# FARMING FOR NATURE

## THE ROLE OF RESULTS-BASED PAYMENTS

EDITED BY

EILEEN O'ROURKE & JOHN A. FINN

# FARMING FOR NATURE

## THE ROLE OF RESULTS-BASED PAYMENTS


EDITED BY

EILEEN O'ROURKE & JOHN A. FINN

CONTRIBUTORS

Andy Bleasdale • Amanda Browne • Dolores Byrne

Padraig Cronin • Brendan Dunford • John A. Finn

Kathryn Finney • Caitriona Maher • Patrick McGurn

James Moran • Derek McLoughlin • Gráinne Ní Chonghaile

Richard O'Callaghan • Barry O'Donoghue

Eileen O'Rourke • Sharon Parr • Paul Phelan

First published in 2020 by
Teagasc and National Parks and Wildlife Service (NPWS)

Teagasc
Johnstown Castle, Wexford, Y35 TC97, Ireland
www.teagasc.ie

National Parks & Wildlife Service
90 North King Street, Smithfield, Dublin 7, D07 N7CV, Ireland
www.npws.ie



ISBN 978-1-84170-663-4

British Library Cataloguing in Publication Data
An entry can be found on request

Library of Congress Cataloging in Publication Data
An entry can be found on request



Design and setting: edit+ www.stuartcoughlan.com
Cover design: edit+ www.stuartcoughlan.com
Typeset in Adobe Garamond Pro

Printed in Ireland by Think Print & Design


An Roinn Cultúir,
Oidhreachta agus Gaeltachta
Department of Culture,
Heritage and the Gaeltacht

# CONTENTS

9

# REFLECTIONS AND SYNTHESIS OF SELECTED RESULTS-BASED APPROACHES IN IRELAND

JOHN A. FINN

## INTRODUCTION

The primary source of funding for biodiversity conservation and ecosystem services in the EU comes from agri-environment policies. It is clear, however, that the business-as-usual, 'one-size-fits-all' EU approach has failed to deliver the best biodiversity and ecosystem services outcomes, despite their considerable financial costs. Although EU agri-environment schemes have changed over time, they remain action-based, and there is a general acceptance among researchers and policymakers that agri-environment schemes need to be more focussed and better targeted to deliver verifiable results (ECA, 2011). The next stage in the development of such schemes is to incorporate results-based approaches and payments. The Irish programmes and case-studies described in this book provide applied research on how to achieve this. All the case-studies focus on areas of high nature value, many being Natura 2000 sites, and all are intimately linked with extensive farming systems.

Here, I identify and collate some common themes from these case studies, to share good practice and facilitate the broader adoption of results-based approaches in Ireland and, indeed, further afield. I outline some of the key features of locally-led results-based approaches that contribute to their environmental effectiveness. I explore some of the themes that may guide where results-based approaches, action-based approaches or a hybrid of the two may be most applicable. To this end, I discuss the various forms

> **The next stage in the development of such schemes is to incorporate results-based approaches and payments. The Irish programmes and case-studies described in the book provide applied research on how to achieve this.**

of targeting that are achieved through a locally-led approach, and which complements the results-based approach. I discuss the distinct features of the design, implementation and monitoring of results-based approaches, and the relative distribution of transaction costs. I conclude by considering the application of hybrid approaches that combine features of results- and action-based approaches.

## OVERVIEW OF CASE STUDIES

In this section, I briefly review the case studies and select some key points and lessons from each in turn. The review of literature by Eileen O' Rourke (Chapter 2) established that:

- Biodiversity is widely threatened. Payments from EU DG Agriculture can play an essential role in supporting biodiversity if allocated appropriately. There is greater recognition of the role of public payments for environmental public goods;
- Current action-based agri-environment schemes are widely implemented. They also widely vary in the extent to which they are sufficiently monitored to assess the degree to which biodiversity objectives are achieved;
- There is limited evidence to show whether action-based schemes have had a strong effect on long-term farming behaviour and culture;
- Successful examples of results-based approaches are known, but are not yet widely implemented;
- Results-based approaches have their own set of pros and cons. In comparison to action-based programmes that have lower transaction costs (but are less likely to deliver the intended objectives), results-based approaches (that may have higher transaction costs in some cases) that deliver their objectives should therefore deliver overall better value-for-money.

In the first case study from the **Burren Programme** (Chapter 3), this long-running hybrid programme provides several key lessons:

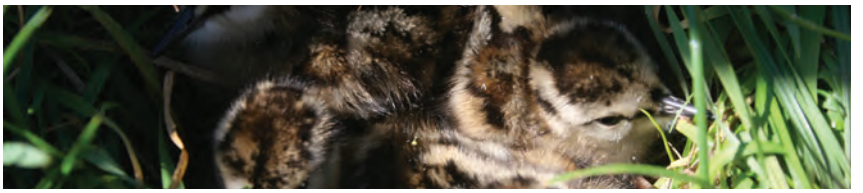
- A results-based approach was successfully designed and implemented. It integrated the needs of participant farmers, scientists (who design, implement and monitor the programme), and policymakers (who need to deliver biodiversity objectives with a valid, compliant and verified programme);
- Scientifically validated indicator plants and scoring systems were developed, implemented and the farmer payments were related to scores;
- The succesful approach in the Burren Programme involved a hybrid model of results-based payments in combination with payments for capital works (non-productive investments). Interestingly, the capital works were co-funded both by the Programme and individual farmers through different co-funding rates that depended on the nature of the investment. The strategy helped increase the relevance and benefit of the investment;
- The programme delivered national-scale biodiversity objectives because of its focus on priority habitats that reflect vital objectives within the Irish Prioritised Action Framework;
- Regular and appropriate monitoring:
  - demonstrated to farmers and the wider community that their efforts can be effective and can justify their higher payments,
  - Informed scheme designers how to adapt to meet new challenges and facilitate iterative improvements over time,
  - demonstrated effectiveness and efficiency to scientists, policymakers and budget holders.
- Farmer and community engagement from the earliest time point is essential to achieve long-term commitment and effectiveness.

There are common highlights shared by both the **AranLIFE** and **KerryLIFE** projects that include:

- Successful use of an externally funded scoping study to collate information that informed the LIFE proposals and helped specify the objectives and target the actions;
- Focus on priority species/habitats that reflect key biodiversity concerns and objectives;
- Active engagement with the local community in the design phase;
- Adaptive learning throughout the project;
- Successful use of a mix of non-productive investments and results-based payments; (Definition: non-productive investments do not generate significant return, income or revenue, or increase significantly the value of the beneficiary's holding, but have a positive environmental impact);
- Provision of expertise for relevant ecological advice to farmers that contributes to the effectiveness of farm-scale implementation and actions.

