and Belgium. This cooperation strives for sustainable growth and value creation for its member dairy farmers. Over 19.000 member dairy farmers share ownership of the Koninklijke FrieslandCampina N.V. through the cooperation.

photo Fabrice Ottburg

— Geert van Duinhoven (editor)

New collectives are playing good cop and bad cop at the same time

From 2016 onwards, collectives will play a central role in agri-environmental management. But what exactly is an agrarian collective? What are its tasks? Three views on collectives.

Walter Kooy, Stichting Collectief Agrarisch natuurbeheer[1]

> When it became clear that a new organisational structure had to be created for agri-environmental management, the agrarian umbrella organisations BoerenNatuur[2], Natuurlijk Platteland Oost[3], Natuurrijk Limburg[4], LTO Noord[5], Veelzijdig Boerenland[6] and ZLTO[7] quickly established the Stichting Collectief Agrarisch natuurbeheer (SCAN). This foundation supports the agrarian collectives in the preparation of their task as final beneficiary for subsidies in the new system, and works towards the professionalization of the new collectives. However, Walter Kooy, project director of SCAN, has noticed that professionalization entails more than just a course in agri-environmental management or project management. “Much has happened over the past few years. We have been very busy, and most of all, it is becoming more and more clear to everyone that the future will not be anything like the past. Farmers are starting to realise that they really have to earn their position now, really have to show something, and make agri-environmental management more effective. Furthermore, some agri-environmental associations were forced to merge into collectives, and others had to become collectives, which definitely took some getting used to. Landscape management foundations may lose certain tasks to the collectives. Terrain managers have, in some cases, promoted themselves to a type of supervisor in a number of provinces. The agrarians, however, are not in favour of this development; they want to take responsibility for management tasks themselves now. Officials will be assigned a different role: less involved guidance, making better use of cadastre registration, and offering trust and security. Overall, it has been extremely time and energy consuming. We all suffer slightly from “transition pain”, as representative Jan Jacob van Dijk has called it. But things are moving in the right direction, and farmers and nature conservationists are getting along. In the provinces of Noord-Brabant and Zeeland, for example, this has resulted in a completely new idea, namely the establishment of a type of back-office for the three collectives of Noord-Brabant and the collective

1 Collective Agri-environmental management Foundation

2 Farmers’ Nature, a cooperation of agri-environmental associations in the provinces of Groningen, Friesland, Drenthe and Flevoland.

3 Natural Countryside East, cooperation of agri-environmental associations in the provinces of Overijssel, Gelderland and the eastern part of Utrecht.

4 Natural Limburg, an agrarian collective for the province of Limburg.

5 Dutch Agriculture and Horticulture Organisation, Northern division

6 Versatile Farmland, a cooperation of agri-environmental and landscape organisations in the western Netherlands.

7 Dutch Agriculture and Horticulture Organisation, Southern division

of Zeeland, with which the Brabants Landschap[8] and the FPG[9] are involved. In this case the terrain managers, landscape organisations and farmers are working together very well. In short, proper organisation is definitely very important. However, for the collectives the hard work has only just begun, as they have to prepare the area applications that must be submitted before the first of July.

According to Kooy the challenge now lies in showing that collectives are able to organise their management both more efficiently and more effectively. This should eventually result in an improved ecological standard. The collectives will decide, based on the participating farmers, which type of management will have to be implemented. "We can assume there will be more applications than there is available funding; the collectives will be forced to make selections. There will also be instances where they will have to inform farmers that their current management is suboptimal, and must therefore be terminated. In my opinion the professionalism to make such choices is present within the collectives. Furthermore, there will be better internal checks and balances, as the collectives and farmers form a flat organisation. Monitoring will still be an enormous task. At this moment, LandschappenNL[10] is organising a course for SCAN to instruct teachers to train volunteers who wish to help in the monitoring process. As monitoring will be a substantial task, it is vital that a sufficient amount of volunteers will sign up. This is a task for the collectives. However, in order to be able to invest as much funding as possible in management, larger budgets for monitoring will not be available."
A new task that awaits the collectives is to sanction participants that do not uphold the directives. "When agri-environmental associations merged into a collective, there were plenty of chairmen available, but inspectors were harder to find. The reason for this is the dichotomous role of the collective, playing both good cop and bad cop at the same time. A collective must be in control of their finances, and must confront farmers that do not live up to the directives in time, in order to be able to endorse farmers that are upholding those directives. Things are shaping up quite nicely, fortunately, and I expect that 39 collectives will be ready to work professionally on agri-environmental management by the first of January 2016."•

