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This interim evaluation shows that the feasibility and effectiveness of the Agricultural Nature and Landscape Management scheme (ANML) which was introduced in 2016, have both improved relative to the previous subsidy scheme. The ecological conditions for achieving the objectives of the Birds and Habitats Directives and the Water Framework Directive have also improved slightly. Two important factors for this success are 1) the area-based approach that has been implemented, with 40 agricultural collectives coordinating the conservation activities and concluding contracts with farmers, and 2) the greater flexibility of the system, which has made it possible to respond more effectively to the situations in the respective areas. With further specification of roles and responsibilities, additional simplification, prioritisation of target species and optimisation of conservation activities, additional gains can be made within the context of the scheme. However, more effort is needed to reverse the negative population trends of many target species and to actually improve water quality. This evaluation therefore makes recommendations for the use of supporting policy in combination with the ANLM, such as implementation measures, land policies, predation management and eco-regulations, the development of more far-reaching policy instruments and new forms of financing that enable the transition to 'nature farming' and the search for synergy with other sustainability challenges in area-based processes.

Keywords: agri-environment scheme, agricultural collectives, habitats, Birds and Habitats Directive, Water Framework Directive, habitat quality, spatial cohesion, National Strategic Plan

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# Summary

## Background and evaluation design

**New agri-environment scheme introduces a collective approach**
In 2016, a new agri-environment scheme, - Agricultural Nature and Management scheme (ANLM) - , came into effect. This scheme comprises a collective approach for agricultural nature and landscape management in which individual participants are no longer the final beneficiaries of the management subsidy; instead, 40 agricultural collectives have been established for this purpose. These certified collectives of farmers and other land owners coordinate the nature and landscape management, conclude contracts with the participants and are responsible for the administration and accountability of the activities. The new subsidy scheme has also decentralised agricultural nature and landscape management: the central government became more distant from the policy implementation and the provinces were given more control over the implementation by the collectives. In contrast to previous subsidy schemes, the ANLM focuses more on the international obligations regarding nature protection and target species of the Birds and Habitats Directives (BHD). To this end, a habitat-based approach was implemented that aims to create and maintain four types of habitats for species that require similar conservation measures: open grassland, open arable land, green infrastructure and blue infrastructure. Since 2016, the ANLM has also focused on improving water quality (Water Framework Directive, WFD) and water management.

**The evaluation focused on informing and learning**
On behalf of the Ministry of Agriculture, Nature and Food Quality and the provinces, about four years after implementation of the new scheme, Wageningen Environmental Research carried out an interim evaluation to inform the Dutch Parliament, the Provincial Executive and the Provincial Council primarily about the feasibility and effectiveness of the ANLM and to identify points for improvement. Although the current implementation period of the ANLM will continue until 2023, this is a good time to reflect on the scheme. Start-up problems have been overcome and the implementation is proceeding apace. By performing an interim evaluation now instead to waiting until the end of the first implementation period, lessons can be learned that can be applied during the current implementation period. In addition, the evaluation can contribute to the preparation of the National Strategic Plan for the new Common Agricultural Policy, of which the ANLM will become part from 2023.

**Evaluation framework assesses expected outcomes of new scheme**
At the start of this study, together with those closely involved with the ANLM, an evaluation framework was drawn up consisting of the most important expectations of the new scheme regarding process, organisation and policy performance. These expectations relate to the contribution that the new scheme should make to a greater focus on objectives, improved feasibility, lower implementation costs and improvement of the ecological conditions for the BHD target species in the agricultural area and for water quality. As a whole this should ultimately lead to attainment of more BHD and WFD objectives. These expected outcomes were assessed with a mixed methods approach (a combination of quantitative and qualitative methods) and analyses were performed at the national, provincial and regional levels. An important part of the evaluation was a multiple case study in Westergo (Province of Friesland), the province of Drenthe and the Krimpenerwaard (Province of Zuid-Holland). This case study addressed the organisational and ecological questions of the evaluation in a coherent manner and determined how the new scheme functions in practice, what is going well and what could be improved.

The evaluation does not make any statements about attaining BHD objectives with the ANLM, because no data is yet available from the policy monitoring that is intended for this purpose. This evaluation also makes no statements about the contribution of the ANLM to the attainment of WFD objectives because this scheme does not monitor water policy. Due to a lack of data it also proved difficult to get

a complete picture of the implementation costs of the new scheme relative to the previous one. As a result, the expected reduction in implementation costs could only be partially assessed.

## Feasibility

**Feasibility has improved due to clear roles and collaboration**
During the implementation period the feasibility of the ANLM has steadily improved relative to the previous scheme for agricultural nature management. In particular, after four years the roles and objectives have become clear. The 40 agricultural collectives work professionally on the implementation of the ANLM, initiate new projects and enter into collaborative relationships. The roles of the other parties in the chain (Ministry of Agriculture, provinces, regional water authorities, BIJ12, the RVO, the NVWA and BoerenNatuur) have also largely crystallised. Moreover, these chain partners are highly motivated to make the system a success, and the willingness of farmers to participate has increased. Cooperation in the implementation chain has improved, partly due to the joint ANLM consultations in which parties in the chain can discuss specific implementation issues.

**Regional water authorities, land management organisations (TBOs) and volunteer organisations are not fully-fledged chain partners**
However, there are also parties that play (or should play) an important role in the ANLM, but do not yet function as a fully-fledged chain party. For example, regional water authorities are involved nearly everywhere, but their association umbrella (Unie van Waterschappen) does not participate in chain consultations at an overarching level. As a representative of volunteers, LandschappenNL (organisation for preserving heritage landscapes) is not seen as a chain partner, even though its volunteers play a crucial role in monitoring landscape management and thus contribute to the learning aim of the ANLM. Moreover, the existing land management organisations (TBOs) have not been given a formal role in the implementation of the scheme. As a result, coordination of conservation measures between the TBOs and agricultural collectives is often lacking, even though such coordination could increase the effectiveness of the scheme for BHD target species.

The cooperation at the joint level can be strengthened by having the association of Dutch Water Authorities, TBOs and LandschappenNL (as representative of volunteers) participate in chain consultations. At area level, provinces can strengthen cooperation between TBOs and agricultural collectives through a combination of facilitation and formalisation, for example by supporting the preparation of joint management reports and management plans and establishing formal requirements for these plans and reports when granting subsidies to TBOs and agricultural collectives.

**Agricultural collectives have sufficient competence and resources to carry out tasks**
Agricultural collectives generally have sufficient competence and resources to carry out their coordinating and administrative tasks in the ANLM. However, the financial position of the collectives is vulnerable. This is primarily because payment for administrative tasks and conservation activities takes place after the end of the management year, which means that collectives have to pre-finance one year in advance. Because agricultural collectives were usually unable to finance this themselves at the start of the scheme, many provinces have provided interest-free loans to bridge the gap. This 'flaw' in the scheme must be resolved before the new implementation period, so that collectives can operate independently in terms of their finances.

Collectives also have limited financial scope for knowledge development. No structural provision has been made within the ANLM for research and other activities, even though there are still many knowledge gaps about water management, the relationship between the management and the occurrence of the target species, especially for habitats in the green and blue infrastructure. Moreover, the monitoring of the conservation activities is not effective.

**Flexibility is limited by European regulations**
The ANLM offers more flexibility and scope for regional fine-tuning than the previous scheme. Provinces tend to govern more in broad terms and agricultural collectives have various options for attuning conservation agreements to specific local circumstances, also during the growing season.

However, these options are limited by European regulations, which require that administration, accountability and audits are very detailed and that changes in conservation measures must be communicated in a timely manner. As a result, collectives experience a large administrative burden that is at the expense of their efforts to improve the quality of the conservation efforts. Moreover, this administrative burden is not proportional to the managed area of the various habitats and the water category. For example, green infrastructures, blue infrastructure and the water category entail higher administrative burdens per hectare than open grassland. Chain partners have various ideas for simplifying the system and the implementation procedures that deserve further elaboration and can reduce the administrative burden.

**Self-governing capacity of agricultural collectives is increasing**
The self-governing capacity of agricultural collectives has increased. Besides performing their tasks in the ANLM in a professional manner, they have also contributed to the transition towards a more nature-inclusive agriculture. There are, however, differences between collectives in terms of professionalism and the extent to which they take on (or can take on) new activities. Improvements are possible in terms of strategy formation, separation of strategic management and operational organisation, clarification of task allocation with the Agricultural Nature Associations (ANVs), and scaling up and cooperation. Logically, the current organisational structure of most collectives is also based on their current role in the ANLM and not yet on broader ambitions. Aligning the organisational structure with new roles deserves attention, partly in light of the potential roles that collectives can play in the implementation of the eco-schemes in the new CAP.

# Focus on policy objectives and ecological conditions

**Greater focus on BHD target species than in the previous scheme**
Relative to the previous scheme, the ANLM focuses more on the 68 BHD target species that occur on farmland. This is because provinces make additional choices regarding target species that affect the selection and delineation of habitats, the assessment of area applications and the conservation choices of the agricultural collectives. The targeting is most effective for open grassland because collectives use up-to-date distribution data for target species and monitor the measures to improve them and deploy them at locations where the meadow birds occur. For open arable land, less distribution data is available for collectives, or the available data is not current. This makes it more difficult for collectives, within the boundaries, to make additional choices for the best locations.

Protecting species of concern is more difficult to achieve for the green and blue infrastructure due to the wide variety of such target species, more limited knowledge about the relationship between conservation measures and the occurrence of the target species compared to the other habitats, and a lack of distribution data. Protecting species of concern in these habitats can be enhanced by focusing efforts on those species for which it is known where they occur and what they need.

The focus of the water measures on WFD objectives has been limited as a result of the initial focus of the regional water authorities on raising awareness among farmers and the process of acquiring experience with the new scheme, but it has improved due to increased understanding about the problems for water quality. However, a sharper focus on the water quality objectives is needed.

**Long list of target species is difficult to deal with in practice**
Provinces have added dozens of their own provincial species for all four habitats to the list of 68 BHD species. This long list is difficult to deal with in practice and therefore poses a risk to the focus on species of concern. Because individual provinces prioritise species without mutual coordination, it is questionable whether the ANLM contributes to the conservation of all these species. As a result, there is a lack of insight into the extent to which all 68 species are sufficiently protected on a national scale.

To enhance the focus on species of concern and to prevent false expectations, the provinces should limit additions of provincial species to species with the highest priority and to species that demonstrably benefit from measures to conserve priority species. They should also coordinate these choices with each other. The focus on species of concern can be further enhanced if the provinces

jointly map out the needs of the prioritised target species, determine which measures should be taken to achieve this, and on this basis review the current allocation of ANLM resources to the habitats and the provinces. This allocation can then be adjusted if necessary.

**Required scope and budget is unclear**
Although the ANLM focuses more than previous schemes on the conservation of BHD target species, the area and budget that is required to reverse the negative trends for the 68 target species is unclear. In addition, the ANLM is one of the instruments that should contribute to the favourable conservation status of these species. The Netherlands Nature Network (Natuurnetwerk Nederland: a robust, coherent network of nature reserves and connections between them at the national level) and several agri-environmental policies also contribute to this. It is recommended to clarify the required scope of the ANLM and the size of the budget for ANML, partly in relation to other policy instruments to benefit conservation status for the 68 BHD target species and WFD objectives. Realistic objectives for the AES can then be formulated.

**Tension between measures for long-term habitat quality and current farming practices**
Relative to the previous scheme, for open grassland the collectives are focusing more on severe restrictions on farming practices and less on nest (clutch) activities. This approach often involves deferred mowing, sometimes combined with early season grazing and seasonally flooded grassland. However, this strategy generally does not provide the necessary long-term improvement in habitat quality, as regular farming practices are resumed after the rest period to avoid a decline in agricultural production.

The contribution to long-term habitat quality can be enhanced by focusing more on developing herb rich grassland, reducing fertiliser application and raising the water table. This calls for a joint approach to bottlenecks, such as the fitting into current farming practices, the absence of a favourable initial situation and the amount of compensation for herb rich grassland (see Conclusion).

**Mixed results for spatial concentration and continuity of conservation activities**
The spatial concentration of conservation activities for the open arable land habitats and green and blue infrastructure has improved compared to the previous scheme and during the implementation period of the ANLM. For open grassland there has also been a slight improvement during the implementation period, but the spatial concentration initially decreased slightly when the scheme was introduced at the national level. This was probably due to the decreased number of hectares for which contracts could be completed during the transition to the new scheme and the continuation of many old contracts that could not be shifted.

The continuity of management of the ditches, ponds and landscape elements, and to a lesser extent open arable land and open grassland, has increased since the beginning of the scheme, when much conservation activities were repositioned. However, some of the meadow bird management has not been continued in the period 2016 to 2019, or has been repositioned to new locations. Due to these shifts, which were possibly caused by agricultural collectives allowing conservation activities to be repositioned with the birds, it has not been possible to work on developing long-term habitat quality at these locations. Provinces and collectives can make ecological gains by focusing more strongly on the formation of large clusters with severe restrictions on spring mowing and other activities in areas with meadow birds, where this type of activities is continued for many years.

**Optimise conservation practices by learning from and sharing results**
Agricultural collectives and participants have reported good experiences with learning from the results of conservation practices and sharing these insights with others working in the same type of habitat. With this learning approach to conservation practices they track the effects of conservation measures on the populations of target species and adjust measures if necessary on the basis of the results. This learning approach can be enhanced by paying more attention to habitat quality instead of just counting species, and by combining data from various sources, experimenting with different measures and with species-oriented projects.

**Predation is a concern**
Predation pressure has increased sharply in the Netherlands since 2000. Many agricultural collectives in the meadow bird provinces in particular are concerned about this increased predation pressure. They currently see predation as the main factor that negatively affects the breeding success of meadow birds. If predation does not decrease, they feel that their efforts will be futile. Despite the best efforts of the participants, excess predation leads to insufficient breeding success. This is a topic for supporting policy that requires further elaboration and joint efforts by provinces, collectives, TBOs, game management units and species organisations, not only to increase breeding success, but also to prevent the continued predation losses from affecting the willingness to participate in the ANLM because participants lose motivation.

# Policy renewal

**Supporting policies and new instruments are needed to improve the attainment of objectives**
The evaluation makes a number of suggestions for improvement that can largely be realised within the context of the current scheme and/or can be included in the National Strategic Plan and its associated subsidy framework. The suggestions can be summarised as follows: improve chain cooperation, continue simplification of the scheme, strengthen the focus on policy objectives and optimise conservation practices. However, it is expected that the ANLM alone, even after implementing these improvements, will be insufficient to reverse the negative trends of many BHD target species and achieve the water quality objectives in agricultural areas. Therefore, to improve the attainment of the ANLM objectives, efforts are needed in supporting policy in a general sense. This concerns, among other things, implementation measures, making adjustments to water policy (decisions about the ground water table), developing plans for predation management, using land policy instruments such as reallotment and supporting area-specific knowledge development.

For open grassland habitat, more effort is also needed for long-term improvement of habitat quality, enlargement of core areas, openness of the landscape, restriction of fertiliser use and nutrient stripping. Such far-reaching adaptations cannot be expected from farmers on the basis of a voluntary scheme with compensation for loss of income per hectare and short-term contracts. This raises the question of what the possibilities are of new instruments that support far-reaching adaptations in agricultural practices towards 'nature farming', such as transition schemes, long-term private law agreements on the land use linked to depreciation and new revenue models. It is advisable to support the possibilities offered by such new policy instruments and forms of remuneration that integrate more demanding forms of management aimed at conserving the more critical species in open grassland habitats.

**Look for synergy with other endeavours in area processes**
Making agriculture more sustainable is not only important for the conservation of ANLM target species and water quality objectives. A broader societal interest is also involved. Various endeavours require making agriculture more sustainable, such as climate adaptation, $CO_2$ reduction, increasing general biodiversity, improving the quality of groundwater and surface water, preventing soil subsidence, improving soil quality and reducing nitrogen emissions. As a relatively independent policy domain with its own goals, regulations and implementing organisations, the ANLM now operates largely separate from these endeavours. This is problematic because these endeavours cannot be seen in isolation from each other and the associated approaches can be both an opportunity and a threat, depending on the policy choices involved. It is therefore important to look at the objectives and measures of the ANLM from a more integral perspective. An comprehensive area-oriented approach offers starting points for attaining synergy between the ANLM and other endeavours. As part of their environmental policy, the provinces are ideally suited to take this role. The ANLM can then be seen as one of the instruments for achieving joint objectives in specific geographical areas. In addition to a broader interpretation of the province's directing role, this perspective requires a reorientation of the agricultural collectives: do they remain mainly associated with the implementation of the ANLM or do they develop into broader, area-based collectives that are committed to comprehensive area-based objectives in which other non-agricultural parties from the area also participate?

# 1 Introduction

## 1.1 Background

**The ANLM: a new subsidy scheme**
In 2016, the ANLM, a new subsidy scheme for agri-environment, came into effect. The scheme has introduced an area-oriented approach for agricultural nature and landscape management in which 40 certified agricultural collectives play a central role. Together, the agricultural collectives cover the entirety of the Netherlands. More than previous subsidy schemes, the ANLM focuses on international nature obligations and target species (Birds and Habitats Directives). The ANLM also focuses on improving water quality (Water Framework Directive, WFD) and water management (Regiebureau POP, 2017). In addition, the scheme is intended to contribute to an attractive and liveable rural area (EZ 2013b; EZ & IPO 2014). The subsidy scheme is partly financed by the EU through the Netherlands Rural Development Programme (RDP 3), which means that agricultural nature and landscape management must comply with European funding regulations in terms of its subsidy conditions and procedures.

**Evaluation of initial experiences and results**
Five years after its introduction, the question is how this new scheme has worked out in practice. How have the central government, the provinces, the agricultural collectives, the regional water authorities and other stakeholders implemented the new scheme? Are the expectations in terms of improving feasibility, focus on policy objectives and ecological effectiveness being met? And what can be learned to improve implementation in the remaining period of the ANLM (through 2022) and for the implementation in the Netherlands of the new Common Agricultural Policy (CAP) from 2023? To answer these questions, the Ministry of Agriculture, Nature and Food Quality and the provinces commissioned an interim evaluation of the new ANLM scheme. Here we report on this evaluation.

## 1.2 Background of new scheme

**Disappointing results and high implementation costs of previous scheme**
The primary reasons for initiating the new scheme were the disappointing ecological results of the previous scheme – Subsidy for Nature, Landscape and agricultural nature management (SNL-a) – and the high implementation costs involved. An important milestone was the report (published in 2013) 'Nature's imperative – Towards a robust nature policy' from the Council for the Environment and Infrastructure (Rli). In this report, the Council noted that "the agricultural nature management instrument and the resources used are of limited effectiveness in terms of the conservation of endangered species" (Rli, 2013: 17). Moreover, the implementation costs had risen to 40% of the total budget for agricultural nature management (Tweede Kamer, 2011). Preparations for a major change in the agricultural nature management subsidy scheme were already in full swing at that time.

**Building on agricultural nature associations**
When designing the new system, it was possible to build on existing cooperation on agricultural nature and landscape management with agricultural nature associations. The experiences with collective farmland bird management were also useful. From 2014, area coordinators concluded conservation agreements with individual farmers based on collective management plans. Between 2011 and 2014, pilots were also carried out at the area level in which the collective approach was further elaborated in preparation for the ANLM.

**Habitats approach is central**
A core element of the new scheme is the habitats approach, which focuses on creating and maintaining habitats for individual species or groups of species that require similar conservation

measures. The ANLM focuses mainly on fauna species of international importance that are highly dependent on the agricultural area. A distinction is made in the system between four types of habitats: open grassland, open arable land, green and blue infrastructure. In addition, there is a water category for improving water quality and water management. The approach to open grassland and open arable land habitats is based primarily on previous meadow bird and field bird conservation practices in the SNL-a. The green infrastructure management is based on the landscape management from the previous scheme, but in the new scheme it is linked to the BHD target species that occur in this type of landscape. The blue infrastructure and the water category did not have precedents in the previous scheme.

**Focussing on promising areas and a collective approach**
To make the protection of endangered species more effective and efficient, in the new scheme the species that depend on each habitat type are determined together with the ecological conditions that are needed to maintain the species sustainably. To this end, the knowledge about the demands that species place on their environment, and about the conservation measures and implementation measures that are required to maintain them, is collated in so-called species cards (BIJ12, 2014). In addition, the demands that species place on the size and spatial cohesion of habitats were examined (Melman et al., 2014). In line with this, most provinces, in consultation with stakeholders in the areas concerned, have limited the size of the areas where agricultural nature and landscape management is subsidised in their nature management plans and are focusing on areas where promising populations of species are already present or can be expected in the near future. (Kuindersma et al., 2017; Melman et al., 2016). The agricultural collectives then coordinate, supervise, administer and review the conservation efforts of individual participants at the area level. Because the collectives operate in the region and are closer to the farmers than the government, the new scheme provides opportunities for regional fine-tuning and greater flexibility in conservation activities, payments and locations. Better results are therefore expected (Ministry of Economic Affairs, 2016; Hendriks, 2016).

**Cost savings and simplification**
The new approach, which involves agricultural collectives, should also entail considerable cost savings for the government. In the previous system, the Paying Agency (RVO) concluded subsidy contracts with more than 10,000 farmers in 2013 (Boonstra and Nieuwenhuizen, 2019); in the new system this has been reduced to subsidy decisions for 40 agricultural collectives. The previous system also had a high risk of administrative errors. Working with collectives should make it possible to simplify administrative processes and make it easier for participants to comply with the rules (Ministry of Economic Affairs, 2016).

## 1.3 Research questions

**Inform and learn**
With this interim evaluation, the central government and the provinces want to inform the minister, the Dutch Parliament, the Provincial Executive and the Provincial Council about, among other things, the feasibility and effectiveness of the ANLM scheme. In addition, the central government and the provinces want the evaluation to provide the relevant chain partners in the ANLM with tools for making improvements in the current implementation period and for continuing the development of the ANLM in the next implementation period of the new Common Agricultural Policy.

**Main questions**
The main research questions of the evaluation are the following:
1. What is the context and justification of the new scheme and what are its most important features?
2. Which parties take which roles in the implementation of the ANLM, and how has the scheme developed since its introduction?
3. To what extent and in what way will the new scheme contribute to lower implementation costs, better feasibility, sharper focus on specific objectives and greater effectiveness of agricultural nature and landscape management?

4. What action perspectives are there for chain partners to improve the feasibility, enhance the focus on objectives and improve the effectiveness of the scheme, and what recommendations can be made for the further development of the ANLM in the new CAP?

## 1.4 Evaluation framework

An evaluation framework has been drawn up consisting of the central expectations of the new ANLM scheme that are reviewed in the evaluation (Figure 1.1). The various elements of the approach are shown on the left of the figure, the intermediate goals in the middle and the final goals of the new scheme on the right. This evaluation framework forms the lens through which we have looked at the ANLM. It is based on a more extensive intervention logic of the new scheme that has been reconstructed together with the chain partners in the ANLM. This intervention logic refers to the set of assumptions about the way in which the various elements of the new scheme should contribute to its objectives. This is presented in Annex 4.

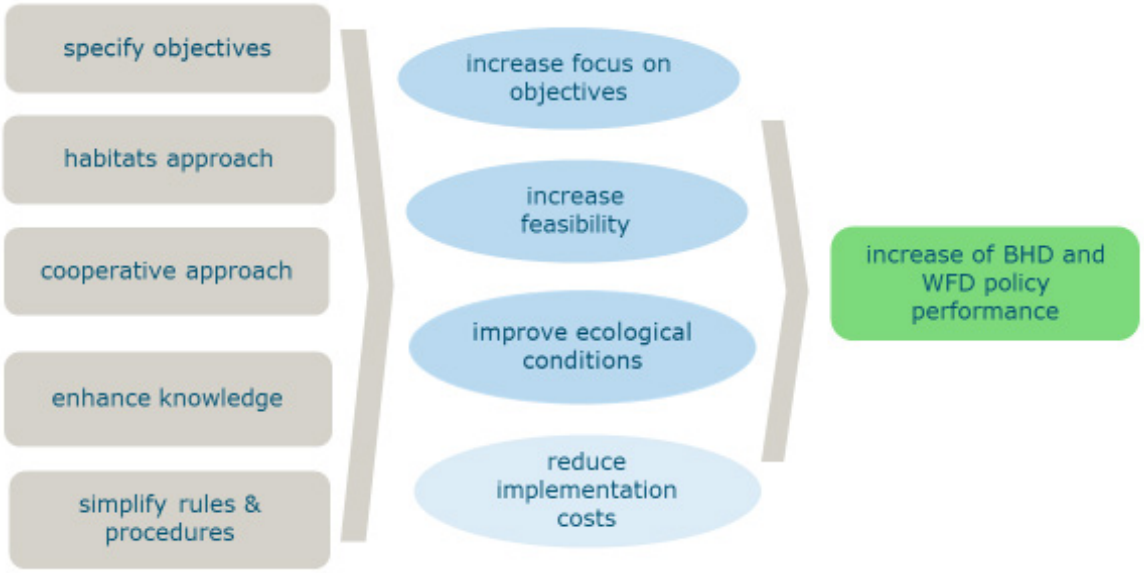


***Figure 1.1*** *Evaluation framework for the new ANLM scheme*

**Indirect assessment of ecological effects**
This evaluation determined to what extent the approach of the new scheme contributes a more effective focus on objectives, improved feasibility and improved ecological conditions for attaining the BHD and WFD objectives compared to the previous scheme. During the evaluation, no data were yet available from the policy monitoring about the actual effects of the scheme on the BHD target species. Therefore no statements have been made about the attainment of the BHD objectives with the ANLM. A national report on the results of the policy monitoring is expected at the end of 2021 at the earliest (Boonstra and Nieuwenhuizen, 2019). The policy monitoring of the ANLM does not involve the WFD objectives. Due to the lack of data on the actual effects, an indirect assessment of the ecological effects was used in this evaluation. This was based on the assumption that more effective focus on ANLM objectives, improved feasibility, reduced implementation costs and improved ecological conditions will contribute to greater attainment of the BHD and WFD objectives. However, no firm statements are made in this report about the extent to which this is the case.

**Specific focus on BHD and WFD objectives**
In the ANLM, the central government, the provinces and the regional water authorities are focusing on the 68 target species of the BHD that occur on farmland and on the water quality objectives of the WFD. Compared to the previous scheme in which target species of the BHD were not specifically named, the focus on these species in the ANLM is a refinement of the objectives of agricultural nature

and landscape management. In addition, for the green infrastructure there has been a shift from landscape objectives to species management. The central government and provinces expect that this shift in objectives and focus will lead to improved management of these species. The previous scheme did not include water management measures. The attainment of objectives for water is expected to increase during the current implementation period.

**Feasibility: roles, collaboration, resources and support**
Increasing the feasibility of the scheme is an important expectation of the new ANLM. The creation of agricultural collectives that take over tasks from the government and are closer to the farmers, in combination with simplified rules and procedures, should contribute to greater feasibility. Feasibility concerns the following aspects:

- The extent to which it is clear who will implement the ANLM and what everyone's role is in the scheme.
- The extent to which roles are sufficiently coordinated and cooperation takes place.
- The extent to which implementing parties have sufficient and appropriate resources to carry out their tasks in the ANLM. This concerns aspects such as authority (competence), funding, flexible regulations, knowledge and self-governing capacity.
- The extent to which implementing parties also want to implement the ANLM (support).

The term 'self-governing capacity' deserves further explanation. This concerns the ability of agricultural collectives to perform their role in the scheme and to take on new roles that may be necessary. It also concerns the extent to which and the way in which collectives take on the following activities:

- Jointly developing a persuasive strategy (vision) and activities.
- Mobilising resources to implement the strategy, including knowledge and funding.
- Establishing a stable and professional organisation with sufficient authority.
- Coordinating and implementing activities and safeguarding synergy.
- Collaborating with other organisations in the area.
- Representing the interests of the members.

**Implementation costs: partial assessment is possible**
An important expectation of the new scheme is a reduction in implementation costs, which is associated with the introduction of collective agreements at the area level. This replaces agreements with individual farmers in the previous scheme and simplifies the rules and procedures. Implementation costs refer to the costs incurred by public and private parties to implement the ANLM. This includes costs involved in granting subsidies, setting up management systems, auditing and accountability systems, and communication and monitoring. The costs for the actual conservation measures that the participants implement are not included. To determine whether the expectation of lower implementation costs has been realised, in this evaluation the implementation costs of the ANLM were compared with those of the previous subsidy scheme. This was only partially successful, because no data was available on many cost items. Consequently, no conclusions could be drawn from the analysis about the realisation of the expectation.

**Ecological conditions: effective management at the suitable location and spatial cohesion**
The habitats approach is a core element of the ANLM and is an innovation compared to the previous scheme. The approach focuses on creating and maintaining the right ecological conditions in habitats for groups of target species with similar demands on their habitat. Specific conservation measures have been described for each type of habitat that are aimed at increasing habitat quality or solving an ecological bottleneck. To ensure that the habitat is also large enough for the target species, the habitat approach also focuses on increasing the spatial cohesion (clustering) of conservation efforts. These two aspects are known within the ANLM as 'effective management at the suitable location' and 'realisation of sufficient spatial cohesion'. In this evaluation we assessed the expected outcome that the ANLM would contribute to more 'effective management at the suitable location' and to greater spatial coherence of conservation activities compared to the previous scheme.