The **RBAPS** project demonstrated the successful application of results-based approaches across several case study sites, and illustrated the following specific points:

- Because biodiversity priorities are highly spatially distributed, local adaptation of objectives and indicators contributed to effective biodiversity conservation;
- The involvement of farmers and specialists in defining objectives and targets can improve the process of local adaptation;
- Scorecards were developed to assess the quality of different ecological targets that ranged across species-rich grasslands, breeding waders, and habitat for a rare butterfly species. The scorecards were designed through ecological assessment, and were used to underpin results-based approaches;
- Appropriate guidance and advice from specialist advisors with ecological expertise was an important success factor;
- The optimal approach tended to involve a combination of non-productive investments and results-based payments;



- RBAPS developed and made publicly available a structure, tools and guidance notes that can allow more general adoption and customisation of the methodology.

Selected features of the **NPWS Farm Plan Scheme** include its:

- Focus on high-priority national biodiversity objectives (habitats and species) that are identified in the Irish Prioritised Action Framework;
- Translation of national priorities into locally-led approaches through engagement of local farmers by local NPWS staff, and working with farmers to develop plans, advice, implement and monitor effectiveness;
- Examples of co-ordinated landscape-scale implementation of conservation objectives and actions, which is typically quite rarely achieved;
- Use of non-productive investments and action-based payments, as well as a keen interest to roll out more results-based payments;
- High capacity to learn how to do better. There is widespread use of monitoring to very effectively assess progress toward results and respond accordingly;
- Ability to achieve and demonstrate effectiveness, which suggests very high value for money (although external factors may reduce effectiveness in some cases).

In Chapter 8, James Moran discusses the policy environment within which results-based approaches are being introduced. He considers the environmental priorities that need to be better addressed in international policymaking, and the role that agriculture can play in providing a range of ecosystem services and disservices. Results-based approaches seem to be an important policy instrument that is distinctly placed to most directly incentivise desired management and outcomes, given the dependence of ecosystem service supply on the management and ecological condition of ecosystems.

## SYNTHESIS

In the remainder of this chapter, I outline some of the key features of locally-led results-based approaches that contribute to their environmental effectiveness. I also elaborate further on the lessons learned from these case studies, and explore the future implementation of results-based approaches.

## THE 'LOCALLY-LED' NATURE OF CASE STUDIES CAN VARY IN APPROACH

The phrase "locally-led" is widely used. However, the case studies revealed different interpretations. 'Locally-led' does not necessarily mean that local people must lead the project or programme. Indeed, the experience across the case studies suggests that their greatest strength lies in combining the specialised skills across farmers, ecologists, advisors and project managers. In many cases, some of these skills are likely to be provided from outside of the local community. The priority is to ensure the most relevant skills are harnessed for the success of the project.

Some of the characteristics that contribute to the quality and efficacy of 'locally-led' include the presence of local champions and advocates, prior knowledge of the local agri-environmental context and farming system, and the specificity of objectives and targets. I discuss these as follows:

### Locally-led by local champions

By definition, locally-led projects need to involve the local community. The presence of an appropriate champion at an early stage is vital to provide the link between external specialists and the local community. Locally-led projects tend to have local advocates and champions who are able to present a vision to the local community, and explain, encourage and often persuade local participation in the projects. It is very evident in the case studies from the Burren, KerryLIFE, AranLIFE, RBAPS and the NPWS initiatives. For example, the NPWS Curlew Conservation Programme has a specific 'Curlew Champion' role, which formalises the important contribution of local champions.

Typically, the most important function of the champion can be to identify: a problem, the need for a solution, who to approach to devise a solution, and who to work with to implement the solution. This information

> **the most important function of the champion can be to: identify a problem, the need for a solution, who to approach to devise a solution, and who to work with to implement the solution ... The champion can be an individual, a group of individuals, or a local association. Whatever its identity, a locally-led approach requires a local leader.**

is most likely to be provided through preparatory work before project development and is an important prerequisite for successful initiation of a project or proposal. Local champions typically encourage local participation and feedback, and this helps to build mutual trust and education, as well as improved design and delivery.

The champion can be an individual, a group of individuals, or a local association. Whatever its identity, a locally-led approach requires a local leader. The championing of a project or approach is not the same as representation which is also very important, of course. Representation is usually achieved on an ongoing basis through formal stakeholder groups and other informal stakeholder interactions.

### Importance of locally-relevant prior knowledge

Typically, the effective conservation of a threatened species or habitat requires good understanding of: the current status and spatial distribution of the species, the relative priority of the threats to the species, the corrective actions needed and their likely effectiveness, feasibility and cost of actions.

The case studies generally represented projects that had substantial knowledge and understanding developed from ongoing monitoring and/or dedicated studies that preceded the project. The evidence collated is highly likely to be a strong success factor for both action- and result-based approaches. For example, KerryLIFE relied on a substantial body of national and local work on the distribution of freshwater pearl mussels, as well as catchment-scale assessments that identified priority threats. The RBAPS project benefited from prior knowledge and experience of the ecologists who formulated the proposal, and the work of previous surveys on e.g. the target location for species-rich grassland from the national Irish Semi-Natural Grasslands Survey.

High levels of local knowledge about an environmental issue facilitate the formulation of:

- specific objectives
- specific actions that are targeted at prioritised threats
- evidence-based actions that are highly likely to be effective
- actions that are feasible and cost-effective
- monitoring and evaluation programmes using targets and indicators that reflect performance and thereby confirm effectiveness, or guide learning how to do better.

### Local specificity of objectives and targets

The setting of objectives is a critical aspect of any project or programme. The objectives dictate quantitative targets, the relevant actions and interventions that are intended to achieve the targets, as well as the quantitative indicators that are used to monitor effectiveness.

A defining feature of the case studies is the **clarity and focus of their objectives**. The latter are a direct outcome of the locally-led approach that integrates the experience of both specialists and local farmers and communities. Rather than having generic objectives such as 'restoring biodiversity', 'reinstating wildlife' or 'improving the countryside', they focus on quite specific biodiversity priorities for the local countryside. What is also impressive through all the case studies is the degree of shared ambition that was co-developed between specialists and the local participants. It is evidenced in the design and payment structures that seek to attain the highest levels of biodiversity provision.

There are multiple examples of conservation actions directed toward priority species and habitats featured in the Prioritised Action Framework in the NPWS Farm Plan Scheme. Similarly, the Burren Programme, AranLIFE and RBAPS projects directed their conservation efforts at nationally important species-rich grasslands. The KerryLIFE project was aimed at a critically endangered species.

What is also clear is that the local specificity in objectives occurred across multiple spatial scales. At the landscape-scale, projects set quantitative targets for named species/habitats while the locally-led ethos translated into farm-scale targets and actions.

## IMPORTANCE OF FARM ADVICE

The important role played by farm advisors is another common theme running through the different case studies. They all relied on the provision of targeted ecological advice for individual farms, and stressed its importance. As one farmer put it, by having the right expertise available "you make the right decision before you make a mistake" (Norfolk farmer, RBAPS project). Typically, the advisor is the main link between the project and the participants, and the attitude and encouragement of the advisor can be very influential.