8 Landscape of Brabant: protects and manages nature in the province of Noord-Brabant.
9 Federatie Particulier Grondbezit = Private Land ownership Federation
10 Dutch Landscapes

Dirk Roeper, multifunctional agrarian on the island of Texel

Dirk Roeper is a farmer on the island of Texel and has been running a multifunctional farm for years. He combines nature, healthcare, education and tourism with the farming of suckler cows. He has land held on long lease by Natuurmonumenten[11], a third of which includes an agrarian management agreement. The other two thirds are managed by Roeper as a nature reserve under SNL. The farm is situated in the polder Waal en Burg, of which the largest part was given the nature-status a few years ago. "Most farmers have been bought off, but as we were on the right ecological track already, we were able to broker agreements with Natuurmonumenten to manage 120 hectares ourselves. Because most agriculture has disappeared, it was possible to raise the water level within the polder and subsequently enable nature to thrive. We have constructed a stable with a deep litter system, using ILG[12] money. We have always submitted the applications ourselves. This worked out just fine for us, and in our opinion the system needn't necessarily be changed. However, it may have its advantages. Communication between the province and the farmers might become easier. Direct communication hopefully implies fewer overhead costs as well, increasing the budget for farmers and nature. A better reputation will be one of the major advantages of the revision. An upgrade in reputation will enable us to showcase our skills in agri-environmental management, especially our ability to operate while keeping costs low.

"The fact that our company will become strongly dependent on our Agri-environmental association is an important change. De Lieuwe will become a collective in its own right. There is a sound knowledge base within our agri-environmental association; I am therefore positively confident that all will work out well. The framework must be very clear, however. For example, there must be sufficient funds: if the agri-environmental association, soon to be collective, has to divide the budget amongst all farmers that have applied, things might get complicated. It will not be a problem if the budget is sufficient. However, I fear it will be impossible for the collective to decide who is in and who is out. For what will an entrepreneur do if the collective decides that not enough funds are available? I assume it is still possible to appeal to the province if you do not agree with the decision of a collective."•

11 National Trust

12 Investeringsbudget Landelijk Gebied = Investment budget Rural Area

photo Judith Westerink

Jan Willem Erisman, Vereniging Collectief Deltaplan Landschap[13]

Most of the current agri-environmental associations form the basis of the newly created collective. In some cases an agri-environmental association will become a collective, in other cases several agri-environmental associations will merge into one collective. In the province of Zeeland, for example, there is only one collective for the whole province. Nevertheless, every agrarian is able to join a collective.

Apart from these regional collectives, a national collective was called into existence in April. This collective was founded by the Werkgroep Grauwe Kiekedief[14], Vereniging Nederlands Cultuurlandschap[15] and the Louis Bolkinstituut[16]. The Vereniging Collectief Deltaplan Landschap, as the new organisation is called, wants to represent all agrarians and all collectives, says Jan Willem Erisman of the Louis Bolkinstituut and chairman of the collective. What will such a national collective contribute to the current 39 regional collectives? "As separate organisations, we offer to share our knowledge base with the collectives right from the start. Indeed, they are now faced with a complicated task that requires a great amount of knowledge: where should agrarian management be carried out, how should it be done, how should it be monitored, how can adjustments be made? These are all complicated matters, which we will gladly support. We have noticed, however, that the collectives are mostly preoccupied with the process: how will matters be organised, how will the collectives relate to the provinces, the agri-environmental associations and the individual agrarians. Even though the collectives recognise the importance of a sound ecological knowledge base, they cannot find the time to establish such a knowledge base, to their own detriment. I understand all this, but we do wish to improve ecological standards and meet our targets. Too little attention is paid to this at the moment. A typical example of this is the fact that terrain managers and wildlife organisations have a hard time becoming members of a collective, while their tremendous amount of knowledge and experience can be used to the advantage of the collectives."