For the aspect of effective management at the suitable location, we used the following criteria:
- The extent of overlap between the distribution of target species and the ANLM management measures – the more overlap, the better.
- The extent to which conservation measures have contributed to improving habitat quality for the target species and water quality conditions – the greater the contribution to improving habitat quality and water quality conditions, the better.

We used the following criteria for spatial cohesion of conservation management:
- The size of the managed area per habitat and of the water category – the bigger, the better.
- The spatial concentration of habitat management and water management (is conservation management widely disseminated in the landscape or concentrated in clusters?) – the more concentrated, the better.
- The extent to which habitat elements are intertwined – the greater the intertwining, the better.
- The connections between agricultural meadow bird management and the meadow bird nature reserves in the Netherlands Nature Network – the more connected, the better.
- The continuity of conservation management – the more continuity, the better.

In the analysis of the spatial concentration for the open grassland habitat, the focus was on clustering the management of nesting and rearing habitat relevant to meadow birds, such as deferred mowing, herb rich grassland and raising the water table. Nest (clutch) management and rearing areas have not been taken into account here because they do not contribute independently to the aforementioned nesting and rearing habitat, but only in combination with the aforementioned severe restrictions on spring activities.

The extent to which habitat elements have been acquired was assessed regarding two aspects:
- The relative contribution of ditch conservation measures, such as maintaining nature-friendly banks and ecological ditch cleaning, which are carried out in spatial cohesion with meadow bird management.
- The relative contribution of the management of landscape elements that is carried out in spatial cohesion with agricultural meadow bird and field bird management.

## 1.5 Evaluation approach

**'Learning evaluation' for redirection and further development of the ANLM**
The Ministry and provinces have designed the evaluation of the ANLM as a process in which learning and evaluation come together in a learning evaluation. The evaluation has taken place during the process of policy elaboration and implementation and not only afterwards, as in many traditional evaluations. Besides mapping out policy results, a learning evaluation focuses on how these results are achieved and on the associated challenges. After all, these processes are the starting points for policy improvement and redirection. Moreover, a learning evaluation is a collaborative process between researchers, policy-makers and other parties involved in the ANLM. Together they determine the research questions addressed in the evaluation and the evaluation framework. The stakeholders actively contribute their knowledge and perspectives, and together with researchers they give meaning to the answers to the research questions. A learning evaluation thus aims at establishing an effective connection with policy in practice (Boonstra et al., 2018).

**Mixed methods for answering research questions**
To answer the research questions (see Section 1.3), a mixed method approach – a combination of quantitative and qualitative methods – was used, and analyses were performed at the national, provincial and area levels.

To answer the first research question about the context, motivation and development of the scheme, a document analysis of available literature and policy documents was performed. The answer to the second research question into actors and roles in the ANLM was based primarily on interviews with key actors from the ANLM chain and stakeholders (see A1).

The following methods were used during 2020 to answer the third research question about the focus on objectives, feasibility and effectiveness:

- Quantitative analysis of input and output
- Quantitative analysis of implementation costs
- Geographic Information System analysis (GIS analysis) of spatial cohesion
- Self-evaluation by the provinces
- Self-evaluation by the regional water authorities
- Multiple case study
- Focus groups

The question on action perspectives was discussed in a concluding workshop with chain partners and stakeholders.

**Multiple case study in Westergo, Drenthe and the Krimpenerwaard**

The multiple case study was an important part of the evaluation. The cases consisted of agricultural collectives, their network and their area (or sub-area) of activity. Because we wanted to gain insight into the effect of different circumstances on the focus on objectives, feasibility and ecological conditions, we looked for cases that differed on the following criteria: origin of the collective, its size and the corresponding habitats. Based on these criteria the following agricultural collectives and areas were selected in consultation with the evaluation supervisory committee: The Agricultural Nature Collective Westergo with the Greidhoeke sub-area; the Drenthe Agricultural Nature with the Veenkoloniën/Odoorn sub-area; and the Krimpenerwaard Agricultural Collective with the entire Krimpenerwaard area. In the multiple case study, organisational and ecological questions were discussed in mutual conjunction and answered on the basis of document analysis, field visits and group discussions with the collectives and other stakeholders.

**Analysis of the development of 'effective management at the suitable location' and spatial cohesion**

Charting the development of effective management at the suitable location was part of the multiple case study and therefore had a predominantly qualitative character. No generic analysis has been carried out into the extent of overlap between the management carried out and the distribution of target species and the extent to which conservation measures contribute to improving the habitat quality for the target species and the water quality conditions. Partly because of this, our statements about the development of effective management at the suitable location are tentative.

To chart the development of spatial cohesion, a GIS analysis was carried using RVO data on the implemented activities (see Annex 5 for an extensive methodological justification). To determine the extent to which the approach of the new scheme contributed to improved spatial cohesion, the spatial cohesion achieved in the current ANLM implementation period was compared with that achieved in the previous SNL-a scheme. This analysis involved three time points: 2010 (SNL-a), the 2016 management year (combination of SNL-a and ANLM) and the 2019 management year (almost entirely ANLM).

## 1.6 Reading guide

The remainder of this report is structured as follows. In Chapter 2 we describe the most important characteristics of the ANLM, the policy tasks to which the ANLM should contribute, the policy context of the ANLM, the implementing actors and their roles, the management cycle and the development of the ANLM since its introduction in 2016. Chapter 3 addresses the feasibility of the scheme. We discuss the changes in the feasibility compared to the previous subsidy scheme and also how the feasibility has developed during the first implementation period of the ANLM. In Chapter 4 we examine the question of whether and to what extent the scheme has contributed to a more effective focus on objectives. Chapter 5 addresses the contribution of new scheme to the intended improvement of the ecological conditions for the attainment of the BHD and WFD objectives: 'effective management at the suitable location' and the spatial cohesion of management. In Chapter 6 provides conclusions and recommendations for the future of the ANLM.

# 2 The ANLM in outline

## 2.1 Introduction

In this chapter we describe the main features of new Agricultural Nature and Landscape Management scheme (ANLM). The following aspects are discussed in succession: the most important characteristics of the ANLM (Section 2.2), the policy tasks to which the ANLM should contribute (Section 2.3), the policy context of the ANLM (Section 2.4), the implementing actors and their roles (Section 2.5), the management cycle (Section 2.6) and the development of the ANLM since its introduction in 2016 in text (Section 2.7) and figures (Section 2.8). The chapter ends with a number of conclusions (Section 2.9).

## 2.2 Main features of the ANLM

**New scheme aimed at international obligations**
In 2016, the subsidy scheme for Agricultural Nature and Landscape Management (ANLM) came into effect. The ANLM consists of twelve provincial subsidy schemes and an area-oriented approach in which 40 certified agricultural collectives play a central role. Together, the collectives cover the entirety of the Netherlands. In contrast to previous schemes, the ANLM focuses on international nature obligations and target species (Birds and Habitats Directives). The ANLM also focuses on improving water quality (Water Framework Directive) and water management (Regiebureau POP, 2017), and should contribute to an attractive and liveable rural area (EZ 2013b; EZ & IPO 2014).

**Habitats approach is central**
A central element of the ANLM is the habitats approach aimed at creating and maintaining habitats for species or groups of species that require comparable conservation measures. The ANLM focuses mainly on the 68 target species of the Birds and Habitats Directives (BHD) that are highly dependent on the agricultural area and for which the Netherlands has the obligation to maintain or improve their conservation status. The majority are birds, but BHD target species also include fish, amphibians, insects and mammals. The scheme distinguishes between four habitats for these species: open grassland, open arable land, blue infrastructure (such as ditches and ponds) and green infrastructure (upright vegetation such as hedgerows and hedge banks). In addition, a water category has been included in the system for improving water quality. Until the introduction of the ANLM in 2016, agricultural nature management focused mainly on wild birds that breed in grasslands, botanical grasslands and, to a limited extent, arable lands that were not specifically identified. The management of hedges, ditches and canals was mainly aimed at landscape and cultural-historical values and not specifically at the species that live in them. Management of species in blue infrastructure, such as amphibians and fish, was not part of the system.

**Focus on promising areas**
To make the protection of vulnerable species more (cost) effective, for each habitat type the scheme determines which species depend on these habitats and which ecological conditions are required to sustain them. To this end, the available knowledge about the demands that species place on their environment, and which conservation measures and implementation measures are required to maintain them, was collected in so-called species cards (BIJ12, 2014). In addition, the demands that species place on the size and spatial cohesion of habitats were also examined (Melman et al., 2014). In line with this, most provinces, in consultation with agricultural collectives (ongoing or in formation) and land management organisations (TBOs), have limited the size of the areas where agricultural nature and landscape management is subsidised in their nature management plans and are focusing on areas where promising populations of species are present or can be expected in the foreseeable future (Kuindersma et al., 2017; Melman et al., 2016).

**Agricultural collectives design nature and landscape management**

The agricultural collectives that are established for this purpose can autonomously determine how the agricultural nature and landscape management in the designated areas is given shape. An agricultural collective is a partnership of farmers and other land users in a certain area who have voluntarily joined forces to implement agricultural nature and landscape management. The collectives have a conservation strategy, draw up annual management plans and, based on this, conclude private law contracts with participating farmers and other land users about conservation measures and the corresponding compensation. Agricultural collectives submit a subsidy application (area application) to the province. In this application they specify the objectives they want to achieve at the area level, such as numbers of hectares of open grassland or green infrastructure, which conservation measures they plan to use and how these measures contribute to achieving the objectives from the nature management plan. The central role of agricultural collectives in coordinating, guiding, financing, monitoring and, if necessary, sanctioning the conservation efforts of individual participants is a major change compared to the previous subsidy scheme. Previously, the location of conservation activities, the measures and the cooperating parties were specified in an agreement between the government and the participant. In the collective system, this was changed to an agreement between the participant and the collective. This is also known as the 'front door-back door' principle. In an area application, agricultural collectives make agreements at the 'front door' with provinces and regional water authorities about the intended achievements at the area level. At the 'back door', the agricultural collectives make agreements with farmers and other agricultural land users about the conservation measures to be carried out at the land parcel level.

**Flexibility**

Another change from the previous scheme is the greater flexibility made possible by the front door-back door principle. The agricultural collectives have a six-year subsidy agreement with the corresponding provinces. Based on this agreement, the collectives make conservation agreements with the participants. Instead of the previous six-year contracts between participants and the government, the collectives can now also conclude shorter-term contracts with participants and transfer the management accordingly. There are also options for making changes to the management and responding to developments in the area during the management year. For example, the agreed rest period for meadow birds until 1 June can be extended if, for example, there are still chicks on the land. This is also known as 'last-minute management'. More flexibility is also possible when determining the payments. Based on the area application, the agricultural collectives receive an average amount of subsidy per hectare per habitat. The collectives then determine the payments to the participants based on the conservation measures that are implemented. For example, the collectives can choose[1] a lower or higher fee for certain conservation packages. At the back door, the collectives therefore have the flexibility to use the allocated budget to conclude additional conservation packages at other locations or to finance additional management requirements. Finally, the collectives can partially convert the payments for certain packages into a result-based payment. This is the case, for example, with nest (clutch) management, where payment can be made per nest.

An important instrument for realising flexibility is the min-max system. The area application contains a minimum and a maximum area to be managed per habitat. The maximum area to be managed is standardised at 120% of the minimum. The subsidy is paid annually on the basis of the land area actually managed up to the maximum specified in the area application. If an agricultural collective manages less than the minimum land area, the payment will be reduced accordingly. This min-max margin enables the agricultural collectives to respond flexibly to developments within their area of activity. Collectives can also choose to manage more land area. The surplus of managed surface functions as a buffer to compensate for small imperfections in land registration or management (for example: a herb rich field margin that has not grown properly in spring).

[1] A package for agricultural nature and landscape management is a coherent set of measures and regulations for a specific type of management. The conservation measures and regulations are aimed at conserving specific target species or a group of such species. Examples of conservation packages are: grassland with a rest period, fields with winter food, coppice management and nature-friendly banks.

## 2.3 Policy challenge

**ANLM focuses on biodiversity, water management and an attractive rural area**

The ANLM is intended to contribute to the conservation of biodiversity outside the Netherlands Nature Network and to an attractive and liveable rural area (EZ 2013b; EZ & IPO 2014). For biodiversity, this mainly concerns the 68 target species of the European Birds and Habitats Directive that the central government and the provinces have designated in the ANLM, such as the yellow wagtail, lapwing, black-tailed godwit, hen harrier, wood pigeon, kestrel, tree frog, crested newt, redshank, dormouse, polecat and little owl (BIJ12, 2019). As a minimum, the national government and provinces aim for stability in the occurrence of these species[2] and for improvements in the conservation status of 50% of the species (EZ and IPO, 2014). No specification has been made regarding the reference year and how much the ANLM should contribute to the prevention and conservation of the BHD species.

The ANLM also focuses on improving water quality (Water Framework Directive, such as buffer strips and soil management) and on water management (water retention, water storage and raising the water table). The specific contribution of the ANLM to these objectives has not been determined. The contribution to an attractive and liveable rural area has not been specified by the provinces and central government.

**Policy challenge for the BHD is large**

The European BHD objectives entail a considerable policy challenge for the Netherlands. Almost three-fourths of the protected species and 88% of all habitat types covered by the European Habitats Directive do not have a favourable conservation status in the Netherlands and one-third of the species in Birds Directive are in decline (PBL, 2020). This qualification is based on the size and structure of the population, its distribution, the area and quality of the habitat and the future perspective. There is no current report on the conservation status of the 68 BHR species designated in the ANLM. Before the start of the scheme, however, it was determined that the conservation status of most ANLM species is moderate to very poor (EZ, 2014).

**Status of farmland birds is worrying**

The farmland bird index provides a picture of the development of the populations of birds that are relevant for the agricultural area. This is composed of trend data of 27 bird species that are characteristic of the entire agricultural area in the Netherlands; it therefore does not focus specifically on ANLM-designated species and areas. In 2018, this indicator showed that the number of breeding birds has declined by half since 1990. In addition, species on open farmland are declining sharply (almost 70% decrease), while species on farmyards and thickets have shown a relatively stable trend in recent decades (see Figure 2.1). Of the 27 species (largely protected under the Birds Directive) that are included in this indicator, 20 have decreased in number, 5 have increased and 2 have remained the same. Some of the species in decline, such as grey bunting and ruff, were also rare in 1990. But much more common species such as black-tailed godwit, lapwing and oystercatcher are also in decline (CBS et al., 2020; Kleyheeg et al., 2020).

[2] In line with the above provisions, during the 2018 budget discussion, the Minister of LNV expressed his support for the objective of stabilising the meadow bird population (Handelingen II 2017/18, no. 32). In that same year, the minister confirmed this objective in a letter to Parliament (TK 33576, no. 135).

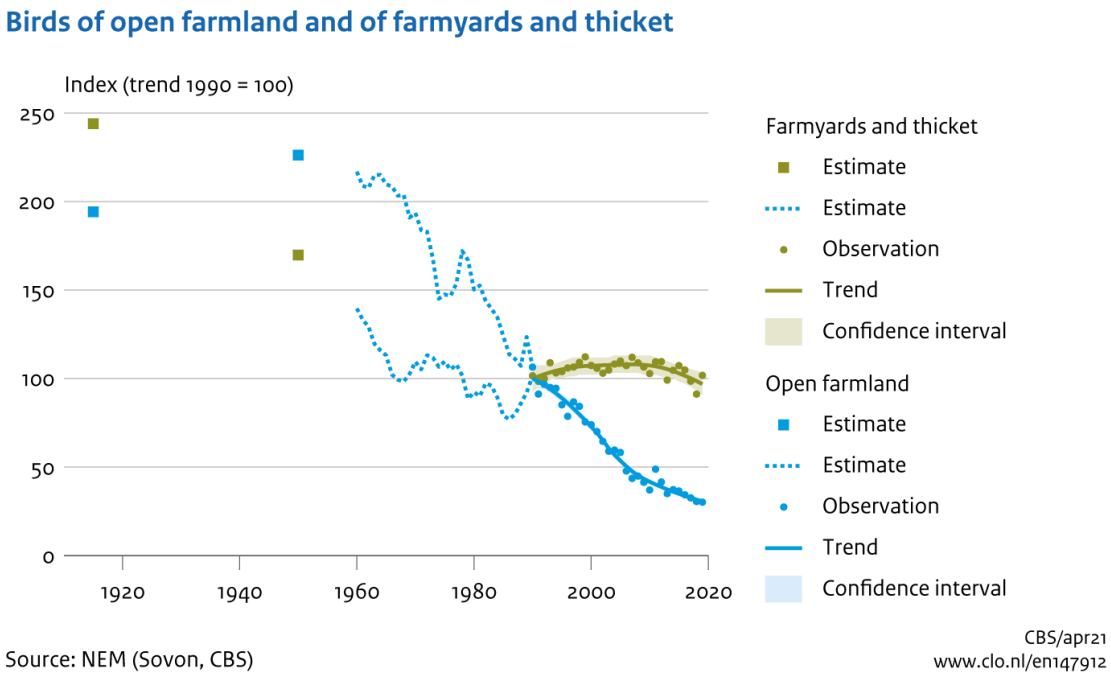


***Figure 2.1*** *Trends in populations of farmland birds (source: CBS et al., 2020)*

**Decreasing area of habitat and intensification of agriculture cause decline**
The decline of farmland birds is mainly due to the intensive use and management of arable land and grassland. Changes in crops, sowing of highly productive grasses, use of pesticides, fertilisation, drainage, scaling up and mechanisation have led to changes in food availability, nesting opportunities and chick survival and to the disappearance of small landscape elements such as hedge banks and fallow corners. Breeding grounds have also been lost due to the expansion of cities and infrastructure and increased road traffic. Intensive mowing has resulted in losses of nests and growing chicks. The combination of a low water level, little cover, better accessibility for predators and poor growing conditions mean that many meadow bird chicks fail to survive (CBS et al., 2020; Kleyheeg et al., 2020).

## 2.4 Policy context

**The ANLM is an instrument of European agricultural and rural policy**
The ANLM is part of the Rural Development Programmes 2014-2020 (RDP 3). This is the European subsidy programme for the development of competitive, sustainable and innovative agriculture, strengthening biodiversity and ensuring a vital countryside. RDP 3 falls under the 'second pillar'[3] of the Common Agricultural Policy (CAP) of the European Union (EU). The EU identified six rural development priorities for the 2014-2020 period, including the restoration, conservation and enhancement of ecosystems dependent on agriculture and forestry. For these priorities, the EU established a package of subsidy measures from which the Member States can choose and which they can specify as needed. The Netherlands has chosen to place the ANLM under Measure 10.1 – Agri-environment-climate support.

The ANLM subsidy is partly financed from the EU via the RDP. Due to the EU subsidy, agricultural nature and landscape management must comply with European regulations in terms of both subsidy provision and working methods (Kuindersma et al., 2017). The European implementing regulation[4] has been amended to make the collective approach possible.

[3] The first and largest pillar of the CAP focuses on direct income support for farmers.
[4] Regulation (EU) No 809/2014

**The ANLM is an instrument of nature policy**
Due to the choice to focus the ANLM on biodiversity restoration on farmland (essentially the 68 BHD target species), the scheme is primarily an instrument of nature policy. The ANLM covers approximately 5% of the entire territory of the Netherlands. In addition to the ANLM, other policy instruments should also contribute to a favourable conservation status of the 68 target species. Within nature policy, this mainly concerns the realisation and management of areas within the Nature Network with comparable objectives, such as the meadow bird nature reserves that are often managed by land management authorities (TBO's). In addition, the general agri environmental and water quality policy can contribute to conditions that benefit the conservation status of the 68 target species.

**The ANLM is an instrument of water policy**
In addition to habitats, the ANLM also includes subsidy options for management of bodies of water on or adjacent to agricultural land. The aim of this water category is to improve water quality (objectives of the Water Framework Directive) and to realise a robust, sustainable and climate-proof hydrological system through conservation activities. The water category is an innovation compared to the previous scheme, which contained no water measures. It builds on previous subsidy schemes of the regional water authorities for blue ecosystem services. Regional water authorities provide co-financing. Sometimes the province also contributes funding.

Similar to habitats, the ANLM is not the only instrument that is used for the aforementioned water objectives. The regional water authorities also implement many other measures, such as the construction of nature-friendly banks. And in the context of the Delta Plan for Agricultural Water Management (DAW), LTO Nederland (the Netherlands Agricultural and Horticultural Association) and the regional water authorities are working on water policy related to agriculture.

**Non-productive investments**
The RDP 3 includes another measure that may be important for achieving the goals of the ANLM, but is not part of this scheme. This concerns 'non-productive' investments for biodiversity, nature, landscape and the hydrological measures of the Programme Approach Nitrogen (sub-measure 4.4.1). This can be used to subsidise aspects such as implementation measures for certain species and the design and construction of landscape elements (Regiebureau POP, 2014).

## 2.5 Actors and roles

**Chain collaboration**
Numerous bodies and organisations are involved in the implementation of the ANLM, each with its own formal and/or informal role. For example, during the implementation cooperation takes place between agricultural collectives, BoerenNatuur, provinces, BIJ12, regional water authorities, the Ministry, the Paying Agency (RVO) and the Netherlands Food and Consumer Product Safety Authority (NVWA). These are also referred to as the chain partners in the ANLM, because they work sequentially on a single process. Various stakeholders who have no formal role in the system are also involved, such as volunteer organisations, expert partners and land management authorities (TBO's), but are important for effective management.

**Certified agricultural collectives are the final beneficiaries of the subsidy**
The agricultural collectives are the recipients of the subsidy that RVO pays out on behalf of the provinces. The collectives are responsible for the coordination, administration and supervision of the management efforts of individual participants at the area level and individual payments to the participants. Only certified agricultural collectives are eligible for a management subsidy. This is an important difference from the previous scheme, in which individual farmers were the final beneficiaries. The certificate is a statement issued by an independent foundation (Stichting Certificering SNL). This foundation assesses the applications for certification purposes and carries out audits. A certificate guarantees that an agricultural collective meets certain quality requirements for management, organisation and administration. There are 40 certified agricultural collectives throughout the Netherlands (BIJ12, 2017). Participating farmers and land users have joined forces in

these collectives to carry out agricultural nature and landscape management. They were established during the preparations for the introduction of the scheme. Many agricultural collectives build on, are part of or work closely with Agricultural Nature Associations (Dik et al., 2020). Most collectives have opted for a cooperative as a legal entity.

**Major differences between agricultural collectives**

There are major differences between provinces in the number and size of agricultural collectives. For example, the provinces of Drenthe, Limburg, Zeeland and Flevoland have one collective each for the entire province, while seven collectives are active in the province of Friesland and eight in the province of South Holland (see Table 3.1). The size of the collectives, measured by average number of members per collective, ranges from 103 in Flevoland to 1316 in Limburg.

***Table 2.1*** *Number of agricultural collectives and participants in the ANLM in 2018 (Source: BoerenNatuur)*

| | Total number of participants | Number of agricultural collectives | Average number of participants per collective |
|---|---|---|---|
| Drenthe | 308 | 1 | 308 |
| Flevoland | 103 | 1 | 103 |
| Friesland | 1820 | 7 | 260 |
| Gelderland | 1708 | 3 | 569 |
| Groningen | 669 | 3 | 223 |
| Limburg | 1316 | 1 | 1316 |
| North Brabant | 790 | 3 | 280 |
| North Holland | 791 | 4 | 198 |
| Overijssel | 757 | 3 | 252 |
| Utrecht | 845 | 4 | 211 |
| Zeeland | 280 | 1 | 280 |
| South-Holland | 1068 | 8 | 134 |
| The Netherlands | 10486 | 40 | 262 |

**BoerenNatuur supports agricultural collectives**

All agricultural collectives are members of BoerenNatuur, which represents and supports its members in the implementation of the ANLM. This organisation is committed to good preconditions for effective and efficient management regarding aspects such as regulations and controls, by consulting with, among others, RVO, the Ministry and BIJ12. BoerenNatuur also focuses on making knowledge available to its members and on sharing knowledge. In addition, the organisation provides communication about the scheme, related developments, and manages the ICT system (SCAN ICT) with which collectives can apply for, account for and pay out management payments. BoerenNatuur is represented in various consultation bodies of chain partners in which the progress of the ANLM and possible bottlenecks are discussed.

**Ministry sets the framework for nature policy and is management authority for the RDP**

In nature policy (including the ANLM) the central government has a predominantly framework-setting role. It must be accountable to the European Commission for complying with international obligations regarding biodiversity (overall scheme responsibility). Because the ANLM is part of the RDP 3, the central government has an additional responsibility. The Minister of Agriculture, Nature and Food Quality (LNV) is the management authority for the RDP 3. The management authority bears the ultimate responsibility for implementation of the RDP 3 with respect to the European Commission. The Minister of LNV must ensure efficient, effective and correct management and implementation of the RDP 3. In this capacity, the minister is the representative of the Member State in Brussels, the counter part of the European Commission and the representative of the government's position. Forerunners of the current Ministry of Agriculture, Nature and Food Quality played an important role in shaping the collective approach and took the lead in discussions with the EU about amendments to regulations that were necessary to make the system possible.

**Provinces have control over implementation**
Provinces are responsible for nature policy and therefore also for the ANLM at the provincial level. They draw up the subsidy regulations, assess the area application from agricultural collectives, issue six-year subsidy decisions and define their ambitions, objectives and preconditions for the ANLM in the provincial nature management plans. They maintain contact with the collectives, which includes formal progress or evaluation interviews on a yearly basis. The provinces are also clients for RVO and the NVWA for the execution of the national and European audits and paying out the subsidy. Due to their coordinating role, the provinces are also responsible for harmonising the ANLM with the broader environmental policy of the province and they coordinate this policy with the regional water authorities. BIJ12, the implementing organisation of the Inter-provincial organisation (IPO) for nature regulations, supports provinces in the implementation of the subsidy scheme by, for example, providing information, drawing up templates and facilitating consultation between provinces and other chain partners.

**Regional water authorities increasingly involved**
Almost all regional water authorities are co-funders of the water category of the ANLM. They discuss their priorities with the province, which defines the eligible areas in its nature management plan. Furthermore, the regional water authorities consult with the agricultural collectives about the desired measures and locations and assess the water category that is specified in the area application of the collectives. In most provinces they are also involved in the annual progress discussions between the province and the collective.

**RVO and the NVWA check for EU conformity**
The RVO is a paying agency for European agricultural subsidies, including RDP 3. RVO provides payment to the agricultural collectives on behalf of the provinces and checks the annual payment application of the collectives for legitimacy on the basis of the EU implementing regulation, the provincial subsidy regulation and the requirements of the provincial nature management plan. RVO also monitors conservation activities and assists the NVWA in carrying out the physical audits on site. RVO and NVWA work on behalf of the provinces. RVO and NVWA are represented in various consultation bodies of chain partners in which implementation problems are discussed. In the previous scheme, RVO managed thousands of contracts with individual farmers. With the new ANLM scheme, the provinces and/or RVO have made subsidy agreements with 40 collectives, and the collectives are then responsible for contracts with individual farmers.

**Volunteers, species organisations and expert partners contribute knowledge**
In addition to the chain partners, a number of other stakeholders are important for the effective implementation of management. Volunteers work with farmers to locate and protect nests and chicks. They also work together with agricultural collectives to implement conservation monitoring. This work is coordinated and supported by LandschappenNL (national volunteer-based organisation for preserving heritage landscapes), the provincial organisations for Landscape Management and the Bond Friese VogelWachten (BFVW – volunteer organisation in province of Friesland). Organisations focusing on species surveys such as SOVON (birds) and RAVON (reptiles and fish), chart the development and distribution of species and conduct research into the management of habitats. Other expert partners that contribute to the ANLM include the OBN Expert Team cultural landscapes, Grauwe Kiekendief (centre of expertise for farmland birds), the Louis Bolk Institute, ecological consultancy firms and universities.

**Land management organisations are important for coordinating management**
Like the expert partners and volunteer organisations, land management organisations (TBOs) do not have a formal role in the ANLM. If the nature reserves they manage adjoin areas undergoing agricultural nature and landscape management, cooperation and exchange of data are often desirable for ecological cohesion and predation management. The extent and type of cooperation is determined primarily by the local circumstances.

## 2.6 Annual management cycle

**Provinces establish objectives in their nature management plans**
The starting point of the ANLM is the framework of objectives with the species and habitat types that require protection at national level on the basis of the Birds and Habitats Directives. The central government and the provinces have agreed that the primary focus of the ANLM is to achieve a favourable conservation status for the 68 BHD species that live on farmland (and elsewhere). The provinces then choose provincial target species, partly on the basis of input from expert partners, agricultural collectives and regional water authorities, but also civil society organisations. With regard to the water category, the provinces determine the boundaries and management functions in consultation with the regional water authorities. These choices are set down in provincial nature management plans that are updated annually. The provincial nature management plan defines the target species and delineates the habitats, specifies the management to be used and which conditions apply (BIJ12, 2017). With regard to the water category, the provinces determine the boundaries and management functions in consultation with the regional water authorities and include these choices in the nature management plan. Every year the provinces invite submissions of ANLM area applications and publish the subsidy ceilings, application periods and subsidies paid to the collectives (BIJ12, 2019).