Targeted ecological advice and discussion is crucial for the drawing up of farm (and commonage) plans, in the verification of results, and in both advising – and learning from - farmers on how to achieve the targets. Traditionally, the training and recruitment of farm advisors and agricultural scientists in general has been strongly oriented towards more intensive agricultural systems. There is now a growing need for, and delivery of agri-environmental advice. To deliver biodiversity objectives, the case studies show a strong demand and need for advisory support with appropriate ecological expertise.

Without exception, all of the case studies considered training and education to be a crucial success factor. Given the importance of ecosystem health in achieving future CAP objectives, such an upgrading of the advisory capacity is a basic requirement and will be more evident in the future. Training and education (of advisors and farmers) is an important and substantial component of the public and private transaction costs of programmes/projects.

## DESIGN OF INDICATORS

The careful design of indicators underpins the ability to conduct a feasible and reliable assessment of environmental quality that can be related to payment rates. It is only possible to define outcome indicators that reflect the range of environmental quality from low to high when there is clarity on the objectives and the desired environmental outcome. It is this differentiation that makes it possible to have result-based payments.

The case studies developed and implemented multiple examples of indicators, which showed considerable variation. An explicit contribution

of RBAPS was to focus on a variety of objectives and ecosystems; this variety demonstrated the capacity to design indicators that are appropriate for results-based approaches. In RBAPS, we see the use of composite indicators that included ecological quality (itself a composite of the number and cover of positive and negative indicator species), and an assessment of threats (level of management, and evidence of damaging activities). Proxy indicators were also used to represent attainment of the ultimate targets. RBAPS used habitat quality to represent conditions for marsh fritillary, and KerryLIFE used '% bare soil' in critical source areas as a proxy for the transfer of sediment and phosphorus to waterways. The appropriate selection and use of indicators (direct or proxy) is only possible through understanding of the underlying cause-and-effect relationships (Primdahl et al., 2010), and further reinforces the importance of relevant prior knowledge from scientific studies.

## RAPID MONITORING OF EFFECTIVENESS, EVALUATION AND FEEDBACK

Here, I contrast the learning and feedback process in action- and result-based approaches. Action-based agri-environment schemes have *ex ante*, mid-term and *ex post* evaluations that are part of a seven-year policy cycle. In theory, the evaluation and policy cycle allow opportunity for monitoring of the outcomes that inform the assessment and demonstration of policy effectiveness , and/or facilitate lessons to be learned that improve future iterations. In practice, the approach appears mostly targeted at helping policymakers to learn (as opposed to farmers). The large effort involved in undertaking a programme-wide evaluation of the RDP usually means that the lessons learned are provided every seven years. The evaluation of environmental effectiveness in achieving biodiversity objectives in RDP evaluations has generally not been possible due to inadequate investment in monitoring (ECA, 2011). Overall, the widely applied action-based approaches have a relatively slow feedback cycle. In some cases, the data was not available with which to provide effective evaluation and feedback (ECA, 2011).

In contrast, an important feature of results-based approaches is the much more rapid feedback cycle. The aim of 'learning how to improve' includes the participant farmers as well as those implementing the project/programme. It occurs at the scale of farmers learning how to increase their provision of environmental services at the scale of individual fields, as well

as across the whole farm. The feedback, directed at farmers, can derive from several sources. They include: self-assessment; advisors during farm visits and training events, and: other farmers as part of peer-to-peer learning and visits. There is also the formal scientific assessments of vegetation and/or indicator species. The scientific assessment can also be aggregated for the purpose of programme-level monitoring. Examples of programme-level evidence of environmental improvements from the case studies are shown in, for example, Figures 3.9 and 3.10 from the Burren Programme, and Figure 5.9 from the KerryLIFE project.

It is not surprising that farmers are proactive in wanting to learn how to perform better to attain the biodiversity targets with the associated financial reward to perform better, and the associated pride in achievement. It reinforces a virtuous cycle of positive performance often assisted by the availability of appropriate advice. This is an intended outcome of results-based programmes. Importantly, it adds to the credibility of result-based programmes or projects not only among participant farmers but also among the local community, policymakers and wider society.

## DESIGN AND PAYMENT STRUCTURES TO DEAL WITH RISKS

Before discussing the risks associated with results based approaches, it is worth remembering that action-based agri-environment schemes also have significant risks. Multiple factors are involved in their intervention logic, and a failing in any one of these factors can compromise effectiveness (Finn et al., 2009; Primdahl et al., 2010). A number of risks (perceived or otherwise) are often associated with results-based approaches, and we discuss some of them here. These generally relate to the predictability of payments for farmers, the predictability of costs for implementing agencies and policymakers, and the governance of compliance, inspection, monitoring and evaluation by policymakers.

### Risks related to farmers

Concern for farmers considering involvement in results-based approaches include the continuity of payments, their ability to increase the payments, and the impact of external factors on the payment levels. There will be other concerns as well, including the time and effort required to learn about a new type of scheme, and to undergo training and education.

Farmers' behaviour is typically risk-averse. Therefore, any successful results-based approach will need to reassure farmers considering participation. Clearly, results-based approaches need to consider effective risk management in programme design. Apart from obvious natural variables, such as climate, uncertainty in ecological responses to agricultural practices cannot be entirely removed, but can be limited by effective planning and use of prior agri-ecological research. Robust systems of dispute resolution, fair to both sides, will contribute to reducing the farmer (and project) risk.

Strategies can be adopted to increase the continuity and predictability of payments, and reduce risks, as well as the perception of risk once farmers have committed to participating. The choice of indicator can be important. In the RBAPS project, for example, the results-based approach for marsh fritillary used indicators of habitat quality, rather than more direct indicators such as the number of adult butterflies or larval webs. Habitat quality indicators are selected to reflect management more than weather. Therefore, the farmers' payments are buffered from year-to-year variation in butterfly numbers that are simply due to weather.

As another example, the payment rates can be adapted over time so that the standards required to achieve payment are less demanding at the start but increase over time as farmers have had sufficient time to learn to implement new actions (see Box 9.1). In addition, it is also possible to increase the standard of the ecological target. There is little or no risk for farms that already attain and maintain a high standard. This type of approach was adopted by the Burren Programme, which did not make payments for areas with a score of 5 or less; after two years in the programme, this threshold was increased to a score of 6.

## BOX 9.1

Comparison of the distribution of payments in relation to level of outcome in action-based approaches (panel a) and results-based approaches (panels b and c) for an environmental context where a high level of quality is targeted. In typical action-based agri-environment schemes, the payment rate (y axis) is standard (horizontal dashed line in the left panel despite the large variation in the delivery of the ecosystem service represented by the distribution of dots).

In an example from results-based approaches, the exact same level of performance is supplied from the same farms in the left panel, but the payment rate is related to the supply of the ecosystem service. There is a threshold level of quality below which a low or no payment is made (panel b).

By varying the thresholds for payments over time to be less demanding initially (panel b), and increasing it over time (compare panel b and c), there is a reduction in risk for the farmer at the beginning, and an opportunity to increase performance over time (note the rightward shift in position of dots in panel c). In this scenario, some farms do not receive a results-based payment. From a scheme perspective, this may represent a form of targeting; however, these farms may participate in other more relevant schemes, or may receive non-productive investments that allow them to increase their score over time and receive payments.