But what will be the function of the Collectief Deltaplan Landschap? "We do not wish to compete with the existing 39 collectives. We wish to cooperate with collectives, farmers, terrain managers, and anyone determined to improve the biodiversity of the agricultural area. Whether we accomplish this by cooperating with a collective or creating a plan for an area ourselves is not important. We want to determine how a certain region can increase its biodiversity in agricultural areas. I think we might be able to draft area proposals in cooperation with the local agrarians for a few regions in the Netherlands. It is my estimation that a situation where more than one plan is proposed for a single area will not occur, eliminating the possibility that the province will have to make a choice. I would like to make plans for improving biodiversity alongside frontrunners that want to achieve ecological goals, and for example with terrain managers and public parties such as municipalities."

According to Erisman, one of the added advantages of a national collective would be the opportunity to collect and assess knowledge on agri-environmental management. "Collectives are now carrying out similar work without exchanging knowledge or experience. They are all creating the same set of measures in order to achieve a certain level of ecological quality. This takes up so much time and energy; it would be better if they could help and learn from each other. We may be able to play a part in this process."<

photo Fabrice Ottburg

Broad-bodied chaser, female

13 Collective Deltaplan Landscape Association
14 Workgroup Montagu's Harrier
15 Dutch Cultural Landscape Association
16 Louis Bolk institute

Why a cooperative approach **to agri-environment actions** works in the Netherlands

Now that the new EU rural development regulation allows for group applications for agri-environment measures, the Dutch government decided to exclusively deal with cooperative action. This article explains the relative success of this approach in the Netherlands and estimates the potential for other member states.

— Paul Terwan (independent consultant)

> Territorial cooperation for the delivery of agri-environmental services is gaining importance, both in practice and as a part of policy development. Surveys and trials show interesting opportunities where a higher environmental output is combined with lower implementation costs. An interesting 2013 OECD analysis illustrated by numerous examples shows that the benefits are increasingly recognised and cooperation for public goods is now a worldwide phenomenon.
The 2013 European Commission's regulations for the Common Agricultural Policy (CAP) 2014-2020 include a new formal position for collective action, mentioning "groups of farmers" as potential applicants and (final) beneficiaries under the agri-environment-climate part of the rural development regulation. This regulation also includes support for co-operative actions, including the organisational costs involved. The third innovation is the possibility for groups of farmers to realise Pillar 1 greening measures.
The Netherlands has over twenty years of experience with environmental cooperatives. Motivated by the new EU policy options, the Dutch Ministry of Economic Affairs has been developing a new agri-environment scheme based on exclusive participation of regional cooperatives as applicants and final beneficiaries of agri-environment payments. From 2016 on, 15,000 individual applications have been replaced by 40 collective applications, with 150 regional cooperatives taking care of an effective and efficient implementation. Which factors enabled such a drastic scheme reform?

Cooperation: from defensive to offensive approach

The first farmer associations on farmland conservation in the Netherlands were created in the early 1990s, building on pre-existing regional groups and local leadership. They were aiming at territorial contracts to meet government targets on the basis of self-regulation. In this way they were countering conservation organisations buying farmland, government institutions perceived to be unreliable and farmers' unions perceived to be neglecting farmland conservation as a serious activity. In addition, they were hoping to provide better targeting of scheme obligations to local needs and possibilities.
The cooperatives fit in a long Dutch tradition of agricultural producer groups, but they are now aiming at public services instead of primary produce – an important novelty. After the first, rather defensive years, the cooperatives developed the more offensive notion that the collective marketing of public services can have important benefits. This applies especially if the values involved, such as biodiversity, landscape or water quality, are in decline and if teaming up with colleagues is the most efficient way to counter the decline. This is particularly the case for cross-farm values, such as farmland birds, ecological corridors and water quality. The increased perception of private benefits from collective action then lies in, for example, prolonged access to government funds for agri-environment measures. Especially in areas with fragile farm economics formerly called 'less favoured areas', cooperation is increasingly seen as the most effective way to turn natural or economical restraints into valued public services. Improved environmental outcome is crucial in The Netherlands, as the results of agri-environment measures have been critically received for decades, thus putting pressure on the available budgets. In addition, cooperation was seen as a way to improve the local dialogue with other interest groups and the connection between farming and civil society. And, finally: the cooperatives discovered that the government took them more seriously and they could play a substantial role in policy development and implementation. For this same reason, the Dutch government has been partially paying for their activities for years.