**Agricultural collectives submit area applications and provinces provide subsidies**
The agricultural collectives draw up a management strategy in which they describe how they want to realise the conservation of species and how they want to contribute to the water management objectives. Based on this information, they submit a subsidy application (called an area application) to the province. In the area application, agricultural collectives indicate per habitat and for the water category what they want to achieve at area level and how this contributes to achieving the goals from the provincial nature management plan. An area application is valid for the six-year subsidy period. If new submissions are invited, 'extended applications' can be submitted annually. The province assesses the area applications and/or extended applications according to their contribution to the objectives of the nature management plan and provides subsidies accordingly. The subsidy decision contains a bandwidth per habitat (a minimum and maximum number of managed hectares), in order to offer the necessary flexibility in the implementation of the management (BIJ12, 2017). The maximum of an area application is 115% of the minimum area to be managed.

**Implementation and auditing of management**
After the application is approved, the agricultural collectives conclude definitive conservation contracts with individual participants on the basis of an advance commitment. The participants carry out the management and the collective oversees this process. In addition the collectives inspect the area and determine whether the implementation is proceeding according to the conservation agreements. RVO checks whether the subsidy requirements of the province are met and whether the implementation complies with the EU regulations. The NVWA carries out field audits on the basis of random sampling.

**Accountability and re-direction**
Before 1 October each year, the agricultural collectives submit a detailed account of the management that has been implemented: the payment justification. The province, the regional water authority and the collective also hold a progress meeting during the current management year and the expectations for the following year. Based on this, provinces can – if necessary – adjust the boundaries of the habitats and the water category in their nature management plans (BIJ12, 2017).

**Payment**
The agricultural collectives receive a payment decision from RVO no later than ten weeks after the end of the management year. Based on this, they draw up a specification for each participant using, among other things, the results of the inspection, the contract and the specifications from RVO. If applicable, discounted payments will be imposed. The collective determines whether any discounted payment will be passed on to the participant. After RVO pays the agreed amount, the collective pays the individual management fee to the participants.[5]

[5] https://www.bij12.nl/onderwerpen/natuur-en-landschap/subsidiestelsel-natuur-en-landschap/agrarisch-natuurbeheer-anlb/kennisbank, consulted on 10/7/2020

**SCAN-ICT**
The agricultural collectives use the so-called SCAN-ICT system for managing the ANLM, submitting the annual payment request to RVO and for payment justification. With the help of this ICT system, which is linked to RVO systems, the collectives register the management implemented by the participants, keep track of changes and make payments to participants. Notifications of performed or changed conservation activities can also be made via the SCAN-ICT system. These notifications are intended to enable the NVWA to audit conservation activities, as described above.

## 2.7 Development of the ANLM since 2016

**Improvements**
The ANLM scheme was established under severe time pressure. When the new scheme was introduced in 2016, there were a number of initial problems and components that still had to be worked out. New developments have also occurred. After the introduction, chain partners and other parties involved in the ANLM have implemented numerous improvements. These involved actions leading to intensification of management and implementation measures, improved knowledge development and sharing, improved monitoring, simplified rules and procedures, professionalisation of agricultural collectives and improved regional cooperation.[6] We briefly discuss these actions below.

**Extra funding for intensifying management and implementation measures**
During the first years of the new system, the number of farmland birds continued to decline. To reverse this negative trend the chain partners focused on intensifying management and land development measures. At the beginning of 2018, the IPO's Administrative Advisory Committee on a Vital Countryside decided to aim for the conservation of 36,000 nesting pairs of black-tailed godwits nationwide (in reserves and agricultural areas) and to use the additional financial resources resulting from a transfer from Pillar 1 to Pillar 2 of the Common Agricultural Policy for a one-off expansion of conservation measures (€22 million) and for additional implementation measures (€9 million). In addition, extra efforts were made to realise the water category from the ANLM, which had initially lagged behind the management of habitats.

**Knowledge development and knowledge sharing**
Knowledge about habitats played an important role in the design of the scheme. But there were also gaps in this knowledge. Improvements focused on aspects such as additional research into the influence of predation on farmland birds and the relationship between management and the effects on target species in the habitats in green infrastructure, blue infrastructure and open arable land. In addition to knowledge development, the chain partners also paid a lot of attention to facilitating knowledge sharing, for example via the BIJ12 knowledge bank, which provides knowledge about the procedures in scheme. With the support of LNV, BoerenNatuur developed various activities to support the sharing of knowledge between agricultural collectives and between agricultural collectives and universities and research institutes. This concerns ecological knowledge about target species and management as well as knowledge about organisational processes. The aforementioned OBN Expert Team cultural landscapes was also established to support knowledge development and dissemination about agricultural nature management.

**Monitoring of conservation and policy**
Since its introduction, efforts have been made to improve policy monitoring and to establish conservation monitoring of the ANLM. Policy monitoring is the responsibility of the provinces and should provide input for the evaluation of the effectiveness of the scheme. To this end, the number of measurement locations in existing national measurement networks has been expanded, but not everywhere and not for all species. In this way, the provinces aim to provide a reliable picture of the long-term effect of the ANLM at a national and provincial level. Management monitoring is an important instrument for agricultural collectives to respond to local developments and to contribute to

[6] This section is largely based on the progress report: Boonstra, FG, W. Nieuwenhuizen, 2019. *Progress report Agri-environment scheme 2019; Contribution to the 2018 annual report of the Rural Development Programme.* Wageningen, Wageningen Environmental Research.

learning-based management. In order to develop these aspects, existing protocols for conservation monitoring have been clarified or new ones have been drawn up. For example, in addition to the SCAN protocol, a new protocol has been drawn up for field birds in collaboration with SOVON and the Grauwe Kiekendief Knowledge Centre for Field Birds.

**Simplification of rules and procedures**
When the new scheme was introduced, it was immediately clear to those involved that simplification of rules and procedures could contribute to improved functioning of the scheme in practice. In the BIJ12 project ANLM 2.0, various options were subsequently investigated and applied to simplify rules and procedures. For example, the table that links conservation activities permitted by the EU to specific habitats has been simplified. A number of functionalities have also been developed for the ICT system that were not yet finished when the ANLM was introduced. They are aimed at improving user-friendliness and reducing the risk of error messages. Many provinces have adapted the management requirements in their nature management plans, which are assessed by the RVO, so that the control burden has been reduced and agricultural collectives can implement management in a more flexible and area-oriented manner. Not all proposals for simplification could be accepted, partly because some required an amendment of the EU regulation. This is not possible during the programming period.

**Professionalisation of agricultural collectives**
At the outset of the scheme, the professionalism of the agricultural collectives varied widely. BoerenNatuur has committed itself to a learning approach in which the collectives grow into their role as implementers of the ANLM and as fully-fledged area partners. For example, study meetings have been held on aspects such as personnel policy, finances and the quality of management, and three study groups have been established to exchange knowledge about managing the various habitats and the water category. In addition, BoerenNatuur has guided the collectives in the development of optimisation plans in which they formulate long-term strategies regarding cooperation, knowledge acquisition and exchange, motivation, management, and implementation measures.

**Area-based cooperation**
Area-based cooperation between agricultural collectives and other land managers provides opportunities to improve ecological cohesion at the area level. When the scheme began, this collaboration with conservation site managers had not yet gotten off the ground. Cooperation has been promoted in many provinces by working on joint provincial action plans for farmland birds and establishing provincial consultative bodies in which the various organisations involved in land management are represented. New partnerships in water management are also developing between collectives, regional water authorities and provinces. This is supported by the water subproject of the ANLM 2.0 project.

## 2.8 Development of budget, payouts and land area

**Total budget of the ANLM has increased since the scheme entered into force**
When the scheme began in January of 2016, the total ANLM budget amounted to more than €466 million for the entire period from 2016 to 2021 and has been allocated to the provinces in accordance with the recommendation of the Janssen III Committee on the distribution of decentralised funding for nature management. The historical distribution of budgets was an important principle for this allocation. In mid-2017, the central government decided to transfer funds from Pillar 1 (direct agricultural support) to Pillar 2 (rural development) of the CAP. As a result, €22 million became available for additional meadow bird and field bird management in the ANLM. These resources are also being distributed between the provinces on the basis of the Jansen III distribution key. Most provinces opened a second application period for agricultural collectives at the end of 2017. As a result, this additional funding could be used to support additional conservation measures in 2018 (IPO and LNV, 2018). This brought the total budget for the ANLM to more than €488 million (source RVO).

**Phasing out SNL-a resulted in a larger available budget for the ANLM**
At the start in 2016, part of the total budget for the ANLM was still allocated in continuous contracts from the predecessor of the ANLM, the Subsidy for Nature and Landscape Management, agricultural

nature management (SNL-a). Participants entered into individual multi-year contracts with the central government. Some of these contracts continued until a number of years after 2016. This meant that in the management year 2016, an amount of €13.4 million was paid out under the SNL-a (see Figure 2.2). As a result, this amount was not yet available for the new ANLM scheme. Whenever SNL-a contracts expired, funding was released that the provinces could contribute to the new ANLM scheme. Consequently, the phasing out of the SNL-a resulted in an annual growth of the budget of the ANLM in many provinces. In 2019, the amount that was still being paid out (disbursed) under the SNL-a had decreased to €2.4 million (see Figure 2.2).

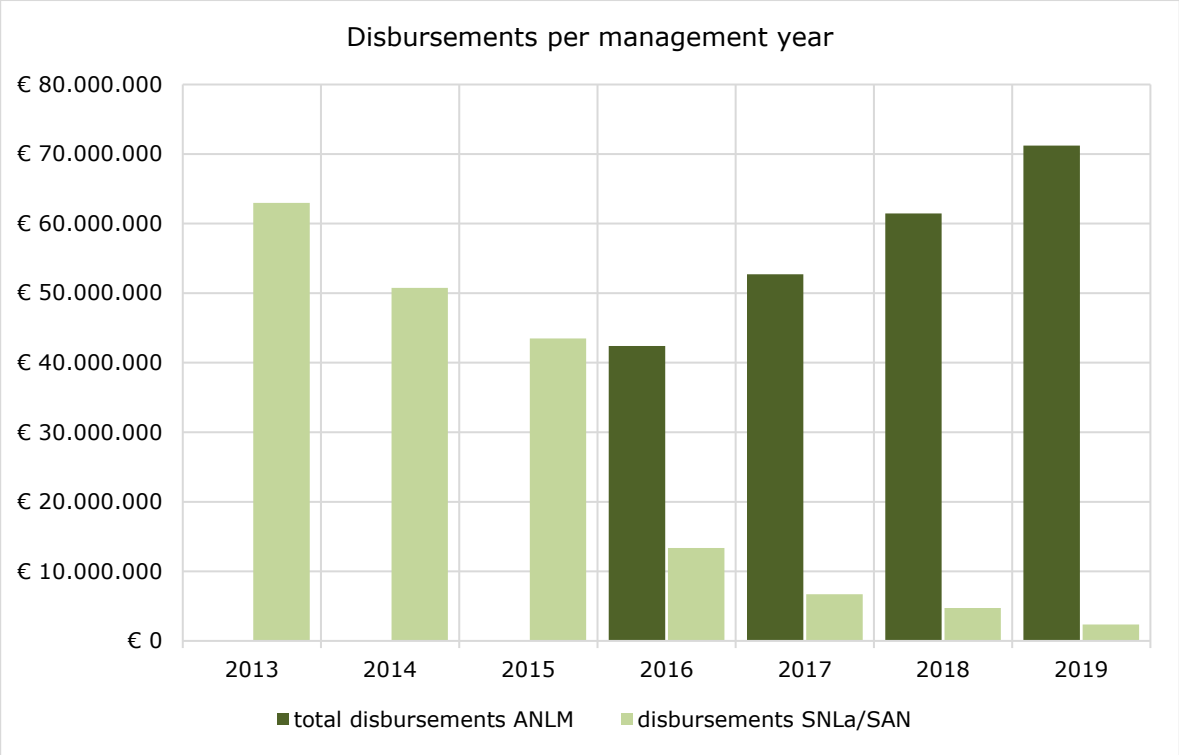


***Figure 2.2*** *The amounts disbursed (total) per management year show the growth of the ANLM and the decrease of the previous SNL-a (source: RVO, adaptation by WENR)*

**Amounts disbursed under the ANLM have increased since 2016**

Since the introduction of the ANLM scheme, the amount disbursed to the agricultural collectives per management year has increased from about €42.4 million in 2016 to more than €71.2 million for the management year 2019 (see Figure 2.3). This concerns the amounts actually disbursed after the RVO audits (oral communication RVO). We show the amounts per management year, i.e. the year in which the management is actually implemented; the payments to the collectives take place in the following year.

Almost half of the amount disbursed goes towards the management of open grassland habitat: more than €33.4 million in management year 2019, of the total disbursement of €71.2 million (see Figure 2.3).

**Land area being managed under the ANLM has increased sharply since 2016**

The net area[7] that is managed in the habitats and water category via the agricultural collectives has grown strongly since 2016: from 64,293 hectares in 2016 to 84,437 hectares in the management year 2019 (RVO figures). The increase is mainly the result of a combination of the switch from the previous scheme to the new one and the growth in the total budget. Both the largest area and largest share of the budget concern open grassland habitat.

[7] The net area is defined as the area actually managed, whereby different conservation packages on the same area are 'de-duplicated'.

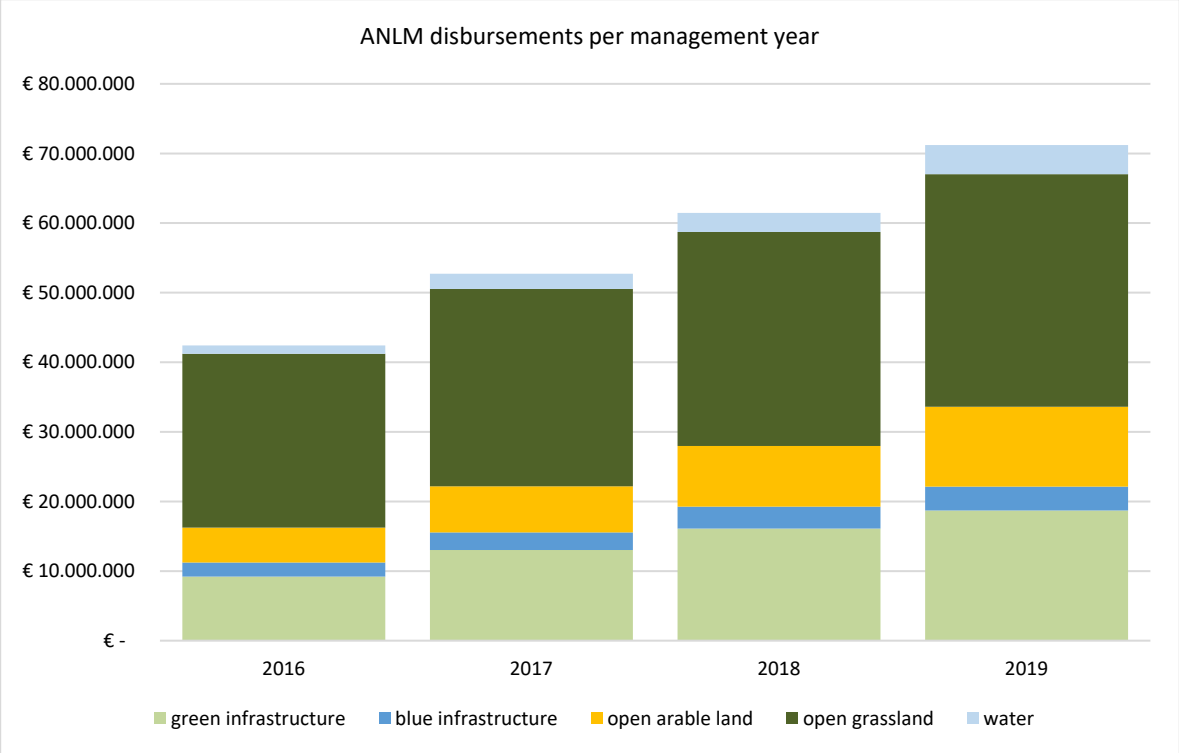


***Figure 2.3*** *The amounts disbursed have increased for all habitats and the water category of the ANLM since its introduction in 2016 (source: RVO, adaptation by WENR)*

## 2.9 Conclusions

- The ANLM consists of twelve provincial subsidy schemes for agricultural nature management, landscape management and water management and an area-based approach in which 40 certified agricultural collectives are the final beneficiaries of the subsidy. The collectives coordinate the management and conclude contracts with individual participants. In the previous scheme, the participants themselves were the final beneficiaries of the subsidy.
- The total ANLM budget for 2016-2021 is €488 million, almost half of which is allocated to open grassland habitat. In the management year 2019, the total managed area was 84,437 ha.
- The ANLM focuses on improving the conservation status of 68 target species of the Birds and Habitats Directives that are highly dependent on the agricultural area. Four habitats (open grassland, open arable land, green and blue infrastructure) have been defined for species requiring similar management. Many of the target species are doing poorly. However, it has not been defined what the precise contribution of the ANLM should be to the conservation status of these species.
- The ANLM must also contribute to the WFD objectives and robust water systems. For this purpose, the new scheme has introduced a water category. It is also unclear what the specific contribution of the ANLM should be for the water management objectives.
- Besides the ANLM, other instruments are also used for the BHD target species and the WFD objectives, such as the realisation and management of the Nature Network and the Delta Plan for Agricultural Water Management.
- Provinces define areas for the target species and for the water category in their nature management plans. In an area application, agricultural collectives make agreements at the 'front door' with provinces and regional water authorities about the intended achievements at the area level. At the 'back door' the agricultural collectives make agreements with farmers and other agricultural land users about the management to be implemented at the land parcel level within the provincial boundaries.
- Because the ANLM is financed from the EU through the rural development programme (RDP 3), the scheme must comply with European subsidy rules in terms of both the subsidy conditions and the working methods.

- A wide range of parties are involved in the implementation of the ANLM. The core is formed by the parties in the chain: The Ministry (LNV), provinces, BIJ12, RVO, NVWA, agricultural collectives and BoerenNatuur. This core is surrounded by a large shell of species organisations, volunteer organisations, TBOs, expert partners and wildlife management units that contribute to the ANLM.
- After the introduction of the ANLM in 2016, chain parties have implemented numerous improvements to intensify management, develop and share knowledge, improve monitoring, simplify rules and procedures, professionalise agricultural collectives and improve regional cooperation.

# 3 Feasibility

## 3.1 Introduction

The introduction of the ANLM in 2016 entailed a major change in the governance of agricultural nature and landscape management and implementation in the Netherlands. The expectations for this new scheme can only be fulfilled if the ANLM is feasible. In this chapter we therefore assess the feasibility of the scheme and look at the extent to which this feasibility has improved compared to the previous scheme and during the course of the current implementation period (see also Section 1.4).

Feasibility concerns the following aspects:
- The extent to which it is clear who will implement the ANLM and what everyone's role is in the scheme.
- The extent to which the roles are sufficiently coordinated and cooperation takes place.
- The extent to which implementing parties have sufficient and appropriate resources to carry out their tasks in the ANLM. This includes authority (competence), funding, flexibility in regulations, knowledge, self-governing capacity and the extent to which participants are also motivated to implement the ANLM (support).

In Section 3.2 we discuss the development of these aspects to date and the success and failure factors in practice. The chapter ends with a number of conclusions (Section 3.3).

## 3.2 Findings

### 3.2.1 Clarity about roles

**Agricultural collectives have a central role in the implementation**
The core of the new scheme is a collective approach with voluntary partnerships of farmers and other landowners as final beneficiaries of the subsidy. It was therefore the intention from the outset that the agricultural collectives would play a crucial role in the implementation. This concerns the coordination, administration and supervision of agricultural nature and landscape management and the individual payments to the participants.

Since the introduction of the ANLM in 2016, these agricultural collectives have continued to develop and have acquired a strong position in the implementation chain of the scheme and in their corresponding geographical areas. In addition to their implementation tasks in the ANLM, many collectives also initiate activities in nature-inclusive agriculture, landscape management and the energy transition. Some collectives are certified as nature reserve managers, sometimes as a separate legal entity. When it comes to making agriculture more sustainable, the collectives are partners with government agencies and public bodies, civil society organisations and parties from the agricultural chain, whereby they carry out activities and projects on this theme. They are also increasingly focusing on private citizens. A small number of collectives also see themselves as representing interests in policy decisions and politics (Dik et al., 2020). This broadening of roles has gone faster than expected when the scheme was introduced. For the time being, the various roles of the agricultural collectives have not resulted in ambiguities. Despite the broadening of activities, the collectives primarily see themselves – now and in the future – as implementers of the ANLM (Dik et al., 2020) and they are also seen as such by others. As the other roles increase and, for example, the collectives also become involved in the implementation of eco-schemes that will become part of the new CAP, this clarity about their role may diminish. Eco-schemes are voluntary measures concerning aspects such as climate, living environment, soil, water and landscape for which farmers can receive compensation.

**Box 3.1** Origins of the Agricultural Nature Collective Westergo

In 2015, in the run-up to the new system, intensive discussions took place between the Frisian Agricultural Nature Associations (ANVs), and four agricultural collectives were established on the mainland of the province of Friesland. However the process failed, in the western part of the province, where eight ANVs were unable to reach an agreement. Two of these ANVs decided to set up their own collective, called Súdwestkust. The six remaining ANVs subsequently merged and founded the Agricultural Nature Collective (ANC) Westergo. Due to the choice of Súdwestkust to form a separate collective, the boundaries of the ANC Westergo took on an hourglass shape, with two geographically separate areas.

The underlying ANVs of ANC Westergo perceived the merger as a 'forced marriage', which led to many tensions at the start of the scheme in 2016. As a result, not all the ANVs made the transition to the new ANLM together. The Westergo board failed to get out of this unworkable situation and proposed that the province dissolve the collective. The province did not accept this proposal and appointed an interim committee to investigate how the tensions could be resolved. This committee reported that the ANVs did not have a joint conservation vision and that they differed in their opinions about the allocation of the budget between the various activities of the ANVs The committee also reported that the contracted conservation activities in a number of ANVs was of low quality. The province then asked the collective to draw up a new management plan in which quality of conservation activities was the guiding principle and provided a number of criteria for this. This also meant that activities for which contracts had already been signed had to be re-examined.

A new governance model was also proposed. In the previous governance model, each ANV designated a board member for the executive board of the collective. As a result, board members mainly acted as representatives of their ANV and had less regard for the interests of the collective as a whole. In the new model, each ANV was given a seat on a policy council that can provide compelling advice to the board. After the governance model was adopted, a new board took office in 2017 and ANC Westergo made a successful restart. Since then, the board has consisted of three members who have no direct link with the underlying ANVs and were chosen on the basis of their managerial experience and affinity with agricultural nature and landscape management. The new model has led to less adversarial governance and a clear division of roles and tasks between the collective and the ANVs, which is laid down in a delegation decision for each ANV.

**Agricultural nature associations have continued to exist**

Before the foundation of the agricultural collectives, approximately 160 Agricultural Nature Associations (ANVs) were actively involved in agricultural nature and landscape management in the Netherlands. When the ANLM was introduced, no attempt was made to regulate how the collectives and the ANVs should relate to each other. This was left to the initiators themselves. Some provinces have aimed – with varying degrees of success – to establish collectives of sufficient size, for example by promoting cooperation between ANVs (see Box 3.1). The relationship between collectives and ANVs has continued to develop since the introduction of the ANLM. For example, some ANVs decided to dissolve, some became collectives and some continued to exist within a collective. There are also examples where the collective became part of the ANV. Some collectives allow part of the implementation to be done by the ANV (Dik et al., 2020). The continuation of the ANVs has to do with the social capital that has been built up in the ANVs: the bond with the area, the strong mutual ties and good relations, so that participants also have something to contribute to the group. However, if clear agreements are not made about the division of roles and duties between collectives and ANVs, this can lead to mutual competition and uncertainty about who is responsible for what.

**BoerenNatuur combines implementation tasks and advocacy**

Before the introduction of the ANLM, regional umbrella organisations of ANVs were active. These organisations have since been discontinued or they have terminated this task to provide space for the establishment of a new national umbrella organisation of agricultural collectives: BoerenNatuur. In contrast to the individual collectives, BoerenNatuur was not given a formal role in the implementation of the ANLM. In addition to representing the interests of the 40 collectives in the chain, BoerenNatuur coordinates a number of implementation tasks of the ANLM at the national level, such as informing the collectives about developments in the scheme and the management and development of SCAN-ICT (the digital environment with which collectives can register their activities and apply for subsidy from the RVO). BoerenNatuur also increasingly acts as an ambassador for nature-inclusive agriculture in general, for which it sees the ANLM as an important instrument. There is no ambiguity about these

various roles. However, some parties involved in this process note that the combination of implementation tasks and advocacy can put BoerenNatuur in a difficult position when, for example, policy developments have to be communicated with which the organisation may disagree in its advocacy role.

**The provinces direct the implementation, LNV maintains contact with the EU**
Preparations for the new scheme took place at the national level, during which it was exempted from the decentralisation of nature policy in the Administrative Agreement on Nature (2011/2012) (Kuindersma et al., 2016). As a result, the Ministry of Economic Affairs (EZ) took the lead in discussions with the EU about amendments to regulations and coordinated the preparation of the scheme. With the signing of the Nature Pact (2013), besides the Nature Network agricultural nature and landscape management was also transferred to the provinces. The provinces initially had the feeling that they were bystanders in this process, because they had hardly been involved in the development of the scheme (Hendriks, 2016). However, they have now been given a clear role in directing the implementation of the ANLM and as contract partners of the agricultural collectives. The regional water authorities also have a coordinating role in the water category. Another component of the coordinating role, i.e. the alignment of the ANLM with the broader environmental policy of the province, is less prominent. In most provinces, the ANLM is an autonomous part of the provincial organisation, with its own resources, procedures, rules and policy officer. The Ministry (LNV) has become increasingly remote from the ANLM and no longer has a direct role in the implementation of the scheme. However, LNV still maintains contacts with the EU about the contribution of the system to the BHD objectives and about the functioning of the system in relation to the development of the Common Agricultural Policy (CAP). LNV handles audits of the European Commission on behalf of the Netherlands and the provinces. Together with the provinces and regional water authorities, the Ministry is also preparing the National Strategic Plan for the new CAP, of which the ANLM will be a part from 2023. This division of tasks is clear, although according to some stakeholders the provinces should play a bigger role in contacts with the EU and in the preparations for the new CAP.

**RVO and NVWA monitor compliance with European regulations**
The roles of the RVO as paying agency and the NVWA as executor of the field audits are clear and are related to the fact that the ANLM is partly financed with European funds. In the previous scheme, the RVO managed thousands of contracts with individual farmers. With the new ANLM scheme, provincial authorities have made subsidy agreements with 40 agricultural collectives, with the final disbursement being made via the RVO. The RVO monitors compliance with European regulations.

As an inspection body, the NVWA becomes involved at relatively late stage in the preparations for the new scheme. Initially, the expectation was that field audits by the NVWA would not be necessary and that the audits carried out by collectives themselves would suffice. When this proved impossible according to European regulations, the NVWA was given an important role in auditing conservation activities. The role of the NVWA is therefore clear, but the desire for a different, less burdensome form of auditing continues unabated among the collectives, thereby weakening support for NVWA audits.

**Regional water authorities are not yet fully linked to the new scheme**
Regional water authorities became involved in the ANLM at a late stage. The umbrella organisation of water authorities (Unie van Waterschappen) had agreed with LNV and the provinces that the regional authorities would contribute to the water measures from the RDP, but this agreement had not been confirmed by the 21 separate regional water authorities when the scheme was being prepared. Moreover, it was unclear how much of the committed funding for water measures related to the water category of the ANLM and how much to non-productive investments for water. For the regional water authorities, the designation of blue services and whether the compensation was based solely on loss of income was unclear (Hendriks, 2016). BIJ12 has initiated a separate project (as part of the ANLM 2.0 project, see also Section 2.7) to raise awareness at the regional water authorities about the possibilities of the water category. Additional agreements have also been made about the funding. In some provinces the regional water authorities co-finance 50% of the water measures and in other provinces 25% co-financing is provided by the regional water authority and 25% by the province. In the province of Limburg, the regional water authority does not participate in the scheme and the province has not invited participation in the water category. Initially, the regional water authority saw

no added value in the water measures, and when this changed, partly due to efforts by the collective, the available European co-financing budget of the province had already been invested in habitat management.