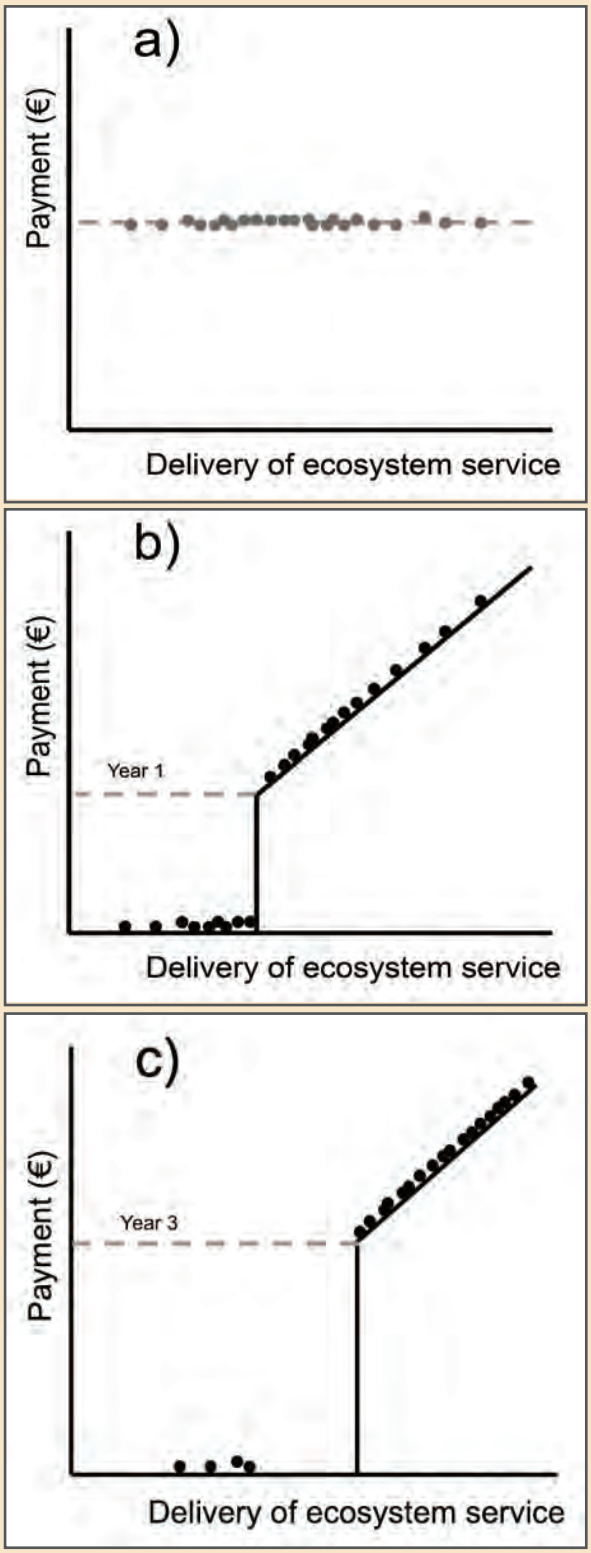



**Figure 9.1**
Comparison in the distribution of payments in relation to level of outcome in action (panel a) and results-based approaches (panels b and c).

In the Burren programme, there is a very practical approach to incentivising the progression from lower to higher ecological condition. As reported in Chapter 3, "the lowest scoring fields are listed first for payment - on larger farms (>40 ha) this means that the farmer is effectively losing more money on the lowest scoring fields (paid at the top-band rate) than is being gained on the highest scoring fields (which are paid at a (50% +) lower rate). It offers a clear financial signal to the farmer to focus on conservation activities on the lowest scoring fields which need most attention. On the other hand, a bonus of 25% and 50% is paid for scores of 9 and 10 respectively". The approach represents a risk-reduction strategy for the implementing agency to deliver on the environmental objectives and protect the reputation of the programme. It also fairly rewards farmers for their efforts. In effect, these 'banded' or grouped payments incentivise a progression that aims to "accentuate the positive, eliminate the negative". More generally, across case studies, many participant farmers clearly recognise the fairness associated with giving more payment to the participant who does more work or provides more of the environmental benefit. Similarly, participants also recognise the fairness in a lower payment going to a participant who does not deliver the environmental targets.

Generally, the way in which payments are related to the delivery of ecosystem quality can be adjusted to reflect exposure to risk (see Box 9.2).

A lesson from the case studies is that hybrid approaches (with some combination of action-based payments, non-productive investments, and results-based payments) are likely to be more widely implemented than pure results-based approaches. Hybrid approaches can also offer an opportunity to reduce the apparent risk for farmers (see Box 9.3). For example, there is a lesser reliance on action-based payments over time, with a corresponding increase in result-based payments. The approach might be appropriate for the introduction of a new results-based project. It allows time for training and knowledge transfer to occur and the delivery of higher ecosystem services over time.

BOX 9.2

**Type 1:** Strongly encourages delivery of a modest threshold level of environmental service, but relatively low reward for marginal improvement at the highest level of delivery. It can equally be seen as strongly penalising lowest levels of delivery. However, the payment levels are also very resistant to changes at the highest level of delivery, which buffers against environmental factors, e.g. weather/climate, that are outside of the farmers control.

**Type 2:** Equivalent reward per unit of environmental service delivered. It assumes equivalent costs per unit delivery of environmental service across the range of service provision. The marginal benefit from the per unit delivery of service at the highest levels is the same as that at lowest levels.

**Type 3:** Strongly encourages delivery of a high threshold level of environmental service and a relatively high reward for marginal improvement at top end of delivery of environmental series. This approach can also be seen as very strongly penalising low to medium levels of delivery. It might be very appropriate for maintenance and minor restoration of very high-quality habitats. This payment structure, however, would be riskier if external and unpredictable factors can have strong impacts on ecosystem service delivery.