New scheme offers improved targeting

The more offensive approach brought a rapid increase in the number of cooperatives after the turn of the century, totalling over 150 in 2015. The farmers' unions changed their attitude and actively assisted their establishment. In 2015, the cooperatives established 40 new associations, fully integrating the unions, but maintaining the 'old' cooperatives as an underlying implementation structure. Mid-2015, the newly established associations submitted their applications for the new scheme. The intermediary position of the associations as an applicant and final beneficiary of agri-environment payments offers additional advantages to farmers. The most important one: possibilities for improved tailoring of conservation measures and payments, because the contracts between the cooperative and its members are not subject to EU regulations. This means that the cooperative has some room to create its own 'policy' as to measures and payments. It enables a better use of local knowledge and adjustment of measures and payments to the local conditions, both ecological and economical. The new scheme also means a major decrease in paperwork for the farmer, which may in turn lead to increased participation and better conservation results. The conservation results are also expected to benefit from the exclusion of individual applications. This rather drastic decision may exclude long-term participants, but was nevertheless welcomed by the cooperatives as 'free riders' were often undermining their ecological strategies.

Future challenges

The drastic scheme change has not evolved without discussion. The discussion focused on the crucial balance between regional self-regulation and a 'governmental straightjacket'. For over twenty years, the regional cooperatives have been developing as bottom-up initiatives, providing guidance to farmers by the goodwill they received due to their position as 'organisations of our own'. The cooperatives have now been incorporated in government policies, informal procedures have been formalised, the cooperatives carrying out part of the tasks of the paying agency. These changes bring the cooperatives in threat of being perceived to be an extension of the government, or at least of being 'sandwiched' between government and farmers. Up to now, the benefits of the new scheme seem to outweigh the possible drawbacks, but the coming years will be the proof of the pudding. The Dutch government is still firmly convinced by the concept and is now exploring the possibilities to create more room for a cooperative approach in Pillar 1 greening measures.

Relevance to other member states

In discussions with other member states, the Dutch cooperative approach often meets appraisal, but scepticism where it comes to a broader implementation: "Nicely done, but it's not for us". Some are not convinced of the added value of cooperation; others foresee a lack of cooperative spirit or a lack of regional implementation capacity. For this reason, it is important to emphasize that the Dutch approach is not necessarily a blueprint for other member states and is only one way to improve the scheme's environmental outcome. Important progress in improving cost-efficiency and effectiveness can already be made by moving from an individual to a regional approach in which possible applications should fit within a regional plan. Such community-based approaches are becoming increasingly common in the EU. They might not result in a joint contract, but are pursuing the same goals. In this respect, a regional approach and regional cooperation are already very important keys to increasing efficiency and effectiveness of environmental services from agriculture.

paul.terwan@wxs.nl

photo's Fabrice Ottburg

Grey partridge.

Ditch for European weatherfish.

The Dutch situation put into perspective

— Anne van Doorn (Alterra, Wageningen UR)

This special issue of the Trade Journal Nature Forest Landscape concerns the Dutch interpretation of agri-environmental management. The Dutch government and Dutch farmers have agreed on an approach that is typical for the Dutch conditions. In order to understand their approach, it is useful to elaborate on the Dutch situation, in which agriculture and nature are strictly separated, and most of the Common Agricultural Policy budget is provided by the European Council's first pillar.

> The Netherlands is a delta, which, without the proper management, would be a soggy swamp. Due to its waterworks, intensive farming, and building, however, this delta has not only become one of the most densely populated areas of the world, but also one of the world's most productive agricultural areas. The most important characteristic of the Dutch landscape is its highly intensive farming, combined with very high demographic pressure. Agriculture is comprised of several types of farming; its spatial distribution is dependent on the type of soil, as well as historical or economic motives. Most of the country's agriculture can be found on the rich clay soil along the coast of the provinces of Friesland and Groningen, in the polders of the IJsselmeer, on the islands of the province of South Holland, in Zeeland, and in the western part of North Brabant. Dairy farming is mostly found on the less fertile clay and peat soils of the Frisian pasture area, the rural area the Groene Hart, and the region of West Friesland. Bulb cultivation is found on the geest lands behind the dunes of the provinces North Holland and South Holland, as well as on the clay soil around Den Helder and Enkhuizen. Greenhouse horticulture is concentrated in the Westland region, as (open-field) horticulture flourished in this region at an early stage, due to its good soil conditions, the local climate (relatively warm and sunny), and the proximity of a large outlet, among others. Other types of farming are less bound to a certain type of soil, but are concentrated in certain areas because of historical or economic reasons, for example the poultry and pig farms in the Gelderse Vallei region and in the southeast of North Brabant.