**Role of volunteers is clear but vulnerable**
In addition to the chain partners mentioned, there are a large number of other stakeholders who have no formal role in the implementation of the ANLM and who are not chain partners, but who are important for the implementation of the system, such as volunteers, LandschappenNL, Bond Friese VogelWachten (BFVW), species organisations and expert partners. Their informal contribution to the objectives of the scheme is usually arranged through separate agreements or subsidy relationships. In general, their role is clear, but is sometimes vulnerable. For example, volunteer organisations are struggling with an ageing and shrinking membership. As a result, roles are sometimes combined, such as counter and field worker for the collective. Such a dual role can affect the independence of the counters if effective agreements have not been made about this. Moreover, only limited volunteer networks are available for field birds, green and blue infrastructure. This limitation is partially compensated by the collectives by bringing in regional professionals. According to stakeholders, not enough funding is available for additional professionalisation and support of volunteers. For example, the focus and expertise of many counters has historically been on meadow birds, which means that insight into the development of a number of other target species is lacking. In the case of fish and amphibians, monitoring requires a great deal of effort and yields little result in the ditches in the agricultural area, which are often species-poor. The volunteers with expertise about these species prefer to monitor in nature reserves.

**Uncertainty about the role of TBOs due to lack of formal agreements**
TBOs have also not been given a formal role in the scheme even though a lot is expected of them. For example, according to the management cycle, the collective should coordinate conservation plans with area partners such as the TBOs.[8] Joint predation management is also increasingly seen as a precondition for success. The lack of a formal role for the TBOs leads to uncertainty. For example, one of the TBO's (Staatsbosbeheer) states that it has no budget or authority to develop contacts with agricultural collectives on a structural basis and to coordinate conservation activities. LandscapesNL sees coordination with agricultural collectives as the task of its affiliated provincial organisations. Moreover, the collectives do not always want to coordinate actively with the TBOs. This is due to a lack of time and because they are usually not involved in the choices of the TBOs and there is therefore no reciprocity. As a result, the degree of cooperation in practice strongly depends on the local managers and personal relations.

### 3.2.2 Collaboration in the chain

**Chain responsibility contributes to collaboration**
The ANLM has strengthened the mutual relationships between the parties that implement various aspects of agricultural nature and landscape management. These parties call this 'chain responsibility', i.e. joint responsibility based on mutually dependent relationships in the implementation chain. This is expressed, for example, in the improved relationship between RVO, provinces and agricultural collectives. In the initial phase of the new scheme, provinces and collectives felt that they had to solve many administrative problems themselves to prevent the consequences from being passed on to the participants. However, according the parties involved, the RVO has started to take an increasingly solution-oriented approach towards these administrative problems, although there are still issues regarding the interpretation of regulations and the delayed handling of formal objections. BIJ12 and RVO in turn experienced problems in the initial phase with the simultaneous availability of maps from the provincial nature management plans for SCAN ICT, so that collectives can register for management.

A difference with the previous scheme is that the agricultural collectives are the designated contacts for the participants, not the RVO. In the previous scheme, communication between participants and

[8] https://www.bij12.nl/onderwerpen/natuur-en-landschap/subsidiestelsel-natuur-en-landschap/agrarisch-natuurbeheer-anlb/kennisbank/activiteiten/voeren-gesprekken-met-gebiedspartners-collectief/, consulted on 10/7/2020.

the RVO was often difficult: participants experienced the RVO as an anonymous agency with a formal approach when dealing with their questions or complaints. Because the collectives now operate between the RVO and the participants, they can show understanding towards the participants, whom they know personally, and at the same time they can unburden the participant by solving any problems in the implementation by contacting RVO, where their knowledge of the regulations is an advantage. The latter is experienced by the RVO as an improvement relative to the previous scheme; they are now contacted by a smaller number of people at the collectives who understand the scheme instead of thousands of participants who were sometimes inadequately informed.

**Collectives gain trust from the provinces**

The cooperation between the agricultural collectives and the provinces has also been strengthened compared to the previous scheme. Previously, many provinces past extensively reviewed the collective management plans of ANVs, but now they are more remote from this process and the collectives are trusted to give shape to the conservation efforts as they see fit within the possibilities offered by the scheme. To limit the auditing burden, the provinces have chosen to have fewer binding requirements for conservation activities in their nature management plans. Their nature management plans therefore contain requirements that are assessed by the RVO during the annual disbursement process as well as guidelines and criteria. These guidelines and criteria are not reviewed by RVO, but must be part of the substantiation of the area application that the collective submits to the province. In addition to formal progress consultations, in most provinces there is also frequent informal contact between the province, regional water authorities and collectives. During these consultations, matters such as the progress of activities, willingness to participate, national developments around the ANLM, regulatory issues, the extension of subsidy agreements and the nature management plan are discussed. According to the provinces, the expertise and professionalism of the managers and the cooperation is enhanced by certification, audits by the Certification Foundation and the quality manuals that each collective is required to draw up. However, the provinces are concerned about the small size of some collectives, which can impede further professionalisation.

**Collaboration with regional water authorities comes up to speed**

The addition of the water category in the ANLM has resulted in new partnerships between regional water authorities, provinces and agricultural collectives regarding agricultural nature and water management. This did not happen by itself. Initially, the budget for the water category was not fully utilised. Through a separate project, regional water authorities have been informed about the possibilities offered by the scheme (see also Section 2.7). The addition of the water category also took some getting used to for the provincial stakeholders. It requires internal coordination with the other parties in water management who are unfamiliar with the ANLM scheme. Although they have specified the water category and determined the management functions in the nature management plan, some provinces have continued to have little substantive involvement in the water category, and therefore do not cooperate fully with the regional water authorities regarding the ANLM. For example, the province of South Holland leaves the further implementation of this category to the regional water authorities and the collectives. The Province of Friesland involved the regional water authority in this process only in 2018. A core team was then appointed up consisting of employees from the province and the regional water authority, after which the process accelerated. In Zeeland, little effort has been devoted to the water category of the ANLM, and in Limburg this category has not been opened to other participants and the regional water authority has not been involved.

The regional water authorities are generally positive about the role that the collective can play in raising awareness among participants about the contribution they can make to water quality and quantity. Management activities and locations are usually determined at the 'back door' in close consultation between regional water authorities and agricultural collectives. This is an important difference with the habitats, where the province directs activities at the 'front door'. Regional water authorities carry out the policy assessment of the area application and often join the formal progress consultation between the collective and the province. But there are also difficult themes that hamper cooperation. For example, the implementation of raised ground water tables, a package of measures for open grassland habitat, usually requires a permit from the regional water authority because this deviates from the regional water decree. To this end, collectives must submit signed statements from surrounding landowners that they agree with the change, which entails a major administrative burden

for the collectives. For ANC Westergo, this was a reason to no longer apply for permits to raise the ground water table. Another difficult theme is the package of measures for seasonally flooded grassland. Regional water authorities in South Holland were initially concerned that excessive nutrients would enter the drainage ditches when farmers drained this flooded grassland at the end of the season. Working agreements have now been made to allow the seasonally flooded grassland to dry up instead of being drained. These examples show that, although there is usually a case of synergy, water interests do not always coincide with the interests of meadow bird management, which makes cooperation more difficult.

**Chain collaboration supported by separate consultation groups**
Chain collaboration is facilitated by various consultation groups for the ANLM, in which implementation issues can be raised and solutions can be sought. For example, there is the ANLM Management Consultation between LNV, the provinces, RVO, BoerenNatuur, Regiebureau RDP (joint programme department of LNV and the provinces), IPO and BIJ12, and the Agricultural Management Task Force under the IPO Working Group on Nature Management, in which the provinces, LNV, BoerenNatuur, RVO, NVWA and LandschappenNL also participate. The Unie van Waterschappen (umbrella organisation of regional water authorities) does not participate in the overarching chain consultations. At the provincial level, provincial umbrella organisations of collectives in provinces with several collectives, such as Fryslân and Zuid-Holland and Overijssel, facilitate coordination between collectives and with the province.

### 3.2.3 Resources

**Agricultural collectives have sufficient competence to implement measures**
As a result of the new scheme, the agricultural collectives have been given the competence to implement conservation measures as they see fit, as long as it remains within the provincial boundaries of the habitats and contributes to the provincial objectives. They can provide regional fine-tuning, for example by adjusting payments to their priorities or setting additional conditions for conservation activities. It is also possible to terminate a contract if, for example, there are no longer any birds on the relevant parcels or if the participant does not comply with the conservation agreements. The ANVs in the previous scheme did not have this competence because the participants had a contract with the government and not with the ANV. However, some collectives want more control so they can determine even more effectively where they conclude conservation contracts. This is particularly the case where provinces have strictly delineated the habitat boundaries (see Box 3.2).

**Box 3.2** Delineation of habitats in Drenthe

The province of Drenthe has very selectively delineated the boundaries of habitats for green and blue infrastructure. The boundaries were chosen primarily as connecting zones between nature reserves to support the Nature Network. They are therefore narrower, more linear boundaries than those designated for open arable land habitat, where much larger areas have been tentatively designated. This selective designation limits the possibilities of Agrarische Natuur Drenthe to make its own choices. This collective wants more competence to decide for itself where it implements measures and to take administrative responsibility for this decision. Moreover, the strict boundaries of the green and blue infrastructure hinder implementation because this reduces the chance that participants will want to participate only within those boundaries. In addition, habitat boundaries sometimes cross parcels of land, which hinders feasibility. The province, in turn, is concerned that the objectives will be diluted if the collective itself decides where the conservation measures will be implemented.

**Agricultural collectives increase their self-governing capacity**
Since the introduction of the ANLM the collectives have developed rapidly and have become more professionalised, with the support of BoerenNatuur. Agricultural collectives are generally able to perform the tasks assigned to them in the ANLM in a professional manner and to determine their own course. This is illustrated by a high disbursement percentage: for the management year 2019, 99.8% of the subsidy that collectives accounted for was disbursed by the RVO, which means that few discounts were applied and that the collectives have their administration in order. It should be noted

here that this high disbursement percentage is also related to the buffers built into the system, with which errors can be accounted for. There are, however, concerns about the vulnerability of smaller collectives in particular. They have less financial scope to absorb setbacks and accrue buffers. They also often rely on voluntary commitment and they sometimes deploy board members for executive tasks. As a result, there is no strict separation between policy and implementation and they have fewer opportunities to respond to new developments.

An important source of the self-governing capacity of the agricultural collectives that was absent in the previous scheme is the administrative responsibility they can take for their decisions on how to use their funding for conservation measures and the results they achieve with this. Participants can influence the course of the collective through member councils or ALVs. The collective is seen by the participants as their own organisation, which contrasts with the anonymous government agency with which they previously concluded contracts. This has strengthened the position and governance possibilities of area coordinators of the collectives towards participants. It also strengthens the position of collectives towards government agencies, public bodies and other regional parties.

Most agricultural collectives and/or ANVs are increasingly performing activities outside the ANLM that make agriculture more sustainable. They are also able to acquire additional financial resources and enter into partnerships for this purpose. However, many collectives do not have a fully developed strategy in this regard that is shared with the members (Dik et al., 2020). It is therefore unclear how the implementation of the ANLM in combination with these new activities has contributed to their ambitions and objectives. In addition, the current organisational structure of the collectives remains strongly based on their role in the ANLM and not on the broader roles mentioned above. This also applies to the quality manuals of the collectives. In light of a possible new role of collectives in the implementation of eco-schemes in the new CAP, this is an important point for attention.

**Shifting implementation costs from government agencies and participants to collectives**
As a result of the new scheme, the joint implementation costs of the RVO, the NVWA and the provinces have been reduced from 42% of the programme costs in 2015 to 19% in 2019.[9] This reduction was largely due to a reduction in the implementation costs of the RVO from €15.1 million in 2015 to €7.0 million in 2019. In the previous scheme, the RVO concluded contracts with more than 10,000 farmers; in the new system, this has been reduced to grant decisions for 40 agricultural collectives, which subsequently conclude contracts with the participants. In the new scheme, collectives spend 15% to 20% of the subsidy they receive on implementation costs. This is partly for tasks that were previously performed by RVO. In addition, the collectives have taken over administrative tasks from the participants in the ANLM. Collectives also carry out activities such as supervision, knowledge sharing and auditing that were absent in the previous scheme or were carried out by other parties such as the Dienst Landelijk Gebied (Rural Areas Agency). In the ANLM, the implementation costs of the agricultural collectives are paid from the area application. This is a difference with the previous scheme, in which implementation costs were paid almost entirely from other sources. This means that in the current scheme there is less funding available for payments to farmers than in the previous scheme.

Based on the available data, the expected outcome – that the ANLM will lead to a reduction in the total implementation costs – cannot be assessed. This is because not all implementation costs of the previous and new schemes have been determined, tasks have been shifted and the percentages mentioned above comprise different cost items.

**NVWA implementation costs have increased**
The implementation burden of the NVWA, which is responsible for the field inspections, has increased due to the collective approach and greater flexibility in combination with EU compliance: from €2.0 million in 2015 to €3.1 million in 2019. A number of factors play a role in this increase. In the SNL-a, 5% of the participants were audited. To continue to comply with the European implementing regulation, this has been changed in the ANLM to 5% of the activities carried out by the collectives. As a result, on-site audits now take place all year. The option introduced with the ANLM to redirect

[9] Own calculation based on data from RVO and information from reports, notes and discussions with LNV, BIJ12, Provinces, BoerenNatuur and collectives.

conservation efforts during the season also means that RVO has to pull several samples instead of only one per year. This results in a varying and therefore greater planning task for NVWA than in the previous scheme. Another factor is that the formulation of some of the conservation activities leads to high deviation percentages. An example is the seasonally flooded grasslands. According to the subsidy conditions, 100% of the registered area must be seasonally flooded. But the degree of flooding is variable due to weather conditions, which increases the chance of deviations. Because the sample is risk-based and risks are defined as activities with a high probability of error, European rules have increased the inspected area, which has intensified the audits and increased the costs for the NVWA.

**Collectives break even with the percentage for implementation costs, but their financial position is vulnerable**

In general, the agricultural collectives have sufficient financial resources to carry out their coordinating and administrative tasks in the ANLM. They spend 15% to 20% of their budget from the area application on implementation costs. They actively aim to keep this percentage low by working efficiently, so that as much money as possible can go to actual conservation activities. The financial position of the collectives is nevertheless vulnerable. This is primarily because payment for administrative tasks and conservation activities takes place after the end of the management year, which means that collectives have to pre-finance one year in advance. As the budget grows, this may become problematic because an increasing amount has to be pre-financed. In addition, as a result of the audits carried out by RVO and NVWA, there may be a discount on the payment, which the collective cannot absorb itself. Many provinces have provided interest-free loans to bridge the first year of costs that have not yet been reimbursed. Provinces have also sometimes provided incidental subsidies to make up shortfalls. Some collectives have been able to accrue a reserve themselves or have received a reserve from the ANVM to absorb setbacks, but the general impression is that the financial position of collectives vulnerable.

**Scheme complexity creates a high administrative burden for agricultural collectives**

The agricultural collectives experience the administrative burden of the ANLM as high. Numerous actions have to be performed in SCAN-ICT, such as accurately registering activities (down to the square metre), entering crop codes, entering changes and reporting activities. There are strict deadlines for this and in the event of incorrect or late entries, the disbursement may be discounted. In addition, the collective must provide the necessary documentation, such as area applications, progress reports, management plans and quality manuals. The frequency of the audits is also experienced as burdensome. Large collectives in particular are regularly visited by the NVWA for field audits. This is because 5% of all conservation activities must be audited in accordance with the European regulation. This leads to approximately 2500 audit assignments for the NVWA per year and an average of approximately 60 audits per collective per year.

There are also a number of specific bottlenecks that the agricultural collectives must deal with and that are related to accountability on the basis of land parcels. For example, the collectives usually receive a large number of error messages from the RVO based on the registered activities. This concerns errors such as boundaries of the carried out conservation measures that do not correspond to the exact boundary of a land parcel. There are also error messages that arise because different maps do not match, for example because the RVO changes the LNV reference layer of agricultural land after the collective has already submitted the management task to the RVO. Quite suddenly, in 2019, a reference layer for landscape elements had to be introduced on which landscape elements were drawn that did not match the maps of collectives. In collaboration with the RVO, the location of all landscape elements had to be reconsidered. These kinds of changes to reference layers automatically generate many errors and necessary corrections, often without anything really being wrong. Collectives report that the number of error messages is increasing rather than decreasing. Other bottlenecks include the high implementation costs for contracts for green and blue infrastructure and the water category. This requires many contracts which cover relatively few hectares. Delineating borders and landscape elements takes a lot of time and is prone to errors. In the Krimpenerwaard, the combined total of blue infrastructure and water category involves only 23% of the contracted land area, but it concerns 62% of the total implementation costs. This means that collectives may prefer to focus on hectare-based measures due to cost and risk considerations.

The high administrative burden means that there is limited scope within the target overhead percentage for activities aimed at improving the quality of conservation activities and knowledge development. According to one stakeholder, smaller collectives in particular would have less room for manoeuvre when supervising participants. Incidentally, the maximum overhead percentage is defined in a national agreement; under EU rules, up to 30% can be spent on overhead. Another factor is that collectives themselves want to spend as much of the available budget as possible on actual conservation activities by participants.

In addition to high administrative burdens, collectives also report an 'emotional burden'. In the attempts to connect agriculture and nature, regulatory pressure leads to frustration, which can lead to decreased motivation to continue.

**Regulatory flexibility has increased**

The ANLM offers more options for regional fine-tuning and flexibility than the previous scheme (see also Box 3.3). Agricultural collectives make general agreements with provinces and regional water authorities about the performance to be delivered at area level via an area application at the 'front door' and specific agreements at the 'back door' with farmers and other agricultural land users about the activities to be carried out at the farm level. The government agencies and public bodies that are involved focus more on the broad terms than in the previous scheme. In their nature management plans, provinces specify where the habitats with the target species are located, which type of management can be used for this and which conditions apply. For the water category, this does not directly concern target species, but water management objectives within the area boundaries. The 30 eligible conservation activities are formulated more abstractly than in the previous scheme. The actual ecological interpretation is up to the collective. That is a clear difference with SNL-a, in which conservation activities were specified very precisely.

**Box 3.3** Agricultural Collective Krimpenerwaard (ACK) uses flexibility system

The meadow bird management in the Krimpenerwaard focuses on rearing chicks. In those parts of the Krimpenerwaard where meadow birds often breed, the area coordinator concludes various packages for meadow bird management. A conservation mosaic is formed, consisting of clutch management in combination with herb rich grassland margins, alternating with grassland with rest periods, parcels with early season grazing, extensive grazing, seasonally flooded grassland and herb rich grassland. When nesting pairs are present on the parcels with clutch management, last minute management is used and there are rearing areas with rest periods. The undisturbed parcels are intended to give nesting pairs time to incubate their eggs and provide grazing areas for chicks with sufficient food and shelter.

If rest periods expire and birds are still present, the rest periods are extended by one week each time, until the birds have left. If necessary, the coordinator adjusts the conservation package, for example if delayed mowing until June 15 results in excessively dense grass. Then the package is exchanged for a package with early season grazing or extensive grazing. Because the depletion of minerals in over-fertilised peat soil is very slow and the late mowing date leads to a crop that is too dense, the ACK has introduced the new package 'developing herb rich grassland'.

The ACK also uses the flexibility in the system to avoid discounts on disbursements. For example, the seasonally flooded grasslands are not fully registered at the 'front door' to prevent them from being rejected by the NVWA. The collective therefore runs the risk of not meeting the minimum land area specified in the area application and the disbursement being discounted. The strict control has to do with the requirement that 100% of the registered area must be inundated at the time of inspection, while in practice this area is highly variable due to the effects of weather. The ACK therefore only draws in the core of the seasonally flooded grassland at the 'front door'. They draw the ring around it as their own package. The ACK does make a disbursement for this at the 'back door'.

Instead of the previous six-year contracts between the participant and the government agency, the collective can now also conclude shorter-term contracts with participants and shift the management to more favourable locations, which they also do in practice. They are, however, obliged to maintain at least the total managed land area, otherwise a full discount on the disbursement will follow. Another new aspect concerns the options for redirecting activities during the year in order to respond to current developments, such as birds that start to nest on a certain parcel. Within certain margins,

more flexibility is also possible in determining the payments that the participants receive. An important instrument for realising flexibility is the min-max system. The area application contains a minimum and a maximum area to be managed per habitat. The maximum area to be managed is standardised at 120% of the minimum. This min-max margin allows the agricultural collective to respond flexibly to developments within their area.

**Mutual frustration among agricultural collectives and NVWA about audits**
The ANLM entails that the NVWA only audits whether conservation activities have been carried out and is no longer allowed to assess the ecological quality of the implementation. That is up to the agricultural collective, which audits this itself. This does not alter the fact that collectives experience bottlenecks in the description of some conservation activities and/or in the variable way in which the audit is performed. The definitions used by the inspectors are also insufficiently known to the collectives, which makes implementation more difficult. They also believe that inspectors should audit more according to the spirit of the contract and less according to the letter so that, in the eyes of the collectives, undue reductions in disbursements can be prevented. One stakeholder from the NVWA indicated that due to the chosen abstract description of the activities, audits are less in-depth than in the previous scheme. It is unclear whether the audits also lead to changes in conservation practices, because most of the deviations that are detected are lost in the buffer and therefore do not lead to reductions in the disbursements. In addition, some collectives do not meet with the inspectors to share their findings on nonconformities and are therefore unable to add comments to the inspector's report. It is frustrating for the inspectors that they cannot discuss their findings and that they have no learning effect. Collectives in turn indicate that they do not discuss the findings with the inspector because it is unclear what will be done with their comments.

**Amendment and notification periods also limit flexibility and options for customisation**
The amendment and notification periods that must be observed to enable accountability and auditing also limit the flexibility of the system. For example, the collective must communicate additions or changes to the intended conservation activities no later than 14 days before the activities takes place. Certain activities must also be reported beforehand or afterwards, so that the NVWA can include them in the audit. Failure to comply with these deadlines may result in a discount on the disbursement. Collectives find these timelines too inflexible and would, for example, prefer to use the rest period and deferred mowing more flexibly during the season, so that mowing is possible when there are no birds left and mowing is not done when the birds are still there. Agreeing to conservation packages in advance does not always benefit species and does not enable local and individual fine tuning.

**Agricultural collectives use available knowledge**
In the ANLM, the attention for developing, sharing and using knowledge has increased. To strengthen performance, agricultural collectives need knowledge about the integration of agricultural nature and landscape management into farming practices and about the relationship between the measures carried out and the way in which these measures increase the quality of the habitat and the presence of target species. The idea is that collectives and participants do the latter by monitoring the effects of their efforts on the occurrence of the target species and adjusting measures based on the results ('learning from the results'). Conservation monitoring, usually performed by volunteers or regional experts, is an important tool for this. Within the collectives and/or the ANVs, substantial knowledge about meadow and field birds is often available. Larger collectives generally have more opportunities to accrue expertise within their own organisation about the various habitats and the water category than smaller ones. For example, the Agrarische Natuur Drenthe collective has access to various area coordinators who specialise in different habitats and the water category. When knowledge is lacking, collectives work to varying degrees with external expert partners, such as SOVON, Grauwe Kiekendief–Kenniscentrum Akkervogels, Altenburg and Wymenga, RAVON and the Louis Bolk Institute. By holding expert meetings with ANLM participants and specialists in the field, interesting discussions arise from which everyone can learn. On a national scale, BoerenNatuur supports its members with various activities aimed at knowledge transfer and knowledge sharing. Shortly after the introduction of the ANLM, a separate expert team for cultural landscapes was set up within the Expert Network for Development and Management of Nature Quality (OBN), which can commission only one substantiated study per year on the effectiveness of agricultural nature management. According to those involved, this is very little in the light of the need for knowledge. Sometimes there is tension between external

scientific knowledge and practical knowledge. This usually concerns the applicability of generic scientific knowledge in area-specific practice. The relatively long turnaround time of scientific research also does not always match the dynamics of practice.

**Knowledge gaps for green infrastructure, blue infrastructure and the water category**
For green and blue infrastructure, insufficient knowledge is available about the requirements that target species place on their habitat and about the relationship between the measures, the quality of the habitat and the occurrence of species. This species knowledge is sometimes available, but is more difficult to apply than knowledge about meadow birds. This prevents learning from the results of conservation practices. To a lesser extent, the lack of knowledge also applies to the open arable land habitat (Faber et al., 2020). For the water category as well there is a need for knowledge development about the relationship between measures and water quality. However, regional water authorities indicate that it is difficult to establish a direct relationship between a conservation activity at a specific location and an effect on water quality. This is because the land area under management is limited and fragmented and the surface water partly originates from elsewhere. However, targeted research could offer a solution. In Northeast Twente, for example, a study has been launched by the Vechtstromen regional water authority and the Louis Bolk Institute into the effect of the 'water retention' soil package on the sponge effect of the soil, soil biodiversity and leaching of nutrients and plant protection products into ground and surface water. For green infrastructure, blue infrastructure and the water category, limited monitoring is carried out into the distribution of target species. This is because target species are only partially influenced by local measures and are strongly influenced by other factors in the landscape. However, attention is paid to the habitat quality that is realised.

**There is no structural provision for knowledge activities**
No structural provision has been made within the ANLM for knowledge development and transfer of expert knowledge to collectives. This is seen as a shortcoming by various stakeholders. Agricultural collectives pay for conservation monitoring from their overhead percentage. For example, Agrarische Natuur Drenthe (AND) spends approximately 1% of its ANLM funding on monitoring for the entire province of Drenthe, which amounts to approximately €40,000 per year. Collectives depend in part on projects and support from provinces and regional water authorities to answer additional knowledge or monitoring questions.

### 3.2.4 Support base

**Chain parties want the scheme to be a success**
While the previous scheme was faced with less and less enthusiasm from participants, the current chain parties have generally shown great commitment to the ANLM and a strong motivation to make the scheme a success. This involvement is logical for the agricultural collectives and BoerenNatuur, because for the time being they derive their raison d'être from their role in the ANLM. However, their support depends on the effective functioning of the scheme and partly on the extent to which solutions are found for the aforementioned bottlenecks (administrative burdens, audits and knowledge).

Although the regional water authorities were hesitant about the scheme at the start of the ANLM, they have begun to catch up. Besides European financing of blue services, they see many advantages in their cooperation with agricultural collectives. Due to the role that collectives play in raising awareness among farmers about the effect of their actions on water quality, regional water authorities are reporting increasing support for water management in this target group. They also report real benefits for water quality by deploying the water management measures where the bottlenecks for the Water Framework Directive (WFD) are greatest. Participation in the ANLM has also given the regional water authorities more insight into farming practices.

**Willingness to participate has increased due to the scheme and the societal pressure for sustainability**
The willingness to participate in the ANLM among farmers and agricultural landowners has generally increased compared to the last years of the previous scheme. In addition to the efforts of collectives and good examples in the surroundings, this has to do with the increased societal pressure to produce sustainably and with concrete sustainability initiatives such as 'On the way to Planet Proof' and the

ongoing biodiversity monitoring of dairy farming and arable farming, whereby participants sometimes receive extra points (and therefore extra compensation) if they can demonstrate that they carry out agricultural nature and landscape management (see Box 3.4). Due to increasingly strict rules regarding spraying techniques, arable farmers are increasingly opting to commit to conservation packages for field margins adjacent to ditches from the water category. This means that they run less risk of violations and they do not have to modify their field sprayer Sometimes economic motives also play a role in the increasing interest in the ANLM. For example, during recent dry summers, payments from field margin management or full-field management in Drenthe resulted in better revenue than grain, and such measures provide more certainty about the amount of compensation compared to fluctuating market prices. Many agricultural collectives have waiting lists of farmers who want to participate in meadow bird and field bird conservation in particular. There are also exceptions: collectives in the province of Utrecht initially had difficulty finding sufficient participants for the management of the core areas. Only one-third of the farmers participated. The province has temporarily changed the boundaries to account for this and has also defined meadow bird peripheral zones. As a result, the number of participants has increased.

**Box 3.4** Sustainability initiatives and the ANLM in the Westergo collective

Sustainability initiatives can also have a negative impact on participation in the ANLM. For example, parties involved in the Westergo collective report that committed meadow bird farmers among the participants will score worse in the points system of Friesland Campina's 'On the way to Planet Proof' regarding $CO_2$ emissions and protein from their own farm than farmers who do not participate in the ANLM. This is because the committed meadow bird farmers generally have less roughage yield per hectare and have to compensate for this with concentrates. As a result, these participants lose points and do not qualify for an attractive supplement per litre of milk. If 'Planet Proof' yields more net revenue than the ANLM, it may be economically more attractive for these participants to leave the ANLM and opt for the Friesland Campina scheme.