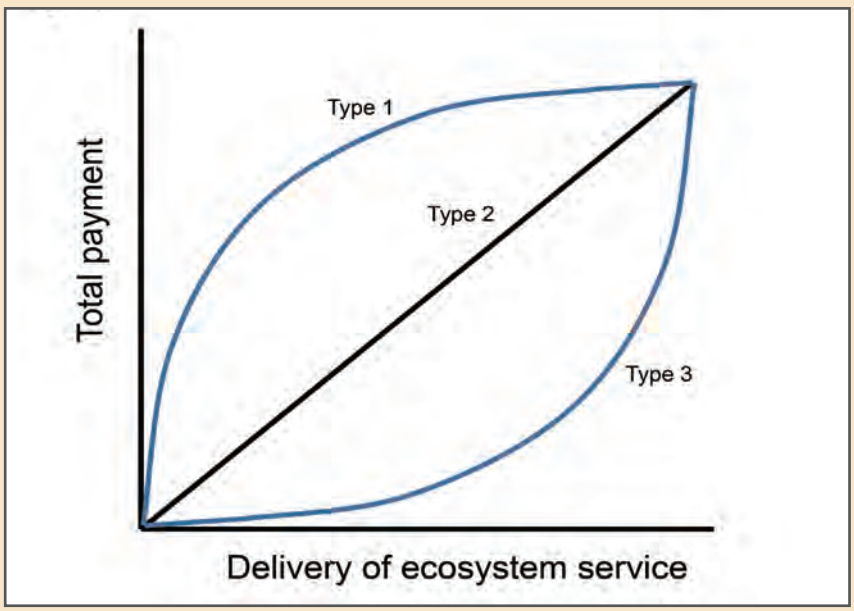



**Figure 9.2**
Illustration of different ways in which payments can be related to the delivery of an environmental service

**BOX 9.3**

In the first example, there is an action-based payment worth 75% of the maximum possible payment (line 1). Thus, 25% of the remaining payment is based on a result-based approach for delivery of the ecosystem service.

In the second example, there is an action-based payment worth 50% of the maximum possible payment (line 2). Thus, 50% of the remaining payment is based on a result-based approach for delivery of the ecosystem service.

In the first example (line 3), there is an action-based payment worth 25% of the maximum possible payment. Thus, 75% of the remaining payment is based on a result-based approach for delivery of the ecosystem service.

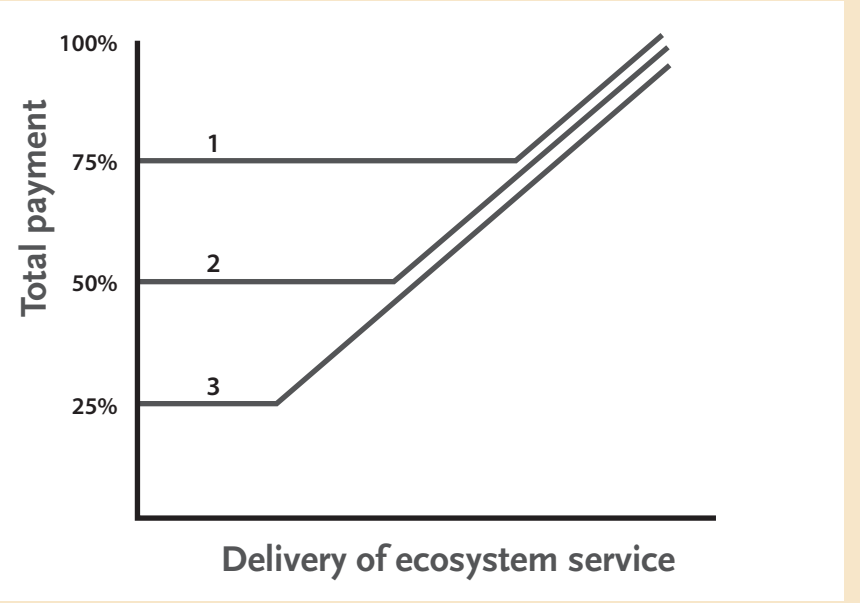



**Figure 9.3**
An illustration of different approaches to produce different hybrid result-based models by varying the relative contribution of action- and result-based payments.

The engagement with farmers, and resulting dialogue, training and knowledge exchange also help to: reduce risk perception through peer learning; identify ways to reduce real risks, and; identify and overcome the fear of income loss or disadvantage. Therefore, a range of results-based models are available to reduce risk perception among farmers and promote encouragement of positive practices.

Many of these approaches are already embedded in the case studies. They include: the example and encouragement by local champions, opportunity to contribute to programme design, peer learning (including visits to other areas and initiatives), use of demonstration activities, as well as effective training and knowledge sharing.

## RISKS RELATED TO SYSTEM OF GOVERNANCE OF COMPLIANCE INSPECTION AND MONITORING

Policymakers have multiple responsibilities for the implementation of publicly-funded schemes. They include training, advice, compliance inspection, sanctions and penalties, monitoring, evaluation, and delivery of value-for-money. A comprehensive and complex administrative system for traditional action-based approaches has developed over time that addresses several of these issues. They are also known to be acceptable to the Commission.

A possible risk for policymakers may be the change in administration arrangements necessitated by the introduction of results-based approaches. Such a change may be an obstacle to implementation because of a combination of both the need to change administrative systems (a logistical challenge), as well as concern about the acceptability of the changed system to the Commission and, perhaps, stakeholders (a legal and political challenge).

A possible risk for policymakers may be uncertainty in the total budget for results-based approaches, given the relationship between payment and performance. However, the risk-reduction approaches highlighted above will also act to reduce unpredictability in budget demands. When hybrid approaches are used, the proportion of the total budget dependent on results-based approaches can be relatively modest. Traditional action-based approaches also have had uncertainty over budgets. It is evidenced by some measures requiring encouragement and incentivisation while others were over-subscribed.

In isolation, some of the individual components associated with results-based approaches may be a possible risk for policymakers. For example, can CAP regulations and administrative oversight be upheld and expenditure be justified based on self-assessment of performance by farmers? On its own, this would be a legitimate concern (even though farmers can be very conservative when conducting self-assessments). However, the RBAPS project and the Burren illustrate how a bundle of administrative actions are usually applied, and these can work together to result in a level of administrative oversight that is no less than that which is currently applied. For example, the education and training in self-assessment by farmers offers considerable benefits in communicating the targets, indicators and outcomes of a programme, and promoting a deep understanding of the programme objectives around ecosystem service delivery. The approach has the potential to result in an improved situation relative to traditional schemes.

The implementation of self-assessment by farmers collects information that can inform them on their progress towards the outcomes and higher payments. It also contributes to programme-level reporting. In addition to the self-assessment, scientific monitoring of randomly selected sites can contribute to validation of the self-assessment process, and provide independent scientific assessment of the level of achievement of the specific outcomes. A risk-based selection of farms for validation checks could be established that includes sites where there are unusually large increases in scores through either self-assessment and/or an advisor's declaration of scores. Certified advisors who are found to deviate from the scoring system could face sanctions that could escalate through e.g. more training, a warning and loss of certification to reduce this risk. It is also possible to assess broad changes in habitat extent and, perhaps, ecological quality with the developments in remote sensing technology. Collectively, the risk reduction strategies outlined above provide evidence that results-based approaches can deliver administrative governance to a standard that is equivalent to that of conventional action-based approaches.

A complex administrative process structure currently exists to assess compliance and verification within action-based agri-environment schemes. However, monitoring of outcomes is much less developed (ECA, 2011). Ultimately, the greatest risk lies in the CAP not achieving its stated environmental objectives (and see below). As CAP reform progresses, there will undoubtedly be further debate about the extent to which complete adherence to administrative requirements and avoidance of risk can be balanced with innovative approaches for more effective delivery of environmental outcomes that match the required level of ambition.