Upscaling

The number of agriculture and horticulture holdings in the Netherlands has steadily decreased from 301.000 in 1960 to 65.500 in 2014. Most of these 65.500 holdings are livestock farms (40.400 in total). In the period between 1980 and 2014 a major upscaling took place. The number of holdings decreased significantly by 55%, while the surface area of arable land only decreased by 9%. A large part of the lost arable land was used for building. In the period between 2000 and 2010 the surface area of the built-up area increased by more than 48.000. This urban growth and the expansion of infrastructure changed the appearance of the agrarian landscape. As buildings, viaducts, and noise barriers are visible from a large dis-

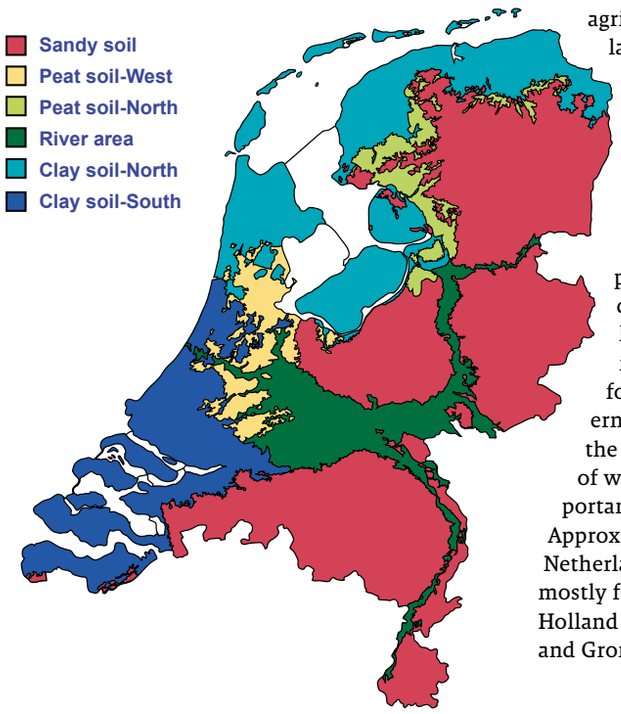
tance, they influence the amenity value in large parts of the rural areas. In addition, rural areas become fragmented because of urban building, business parks, and infrastructure. The average cultivation surface area per holding increased from 13.9 hectares in 1980 to 28.1 hectares in 2014. A similar upscaling has taken place for livestock farming.
The Dutch population grew from 5.1 million to 17 million people between 1900 and 2016. Mainly due to this significant growth, the total individual space per inhabitant decreased by more than two-thirds over the course of the 20th century. Although the total surface area of nature and forest has increased over the past twenty years, the largest decline in the number of available square metres per inhabitant occurred in this category. The amount of nature and forest per inhabitant has decreased from over 1700 square metres to merely 293 square metres between 1900 and 2012.

Hedgerows and unassigned plots

It has become clear that the pressure for available ground is high in the Netherlands, and the available arable land is generally used extremely efficiently. Therefore, in the Netherlands, agriculture and nature are separated to a high extent when compared to other European countries. Nature reserves are owned by land managing nature organisations. Nature values are clearly less important for the agricultural areas than they are for nature reserves. An effective nature policy has been implemented since 1990, slightly improving the spatial and environmental conditions for the target species over the past decades. In the agrarian areas, however, the number of species is still declining. Production and harvesting efficiency per hectare is maximised by, for example, fully optimising the environmental conditions in favour of agricultural benefits. For this reason, increasingly fewer species find the space they need in order to survive. On average, for example, breeding birds in agricultural areas on higher sandy soils have been in decline since 1990. Bird species are not only diminishing in fields and grassland – the ruff, Eurasian skylark, and the corn bunting, for example – but in field margins, hedgerows, and unassigned plots as well – the grey partridge, for instance. Beside intensification, these specific birds are affected by changes in crop choices and the scale-up of agriculture, which have eliminated many of the smaller landscape elements like hedgerows and unassigned plots.