## 3.3 Conclusions

- After four years it has become clear who is responsible for what in the implementation of the ANLM, despite the significant changes in the allocation of roles and tasks in the implementation compared to the previous scheme and the establishment of 40 new agricultural collectives. However, the role of the TBOs remains unclear. They have not been given a formal role in the implementation of the system, although they are expected to collaborate with collectives at the area level and coordinate conservation measures. This is one of the reasons why the cooperation varies in practice.
- Cooperation in the implementation chain has been enhanced since the introduction of the ANLM. The Ministry of LNV, the provinces, BIJ12, regional water authorities, RVO, NVWA, BoerenNatuur and the agricultural collectives are aware of their joint chain responsibility.
- Nearly all regional water authorities have now joined the scheme, but are not yet functioning as fully-fledged chain partners. The latter also applies to volunteer organisations. They have a crucial role in conservation monitoring and thus contribute to the desired learning from the results of conservation practices, but are not regarded as chain partners.
- Agricultural collectives have sufficient competence and resources to perform their coordinating and administrative tasks in the ANLM. However, they do experience a major administrative burden arising from the complexity of the system and the need to comply with European rules. This is at the expense of their efforts to increase the quality of conservation measures.
- The self-governing capacity of agricultural collectives has increased since 2016 and, in addition to performing their tasks in the ANLM in a professional manner, also includes contributing to the transition towards more nature-inclusive agriculture. However, there are major differences between collectives in the extent to which they take up new activities (or are capable of doing so), and the current organisational structure of most collectives is largely based on their role in the ANLM and not on a broader context.
- The ANLM offers more scope for regional fine-tuning than the previous scheme. Provinces tend to govern more in broad terms and agricultural collectives have various options for attuning

conservation agreements to specific local circumstances, also during the growing season. This fine-tuning is, however, limited by European accountability rules, auditing obligations and the generic conservation packages that are chosen.

- There are insufficient structural provisions within the system for knowledge development, knowledge sharing and knowledge application. This applies in particular to the green infrastructure, blue infrastructure and the water category, for which there are still many questions about the best type of conservation measures for the target species and water management objectives.
- Chain partners are strongly motivated to make the system a success, and the willingness to participate among farmers has increased. In addition to the possibilities offered by the collective system, the societal demand to make agriculture more sustainable and the contribution that the ANLM can make to sustainability initiatives also play a role.

# 4 Focus on objectives

## 4.1 Introduction

With the ANLM, the central government, the provinces and the regional water authorities want to contribute to improving biodiversity and water management in agricultural areas. For biodiversity, this is about improving the conservation status of the 68 target species of the European Birds and Habitats Directive (BHD) that the central government and the provinces have specified in the ANLM. These species include fish, amphibians, insects, birds and mammals. The scheme distinguishes between four habitats for these species: open grassland, open arable land, blue infrastructure (such as ditches and ponds) and green infrastructure (upright vegetation such as hedgerows and hedge banks). For the water category, it concerns the healthy chemical and ecological status of bodies of water subject to the WFD and a robust hydrological system.

Compared to the previous scheme, the emphasis on the 68 target species of the BHD entails a sharper focus and a shift in the objectives of agricultural nature and landscape management. The central government and provinces expect that this sharper focus on species of concern will lead to more effective conservation of these species of concern. The previous scheme did not include water management measures. The focus on objectives for water management is expected to increase during the current implementation period (see also Section 1.4).

We assessed the expectation of improved conservation of species of concern by examining how provinces, regional water authorities and agricultural collectives have a sharper focus on specific objectives and which success and failure factors have arisen in practice (Section 4.2). This chapter ends with a number of conclusions about the focus on objectives in the ANLM (Section 4.3).

## 4.2 Findings

### 4.2.1 Habitats

**Provinces focus on target species, but the total effect of choices is unclear**
In the run-up to the new scheme, the provinces have determined the relevance for their own province from the national list of 68 species; not every species occurs everywhere or has a potential habitat. This has led to differing selections. The provinces of Friesland, North Holland, South Holland and Utrecht have focused mainly on the conservation of meadow birds, while the provinces of Groningen, Drenthe, Flevoland and Zeeland have focused on field birds. The province of Gelderland has focused mainly on species in green infrastructure, and the province of Limburg has focused mainly on field birds and species in these networks. The provinces of North Brabant and Overijssel have shown a more mixed picture. The focus of the BHD on 68 target species is new compared to the previous scheme, which focused more generally on the conservation of nesting birds on grasslands, botanical grasslands and some arable land. The management of hedges and hedge banks was mainly aimed at landscape values and cultural-historical values and not directly at the species that live in them. Management focusing on species in blue infrastructure, such as amphibians and fish, was not part of the scheme.

In their nature management plans, provinces have added other species to the BHD species that are characteristic of their province and to which agricultural nature and landscape management must contribute. Examples are the dwarf mouse, cornflower and the gatekeeper butterfly (*Pyronia tithonus*) in Drenthe and the wall brown butterfly (*Lasiommata megera*), small loach and moor frog in South Holland. This results in a national total of 174 target species which the provinces want to help conserve (Teunissen et al., 2019). There has been no national feedback on the joint effect of the

choices of individual provinces. It is therefore unclear to what extent all 68 target species from the BHD are actually benefited.

Within the list of target species some provinces have designated 'guide species' for each habitat – they expect that conservation measures for these species will benefit other species – or have set additional priorities in the selection of species in some other way. For example, the province of Friesland has opted for the open grassland habitat for the black-tailed godwit, redshank, lapwing and oystercatcher, with a strong focus on the black-tailed godwit. The province of South Holland has focused on nine guide species: the black-tailed godwit, redshank, lapwing, oystercatcher, shoveler, skylark, ruff, snipe and garganey. Working with guide species contributes to a sharper focus and clearer objectives for the province. However, it is often unclear to what extent the other target species benefit from the management of the guide species.

**Provinces delineate habitats partly on the basis of eligibility criteria**

Provinces have selected and delineated the habitats on the basis of eligibility criteria with regard to the presence of the selected target species, openness and the size and connectivity of the areas concerned. Other criteria such as synergy with other objectives and support among current or potential participants also played a role in this delineation. This method suited the open grassland habitat, and to a lesser extent the open arable land habitat, due to the presence of clear eligibility criteria and species distribution data. There are no strict eligibility criteria for green and blue infrastructure, and no credible distribution data are available for the associated species. As a result, provinces have sometimes used different criteria. For example, the province of Drenthe has based the delineation of the green infrastructure not on the occurrence of target species, but on the creation of connecting zones for the Nature Network that are intended to ensure the exchange of species and cohesion between the nature reserves. The direct relationship between the target species and the boundaries of habitats is therefore less clear with green and blue infrastructure than with arable land and open grassland habitats. The specification of objectives for these habitats is therefore not as strong.

Compared to the previous scheme, in their nature management plans most provinces have limited the size of the areas where agricultural nature and landscape is subsidised. They focus on areas where promising populations of species are already present or can be expected in the near future. This is also known as the core areas approach. Besides ecological reasons, there were also financial reasons for limiting the size of the areas. Initially, there was less budget available for payments than in the previous scheme, because the administrative activities of the collectives had to be paid from the programme funding, whereas these costs were previously paid from other budgets. Fewer hectares could also be managed because an inflation adjustment was applied to the rates and more was invested in more restrictive management measures, which are more expensive. For example, the province of Drenthe chose to severely limit meadow bird management and focus the available budget mainly on the habitats of arable land, green and blue infrastructure.

**Provinces opt less often for parcel-wide botanical management**

Another consequence of the sharper focus on species of concern is that the provinces have largely phased out the parcel-wide botanical management of grassland and arable land due to the limited contribution to the BHD target species. The management of landscape elements is also no longer subsidised on the basis of cultural-historical or landscape values. To be able to continue to manage valuable landscape elements, the provinces have sometimes been compelled to look for additional target species, such as in the traditional orchards in South Limburg (little owls) and the alder-lined canals in the Northern Woods in Friesland (red-necked redstart, thrush, mockingbird, lesser whitethroat and serotine bat) (Kuindersma et al., 2017). In Gelderland, botanical management in the river valley grasslands that have valuable vegetation has been continued by delineating these areas as green infrastructure and linking target species that may occur there. Overijssel has also chosen to maintain part of the qualitative botanical management. The province of Drenthe has maintained the botanical management of some valuable ash trees (arable land) by delineating them as green infrastructure and adding plant species to the list of target species for this purpose. Nevertheless, stakeholders report that management of valuable botanical grasslands has also been discontinued even though they had sometimes been under management for decades. This was a result of the policy choice to stop parcel-wide botanical.

**Agricultural collectives include target species and criteria in their conservation strategy**
Provinces check the area applications of the agricultural collectives against the eligibility criteria, conservation functions and guidelines per habitat from the nature management plan. In addition to the presence of target species, size and connectivity, this concerns specific requirements for conservation measures, combinations of measures or the relationship between measures. Most provinces use these criteria as guidelines; deviations are therefore possible on the basis of good arguments. Only the delimitation of conservation functions within the habitats in the nature management plan are mandatory. This means that the implemented measures are assessed by the collective regarding the contribution to those functions. Discounts to payments may follow in case of deviations. The province of Utrecht has also imposed certain additional criteria as obligatory. Most provinces have not specified values for the occurrence of the target species. This is due to the consideration that other factors besides conservation activities can influence nesting success, so the collectives cannot not be held accountable for this. Whether it is adequate or inadequate is therefore unclear.

In their conservation strategies, agricultural collectives often include the target species or guide species, the eligibility criteria and the guidelines of the province. When concluding new contracts, they also take the occurrence of these target species into account, insofar as they have data about them, and adjust the choice of conservation packages accordingly. Many collectives make additional choices for target species or guide species and sometimes also pursue additional goals (see Box 4.1). Due to the choices made by the provinces and collectives, only some of the target species from the lists in the nature management plans are actually managed. It is unclear to what extent other target species also benefit from the conservation measures.

**Box 4.1** Target species management in the Krimpenerwaard

The Province of South Holland focuses on meadow birds and has identified nine target species in its nature management plan for open grassland: black-tailed godwit, lapwing, oystercatcher, shoveler, redshank, skylark, ruff, snipe and garganey. The province also reports that other species can benefit from the measures for these meadow birds. In its area application, the Agricultural Collective Krimpenerwaard (ACK) must demonstrate that, in principle, it is possible to have 50 nesting pairs of these species per 100 hectares of managed area.

The ACK has largely accepted the province's considerations. The black-tailed godwit, lapwing, redshank, shoveler and oystercatcher received a lot of attention from the ACK. For the blue infrastructure, the province has designated BHD target species and its own provincial target species. The collective deviates from this by focusing on enhancing the total biodiversity in the ditches and ditch banks. In addition to fauna species, this also explicitly concerns flora species. According to the collective, the flower-rich margins of the narrow parcels also have landscape value. Another factor is that the ACK has insufficient insight into the occurrence of target species within the blue infrastructure habitat. That is why the collective is working together with RAVON to determine how conservation activities can be improved in relation to the target species that occur in the Krimpenerwaard.

### 4.2.2 Water category

**Water measures were initially used to raise awareness**
The objectives of the water category have a different character than those for the habitats. They are not about creating habitats for specific species, but about improving the ecological quality and chemistry of surface water. In addition, there are objectives for water storage, water retention, soil management and the prevention of desiccation, which contribute to a robust hydrological system. Initially, many regional water authorities saw the water category primarily as an incentive to make farmers aware of the importance of water quality and to introduce them to measures that they can take on their own land. The emphasis is on improving water quality and soil management. Water quantity, availability and storage play a subordinate role and are mainly seen by the regional water authorities as aspects that benefit from improved water quality and soil management. Most regional water authorities are now increasingly focusing on deploying water measures in areas where, for example, there are problems with water quality within the framework of the WFD and where they expect the greatest effect from these water measures, or they are planning to implement such measures in the next implementation period (see Box 4.2). However, not much credible information is

available about the effectiveness of water measures taken at the level of ditches, parcel margins or parcels. Management monitoring, such as that used the habitats, is lacking and is also difficult to implement due to the many factors that influence water quality.

**Box 4.2** Focus on water management objectives in the province of Friesland

The province of Friesland has delineated the entire province for the water category. In its nature management plan it also states in which situations synergy is possible between management for the habitats and the water category. This makes it possible for agricultural collectives throughout nearly the entire province to conclude water conservation contracts with participants within the applicable financial frameworks. Wetterskip Fryslân (Friesland regional water authority) is now determining where the biggest problems are with regard to phosphate leaching. With this knowledge, the Wetterskip wants to focus more on deploying conservation activities at locations where the greatest effect can be expected from year 2022 onwards. Until then, the Wetterskip will mainly use the current situation to learn how the scheme can work, how great the willingness to participate is and how conservation packages work out in practice. As a result, the focus on objectives for the water category in Friesland is limited for the time being.

**Regional water authorities govern according to their management strategy and in consultation with collectives**

To enable as many farmers as possible to come into contact with the possibilities of the water category, most provinces have broadly delineated water management boundaries at the request of the regional water authorities, sometimes in combination with a limited number of conservation functions in the delineated areas. The water management objectives have not been translated into area objectives or guidelines in the provincial nature management plan. At the 'front door', there is also a limited focus on synergy between the water category and habitats. Because the agricultural collectives had little experience with water measures, in many areas there is close coordination between the regional water authority and the collective about the measures to be taken. But there are also provinces and areas where coordination is limited. This approach differs from the situation in the habitats, where objectives and guidelines have been laid down in advance and there is no direct consultation between the province and the collective at the level of conservation measures to be taken.

## 4.3 Conclusions

- The focus on the BHD target species in the open grassland and open arable land habitats has increased compared to the previous scheme because provinces have designated target species that affect the selection and boundaries of the habitats in the assessment of area applications and in the conservation choices of the agricultural collectives.
- Focus on objectives is more difficult for the green and blue infrastructure due to the lack of clear eligibility criteria and a lack of distribution data for the target species in these areas. Other priorities also sometimes play a role in the lack of focus on objectives for BHD species in these habitats, such as the contribution to broad biodiversity and landscape values.
- Focus on WFD objectives is limited due to the initial focus on awareness, but is increasing due to increase use of water measures to deal with water quality problems. The main bottleneck here is a lack of insight into the effectiveness of ANLM water measures.
- The provincial practice of adding dozens of other provincial species to their own selection of BHD species detracts from the focus on the BHD species. Moreover, the long list of target species is difficult to handle in practice and is therefore a paper tiger. It is unlikely that activities carried out contribute to the conservation of all these species, because in practice a limited number of these target species are prioritised, for example by establishing guide species. This does contribute to more focus and better manageability for provinces and agricultural collectives, but it is unclear to what extent the other target species benefit from the activities for guide species.
- Information is lacking about what the individual choices of provinces and agricultural collectives mean for the list of 68 species in total and thus for species protection. The provincial choices were not mutually agreed in advance and there was no feedback at the national level about the joint effect of the provincial choices.

# 5 Ecological conditions

## 5.1 Introduction

The habitats approach is a core element of the ANLM and focuses on creating and maintaining the right ecological conditions in the habitats for a group of target species that have the same demands on their habitat. Specific conservation measures have been described for each type of habitat that are aimed at improving habitat quality. To ensure that the habitat is also large enough for the target species, the habitats approach also focuses on increasing the spatial cohesion (clustering) of management. Agricultural collectives have been given a central role in shaping these two aspects, which are known within the ANLM as 'effective management at the suitable location' and the realisation of sufficient spatial cohesion. In this chapter we assess the expected outcome that the ANLM – through its habitats approach and collective approach – will contribute more than the previous scheme to effective management at the suitable location and to spatial cohesion (see also Section 1.4).

To map out the developments in effective management at the suitable location, the following criteria are important:

- The extent to which there is overlap between the distribution of target species and the ANLM conservation measures – the more overlap, the better.
- The extent to which conservation measures contribute to improved habitat quality for the target species and improved conditions for water quality conditions – the greater the contribution to these aspects, the better.

The following criteria are important for mapping out the development of spatial cohesion:

- The size of the managed area per habitat and of the water category – the bigger, the better.
- The spatial concentration of habitat management and water management (is management widely disseminated in the landscape or concentrated in clusters?) – the more concentrated, the better.
- The extent to which habitat elements are intertwined – the greater the intertwining, the better.
- The connections between agricultural meadow bird management and the meadow bird nature reserves in the Netherlands Nature Network – the more connected, the better.
- The continuity of management – the more continuity, the better.

In this chapter, we first examine the way in which provinces, regional water authorities and agricultural collectives aim to improve the ecological conditions for attaining the BHD and WFD objectives (Section 5.2). We then discuss the developments effective management at the suitable location (Section 5.3) and in spatial cohesion (Section 5.4) compared to the previous scheme and within the current implementation period. For effective management at the suitable location, this comparison was based on a qualitative analysis. For spatial cohesion, a GIS analysis of the location of management measures was carried out (see also Annex 5 for an extensive methodical description). We close the chapter with conclusions (Section 5.5).

## 5.2 Findings on improving ecological conditions

**Provinces and collectives strive for overlap of target species and conservation measures and spatial concentration**

To achieve both effective management at the suitable location and spatial cohesion, in their nature management plans the provinces have delineated habitats and areas for the water category and – compared to the previous scheme – have reduced the size of locations where conservation activities are possible. Regional water authorities have introduced the WFD targets and areas in this regard. When delineating habitats, provinces have used distribution data of target species to define habitats in such a way that they include locations where the most target species occur. This worked well for open grassland and open fields, for which uniform eligibility criteria for the occurrence of minimum numbers of nesting pairs have been established based on scientific insights and for which sufficient distribution data were available. However, there is a lack of scientifically substantiated eligibility criteria and distribution data for the delineation of green and blue infrastructure. As a result, the delineation of these habitats is not always based on the occurrence of the target species. Sometimes habitats are delineated on the basis of other criteria. For example, due to a lack of participants in the meadow bird core areas, the province of Utrecht has decided to delineate so-called meadow bird peripheral zones, even if they do not meet the eligibility criteria. In most provinces, the boundaries have been delineated in consultation with the agricultural collectives, regional water authorities, ANVs and other regional parties.

Despite the availability of uniform eligibility criteria, there are clear differences between provinces in how they delineate habitats. Some provinces (such as Groningen, South Holland and Drenthe) apply the eligibility criteria more strictly and delineate the habitats narrowly, while other provinces delineate more broadly and leave it to the collectives to make further considerations (e.g. Friesland and Limburg) (Kuindersma et al., 2017). In their conservation strategies the agricultural collectives have generally adopted the criteria relating to the occurrence of minimum numbers of nesting pairs and focus their activities on locations where target species occur. Sometimes collectives discuss this delimitation with the province, because they see opportunities for conservation activities outside it. The fact that the eligibility criteria are primarily based on the observed presence of target species in previous years plays a role here. According to collectives, this static aspect sometimes means that potentially good areas are disregarded because too few species are present when the application is submitted, but which do have the potential to develop into 'the suitable location' with effective management. This aspect is enhanced if the province has delineated narrow boundaries. During discussions collectives can present their views on the draft nature management plan. In this case, provinces request an ecological substantiation on the basis of monitoring data. During the season, however, there are no possibilities for dealing flexibly with the habitat boundaries, which is experienced as a problem by collectives.

**Box 5.1** Agricultural Nature in Drenthe bases activities on the delineation of open arable land habitat

In the absence of current distribution data for the species in the open arable land habitat, Agrarische Natuur Drenthe (AND) assumes that all fields within the boundary of open arable land habitat are suitable for conservation measures because this boundary was established on the basis of species distribution research of the Grauwe Kiekendief Expertise Centre for Field Birds. This means that the collective bases contracts on the willingness of arable farmers within that boundary to participate. Incidentally, the collective does make use of available distribution data. For example, when constructing 'beetle banks' for partridges they used research into the distribution of partridges and adjusted the location for conservation activities accordingly.

At the introduction of the ANLM in 2016, many SNL-a contracts were still in effect, partly at locations where no meadow or field birds were observed. Due to the expiration of these contracts and the expansion of the budget from 2018, during the past four years the agricultural collectives have been given more and more flexibility to implement measures at locations where the target species have actually been observed The data to determine where expansion of activities is desired comes from conservation monitoring for open grassland. At the start of the ANLM, there was much less effective conservation monitoring for arable land, and monitoring is still inadequate for green and blue

infrastructure. Because agricultural collectives have little access to the distribution data from existing monitoring networks, they also have little insight into the exact distribution of target species (see Box 5.1). Exceptions are species such as the hamster and tree frog that are intensively monitored. When concluding contracts, many collectives make use of the flexibility offered by the current scheme to conclude shorter contracts or terminate contracts earlier if target species are no longer present. These contracts must then be replaced by contracts elsewhere, because the number of hectares per habitat must remain constant. This enables them to monitor the species during the implementation period and avoid conservation activities in places where there are no target species. In addition, collectives with 'last minute' management can redirect measures for open grassland habit during the season if target species are present. Effective real-time monitoring of nesting birds is essential for this type of management (see Boxes 5.2 and 5.3).

**Improving habitat quality through provincial guidelines and conservation strategies of the collectives**

Most provinces have set guidelines in their nature management plan for specific types of activities, which they use to assess the area applications submitted by agricultural collectives. This includes aspects such as minimum areas of seasonally flooded grassland or rearing areas, the minimum width of field margins or the composition of seed mixtures. These guidelines are intended for the realisation of habitat quality. Deviations are possible on the basis of well-supported arguments. The province of Utrecht is the only province that has also set mandatory conditions for the quality of activities. For example, the core areas for meadow birds must consist of at least 18% of land with severe restrictions on farming practices, and at least 0.5% seasonally flooded grassland. The working method with guidelines is an innovation compared to the previous scheme, in which the provinces specified more details of the conservation plans drawn up by ANVs.

The agricultural collectives focus on improving the quality of conservation efforts with their conservation strategies and when concluding contracts. When concluding conservation contracts, collectives can use the conservation packages that have been established on the basis of the collectives' own experience and additional research or advice by an independent ecological expert, which have subsequently been reviewed for ecological effectiveness, EU conformity and compliance with national regulations by the BoerenNatuur Management Packages & Management Fees Committee (including representation from provinces, ecologists from environmental organisations, RVO and regional water authorities).

**Agricultural collectives make different choices in their meadow bird mosaics**

In many cases, agricultural collectives strive for the realisation of mosaics for the open grassland habitat. These are clusters of parcels where breeding birds return every year and where a variety of conservation measures are used to optimally benefit both nesting birds and chicks. This includes combinations of clutch management, grassland with rest periods, herb rich grassland, seasonally flooded grassland, early season grazing and extensive grazing. Isolated activities on a single parcel is being phased out as much as possible. There are, however, different visions and strategies in this regard. For example, herb rich grassland margins with clutch management are seen by some collectives as an effective combination for achieving long-term habitat quality. Although this can contribute to an improvement of the habitat quality at those locations, parcels with clutch management in combination with grassland margins provide a less suitable habitat for meadow birds than parcels with full-field management (Wiggers et al., 2016). Other collectives focus less on field margin management, because in their view this contributes insufficiently to the chicks' chances of survival and encourages predation. They therefore focus on full-field herb rich grassland management. However, according to the Westergo Agricultural Nature Collective, this approach has limitations. Packages for full-field herb rich grassland management are three times more expensive than packages for deferred mowing. With the same budget, fewer hectares can therefore be managed. As a result, choosing to focus more on herb rich grassland can at the expense of the size of meadow bird mosaics that a collective can manage. In the event of a shift to heavily restrictive management measures (delayed mowing, etc.) during the implementation period, the agricultural collective may fall below the minimum number of hectares that has been agreed with the province. Collectives want to avoid this at all times, because then a full discount on the disbursement follows. In addition to these financial considerations, the willingness of farmers to participate in herb rich grassland management plays a role, as is the case with the Krimpenerwaard Agricultural Collective, where many farmers have difficulty in adapting their operations. This is an obstacle to concluding contracts for full-field herb rich grassland management (see Boxes 5.2 and 5.3).

**Box 5.2** Westergo Agricultural Nature Collective (ANC Westergo) combines meadow bird monitoring with a commitment to long-term habitat quality

ANC Westergo uses two conservation strategies for the open grassland habitat in the mosaics in the Greidhoeke sub-area. The first strategy focuses on implementing conservation measures at locations where the nesting birds are located that year. If birds move during the breeding season, the collective arranges last-minute management there, which means that payments can shift not only between parcels, but also between participants during a breeding season. For almost half of the acreage, the contracts consist of grassland with rest periods (35%), herb rich grassland(11%), seasonally flooded grassland(1%) and extensively grazed grassland (1%). The other half of the management consists of clutch management, usually in combination with a herb rich grassland margin. According to the collective, clutch management leads to a good breeding result, but to a poor chance of survival for the chicks. For the same reason, the collective is investing less and less in managing grassland margins for meadow birds in combination with clutch management. This is a clear change from the pre-2018 strategy. At that time, a number of ANVs focused almost entirely on field margin management in combination with clutch management.

The second strategy focuses on improving habitat quality in the long term. One way the ANC Westergo does this is by concluding contracts for seasonally flooded ditches. Existing ditches in the middle of the parcel are pumped full, after which the parcel becomes shallowly flooded. In doing so, the collective makes use of subsidies to purchase pumps for the seasonal flooding of grassland or the construction of weirs or spillways to raise the ground water table locally. If possible, ANC Westergo combines raising the ground water table with the development of herb rich grassland, which now covers 11% of the managed area. They focus on areas where the initial situation is good and where many black-tailed godwit pairs are already nesting.

**Box 5.3** Agricultural Collective Krimpenerwaard (ACK) seeks solutions for excessively dense grass

For the mosaics in the open grassland habitat, the ACK is committed to concluding conservation packages where the largest numbers of the selected target species are nesting. Compared to the previous scheme, the ACK looks more closely at where the birds are actually observed. In those locations, contracts are concluded with a view to nest protection (73%) – often in combination with a herb rich grassland margin (7%), a rest period (12%), herb rich grassland (4%) and seasonally flooded grassland(1%). The collective has reported that grassland with a rest period often produces excessively dense grass for the meadow birds. This is caused by fertilisation and oxidation of the peat soil. As a result, fewer insects are present for the chicks and the grass is so dense that they cannot wade through it when looking for food. To ensure the suitability of the grassland during the breeding season, the collective focuses preventing the crop from becoming too dense for the birds, for example with a conservation package that includes early season grazing. Grazing improves the structure in the parcel and decreases the density of the crop. The collective also concludes contracts for seasonally flooded grassland. Both measures have positive effects on short-term habitat quality, but do not increase the diversity of herb rich plants, which is necessary for improving the long-term habitat quality. That is why the ACK also concludes packages for full-field herb rich grassland with less fertilisation. However, this is not suitable for all participants because it structurally reduces the yield. For the same reason, raising the ground water tables, which causes grass to start growing later in the season, is also unrealistic for the collective. This is illustrated by the small proportion of plots with activities focused on full-field, long-term herb rich grassland, i.e. 4% of the total area of meadow bird management in 2019. There are also no packages for raised ditch water levels in the Krimpenerwaard.

**Predation pressure is a concern**

Many agricultural collectives in the meadow bird provinces in particular are concerned about increased predation pressure (see Box 5.4). They currently see predation as the main cause of the disappointing breeding results. The collectives are concerned that participants will lose motivation and drop out, because their efforts will fail due to predation. SOVON also notes that predation pressure throughout the Netherlands has increased sharply since 2000. The predation loss of clutches of species such as black-tailed godwit, redshank, lapwing and oystercatcher is approximately 42% in the old marine clay areas in the northern Netherlands, where the Westergo case study is located, and about 26% in the lowland moor landscape of the western Netherlands, where the Krimpenerwaard is located (Teunissen et al., 2020). Teunissen et al. (2020) also emphasise that predation pressure is only one of the factors and that good habitat quality is the most important factor for ultimate breeding success.

**Box 5.4** Predation management in the Greidhoeke

The predation pressure in the Greidhoeke is much greater than 30 years ago and is caused by a combination of more species of predators, such as stone martens, foxes and birds of prey, in much higher numbers. At that time, predators were hunted by farmers and hunters much more than now. Many predators are now classified as protected species that cannot not be hunted. The Westergo Agricultural Nature Collective (ANC Westergo) currently sees predation as the most important factor limiting the breeding success of the guide species. For example, breeding success in 2020 was very low after the mouse plague from 2019 had disappeared and the predator population, which had grown during the mouse plague, shifted to meadow birds as prey (ANC Westergo, 2020; Wymenga et al., 2016; Van der Velde et al., 2019). In addition to the survival chances of the guide species, the negative impact of predation on breeding success also affects the motivation of volunteers and farmers to make an effort for the meadow birds. ANC Westergo therefore focuses on predation management. For example, the collective provides information through area meetings and newsletters about preventive measures and provides guidance to mosaic directors, participants and hunters. The collective also maintains contact with the game management units in the working area to allow predators to be hunted, insofar as this is legally permitted. Finally, the collective, together with Natuurmonumenten, has applied for a permit from the province to be allowed to catch stone martens in and around the Skrok and Skrins nature reserves.

**Collectives combine conservation measures for breeding and wintering field birds**

For open arable land habitat, agricultural collectives mainly focus on combinations of multi-year field margin management for breeding birds and annual management aimed at wintering field birds (so-called winter food fields) (see Box 5.5). A new aspect in the ANLb concerns the full-field packages for 'bird fields', which provide breeding opportunities and food and are therefore aimed at both nesting birds and wintering birds. These are plots where strips of various herb rich plants are sown for a period of at least two years, in combination with strips of alfalfa and/or grass-clover and strips of grain (Wiersma et al., 2019). This package gives collectives the flexibility to determine in the second year – depending on the height and density of the crop – whether it is useful to mow (flail) some sections. A recent scenario study showed that field margin management in combination with these full-field packages can contribute to the recovery and conservation of field bird populations (Klaassen et al., 2020).