## RELATIVE DISTRIBUTION OF TRANSACTION COSTS IN ACTION-BASED VERSUS RESULT-BASED APPROACHES

The public and private transaction costs associated with any policy instrument, including agri-environment schemes, are an important criterion for assessment of their cost-effectiveness.

Public transaction costs typically include the costs that arise for agencies that implement agri-environment schemes, for activities that include their design, *ex ante* evaluation, administration and support, provision of information, provision of training and education (for ministry staff,

advisory services and farmers), compliance inspection, monitoring, *ex post* evaluation, and reporting. Private transaction costs are typically those borne by participants. They include the opportunity cost of information collection and processing when making a decision about whether to participate in a programme or not, as well as the costs of application, administration, implementation and training (following the decision to participate and implement actions).

Action-based approaches are perceived to have relatively low transaction costs (both public and private), as a percentage of the total budget. The perception arises because of their one-size-fits-all approach and lower information requirements for participants (who implement prescribed actions).

In contrast, results-based approaches are perceived to have relatively high transaction costs. The veracity of this perception is difficult to assess, for at least two reasons. First, given the complexity and scale of the transaction costs associated with action-based approaches, it is exceedingly difficult to ascertain their true public transaction costs; therefore, it is equally difficult to provide a fair comparison with results-based approaches. Second, most of the results-based approaches to date have been implemented as pilot projects. By definition, pilot projects are likely to have relatively high start-up costs and do not benefit from the economy of scale and per unit reduction in cost that would be expected from a programme-level roll-out with many more participants (see below).

Policy evaluation typically focuses on effectiveness (achievement of the stated objectives) and efficiency (whether least-cost methods are used to attain effectiveness). There has been significant CAP investment in action-based approaches for environmental public goods. Nevertheless, farmland biodiversity and habitat condition continue to decline despite numerous funding cycles that targeted farmland biodiversity. Even if action-based agri-environment have lower transaction costs (as a percentage of spend), there remains significant doubt about their effectiveness (e.g. ECA, 2011, and Chapter 2). In contrast, several of the case studies described/discussed earlier demonstrate that results-based approaches can effectively achieve their objectives for biodiversity improvements/ maintenance.

The delivery of action-based schemes, or indeed any type of scheme, is a false economy if they do not achieve their objectives. Therefore, results-based approaches that achieve their objectives can offer significant cost-effectiveness (value for money) even if their transaction costs may be higher

than results-based approaches (if that is indeed the case). The transaction costs are more likely to be locally targeted at activities that promote effective conservation practices and more specific objectives e.g. design of schemes, selection of effective actions, local consultations, training of specialist advisors, training of farmers, monitoring of performance, and rapid feedback on performance.

## COMMUNITY ENGAGEMENT

Awareness-raising in the wider community is very important to highlight the central role played by high nature value farming systems as well as the farmers' knowledge and skills as landscape stewards. Most of the case studies promoted local engagement by establishing a local office with an open door policy, where farmers can drop-in, establish face-to-face relationships of trust, and receive administrative support and technical advice when necessary.

The Burren Programme identified the importance of instilling in its participating farmers a strong sense of identity, pride of place and programme ownership based on over twenty years' experience. Social events that bring the community together, such as the annual winterage weekend, education programmes in local schools, and 'Learning Landscape' workshops have been developed to achieve community engagement. This is to be expected from a long-established programme; however, it is also very impressive to note the strong community engagement achieved by the newer case studies. The building of social capital – networks, trust, information sharing, along with acquiring new skills, knowledge and awareness - is vital in the long-term change in behaviour, attitudes and values required for the delivery of ecosystem services. It is evidenced by the emerging combination of younger and older farmers in many of the case studies.

The bridging of ecological and sociological approaches highlights the potential social co-benefits of high nature value farming systems. Finance alone will not prevent land abandonment or intensification. Ultimately, farmers and the wider community will need to value a species-rich grassland, diverse hay meadow or intact peatland as much as (if not more than) a more intensive land use. Financial incentives can help, of course, but Dessart et al. (2019) highlight the importance and complexity of other aspects of farmers' behaviour that can enhance their commitment to sustainable farming

practices. These include the wider promotion of environmental objectives as a norm for farming, environmental activities of neighbouring farmers, the social status associated with positive environmental outcomes and public recognition of farmers' efforts.

## LOOKING TO THE FUTURE

### What are the factors that guide the choice of pure action-based, pure result-based or hybrid approaches?

Although we clearly focus on results-based approaches in this book, this does not mean that there is no role for action-based schemes. There are likely to be some situations where results-based approaches are most appropriate, others where action-based approaches are most appropriate, and others again where some form of hybrid approach may be the best solution. A hybrid approach could comprise different combinations of:

- action-based payments
- non-productive investments
- results-based payments

Interestingly, all the case studies in this book adopted a hybrid approach, and offered a mix of results-based approaches, non-productive investments, and action-based approaches.

In the AranLIFE project, farmers were offered non-productive investments to pay for capital works for installation of water-catchers, which is a traditional solution for water storage and supply to the island cattle. The provision of water for cattle allowed cattle to graze areas at risk of undergrazing and scrub encroachment and restore the quality of species-rich grasslands. Similarly, the RBAPS, Burren programme, and KerryLIFE projects offered results-based payments, as well as non-productive investments e.g. improved access to facilitate cattle management and grazing or the installation of fencing along sensitive watercourses.

Locally-led non-productive investments can be very different in nature to nationally implemented non-productive investments that are implemented as one-size-fits-all approaches (e.g. hedgerow planting,

bird boxes and bat boxes). Importantly, the non-productive investments featured in the case studies were all highly targeted to resolve specific issues or limitations. They contributed to the infrastructure and capacity of the farmland to attain the higher results-based targets and payments. The nature of the non-productive investment is, therefore, strongly governed by the locally-led approach. Thus, the aims of the actions are aligned with the local environmental objectives, and designed and implemented in a way that contributes to achieving the delivery of targeted ecosystem services.

The important conclusions arising from the case studies in terms of guidance for future approaches include:

1. Action-based approaches that are locally-led or locally-adapted have the potential to offer higher environmental effectiveness compared to generic action-based approaches that do not have option for local adaptation. For example, the NPWS Farm Plan Scheme has been a highly targeted action-based approach (although it is adopting more results-based approaches), and an excellent example where "spatial targeting may be of greater importance than payment differentiation" (Hanley et al., 2012).
2. Results-based approaches can robustly complement and add value to action-based approaches.
3. The adoption of results-based and action-based approaches is not an either-or choice. Results-based approaches can be adapted to complement action-based approaches and both can be geographically targeted to situations where they are best suited.

The process of developing a results-based approach necessarily places a focus on the selection of specific objectives, quantifiable and reliable indicators, and specific targets and thresholds of performance. The clarity that is produced by this process represents good practice in policy design in general, including for action-based approaches. In addition, the clarity that arises from the systematic consideration of the local context will best inform what specific mix of results-based approaches, non-productive investments, or action-based approaches can best achieve the objectives.