High Nature Value farmland

Agri-environmental management in the Netherlands must always be considered within its framework, namely, that the nature values of agricultural areas must be maintained within a landscape where every inch has a purpose. Since 1975, the Dutch government has been trying to improve nature within the agricultural zone by financially supporting farmers who stimulate nature values on their farms. The policy mainly aims at extensifying the agricultural production through implementing a number of measures, for example postponing the mowing of fields in order to provide meadow birds with sufficient time to raise their hatchlings. Other measures concern subsidising farmers for sowing strips of their fields with flowers, in order to make these strips suitable for various insects and small mammals. Although several forms of funding have been implemented, nature in farmland is still declining. Whether this decline would have been more substantial without this policy is impossible to substantiate, of course.
The Netherlands possesses few agricultural areas with high nature values due to the high pressure that is put on the available space and the amount of intensive farming that takes place. Elsewhere in Europe we often find so-called 'High Nature Value farmland (HNV)'. HNV farmland is an acknowledged concept within the European agriculture and nature policy for agricultural lands that live up to high nature values. Preserving HNV, as well as the Natura 2000 areas, is important for achieving biodiversity targets, as formulated in the European biodiversity strategy. Important HNV areas in Europe are mostly half-natural grasslands with low-intensity grazing, such as mountain pastures and the dehesas and Montados of the Iberian Peninsula. Agrarian landscapes of intricate green and blue interlacing networks are also included; for instance, the bocage landscape in western France is considered an HNV as well. In the Netherlands, HNV is mostly comprised of wet peat pasture areas that provide an important habitat for endangered meadow birds. Approximately 15% of the cultivated area in the Netherlands can be considered an HNV, and it is mostly found in the Groene Hart region, the Laag Holland region, and in the provinces of Friesland and Groningen.



Primarily Pillar 1

The Dutch government traditionally chooses to reserve ninety percent of the total Dutch Common Agricultural Policy budget, circa 1 million € annually, for the direct payment of farmers (Pillar 1). This large share for Pillar 1 comes at the expense of the Pillar 2. Only 10% of the total Common Agricultural Policy budget is spent on rural development policies (Pillar 2), of which just over half is reserved for agri-environmental management. Although this budget is enhanced by national co-financing, it is still extremely modest in comparison to the funds available for direct payments.
Starting in 2015, the government has begun to link greening measures to receiving direct payments. This means, for example, that farmers have to outfit 5% of their agricultural land as an Ecological Focus Area. This measure may contribute to the environment and to the biodiversity goals of the rural area. It would be sheer profit if five percent of Dutch agricultural land were transformed into flowering field margins and landscape elements! However, both during the European negotiations and subsequently during the Dutch implementation a lot of compromises were made. An example of this is the ratification of catch crops as part of an Ecological Focus Area. Due to these compromises, the measures are not as effective as they could have been.

Agricultural fields in their entirety

Under the best of circumstances the effects of greening might become visible in several regions, especially in agricultural provinces like Flevoland and Zeeland, as the landscape will display a higher degree of variation: more field margins and more varied crops. Field margins, however, are not the sole requisite for meadow birds; for the Eurasian skylark, for example, the entire field must be taken into account. Layout is an important factor, but so is, for example, the use of pesticides. Thus, vulnerable species with a specific set of environmental demands will not profit from the greening. The policy is too one-dimensional for that. This means that it is still hard to estimate the impact of greening on the population of specific species.
The new Dutch system for agri-environmental management can be seen as a firm step towards the preservation of nature and biodiversity on agricultural land. In order for agri-environmental management to become a success, it is important to stay focused on the 'bigger picture'. This means that the standard of the general quality of soil, water and space of the Dutch rural area has to be raised, that greening and agricultural policies have to be organised more efficiently and that the distribution of the Common Agricultural Policy budget between the two pillars has to be evened out in order for more funds to be allocated to agri-environmental management.<

anne.vandoorn@wur.nl