**Box 5.5** Appreciation from local residents contributes to perennial field margins

Agricultural Nature Drenthe aims for mosaics of 80% summer measures for nesting field birds and 20% winter measures for wintering field birds. These percentages derive from the criteria for the open arable land habitat of the province (Province of Drenthe, 2019). The field margins are generally 6 to 9 meters wide and are sown with specially formulated seed mixtures. In addition, the collective concludes contracts for bird fields, in combination with field margin management. When concluding contracts for field margins sown with perennials, some arable farmers fear the establishment of typical farmland weeds if the margins are not ploughed under every year. In practice, however, the margins often remain in the same place for longer than the minimum period of two years, because the participant receives appreciation for this from local residents and the compensation provides a fixed income, which is independent of problems such as a poor yield due to poor rainfall. One example is the field margins in the Veenkoloniën, where there are perennial margins along waterways. These are resown approximately every three to four years, but also remain in the same location for years after that (no rotation).

**Large variation in target species and management of habitats in green and blue infrastructure**

Regarding green infrastructure, conservation activities focus on target species that live in grassland or arable land margins and in landscape elements, such as rows of trees, woods, alders and small groves and pools. In addition, the province of Drenthe is using management of green infrastructure to enhance connecting zones between nature reserves from the Nature Network. Due to the great variation in green infrastructure, the number of target species is also large and diverse, ranging from the parti-coloured bat to the European spadefoot toad (see Box 5.6). This also means that measures vary greatly between target species. Because these target species often have a small range, conservation requirements also vary widely between regions. The dormouse, for example, only occurs

in the margins of a small number of hillside forests in South Limburg, and the European spadefoot toad is found only in a small number of areas with river dunes and small-scale agricultural sand landscapes with forest in the vicinity. In the open grassland and arable land habitats, this variation in target species and habitat types is much smaller.

In the case of blue infrastructure, this mainly concerns measures aimed at target species that live in ditches and on ditch banks, where a number of target species, such as the European spadefoot toad, overlap with the green infrastructure. For blue infrastructure and green infrastructure, there is a great deal of variation within the habitat in terms of conditions and thus in target species, partly determined by the geographical location of the waterways. These differences determine the measures that are implemented. In the peat meadow region, for example, the measures mainly involve combinations of ecological ditch cleaning (dredging pump) and unfertilised herb rich grassland margin, while the Poldernatuur collective in Zeeland deploys a package for saline meadows with extensive grazing. Less up-to-date species distribution data are available for both green and blue infrastructure, and conservation contracts are mainly concluded on the basis of willingness to participate within the boundaries of the habitat. The large number of species that live in such networks also makes it difficult to determine the effective management at the suitable location. Moreover, little knowledge is available about the precise relationship between conservation activities and the effects on the large number of species in green and blue infrastructure.

**Box 5.6** Management for the European spadefoot toad and connection zones in Drenthe

Management of the green infrastructure in the Veenkoloniën/Odoorn, Agrarische Natuur Drenthe (AND) focuses mainly on the European spadefoot toad. If the collective knows that European spadefoot toads are living in the area, they establish herb rich field margins 3 meters wide adjacent to vertical landscape elements such as hedge banks. With the combination of field margins and landscape elements, the collective aims to realise a transition from vertical vegetation to a zone with herb rich plants, as part of the terrestrial habitat of the European spadefoot toad. In addition to this management aimed at a specific target species, AND also focuses on the construction of herb rich field margins in the green infrastructure habitat, in line with the objective of the province of Drenthe to enhance connecting zones between nature areas with green infrastructure. This management is therefore not aimed at specific target species in the green infrastructure itself, but at supporting species that live in the nature reserves.

**Deployment of water category focused on WFD bottlenecks**

The management strategy of the regional water authority is especially important for ensuring effective management at the suitable location within the water category. On this basis, regional water authorities are increasingly consulting with agricultural collectives about where measures within the boundaries of the water category can best take place in order to contribute to solving WFD bottlenecks and which packages are suitable for this. In the initial phase of the new scheme with the water category, many regional water authorities mainly wanted to contribute to awareness among farmers about what they can do about water quality. As a result, the location often mattered less in the first years of the ANLM. Moreover, at that time the WFD bottlenecks in the agricultural area were still unknown. Regarding the WFD objectives, the measures have not yet been sufficiently deployed in clusters and, according to stakeholders, the size is inadequate. However, in the next implementation period the regional water authorities do expect to focus more on locations where water quality bottlenecks occur; these locations were identified by the Delta Plan for Agrarian Water Management (DAW).

At the 'front door', provinces and regional water authorities are still not focusing much on synergy between the habitats and the water category. However, provinces often overlap the water category with habitats. South Holland has linked target species to the water category. It is then mainly up to the agricultural collectives to achieve synergy between the water category and the habitats. For example, Agrarisch Collectief Krimpenerwaard aims for synergy by designating the first meters adjacent to water bodies as a buffer strip for the water category and also by concluding conservation contracts for herb rich grassland margins. To enhance the mosaic (food supply and cover options) in the Veenkoloniën, AND deliberately concludes contracts for buffer zones for the water category in the vicinity of management of arable land habitat.

## 5.3 Findings on the development of effective management at the suitable location

**Efforts by provinces and collectives lead to more effective management at the suitable location**

It is plausible that the joint efforts of provinces and agricultural collectives will lead to more effective management at the suitable location for meadow birds and field birds than in the previous scheme. Distribution data from meadow birds, and to a lesser extent field birds, have played a greater role in defining and choosing locations for concluding conservation contracts than in the past. In addition, collectives that focus on open grassland habitat are critically monitoring whether the birds are actually observed, and they redirect their activities accordingly. The flexibility of the system and the availability of up-to-date distribution data for the open grassland habitat provide more options for this than the previous scheme. Field birds are monitored less critically during the breeding season, which means that it is not always clear whether the implemented measures actually contribute to the species that occur in a specific location. This is important because different species of field birds, like meadow birds, make different demands on their habitat; no measures have a positive effect on all species (Klaassen, 2020).

Less distribution data is available for green and blue infrastructure, partly because a much greater variety of species is involved in the corresponding habitats. For these habitats it is therefore unclear whether conservation measures are taken in the suitable location. For exceptions such as the dormouse, which is actively monitored, the management can be more effectively adapted to a specific location.

**Long-term habitat quality management is not yet commonplace**

In the open grassland habitat, agricultural collectives focus more on improving the habitat quality within a breeding season than in the previous scheme. For example, there is a trend towards more stringent restrictions on spring activities and less clutch management. This approach often involves deferred mowing, sometimes combined with early season grazing and seasonally flooded grassland. However, this strategy does not improve habitat quality in the long term (spanning multiple management years). This is because these parcels often revert to standard agricultural practices outside the implementation period; these practices involve relatively intensive use, high levels of fertilisation and several grass mowings after the rest period. Such parcels are often rich in mineral nutrients. The grass therefore becomes too dense early in the meadow bird season and is too homogeneous, with few herb rich plants and insects. For the chicks of meadow birds, the habitat quality is poor. Moreover, seasonally flooded grassland and seasonally flooded ditches increase the habitat quality, but only during the breeding season. Afterwards, the water runs off and the parcel is used agriculturally again.

Agricultural collectives also aim to improve habitat quality in the long term, although the extent is limited compared to measures aimed at short-term habitat quality (see Boxes 5.2 and 5.3). Improvement of the habitat quality over multiple seasons is done by developing herb rich grassland, reducing fertilisation and raising the ground water table. These are activities that decrease the grass yield every year, which is the main reason that this type of management is often more difficult to integrate into farming practices than conservation activities that have a temporary effect. Because the yield decreases every year, the Agrarisch Collectief Krimpenerwaard reports that the compensation in the long term is too low to cover the lost yield. In addition, collectives have to make a trade-off between the packages for herb rich grassland (which are more expensive by a factor of three) and those for deferred mowing, so that a greater commitment to herb rich grassland with a constant budget comes at the expense of the number of hectares that a collective can manage. Finally, there may not be a good initial situation for managing long-term habitat quality – such as levelled parcels with 100% perennial ryegrass – which means that costly implementation measures are required to develop wet herb rich grassland.

## 5.4 Findings on the development of spatial cohesion

**Area under conservation has decreased due to reduced budgets and more costly measures**
The total area of agricultural nature management on open grassland (SNL-a and ANLM) decreased sharply between 2010 and 2019. The largest decrease was due to the transition from the old SNL-a scheme in 2010 and the start of the ANLM in 2016 (see Figure 5.1). There are several reasons for this decrease. For example, the administrative costs of collectives in the ANLM must be paid from the total budget for conservation management, so that on balance less money is available for conservation activities. In the SNL-a these costs were paid from other sources. In addition, the payments for conservation activities were increased upon introduction of the ANLM because they no longer covered the costs incurred. In the previous scheme, contracts for a large area of clutch management were concluded with a low fee per hectare. Under the ANLM, the collectives have focused less on clutch management and more on restrictive conservation packages, such as deferred mowing, herb rich grassland and seasonally flooded grassland, for which higher payments are paid. This means that a smaller area can be managed than in the previous scheme. This trend towards more restrictive management measures continued from 2016 to 2019. Although additional funding was made available (see Section 2.8), the resulting extra acreage cannot fully compensate for the decrease resulting from the shift to more restrictive management. An increase in the managed area was realised from 2016 to 2019 for green and blue infrastructure, open arable land and the water category (see Figure 5.1).

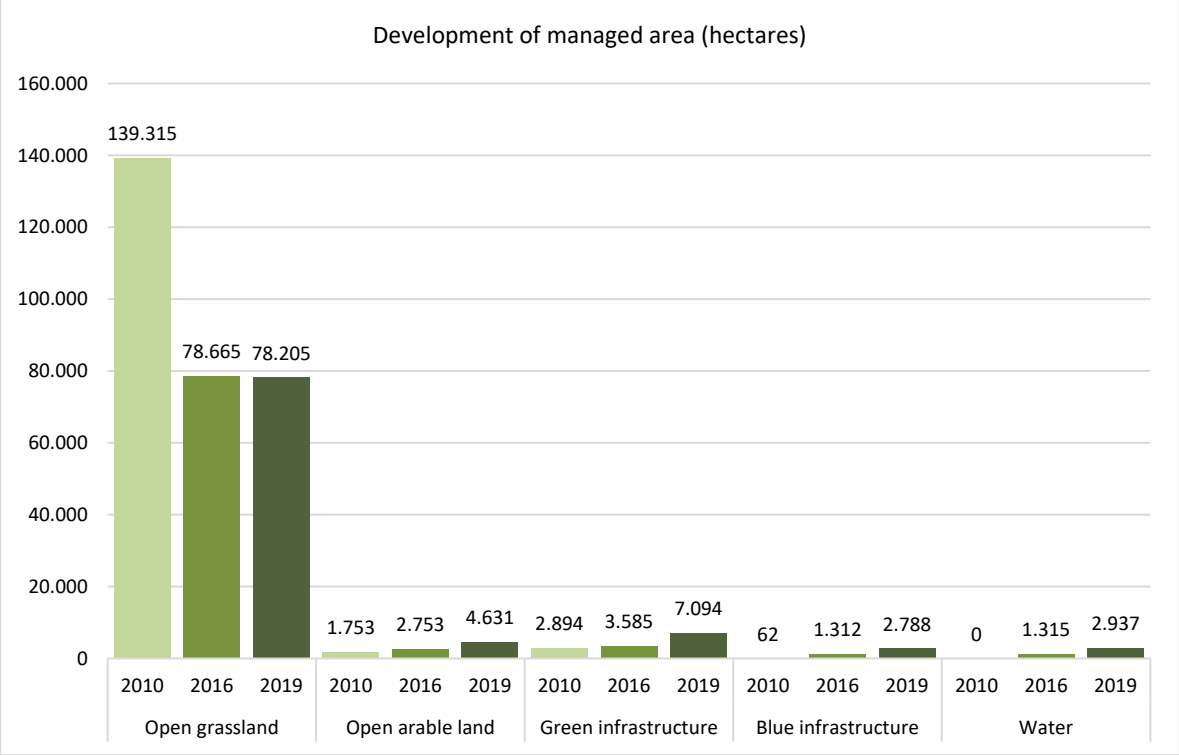


***Figure 5.1*** *Development of the managed area for the habitats open grassland, open arable land, green and blue infrastructure, and the water category for both SNL-a and ANLM. Light green is full SNL-a, medium green is 26% SNL-a and 74% ANLM, and dark green is 4% SNL-a and 96% ANLM*

**Development of spatial concentration gives a mixed picture**
Agricultural collectives are increasingly focusing on realising substantial clusters, which should benefit the conservation of the BHD target species. Figure 5.2 shows that management in the blue and green infrastructure and open arable land habitats is increasingly being implemented in clusters. The larger managed area in these habitats in combination with a higher average spatial concentration during the ANLM period has provided opportunities for enhanced biodiversity.

In open grassland there was a slight increase in the average spatial concentration in 2019 compared to 2016. This increase follows a slight decrease in 2016 relative to the management year 2010. In this analysis, only the more restrictive conservation packages have been quantitatively assessed. Clutch management and rearing areas have not been taken into account because they do not contribute independently to the nesting and rearing habitat, but only in combination with the aforementioned restrictive conservation measures (see also Annex 5). This initial decrease was unexpected; during the introduction of the scheme an increase was assumed due to the focus on developing core areas for meadow birds. Further analysis shows that in 2016 very isolated management occurred relatively less than in 2010, but the same can be said of very large management clusters. During the transition (from 2010 to 2016), more 'fragmented' cores than substantial cores were added. Possible explanations are that at the start of the ANLM there were still many ongoing SNL-a that could not be transferred. Also, due to a lack of time, some agricultural collectives have concluded contracts without looking very critically at spatial clustering. Furthermore, the number of hectares for which conservation contracts could be concluded decreased compared to 2010 (see Figure 5.1). As the ANLM implementation proceeded, there was more room to shift management and to form clusters. Regarding the above comparisons, it should be noted that there are significant differences between provinces and areas.

If we compare the average spatial concentration of management for the four habitats, it is notable that the spatial concentration of management for open grassland is considerably higher than the spatial concentration for the other habitats. This difference is due to the fact that conservation contracts for open grassland are often concluded for full fields, while green infrastructure, blue infrastructure and open arable land usually involve field margin management.

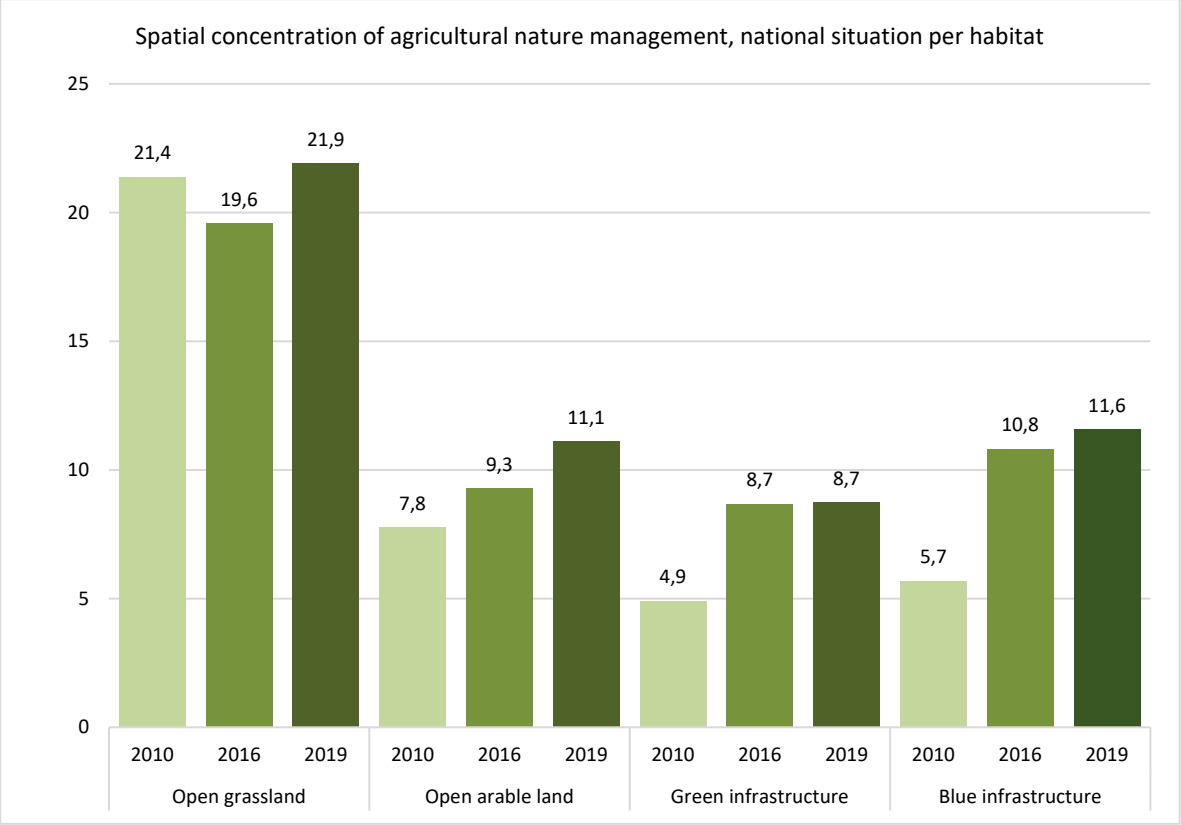


***Figure 5.2*** *Development of the average spatial concentration with which agricultural nature and landscape management is carried out. The results are sorted by habitat by year. The spatial concentration is determined by calculating for each location what proportion of the surroundings (radius of 500 metres) is subjected to agricultural nature and landscape management. A value of 80% can be interpreted as follows: for the location in question, 80% of the surrounding area (radius of 500 metres) is subjected to agricultural nature management. Only conservation packages with a substantial influence on habitat quality have been included in this analysis (see Annex 5 for a detailed methodical description). Light green is completely SNL-a management, medium green is a mix SNL-a and ANLM management and dark green is almost completely ANLM management*

**Interweaving of ditch management and grassland management is increasing**

The share of ditch management, such as management of nature-friendly banks and ecological ditch cleaning, which is carried out in spatial cohesion with meadow bird management, increased in 2016 by 30 percent compared to the situation in 2010, followed by an increase of 12 percent in 2019 (see Figure 5.3). This is a favourable signal, since both management methods are complementary to each other. For example, species make use of both habitat elements and both can influence each other in an abiotic sense. This is because the leaching of nutrients (with a negative influence on the ecological quality of ditches) is limited by adapting the grassland management accordingly. An important explanation for the increase is that the introduction of the blue infrastructure and the water category, along with the new resources for water, provide more opportunities for interweaving ditch and grassland management than in the previous scheme.

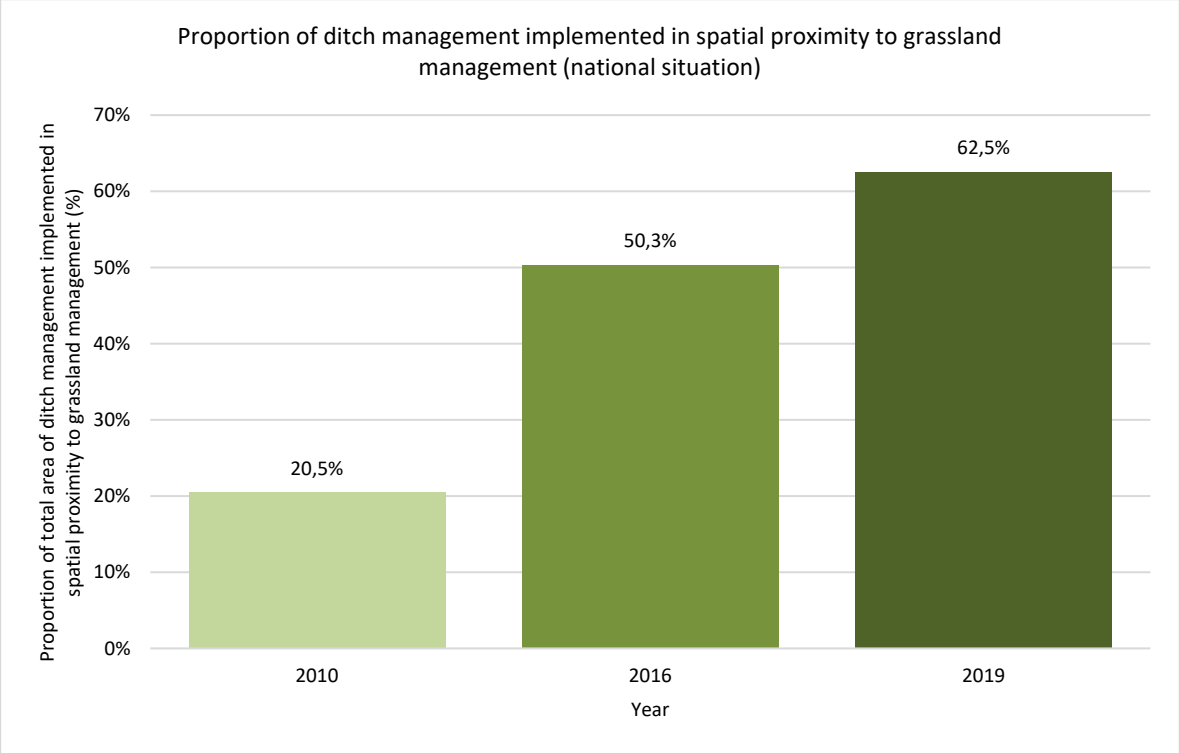


***Figure 5.3*** *Proportion of ditch management performed in conjunction with grassland management. The x-axis shows the years. The y-axis shows the proportion of ditch management (nature-friendly banks, ecological ditch cleaning, etc.), which is carried out in conjunction (within 25 meters of the ditch) with grassland management (deferred mowing, botanical grassland, etc.). Light green is completely SNL-a management, medium green is a mix SNL-a and ANLM management and dark green is almost completely ANLM management*

**Interweaving of landscape elements management with grassland and arable land management has increased after initial decline**

The proportion of the management of landscape elements that is carried out in spatial cohesion with agricultural nature and landscape management on grassland or arable land decreased in 2016 (-14 percent) compared to the situation in 2010, followed by a slightly positive increase (+3.5 percent) in 2019 (see Figure 5.4). This development is relevant for species that use both types of habitats, such as Eurasian tree sparrow and yellowhammer, which use landscape elements for nesting or as a base for foraging in adjacent grassland and arable land. The national trend appears to be largely determined by regional outliers. A high degree of interweaving is being achieved in the provinces of Drenthe and Brabant (75 and 52 percent, respectively, in 2019). A striking negative trend has been observed for the provinces of Friesland and Groningen since 2010. Specific provincial choices probably play a role in this. For example, Friesland has opted in the ANLM for a strong focus on meadow birds and has phased out the botanical management of field margins. This provides fewer opportunities for interweaving landscape elements with grassland or arable land management.

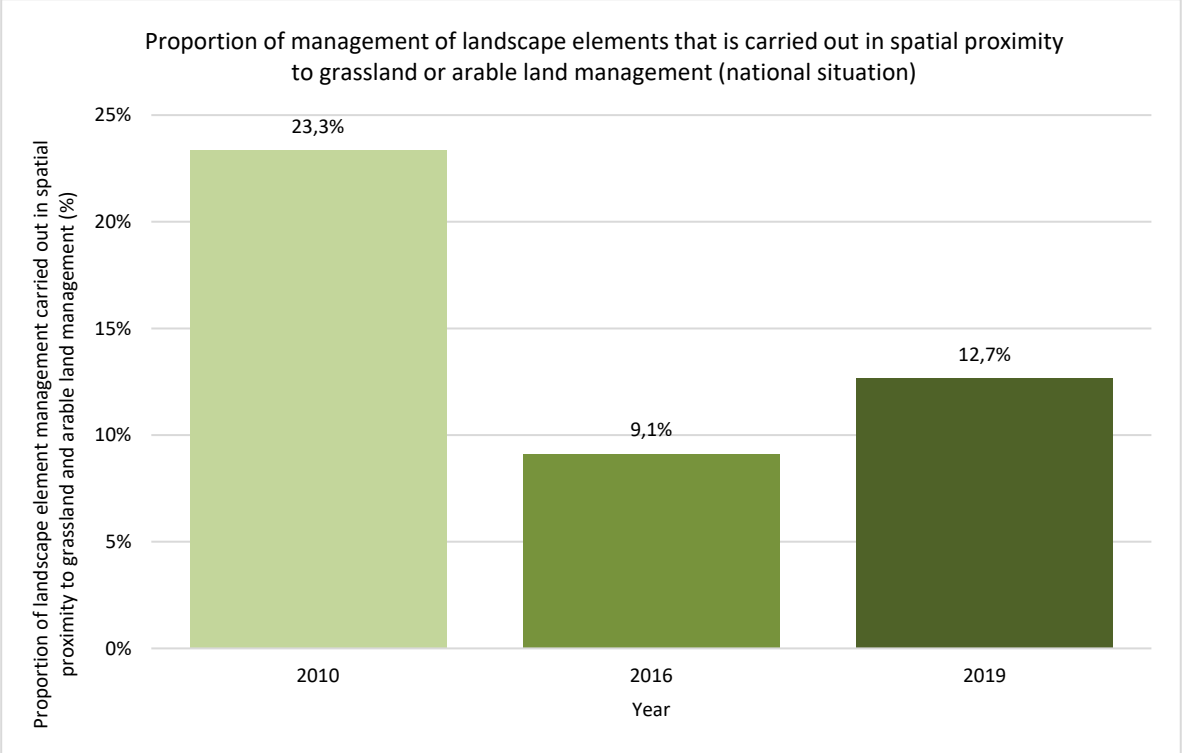


***Figure 5.4*** *Proportion of green infrastructure management implemented in conjunction with arable land and grassland management. The x-axis shows the years. The y-axis shows the proportion of green infrastructure management that is carried out in conjunction (within 25 meters of the landscape elements) with arable land or grassland management (deferred mowing, botanical grassland, bird field, etc.). Light green is completely SNL-a management, medium green is a mix SNL-a and ANLM management and dark green is almost completely ANLM management*

**Connection between ANLM meadow bird management areas and meadow bird reserves has decreased slightly**

The connection between meadow bird reserves, which are part of the Netherlands Nature Network, and the ANLM meadow bird management decreased by 3.6 percent in 2016 compared to the situation in 2010, followed by another slight decrease (-0.7 percent) in 2019 (see Figure 5.5). When looking exclusively at heavily restricted agricultural nature management, almost the same picture emerges. The explanation for this decrease is not clear. A possible cause could be the non-renewal of contracts near nature reserves if no birds nest on those parcels. Another reason may be that good meadow bird parcels have become part of the Netherlands Nature Network, as a result of which they no longer fall under the ANLM. These shifts in meadow bird reserves have not been taken into account in the analysis.