## HOW DO WE SCALE UP FROM INDIVIDUAL PROJECTS TO COUNTRYWIDE PROGRAMMES?

This collection of case studies provides proof-of-practice that results-based approaches can be successfully designed and implemented to achieve biodiversity objectives in high nature value farmland. These case studies, however, largely represent relatively small projects with numbers of farmers and areas that are relatively small compared to a nationally applicable agri-environment scheme.

Looking to the future, a key challenge is: how to upscale locally-led results based approaches? This is probably one of the most important challenges that need to be resolved if agri-environmental conservation efforts are to be implemented at a pace and scale that matches the corresponding threats.

Here, I draw attention to some of the issues and questions that need to be addressed in scaling up results-based approaches. I do not intend to resolve these issues here, and simply aim to identify and present some of the main ones, as follows:

Across several different environmental objectives, how will decision-making and governance mechanisms resolve the relative prioritisation of environmental objectives, and budget allocations?

Will governance issues arise as one attempts to fit results-based (and hybrid) approaches to the existing governance structures associated with public payment programmes?

Are results-based approaches a natural progression for the various agri-environment schemes that were initially more focused on the establishment of new practices and prescribed managements, and now need to maintain the natural capital arising from this?

Will it be possible for results-based approaches to achieve alignment with EU rules and regulations that were built for action-based approaches, or will some modification of those rules and regulations be necessary?

Can results-based approaches be used to better achieve landscape-scale programmes that achieve a critical mass and spatial distribution of participation that is sufficient to achieve biodiversity objectives (this is also an issue for traditional schemes)?

To what extent can the scaling up of results-based approaches contribute to an economy of scale in the associated transaction costs?

What kind of a national framework can achieve the scaling up of results-based (and hybrid) approaches, and also maintain their capacity for local adaptation? To scale up, do we have to compromise on locally-led aspects? If so, to what extent?

How best to design and implement hybrid approaches? How to decide on the best combination of pure action-based approaches, hybrid and pure results-based approaches?

What are the pros and cons of whole-farm or part-farm approaches to locally-led results-based (and hybrid) schemes?

Is there sufficient capacity in the advisory and knowledge transfer networks to implement an upscaling of locally-led results-based approaches? If not, how can this be addressed, and what is the potential role of other actors?

Are locally-led results-based approaches only appropriate for biodiversity? Can they also be applied to other ecosystem services such as water quality, soil health, greenhouse gas mitigation, and carbon retention?

Are locally-led results-based approaches only appropriate and feasible for High Nature Value farmland, or can they be implemented for the wider countryside as well?

Many of these questions can be resolved quite quickly and can be informed by current experiences within Ireland (and elsewhere in Europe). In addition, it can be expected that the scaling up of results-based approaches can itself be evaluated and improved over time. Here, I briefly discuss the two specific points raised about national frameworks and transaction costs. I also consider the potential for public-private partnerships in the delivery of environmental public goods.

## NATIONAL FRAMEWORKS FOR THE INCORPORATION OF RESULTS-BASED APPROACHES

Several opportunities arise for the implementation of results-based approaches depending on the level of ambition and roll-out. Here, I focus on the articulation among the proposed eco-scheme, general agri-environment scheme, a higher tier agri-environment scheme, and separate (but complementary) results-based and hybrid approaches (see Box 9.4). I exclude consideration of the conditionality associated with Pillar 1.

Policymakers face such choices in the design of the new architecture of policy instruments of the CAP. One can also expect an evolution over time in the implementation of results-based approaches.

**BOX 9.4**

A) There is an increasing degree of incorporation of results-based approaches as one proceeds through more demanding environmental requirements of eco-schemes, general agri-environment schemes (AES), and higher tier AES.

B) Results-based approaches are only applied in selected objectives as part of an AES.

C) Results-based approaches are quite separate to the eco-scheme and AES.

There may be multiple large programmes that scale up hybrid approaches (that include results-based payments) to address specific objectives (e.g. similar to current examples such as Burren Programme, Hen Harrier EIP, and Pearl Mussel Project (EIP) in Ireland). These may also be complemented by smaller projects where other innovative approaches can be trialled for future scaling up. Of course, several of these features are not mutually exclusive.

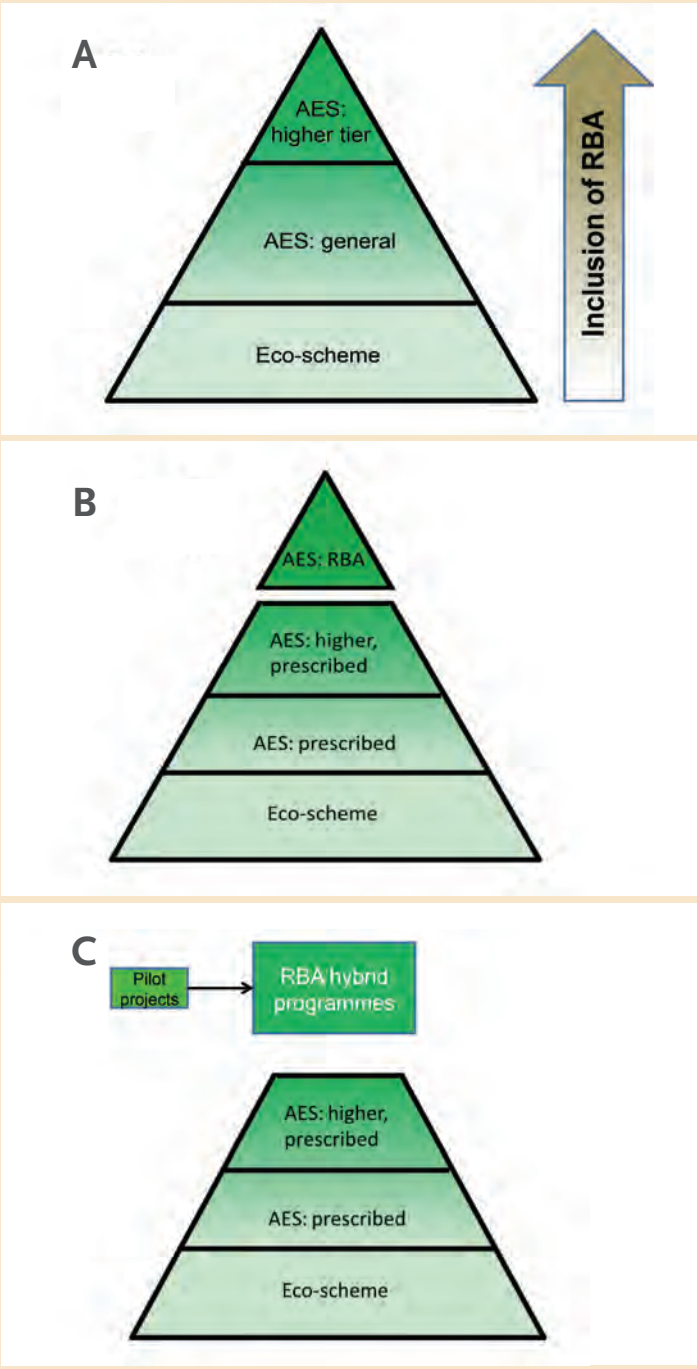



**Figure 9.4.**
Three scenarios for national frameworks for agri-environmental supports and incorporation of results-based approaches.