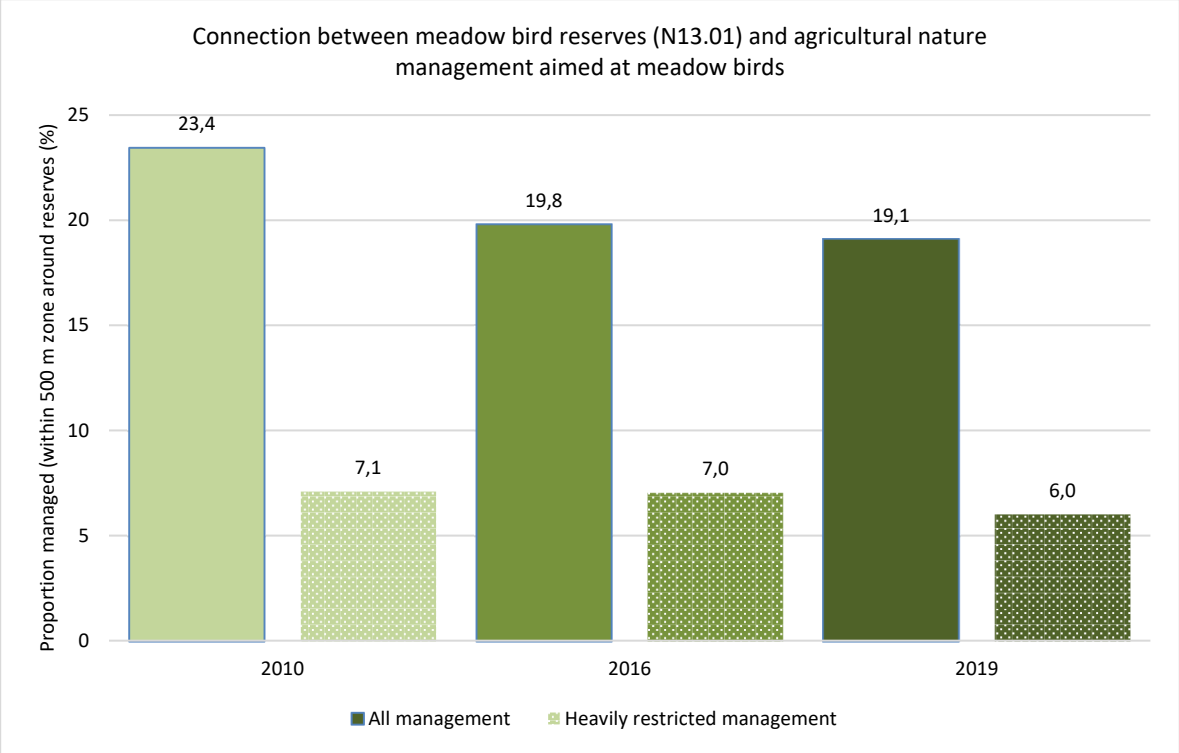


***Figure 5.5*** *Spatial connection between meadow bird reserves (N13.01 wet meadow bird grassland) and agricultural meadow bird management. The extent to which the two match up has been analysed by using GIS to calculate the proportion (%) of the grasslands surrounding meadow bird reserves (N13.01 damp meadow bird grassland) on which agricultural meadow bird management is implemented. A radius of 500 meters is used. The y-axis shows the national average of this percentage. Low percentages indicate situations in which the two do not match each spatially to a significant degree. High percentages indicate situations in which the two match each other well. The x-axis shows the years. Light green is completely SNL-a, medium green is a mix SNL-a and ANLM and dark green is almost completely ANLM*

**Continuity of management of landscape elements, ditches and pools is increasing**

For all habitats and combinations of conservation packages, during the transition from the old scheme to the new one a relatively small amount of conservation management was continued and relatively large amount of management was repositioned (see Figures 5.6 to 5.9). An important reason for this is the reduction in the area for which conservation contracts can be concluded. Provinces have made stricter choices regarding the delineation of habitats and have drawn up eligibility criteria. Collectives have largely adopted these eligibility criteria. They have focused on more promising areas within the habitat boundary and have terminated contracts at locations with disappointing results. More continuity can be expected from the transition during the period 2016 to 2019. This is the case for the management of landscape elements (Figure 5.8) and the management of ditches and pools (Figure 5.9): a very large proportion of the management has been continued at the same location. This is a positive signal regarding the development of habitat quality, which often requires years of effort. This is less the case for arable land management (Figure 5.7): a relatively large proportion of this management has been repositioned. In arable farming, field margins are often in place for at least two years, because this is a condition of the conservation contracts. Increasing pressure from weeds and grass often leads to participants, in consultation with the collective, shifting the boundaries after that period. For seed-eating and wintering field birds, the feasibility of enhancing habitat quality on arable land is – in a certain sense – greater than for insect-eating birds. The development of vegetation with many seeds can be realised in only one growing season. For nesting and insect-eating field birds it is more important that the management remains at the same location for a number of years. This is because an insect population develops better in a perennial field margin. This makes rotation of field margins undesirable for these species.

**Shifting heavily restricted grassland management**

For more heavily restricted grassland management, such as deferred mowing, rest periods, seasonally flooded grassland and herb rich vegetation, part of the management was discontinued before the transition from 2016 to 2019 and part of the management was repositioned (see Figure 5.6, right). This is a point of concern for the long-term development of habitat quality. For example, the development of a herb rich grassland due to nutrient stripping takes at least 3 to 10 years, depending on the soil type. This herb rich grassland is important for the reproductive success of breeding birds, but delayed mowing also benefits from a high degree of continuity to create the best starting situation at the same location each season so that birds can settle there in the spring. If management shifts annually to serve birds that 'wander' through the area, it will not be possible to develop long-term habitat quality. However, for collectives with a limited budget, the downside of long-term habitat quality management is that some of the locations where meadow birds settle in the spring will be left out. In that case it is virtually impossible to create a suitable habitat for that breeding season.

In addition to a unilateral commitment to 'following the birds', specific local circumstances and economic choices can also play a role in shifting conservation measures. In North Holland, for example, many livestock farmers temporarily lease their land to bulb growers. This limits the continuity of management.

An exception to the need to continue management are areas with very favourable abiotic conditions for biodiversity: high soil moisture and relatively extensive grassland use where changes in the location of heavily restrictive conservation packages are less of a problem; a simple postponement of the mowing date can lead to a grassland with good habitat quality. However, such areas are very scarce (Melman & Sierdsema, 2017).


***Figure 5.6*** *Continuation of grassland management for 2016 compared to 2010 (left) and 2019 compared to 2016 (right).*
*The following conservation packages are included: 3 (seasonally flooded grassland), 5 (herb rich grassland, 13 (botanical grassland), 31, 32 (insect-rich grassland or grassland margin), 41 (development of herb rich grassland). Light green is completely SNL-a, medium green is a mix SNL-a and ANLM and dark green is almost completely ANLM*

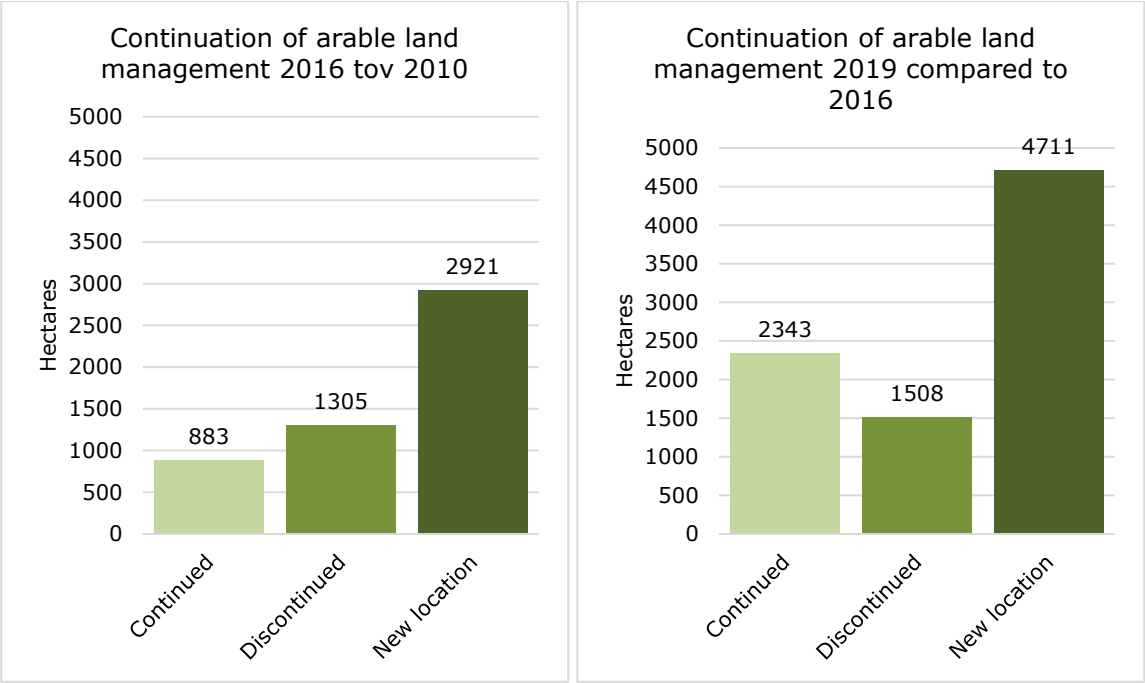


***Figure 5.7*** *Continuation of arable land management for 2016 compared to 2010 (left) and 2019 compared to 2016 (right). The following conservation packages are included: 15 (winter food field), 16 (bird field), 17 (arable land for hamsters), 18 (herb rich arable land), 19 (herb rich field margin). Light green is completely SNL-a, medium green is a mix SNL-a and ANLM and dark green is almost completely ANLM*

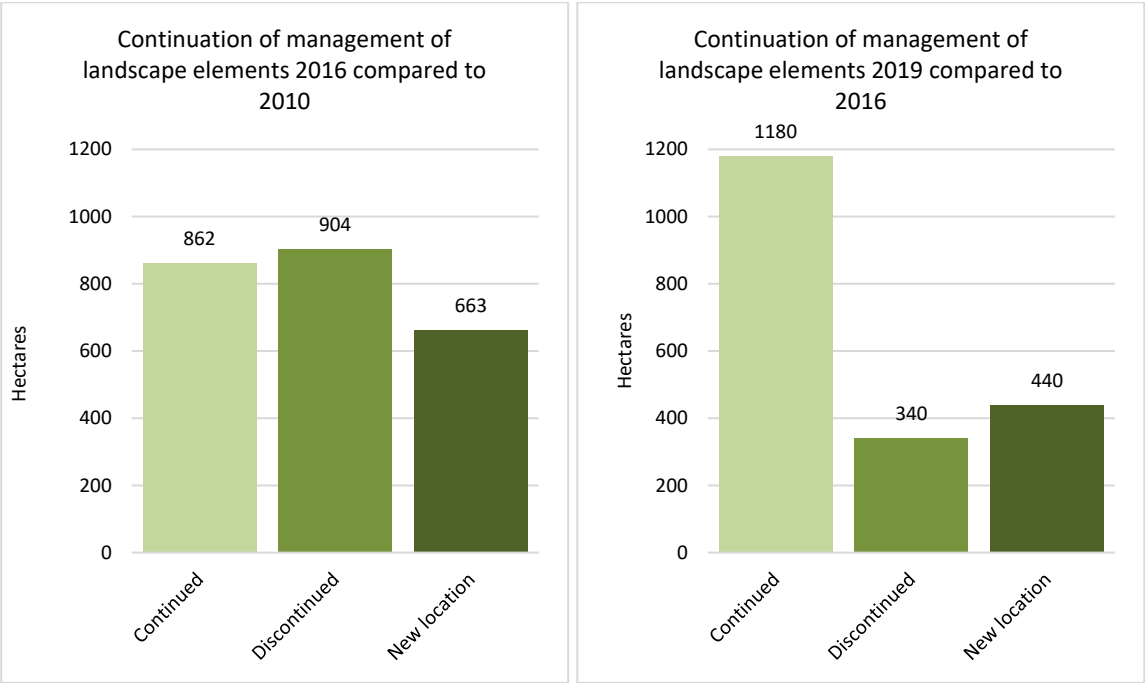


***Figure 5.8*** *Continued management of landscape elements for 2016 compared to 2010 (left) and 2019 compared to 2016 (right). The following conservation packages are included: 20 (coppice management), 22 (cut or trimmed hedge), 23 (thicket hedge), 24 (thicket margin), 26 (orchard), 27 (coppice), 28 (osier bed), 29 (woods). Light green is completely SNL-a, medium green is a mix of SNL-a and ANLM and dark green is almost completely ANLb (woods). Light green is completely SNL-a, medium green is a mix SNL-a and ANLM and dark green is almost completely ANLM*

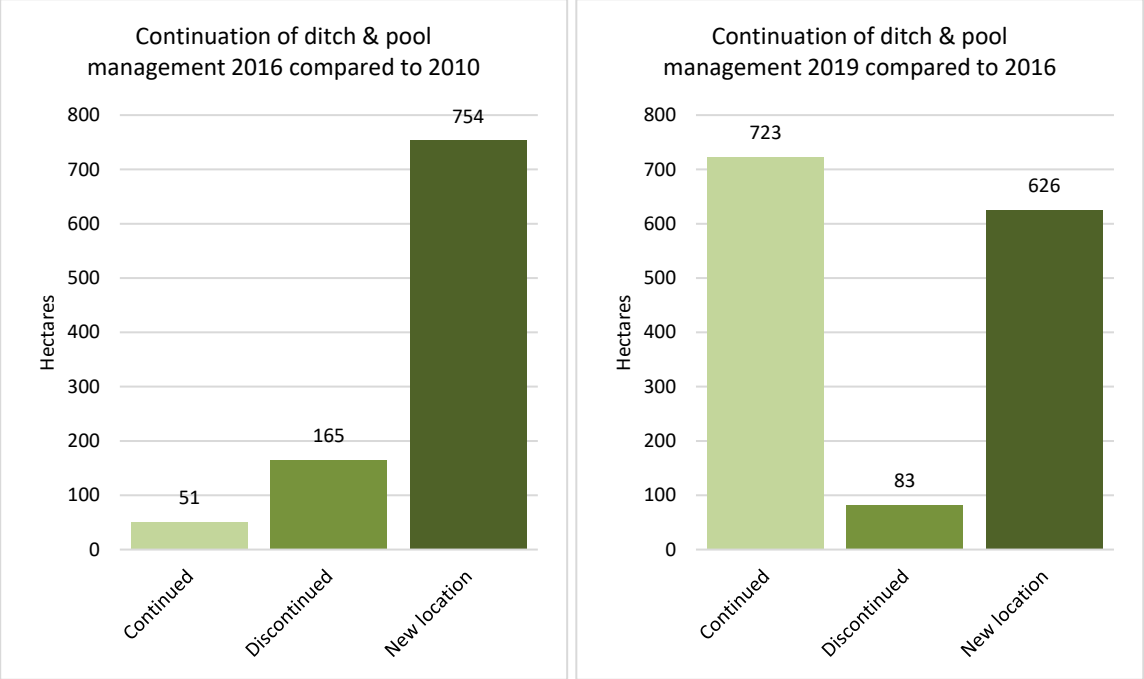


***Figure 5.9*** *Continuation of ditch and pool management for 2016 compared to 2010 (left) and 2019 compared to 2016 (right). The following conservation packages are included: 9 (pool and small historic body of water), 10 (nature-friendly bank), 11 (reed border and small reed plot), 12 (sustainable ditch management)*

## 5.5 Conclusions

- Compared to the previous scheme, species distribution data on meadow birds, and to a lesser extent field birds, is playing a greater role in defining and choosing sites for concluding conservation contracts. Consequently, it is plausible that the efforts of provinces and agricultural collectives will lead to a shift of management to locations where the birds actually reside.
- However, very little species distribution data is available for the habitats of green and blue infrastructure, partly because there is a much larger variety of species in these habitats that are not monitored nationally. For these habitats it is therefore unclear whether management is in the suitable location.
- To make an actual contribution to the WFD objectives, the measures from the water category are still insufficiently clustered and insufficient in size. In the next implementation period, regional water authorities expect to increasingly delegate management to specific locations.
- For open grassland, the focus is more on habitat quality than in the previous scheme. There is a trend towards more restrictive management measures and less clutch management. This approach often involves deferred mowing, sometimes combined with early season grazing and seasonally flooded grassland. However, this strategy does not improve habitat quality in the long term.
- Long-term habitat quality management is also implemented in open grassland, but is more difficult for many collectives to achieve than short-term habitat quality due to a lack of motivation among participants. This involves developing herb rich grassland, reducing fertilisation and raising the water table. These measures are difficult to incorporate into agricultural operations because they lead to structurally lower returns that are not reflected the corresponding payments. Moreover, the short duration of the ANLM contracts results in uncertainty.
- The spatial concentration of management for the open arable land habitats and green and blue infrastructure has improved compared to the previous scheme and during the implementation period of the ANLM. For open grassland there has also been a slight improvement during the ANLM, but the spatial concentration initially decreased somewhat when the scheme was introduced. This was probably due to the decreased number of hectares for which contracts could be completed during

the transition to the new scheme and the continuation of many contracts under the previous Nature and Landscape Scheme (SNL-a) that could not be shifted to the new scheme.

- The continuity of management of the ditches, ponds and landscape elements, and to a lesser extent open arable land and open grassland, has increased since the beginning of the scheme, when much management was repositioned. However, some meadow bird conservation measures were discontinued in the period 2016 to 2019 or were repositioned (rotated) to new locations. This rotation, which may be caused by agricultural collectives allowing management to move with the birds, means that it is not possible to work on developing long-term habitat quality at these locations.
- Many agricultural collectives regard predation pressure as the main cause of the low breeding success of meadow birds. Many predators are not allowed to be hunted. If at the end of the breeding season the breeding success is often insufficient; the participants may feel that all their efforts have been futile. This is a serious risk for motivation and willingness to participate in the ANLM.

# 6 Conclusions and recommendations

## 6.1 Introduction

When it was introduced in 2016, the expectations for the ANLM were high. Compared to the previous scheme, it was expected that far-reaching innovations in both the content and organisation of the policy would contribute to better feasibility, lower implementation costs, more effective focus on objectives and a greater contribution to the stabilisation of ANLM target species. Another expected difference was that the ANLM would contribute to the realisation of the WFD targets and robust water systems. In the concluding chapter of this interim evaluation, we take stock by examining the extent to which these expectations are being met, what the most important explanatory factors for this are and what options are available in the current and subsequent implementation period to increase feasibility, improve the focus on objectives and enhance the contribution to ecological conditions. The focus here is on current implementation and the questions 'are we doing things right?' and 'how could it be improved?'.

Since the introduction of the ANLM, developments in biodiversity on agricultural land have not stood still. Negative trends in populations of meadow birds, and to a lesser extent field birds, have fuelled the discussion about whether much greater efforts are needed to restore biodiversity on farmland. Nature-inclusive agriculture, eco-regulations in the CAP, the Delta Plan on Biodiversity Recovery and the Black-tailed Godwit Attack Plan are just a few examples of initiatives that have responded to this need. At the end of this report it is therefore important to reflect on the questions of whether we are doing 'the right things' with the ANLM, and on the basis of this evaluation, make conclusions about the renewal of biodiversity policy in agricultural areas. This concerns, for example, the suitability of the ANLM for the tasks it addresses, the possibilities that the ANLM offers to respond to new developments and the relationship with other policy instruments. The answers to these questions are essentially a reflection based on the findings of the evaluation. No additional research has been carried out into the recommendations formulated here.

In the remainder of this chapter we draw conclusions about and options for actions to improve feasibility (Section 6.2), focus on objectives (Section 6.3) and ecological conditions (Section 6.4). We conclude with a reflection on the ANLM in relation to the broader discussion about biodiversity in agricultural areas (Section 6.5).

## 6.2 Feasibility

**Clear roles for and cooperation between chain partners has contributed to greater feasibility**

The feasibility of the ANLM has increased compared to the previous scheme for agricultural nature and landscape management and has continued to develop during the implementation period. After four years it is clear who is responsible for what. Forty agricultural collectives have been created that work professionally on the implementation of the ANLM, take up new projects and enter into collaborative relationships. The roles of the other parties in the chain (Ministry of Agriculture, provinces, regional water authorities, BIJ12, the RVO, the NVWA and BoerenNatuur) have also largely crystallised. In addition, there is a strong drive among chain partners to make the scheme a success, and the willingness of farmers to participate has also increased. Besides the possibilities offered by the collective system, the general sustainability trend in agriculture also plays a positive role in this willingness to participate.

Cooperation in the implementation chain has also been enhanced. This is partly due to the overarching consultation groups such as the ANLM Management Consultation and the Agricultural Management Task

Force, in which ANLM-specific implementation issues can be discussed. However, the involvement of provinces in contacts with the EU about the scheme could be improved. These now take place largely through LNV, which is undesirable in view of the directing role of the provinces in implementation.

**Recommendation 1 (provinces):** Join forces with LNV in contacts with the EU about the contribution of the scheme to the BHD objectives, the development of the Common Agricultural Policy (CAP) and the audits of the European Commission.

**Regional water authorities, land management organisations (TBOs) and volunteer organisations are not fully-fledged chain partners**

After a slow start, the regional water authorities have now joined in, but are not yet functioning as fully-fledged chain partners at an overarching level. To enhance the synergy between habitat management, the water category and water policy, the involvement of regional water authorities in the various consultation bodies surrounding the ANLM should be strengthened at various levels.

As an organisation that represents volunteers, LandschappenNL has not been named as a chain partner, even though these volunteers play a crucial role in monitoring, with which they contribute to the desired 'learning from the results of conservation practices'. In addition, their position is vulnerable due to the ageing of their membership base. Moreover, the independence of volunteers is not guaranteed everywhere; due to a shortage of volunteers, tasks such as counter and field worker for the collective are sometimes combined. Clear agreements about the division of responsibilities, coupled with further professionalisation, are necessary to safeguard their contribution.

The TBOs have also not been given a formal role in the implementation of the scheme, although informal agreements were made in the run-up to the ANLM about cooperation and coordination of conservation activities between TBOs and collectives on the basis of equality. The cooperation that arises therefore often has an operational character and is highly dependent on the goodwill of people in an area. The cooperation between TBOs and the agricultural collectives can be strengthened by a combination of facilitation and formalisation.

**Recommendation 2 (chain parties):** Strengthen the cooperation with the Unie van Waterschappen (Dutch Water Authorities), TBOs and LandschappenNL as a representative of the volunteer organisations at an umbrella level.

**Recommendation 3 (provinces):** Invest in the professionalisation of volunteers and safeguard the independence of conservation monitoring.

**Recommendation 4 (provinces):** Facilitate and formalise cooperation between TBOs and agricultural collectives at the area level, for example by supporting the preparation of joint conservation management reports and management plans and setting additional requirements for these when granting subsidies to TBOs and agricultural collectives.

**Agricultural collectives have sufficient competence and resources to carry out tasks**

Agricultural collectives generally have sufficient competence and resources to carry out their coordinating and administrative tasks in the ANLM. However, the financial position of the collectives is vulnerable. This is primarily because payment for administrative tasks and conservation takes place after the end of the management year, which means that collectives have to pre-finance one year in advance. Because agricultural collectives were usually unable to finance this themselves at the start of the scheme, many provinces have provided interest-free loans to bridge the gap. They also have limited financial scope for knowledge development. No structural provision has been made within the ANLM for research and other knowledge activities, although there are substantial knowledge gaps (see also Recommendation 22).

**Recommendation 5 (LNV, provinces):** Within the subsidy framework for the new implementation period, provide possibilities for advance payment of the implementation costs of agricultural collectives with which they can bridge the period until disbursement of the subsidy and can operate with financial independence.

**Flexibility is limited by European regulations**

The ANLM offers more flexibility and scope for regional fine-tuning than the previous scheme. Provinces tend to govern more in broad terms, and agricultural collectives have various options for attuning conservation agreements to specific local circumstances, also during the growing season. However, these options are limited by European regulations. Administration, accountability and audits must take place at a very detailed level and changes in conservation activities must be communicated in a timely manner due to accountability and auditing obligations. In practice, for example, there is a need to be able to mow grassland earlier in the season if birds are still absent on the land on 15 June or to be able to mow strips of overly dense grass to benefit the mobility of chicks. The requirements for the activities for seasonally flooded grassland have also proved difficult to implement in practice, which leads to problems with the audits by the NVWA.

Due to the demands on accountability and auditing, in combination with the willingness to respond flexibly to the circumstances in the field, collectives experience a large administrative burden that is at the expense of their efforts to increase the quality of conservation activities. Moreover, this administrative burden is not proportional to the managed area of the various habitats and the water category. For example, green infrastructure, blue infrastructure and the water category entail higher administrative burdens per hectare than open grassland.

**Recommendation 6 (chain parties):** Work together on options for simplification of the scheme and reduction of administrative burdens for agricultural collectives. The following options (not an exhaustive list) have emerged in this evaluation:

- Merge green and blue infrastructure, as these habitats often overlap in terms of target species and conservation activities.
- Adapt the notification periods to enhance the flexible implementation of conservation measures.
- When formulating or reformulating the subsidy conditions for conservation activities, include verifiability as an important criterion and use the possibilities offered by satellite imaging, for example. This can reduce the required number of field inspections.
- Increase the effectiveness of the field inspections by improving the discussion with participants and addressing their comments about ascertained deviations.
- Designate nature-friendly banks and landscape elements as part of the agricultural parcels in the LNV reference layer of agricultural land, and prevent seasonally flooded grassland from not being regarded as productive agricultural land during audits. In this way uncertainty about the loss of hectare allowances among participants can be prevented.
- Synchronise chain processes, such as the timely implementation of changes in the reference layer of agricultural land of LNV, in order to reduce the number of error messages and necessary corrections.

**Recommendation 7 (LNV, provinces):** Discuss the proposals for simplification that require amendment of the European implementing regulation at an early stage with the European Commission.

**Self-governing capacity of agricultural collectives is increasing**

The self-governing capacity of agricultural collectives has increased. Besides performing their tasks in the ANLM in a professional manner, they have also contributed to the transition towards a more nature-inclusive agriculture. There are, however, differences between collectives in terms of professionalism and the extent to which they take on (or are capable of taking on) new activities. Improvements are possible in terms of strategy formation, separation of strategic management and operational organisation, clarification of task allocation with the Agricultural Nature Associations (ANVs), and scaling up and cooperation. Logically, the current organisational structure of most collectives is also based on their current role in the ANLM and not yet on broader ambitions. Aligning the organisational structure with new roles deserves attention, partly in light of the potential roles that collectives can play in the implementation of the eco-schemes in the new CAP.

**Recommendation 8 (agricultural collectives, BoerenNatuur):** Continue to focus on further professionalisation and adapt the organisational structure to broadened ambitions and roles.

## 6.3 Focus on objectives

**Greater focus on BHD target species than in the previous scheme**
The ANLM focuses more than the previous scheme on the BHD target species for open grassland and arable land habitats. This is because provinces make additional choices regarding target species that affect the selection and delineation of habitats, the assessment of area applications and the conservation choices of the agricultural collectives. The focus on objectives is greatest for open grassland, because collectives use up-to-date distribution data of species of concern and conservation monitoring to make conservation activities more targeted. Less current distribution data that collectives can use is available for open arable land. Also, they usually do not have access to the National Databank on Flora and Fauna (NDFF). Updating and expanding distribution data and improving the agricultural collectives' access to available data can increase the focus on objectives for open arable land.

Focus on objectives for the green en blue infrastructure is more difficult due to the great variety of target species and the resulting habitat requirements for these areas, the lack of clear eligibility criteria, more limited knowledge about the relationship between the conservation measures carried out and the occurrence of the target species and a lack of distribution data or access to this data. The exception is a number of focus species, such as the red-backed shrike, the hazel dormouse and the tree frog. For these species it is often known where they occur and what they need. Other priorities at provinces and/or collectives sometimes also play a role in the lack of focus on objectives for BHD species in these habitats, such as the contribution to broad biodiversity, support for connecting zones and landscape values. The focus on objectives in these habitats can be increased by directing conservation measures primarily at target species for which it is clear where they occur and what type of management they need in a specific location. To this end, agricultural collectives must have better access to the distribution data from existing monitoring networks, and these monitoring networks must be expanded on farmland. Management monitoring for these habitats should also be strengthened.

**Recommendation 9 (provinces, agricultural collectives):** Enhance the focus on objectives for the green and blue infrastructure by directing conservation measures at species for which it is known where they occur and what they need.

**Recommendation 10 (LNV, provinces, species organisations):** Expand the existing monitoring networks in the agricultural area for ANLM target species and give agricultural collectives access to the NDFF.

**Limited focus on objectives in the water category for the time being**
In the water category of the scheme, the focus on WFD objectives has been limited by the initial efforts of the regional water authorities to raise awareness among farmers and gain experience with the scheme, but it has increased due to the use of water measures to address water quality bottlenecks. To enhance the focus on objectives, in the subsequent implementation period the regional water authorities must clarify which objectives they are pursuing and where. This has been facilitated because the water quality bottlenecks in the agricultural system are now being identified more clearly. This focus on objectives may be at the expense of the possibilities of achieving synergy with the management of habitats, unless the regional water authorities choose to focus on WFD objectives within the boundaries of the habitats. This is also a point of attention if the ANLM is expanded in the subsequent implementation period with additional goals such as climate. The focus on separate objectives can come at the expense of achieving synergy between objectives. When synergy is desired, this must be actively managed at the 'front door' by provinces, regional water authorities and other stakeholders.

**Recommendation 11 (regional water authorities, provinces):** Enhance the focus on objectives in the water category by paying close attention to targets and locations where conservation activities are implemented.

**Long list of target species is difficult to deal with in practice**
The provincial practice of adding dozens of other provincial species to the selection of 68 BHD species poses a risk to the focus on BHD species for all four habitats. Moreover, the long list of BHD and

provincial target species is difficult to handle in practice and is therefore a paper tiger. The question is whether conservation activities contribute to the conservation of all these species, because in practice a limited number of these target species are prioritised, for example by designating guide species for open grassland. The designation of guide species does contribute to more focus and better manageability for collectives, but it is unclear to what extent the other target species benefit from the management of the guide species. Moreover, information is lacking about what the individual choices of provinces and collectives mean for the 68 species themselves. No agreements were made about these choices between the provinces in advance and there was no feedback about the combined effect of the provincial choices.

To enhance the focus on objectives, the provinces must critically examine the list of BHD target species and provincial species and provide insight into what they really want to aim for with the ANLM in practice. After this, an analysis is needed of other species that demonstrably benefit from measures for the prioritised guide species. Based on this information, the list can be limited to prioritised species and other species that benefit from the same measures. This creates clarity and prevents false expectations. The focus on objectives can be further enhanced if the provinces coordinate their priorities, jointly identify what the prioritised target species need and which measures should be used for this. Based on this information, the current allocation of ANLM resources between the habitats and provinces can be examined.

**Recommendation 12 (provinces):** Restrict the list of target species to priority species and species that demonstrably benefit from measures for the priority species, and coordinate these choices between provinces.

**Recommendation 13 (provinces):** Request independent advice about the required commitment for the priority species and determine the significance of this for the allocation of resources between the habitats and the provinces.

## 6.4 Ecological conditions

**Required scope of conservation effort is unclear**
Although the ANLM focuses on the conservation of BHD target species, the scope of the conservation effort that is required to reverse the negative trends for these 68 species has never been clarified. Scenario studies have been conducted on meadow birds and field birds (Melman and Sierdsma, 2017; Klaassen et al., 2020), but they do not provide a direct answer to the question of what the required area for the ANLM should be and when it is sufficiently effective, partly in relation to other policy instruments that are used for these objectives.

The current scope of the ANLM and the size of the budget are expected to be insufficient to reverse the negative trends and thus ensure a beneficial conservation status for the 68 target species, but the difference between the current and required scope is unclear. This makes it difficult to make recommendations for scaling up. However, agricultural collectives do see opportunities for increasing the managed area from 75,000 hectares in 2018 to approximately 102,000 hectares in 2027. For this, the budget would have to increase from €59 million in 2019 to €110 million in 2027. In particular, they see opportunities for expanding conservation activities in the arable land habitat and green infrastructure (Faber et al., 2020).

**Recommendation 14 (chain parties):** Partly in relation to other policy instruments, determine the required scope of the ANLM and the size of the budget that is needed to achieve a beneficial conservation status for the 68 BHD target species and to attain the WFD goals, and then formulate realistic objectives for the ANLM on that basis.

**More conservation management at the suitable location**
For the open grassland and arable land habitats, it is likely that the efforts of provinces and agricultural collectives have contributed to increased conservation activities in areas where the target species are located. The reason is that distribution data from meadow birds and, to a lesser extent,

field birds, have played a greater role in delineating and choosing locations for concluding conservation contracts than in the previous scheme. Less distribution data is available for the green and blue infrastructure habitats, partly because the number and variety of species involved is greater. It is therefore largely unclear for these habitats whether the management is at the suitable location within the habitat boundaries. For an effective contribution to the WFD objectives, the measures from the water category are still not implemented sufficiently at locations with water quality bottlenecks, and the scope of the measures is inadequate. In the next implementation period regional water authorities expect to focus more on specific locations because they now have more insight into where the bottlenecks are located in the agricultural area.

**Recommendation 15 (agricultural collectives, provinces):** For the green and blue infrastructure habitats, invest in monitoring the target species to gain insight into where the species really are and what they need. Deploy this knowledge for the more location-specific use of appropriate conservation measures or combinations of measures.

**Limited suitability of management for long-term habitat quality of open grassland**
For open grassland, there is more emphasis on heavily restricted management and less on clutch management than in the previous scheme. This approach often involves deferred mowing, sometimes combined with early season grazing and seasonally flooded grassland. However, this strategy generally does not improve habitat quality in the long term, as standard farming practices are resumed after the rest period to avoid a decline in agricultural production. Agricultural collectives also focus on long-term habitat quality, for example by concluding conservation contracts for the development of herb rich grassland, reducing fertilisation and raising the water table, but to a much lesser extent. Obstacles to a greater commitment to long-term habitat quality are the compatibility with the participants' agricultural operations and the absence of a favourable starting situation. Raising the water level requires the cooperation of adjacent landowners and the regional water authority, which makes it difficult. Moreover, stakeholders report that the payment for herb rich grassland is currently insufficient to compensate for the annually declining production that occurs if the measures are continued over the long term.

**Recommendation 16 (provinces, agricultural collectives):** Increase the emphasis on conservation measures that ensure a long-term improvement of the habitat quality and investigate how these measures can fit better into farming practices.

**Mixed results for spatial concentration of management and continuity of management**
The spatial concentration of management for the open arable land habitats and green and blue infrastructure has improved compared to the previous scheme and during the implementation period of the ANLM. For open grassland there has also been a slight improvement during the ANLM, but the spatial concentration initially decreased somewhat when the scheme was introduced. This was probably due to the decrease in the number of hectares for which conservation contracts were concluded during the transition from the previous scheme and the continuation of many SNL-a contracts that could not be shifted to the new scheme.

The continuity of management of ditches and pools and landscape elements, and to a lesser extent arable land and open grassland, has increased since the beginning of the scheme, when much management was relocated. However, some meadow bird management was discontinued in the period 2016 to 2019 or was repositioned. This rotation, which may result from agricultural collectives allowing conservation activities to move with the birds, means that it is not possible to work on developing long-term habitat quality at those locations.

**Recommendation 17 (provinces, agricultural collectives):** Focus more on the formation of large clusters with restrictive meadow bird management where management is continued for many years.

**Recommendation 18 (agricultural collectives):** Clustering in open grassland habitat can be promoted by adding a supplement to the payment for farmers who implement heavily restricted management continuously on an area of a certain scale.

**Optimise conservation activities by learning from and sharing results**
Continued enhancement of the ecological conditions is possible by learning more from the results of conservation practices. For example, for open arable land, even more can be learned about 'effective management at the suitable location', by linking monitoring data to the implemented measures. More attention to habitat quality instead of counting species is potentially an important addition to conservation monitoring. The expert circles in which people learn from each other in each habitat are promising initiatives for enhancing the knowledge about effective conservation measures among the collectives and participants, because the approach and results can be compared. A stronger link with national species monitoring networks can help with this process. Experimenting with different conservation measures can also contribute to learning about more effective management. For open arable land, modified measures and monitoring aimed at a single target species, as is the case in the Partridge Project, offers interesting starting points for optimisation. This also applies to green and blue infrastructure; due to the large variety of species, more species-specific measures are required. It is increasingly apparent that many species may occur in the same landscape type, but do not have the same habitat requirements and do not always benefit from the same measures.

**Recommendation 19 (agricultural collectives, BoerenNatuur):** Continue to focus on learning from the results of conservation practices and sharing knowledge by combining data from different sources, paying more attention to habitat quality in conservation monitoring and using experiments, species-oriented projects and knowledge circles.

## 6.5 Policy renewal

The proposed improvements in section 6.4 are aimed at strengthening the ANLM. They build on the experience gained in the implementation of the scheme over the past five years. The proposals for clearer specification of roles and responsibilities, continued simplification, greater focus on objectives and optimising conservation practices are largely feasible within the context of the current scheme and/or can be included in the National Strategic Plan and the associated subsidy framework.

However, within the context of the current system it is expected that the above proposals will not be sufficient to reverse the negative trends for many target species and to actually improve water quality sufficiently. The ANLM contributes to conserving target species and improving water quality, but more is needed to achieve the objectives. In addition, new developments are taking place in policies for climate, water management and nitrogen emissions that provide both opportunities and threats for the focus on ANLM objectives. Below we reflect on the possibilities of supporting policy for the target species, new instruments and embedding the ANLM in broader area-oriented processes.

### 6.5.1 Reinforcing the ANLM with supporting policy

**Spatial design measures are also needed to improve habitat and water quality**
The ANLM is essentially a subsidy for lost income and additional costs resulting from conservation activities that benefit the creation of habitats for target species. It is clear, however, that conservation measures alone are not sufficient to stabilise the populations of target species. For example, due to further scaling up and intensification of agriculture, the gap between what target species need and current agricultural practice has grown wider. As a result, the starting situation for agricultural nature and landscape management has not only deteriorated, but conservation measures have also become less effective. To improve habitat quality and increase the effectiveness of conservation measures, implementation measures are therefore necessary in many cases. For meadow bird areas, this mainly concerns raising the water table. This is difficult for many farmers to integrate into their current practices and requires exemptions from the water table decisions of the regional water authorities, which the individual collectives must apply for. However, actually raising the water tables requires more structural and area-wide changes in water management. This is the responsibility of the provinces and the regional water authorities.

**Recommendation 20 (provinces, regional water authorities):** Initiate a process to work out an area-based increase in water tables for meadow bird core areas.

**Predation management in combination with monitoring**

Predation pressure has increased sharply in the Netherlands since 2000 (Teunissen et al., 2020). Many agricultural collectives in the meadow bird provinces in particular are concerned about this increased predation pressure. They currently see predation as the main factor that negatively affects the breeding success of meadow birds. If predation does not decrease, they feel that their efforts will be futile. Despite the best efforts of the participants, excess predation leads to insufficient breeding success. Because developing large core areas with good habitat quality that are less sensitive to predation is a long-term process, it is important to reduce the predation pressure in the short term. Collectives can monitor which predators are involved and, in collaboration with provinces, TBOs, species organisations and the wildlife management units (WBEs), draw up plans for predation prevention and management. Although many collectives already conduct predation management, their options are limited by regulations. It is clear that this is a topic for supporting policy that needs further elaboration, not only to increase breeding success, but also to prevent the continued predation losses from leading to a lower willingness to participate in the ANLM because participants lose their motivation.

**Recommendation 21 (provinces, agricultural collectives, TBOs, WBEs, species organisations):** Collaborate on predation management and prevention plans based on predator monitoring.

**Also use provincial land instruments for ANLM**

Another category of supporting policy that can be used to strengthen the ANLM involves the provincial land instruments. In the current situation, land acquisition, reallotment and farm relocation are instruments that the provinces use for the realisation of the Nature Network, but only in very exceptional cases for strengthening the habitats of the ANLM. The realisation of larger, more cohesive clusters of meadow and field management can benefit from the use of such land instruments to ensure that skilled farmers end up in the suitable location and/or can further adapt their agricultural operations to the needs of target species, for example by using compensation land to maintain production capacity.

**Recommendation 22 (provinces):** Expand the possibilities of using the provincial land instruments to enhance the habitats of the ANLM.

**Strengthen area-specific knowledge development**

Knowledge is an important instrument for achieving the objectives. However, structural knowledge provision is not included in the ANLM. Particularly for the green and blue infrastructure habitats, only limited knowledge is available about the requirements that target species place on their habitat and about the relationship between conservation measures, the quality of the habitat and the occurrence of species. To a lesser extent, this also applies to the arable land habitat. For the water category as well there is a need for knowledge development about the relationship between measures and water quality. Besides generic knowledge development based on research on a national scale, it is important that knowledge is developed for situations in specific areas. This knowledge development is now often lacking, which means that the applicability of the insights developed falls short. To enhance the use of knowledge in practice, it is important that agricultural collectives, participants and volunteers develop area-specific knowledge themselves, for example by learning from the results of conservation practices, and that they have opportunities to deploy experts with area-specific knowledge. There is still room for this within the maximum percentage for overhead.

**Recommendation 23 (LNV, provinces, regional water authorities):** Invest in knowledge development and sharing knowledge about aspects such as the relationship between measures, the quality of the habitats and water quality, especially for the green and blue infrastructure habitats and the water category.

**Recommendation 24 (collectives):** Commit more to developing area-specific knowledge by learning from the results of conservation practices, supplemented by the deployment of external experts with area-specific knowledge.

**Generic policy can contribute to improving basic ecological quality**
Besides supporting policy for the habitats, there is also generic policy, such as more restrictive legislation on fertilisation and the eco-schemes in the new CAP. These policies potentially contribute to making agriculture more sustainable and thus to increasing the basic ecological quality of the rural area and reducing the gaps between current agricultural use, the needs of target species and the water quality objectives of the ANLM.

**Recommendation 25 (LNV, provinces):** Deploy the eco-schemes to replace conservation measures that will be terminated when target species are further prioritised in the ANLM, but that can make a substantial contribution to the basic ecological quality of the rural area. Guarantee the deployment of available knowledge and provide effective guidance in the implementation of these measures.

### 6.5.2 New instruments for critical species

**Policy intensification needed for 'nature farming'**
From an ecological perspective, the open grassland habitat requires more heavily restricted management measures, continuity of conservation activities, enlargement of core areas, openness of the landscape, limitation of fertiliser use and nutrient stripping (see, for example, Aanvalsplan Grutto, 2020). This brings the limits of the ANLM into view: it is a voluntary instrument that must be compatible with standard agricultural practice. The measures mentioned above can only be used to a limited extent in standard agricultural practice. For example, a substantial increase in the proportion of extensive herb rich grassland requires modifications to farming practices such as new breeds of cattle, a different feed strategy and another type of value chain. Such far-reaching adaptations cannot be expected from farmers on the basis of a voluntary scheme with compensation for loss of income per hectare and short-term contracts.

This raises the question of what the possibilities are of new instruments that support far-reaching adaptations in farming practices towards 'nature farming', such as transition schemes and long-term private law agreements on land use linked to depreciation and new revenue models (PBL and WUR, 2020; Westerink et al., 2019).

**Recommendation 26 (chain parties):** Investigate the possibilities of new policy instruments and types of financing that support integration of more demanding types of management aimed at preserving the more critical species in the open grassland habitat.

### 6.5.3 Synergy with other tasks in area processes

Making agriculture more sustainable is not only important for the conservation of ANLM target species and water quality objectives. A broader societal interest is also involved. Various challenges require making agriculture more sustainable, such as climate adaptation, $CO_2$ reduction, increasing general biodiversity, improving the quality of groundwater and surface water, preventing soil subsidence, improving soil quality and reducing nitrogen emissions. The ANLM currently functions as a relatively independent scheme with its own objectives, regulations and implementing organisations, but cannot be seen in isolation from these other tasks. These can be both an opportunity and a threat, depending on how they are addressed. It is therefore important to look at the objectives and measures of the ANLM from a more integral perspective. An comprehensive area-oriented approach offers starting points for attaining synergy between the ANLM and other endeavours. As part of their environmental policy, the provinces are ideally suited to take this role. The ANLM can then be seen as one of the instruments for achieving joint objectives in specific geographical areas. Besides a broader interpretation of the province's directing role, this perspective requires a reorientation of the agricultural collectives: do they remain mainly associated with the implementation of the ANLM or do they develop into broader, area-based collectives that are committed to comprehensive area-based objectives in which other non-agricultural parties from the area also participate?

**Recommendation 27 (provinces):** Make the ANLM part of comprehensive area-oriented processes in the context of provincial environmental policy.

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| Arjan Mulder | Participating farmers |
| Marielle Oudenes-Graveland | Agrarisch Collectief Krimpenerwaard |
| Marinus Rooken | Agrarisch Collectief Krimpenerwaard |
| Rob Schmidt | Participating farmers |
| Wim Twisk | Hoogheemraadschap Schieland en Krimpenerwaard |
| Jort Verhulst | Province of South-Holland |
| Antonie Vonk Noordegraaf | Agrarisch Collectief Krimpenerwaard |

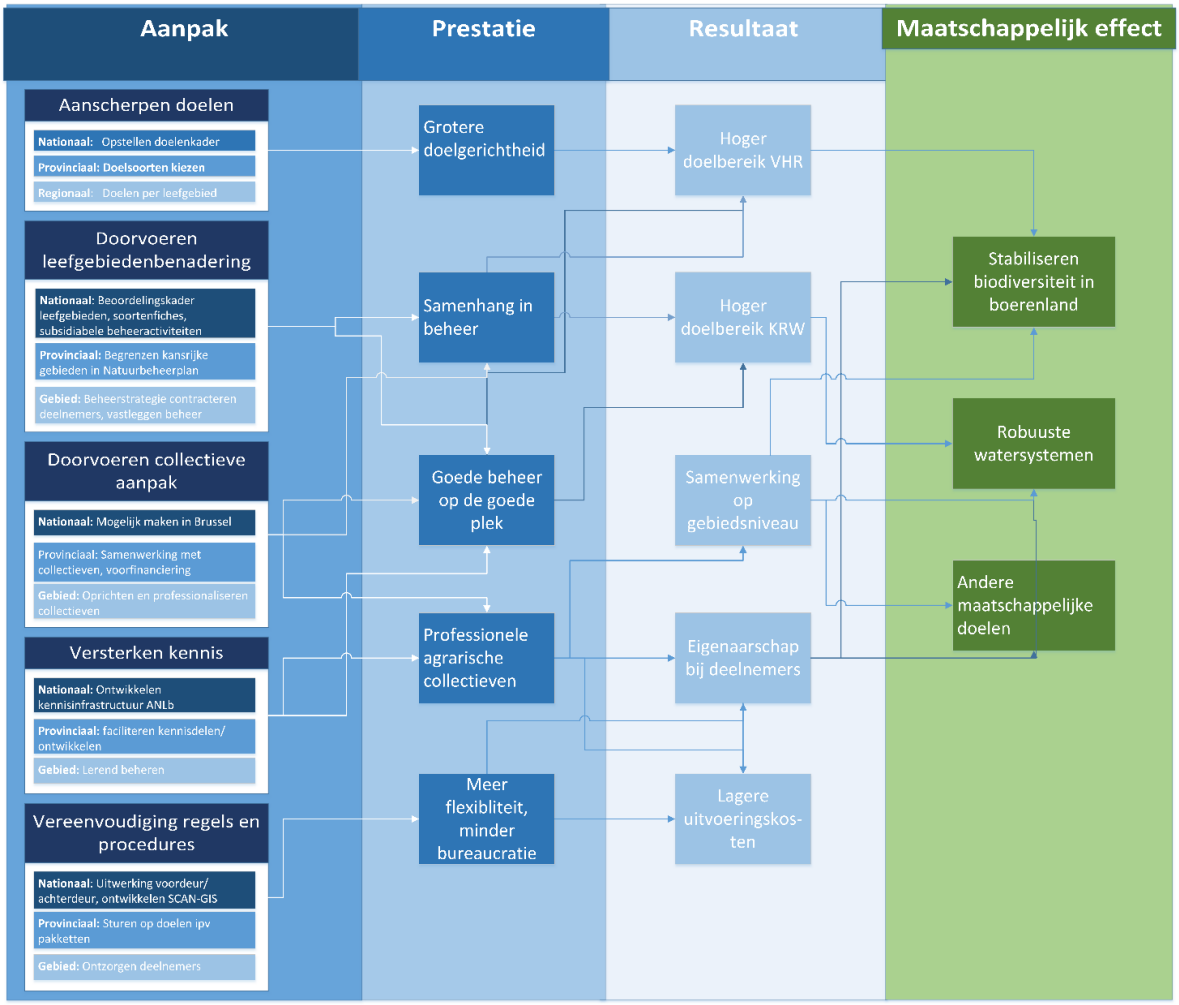
**Case Westergo**

| | |
|---|---|
| Gerard van Asselt | ANC Westergo |
| Jaap Boersma | WBE Gaasterland |
| Jetze Genee | Province of Friesland |
| Thom Miedema | Participating farmers |
| Berend Santema | ANC Westergo |
| Gabe Schaaf | ANC Westergo |
| Sybe van der Schaar | ANC Westergo |
| Joca Jansen | Wetterskip Fryslân |
| Steven Strikwerda | Participating farmers |

**Focus group**

| | |
|---|---|
| Martine Bijman | Water, Land & Dijken |
| Wico Dieleman | Stichting ZeeBra |
| Willemien Geertsema | BoerenNatuur |
| Harm Kossen | Natuurrijk Limburg |
| Ed de Meijer | De Groene Klaver |
| José van Miltenburg | Collectief Rijn, Vecht en Venen |
| Sybe van der Schaar | Kollektivenberied Fryslân |
| Marjon Schultinga | BoerenNatuur Groningen |
| Wim Tijsen | Landschap Noord-Holland |
| Joachim van der Valk | BoerenNatuur Overijssel |
| Hans Veurink | Collectief Veluwe |
| Cees Witkamp | Vogelbescherming |
| Rene Vree Egberts | Agrarische Natuur Drenthe |
| Evelien Verbij | BoerenNatuur |
| Wim Stegeman | Flevolands Agrarisch Collectief |
| Theo Vogelzang | LandschappenNL |

# Annex 4 Intervention logic ANLM



# Annex 5 Spatial analysis method

This annex describes the methods used in the various parts of the spatial analysis from Chapter 6.

**Size of managed area**

*Method*
For the situation in 2010, the so-called BOK-PEIL file [version 31-12-2010, RVO] was used for the individual decisions. For collective decisions, the collective management file was used [version 20100310, RVO]. For the ANLM, two files with established management for management years 2016 and 2019 of the RVO were used. Both files also include ongoing and expiring management from the previous SNLa scheme (in 2016 this was still 26% of the total in 2016 and in 2019 4%).

*Technical details*
- For the spatial analysis of agricultural nature and landscape management, the polygon GIS files were converted to raster files with a cell size of 5 by 5 meters. The overlap between various objects (or object types) which is sometimes present has been eliminated and the grid is a correct measure for the net managed area for this management year.
- For the ongoing agricultural nature and landscape management from 2010, data were collected from 'Beheer op Kaart' (Management on the Map); the SAN/SNLa codes were converted into ANLM codes for comparability. The expertise from the ex-ante evaluation in 2016 was used for this purpose (Melman et al., 2016), where a type of habitat was determined for each package.
- For the location of nature reserves, the management-type codes from IMNa were used (e.g. N13.01 Wet meadow bird grassland).

**Spatial concentration**

*Method*
To measure the spatial concentration of agricultural nature and landscape management, a distance (radius) was chosen within which the spatial concentration was calculated. It was not possible to arrive at a uniform measurement that fits the entire set of target species because the species differ too much. We therefore decided to perform the analysis with a radius of 500 meters, in accordance with the approach used in the 2016 evaluation (Melman et al., 2016). Since this involved determining the changes in the spatial concentration with which the management is carried out, the chosen distance is of less importance. After an exploration with different calculation distances (1000 meters and 2000 meters) it appeared that the chosen distance makes little difference. The exact numbers are different, but the relative differences between the years remained virtually the same.

The proportion of managed area (in percentages) within a radius of 500 meters was calculated using a 'focal statistics' function that resulted in a map image that showed the proportion of the surroundings being managed in a radius of 500 meters for each 5 by 5 meter cell.

*Technical details*
With regard to the analysis performed, the following technical details should be noted:
- Selection of conservation packages: the analysis included all packages that have a substantial influence on habitat quality. The following packages were therefore not included in the spatial analysis: 2 (rearing areas), 4 (clutch management), 7 (rough manure), 34 (espaliered trees on historic farms), 36 (management of separate ground water tables), 37 (infiltration ditch management), 39 (soil improvement).
- Habitats: for the overviews per habitat we used the designations of the collectives themselves that were entered in the column 'habitat type' in the management files.

**Interweaving habitat elements**

*Method*
We examined which habitat elements allocated to different habitats were located in close proximity to each other. This applies in particular to the following two combinations of habitat elements: 1) ditches and grassland and 2) landscape elements (hedge banks, hedges, etc.) and grassland and arable land. Both elements are described separately below.

Ditches & grassland

*Method*
First of all, the ditches were classified according to the type of agricultural nature and landscape management being implemented. The ditches where grassland management was implemented within 25 meters were marked as 'intertwined'. Elements to which this does not apply were marked as 'non-intertwined'.

*Technical details*
The following conservation packages were included in the analysis:
- Ditches: 9 (pool and small historic body of water), 10 (nature-friendly bank), 11 (reed border and small reed plot), 12 (sustainable ditch management).
- Grassland management: 1 (rest period), 3 (seasonally flooded grassland), 5 (herb rich grassland), 6 (extensively grazed), 13 (botanical grassland), 31 (insect-rich grassland parcel), 32 (insect-rich grassland margin), 41 (development of herb rich grassland).

Landscape elements & grassland and arable land management

*Method*
First of all, the landscape elements were classified according to the type of agricultural nature and landscape management being implemented. The landscape elements for which grassland or arable land management is implemented within a radius of 25 meters were marked as 'intertwined'. Landscape elements to which this does not apply were marked as 'non-intertwined'. For each province, the proportion in the 'intertwined' category was calculated.

*Technical details*
- Selection of conservation packages: the following packages were included in the analysis: Landscape elements 20 (coppice), 21 (rows of trees), 22 (pruned and trimmed hedge), 23 (thicket hedge), 24 (thicket margin), 25 (tree on agricultural land), 26 (semi-standard and standard fruit trees), 27 (coppice grove), 28 (osier bed), 29 (grove), 35 (sandbanks)
- Grassland and arable land management: 1 (grassland with rest period), 3 (seasonally flooded grassland), 5 (herb rich grassland), 6 (extensively grazed), 10 (nature-friendly bank), 13 (botanical grassland), 14 (stubble), 15 (winter food field), 16 (bird field), 17 (arable land for hamsters), 18 (herb rich arable land), 19 (herb rich arable land margin), 31 (insect-rich grassland), 32 (insect-rich grassland margin), 40 (bird grain), 41 (development of herb rich grassland).

**Spatial connection of agricultural nature management aimed at meadow birds and meadow bird reserves (N13.01)**

*Method*
This analysis shows to what extent agricultural nature management aimed at meadow birds and meadow bird reserves is spatially connected and how this connection has changed over the years. The extent to which meadow bird reserves and agricultural nature management are connected was analysed by calculating the proportion (%) of the grasslands near meadow bird reserves (N13.01 wet meadow bird grassland) on which agricultural nature management is carried out. A radius of 500 meters was used. Low percentages indicate a situation in which the two do not match or match only slightly. High percentages indicate situations in which the two match each other well.

*Technical details*

With regard to the analysis performed, the following technical details should be noted:

1. Filter: when calculating the above percentage, a filter was used that included only agricultural land. This step was built in because nature areas sometimes border on areas where agricultural nature management is impossible (the sea, lakes, urban areas, highways, etc.). If this filter was not applied, the results would be incorrect (too low). The filter was based on LGN7. All elements not related to agricultural land (e.g. large bodies of water, roads, built-up areas) have been removed, leaving only agricultural land.
2. Selection of conservation packages: the following packages were included in the analysis:
   - Heavily restricted management: 1 (rest period), 3 (seasonally flooded grassland), 5 (herb rich grassland), 6 (extensively grazed), 8 (high water table), 13 (botanical grassland)
   - Light management: 2 (rearing areas), 4 (clutch management)
   - Heavily restricted field management relevant for meadow birds such as lapwing, oystercatcher and skylark: 16 (bird field), 18 (herb rich arable land), 19 (herb rich arable land margin)

**Continuity**

*Method*

The continuity of management – the extent to which management is carried out in the same place from year to year – was analysed by combining the management layers from 2010 and 2016. The same was done with the management layers from 2016 and 2019. Only heavily restrictive conservation packages were included, because this type of conservation ideally benefits habitat quality in the long term. For lighter forms of management – such as rearing areas and clutch management – the continuity of management is less important, because these packages have no influence on the habitat quality, even if they are implemented at the same location for years.

Using the above method, locations have been identified where:

- Management was discontinued (heavily restricted management in year 1, not in year 2);
- Management was continued (heavily restricted management in both year 1 and year 2);
- Newly implemented management (no heavily restricted management in year 1, but starting in year 2).

As described previously, the extent to which rotation is a problem is strongly related to the habitat. For example, packages aimed at the development of herb rich grassland benefit more from years of continuation at the same location than average field margin management (although this is also related to the intended purpose of the field margin: does this only provide seed for seed-eating birds or does it provide suitable reproductive habitat for insects?). Given this qualification, the analysis could not be performed by including all the heavily restricted management measures in a single analysis. We therefore conducted various sub-analyses (see table below), always including a combination of packages that represent a particular habitat and that would benefit from continuation.[10]

[10] In this analysis it was not possible to work only with the column 'habitat' as indicated by the collectives. This is because packages that rotate by definition would have also been included, such as clutch management, rearing areas, etc.

| Sub-analysis | Package code | Package |
|---|---|---|
| Arable land management | 15 | Winter food field |
| | 16 | Bird field |
| | 17 | Arable land for hamsters |
| | 18 | Herbaceous arable land |
| | 19 | Herbaceous arable land margin |
| Grassland management: | 3 | Seasonally flooded grassland |
| | 5 | Herbaceous grassland |
| | 13 | Botanically valuable grassland |
| | 31 | Insect-rich grassland parcel management |
| | 32 | Insect-rich grassland margin |
| | 41 | Development of herb rich grassland |
| Landscape element management | 20 | Coppice management |
| | 22 | Pruned or trimmed hedge |
| | 23 | Thicket hedge |
| | 24 | Thicket margin |
| | 26 | Semi-standard and standard fruit trees |
| | 27 | Coppice grove |
| | 28 | Osier bed |
| | 29 | Grove |
| Management of ditches/pools | 9 | Pool and small historic body of water |
| | 10 | Nature-friendly bank |
| | 11 | Reed margin and small reed parcel |
| | 12 | Sustainable ditch management |

With regard to continuation of management, it can be noted from the table above that a number of packages have not been included in the analysis:

- *1 (grassland with rest period)* →→→ This package was not included in the analysis with regard to the continuation of management because the management requirements that are imposed on this package are not aimed at improving the habitat quality over the years (no restrictions on fertilisation outside the management period).
- *14 (stubble land)* →→→ To optimise the habitat quality of stubble land, it is not necessary to implement the measure on *the same parcel* for many years.
- *40 (bird grain)* →→→ To optimise the habitat quality of bird grain parcels, it is not necessary to implement the measure on *the same parcel* for many years.

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