## POTENTIAL FOR PUBLIC-PRIVATE PARTNERSHIPS?

The emergence of public-private partnerships for the provision of environmental public goods is one of the innovations that may arise through up-scaling of results-based approaches. To date, the prevailing view about agri-environment schemes has been dominated by the provision of environmental public goods being delivered through public payments from the national (or international) taxpayer. Such efforts were originally required because of market failure to internalise the negative/positive impacts of some types of production systems. The growing market awareness and reliance of food brands on sustainability standards represents an effort to internalise the environmental benefits of farming systems *i.e.* brands want to be associated with practices that are good for soil, water, climate and biodiversity (among other attributes). However, with this internalisation of the reputational benefits of sustainability standards also comes with it the possibility of internalisation of the costs of achieving these sustainability standards. There are several examples of this across Europe e.g. Pro Weideland programme in Germany. Might we see greater interest in public-private partnerships that result in some combination of public and private payments for environmental goods and services? If so, it is difficult to see such an approach that would not involve clear and verifiable delivery of the stated standards. Therefore, results-based approaches have a strong role in the delivery of public-private partnerships for delivery of ecosystem services.

## TRANSACTION COSTS

A critical issue is whether an economy of scale can be achieved in the transaction costs, if results-based approaches are to be implemented more widely. Novel and innovative programmes generally have significant start-up costs as they learn to address initial obstacles for the first time. However, they can also be expected to reduce their per-participant transaction costs over time as they become more efficient, and increase the number of participants.

Having lower transaction costs (as a percentage of spend) for the delivery of any scheme is a false economy if the objectives are not attained.

Although we don't provide detailed economic analysis of the case studies presented here, some of the case studies can be used to indicate the scale

of the transaction costs associated with large projects and programmes. For example, the Burren Programme has an administration budget that is capped at 15%. The administration costs were also capped at 15% for other similar results-based approaches introduced in Ireland recently, including the Hen Harrier Programme (€25 million over several years) and the Pearl Mussel Project (€10 million over several years). These administration fees include most, but not all, of the public transaction costs.

The on-going programmes and the new smaller EIP projects will provide the lessons and evidence to guide the development of results-based approaches in future new programmes so that they can effectively and efficiently achieve an economy of scale.

## CONCLUDING COMMENTS

In conclusion, there is an extremely high demand for improved effectiveness of environmental payments to achieve environmental goals. There is a rapidly growing appreciation of the role of results-based approaches in meeting this requirement. It is very important to note, however, that results-based approaches do not displace the need for other agri-environmental measures and programmes (especially action-based payments and non-productive investments). In contrast, they can complement other approaches, and further increase environmental effectiveness. In this book, the evidence presented from the results-based approaches clearly shows its ability to reward farmers in areas with the greatest potential to deliver biodiversity and other ecosystem services in a way that is not constrained by a payment that is based on average conditions (Box 9.1).

In Ireland and the EU, most of the financial support for biodiversity and ecosystem conservation comes from agricultural policies. The future of ecosystem services, including biodiversity, is intimately tied with agricultural practice and support (Poláková et al., 2011). In view of the EU Parliament's enhanced ambition for the environmental and climate objectives of the CAP, the outcome of its reform for the post-2020 period has an ever greater significance. Meeting this ambition will require scaling up, development of capacity, and defining of appropriate CAP instruments for the incorporation of results-based approaches (among other approaches). Importantly, if it is to be properly integrated into policy, such planning and design of results-based approaches will need to be undertaken when general and broad agri-

environment measures are also being designed. This forward planning can help to better integrate these different instruments to ensure that both the environmental targets and payments of each are hierarchical. It in turn, will help to ensure additionality in effects, avoidance of double payment, and provide a progressive financial incentive for farmers to achieve higher payments for higher environmental performance.

Challenges remain to develop the operational details associated with the scaling up of results-based approaches to meet the EU's environmental ambitions. There have always been such challenges in policy formulation but the great societal benefits that need to be achieved provide a strong incentive for all stakeholders to quickly address them. The case studies presented here demonstrate the state of the art and success factors in the design, implementation and achievement of outcomes associated with results-based approaches in Ireland.

## REFERENCES


**Dessart, FJ., Barreiro-Hurlé, J. and van Bavel, R.** (2019) Behavioural factors affecting the adoption of sustainable farming practices: a policy-oriented review. European Review of Agricultural Economics 46, 417-471.

**European Court of Auditors** (2011) Is agri-environment support well designed and managed? Special Report No. 7, 2011. Luxembourg.

**Finn, JA., Bartolini, F., Kurz, I., Bourke, D., Viaggi D.** (2009) *Ex post* environmental evaluation of agri-environmental schemes using experts' judgements and multicriteria analysis. Journal of Environmental Planning and Management 52, 717-737.

**Hanley, N., Banerjee, S., Lennox, GD., Armsworth, PR.** (2012) How should we incentivize private landowners to 'produce more biodiversity? Oxford Review of Economic Policy 2, 93-113.

**Poláková, J., Tucker, G., Hart, K., Dwyer, J., Rayment, M.** (2011) Addressing biodiversity and habitat preservation through measures applied under the Common Agricultural Policy. London: Institute for European Environmental Policy.

**Primdahl, J., Vesterager, JP., Finn, JA., Vlahos, G., Kristensen, L., Vejre, H.** (2010) Current use of impact models for agri-environment schemes and potential for improvements of policy design and assessment. Journal of Environmental Management 91, 1245-1254.

Agricultural habitats cover approximately half the European Union (EU) and an estimated 50% of all species and several habitats of conservation concern in the EU depend on agricultural management. Reversing the loss of European biodiversity is clearly dependent on the conservation of farmland biodiversity.

Results-based approaches are the focus of a growing discussion about improved biodiversity conservation and environmental performance of EU agri-environmental policies. This book outlines lessons learned from a collection of Irish case studies that have implemented results-based approaches and payments for the conservation of farmland habitats and species. The case studies include prominent projects and programmes: the Burren Programme, AranLIFE, KerryLIFE, the NPWS Farm Plan Scheme and Result-Based Agri-environmental Payment Schemes (RBAPS) project.

This work is intended for an international audience of practitioners, policymakers and academics interested in results-based approaches for the conservation of biodiversity and the provision of ecosystem services.

FARMING FOR NATURE
THE ROLE OF RESULTS-BASED PAYMENTS

Teagasc
Agriculture and Food Development Authority

An Roinn Cultúir, Oidhreachta agus Gaeltachta
Department of Culture, Heritage and the Gaeltacht

**Teagasc** www.teagasc.ie
**National Parks & Wildlife Service** www.npws.ie
**ISBN** 978-1-84170-663-4

9 781841 706634

Design: edit+ www.stuartcoughlan.com