Catchment Sensitive Farming

Phase 4 Delivery Report Update (April 2016 – March 2018)

A clear solution for farmers

CATCHMENT SENSITIVE FARMING

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Introduction

This Delivery Report covers the first 2 years of Phase 4 activities of the Catchment Sensitive Farming (CSF) partnership from April 2016 to March 2018. It includes a description of the governance arrangements followed by discrete sections on each of the main work areas.

This report is designed to accompany, and provide context for, the CSF Evaluation Report (report no. JP030) prepared by the CSF Evidence Team in the Environment Agency, which documents the programme outcomes from initial farm engagement to water quality improvements across England. The report also highlights improvements to a broader range of benefits; through better targeting and working with a broader range of partners to deliver shared ambitions in catchment management.

The two reports can be read together to give a full view of CSF from delivery to real outcomes to give a full picture from programme implementation to the consequent environmental benefits.

Programme Overview

This report covers the first two years of CSF Phase 4, April 2016 - March 2018. During this time there has been significant work for the Catchment Sensitive Farming (CSF) partnership implementing Countryside Stewardship and continuing to deliver CSF priorities through advice. CSF has worked with the Defra Air Quality team to define how CSF can help to meet their targets on ammonia emissions in the Clean Air Strategy, integrating this with work on water quality and the wider water offer.

The core purpose of the programme of work remains unchanged; to reduce diffuse pollution from agriculture by helping priority farmers take voluntary action. We do this through offering general and specialist advice on topics tailored to farm and catchment priorities.

The programme focusses on long term farmer behaviour change. Delivery has been supported by a substantial training programme for CSF staff, increasingly focused on social science; how do we engage farmers and other land managers and how do we sustain that engagement?

This has been achieved through Catchment Sensitive Farming Officers (CSFOs) working in catchments where CSF can make the greatest difference in terms of addressing diffuse water pollution. CSF staff in Natural England work with other advisers and partners to increase our work throughout England. CSF also works with a range of partners through collaborative projects.

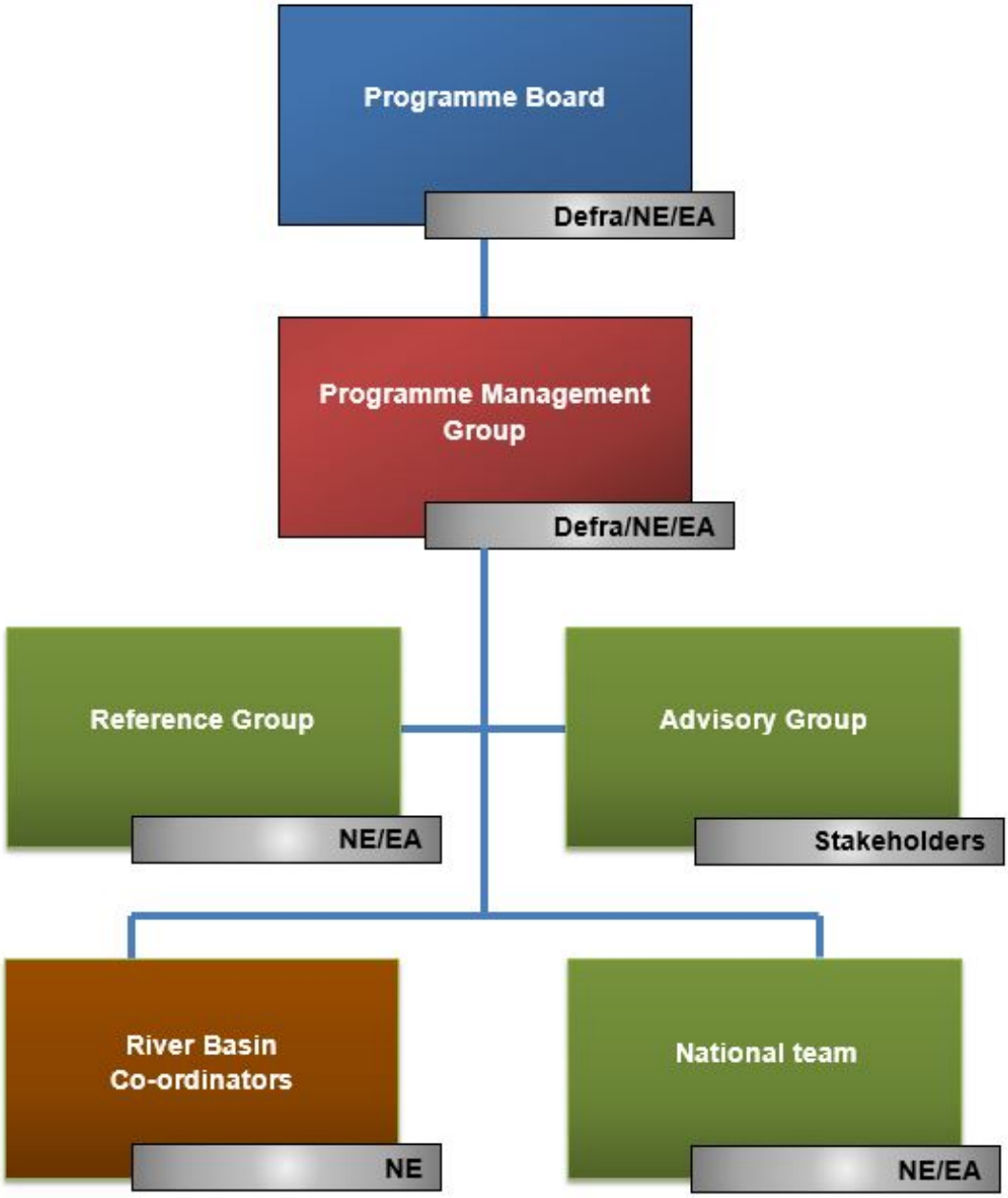
CSF spent considerable time helping to develop Countryside Stewardship (CS), to build on the success of the previous grant schemes and bring together land management and capital works to meet multiple environmental objectives. CSF has a distinct way of working to support CS, mainly through Mid Tier agreements, which matches the measures to the environmental priorities on the farm that a farmer can meet, directly linked to CSF advice.

From 2015, CSFOs and partners have worked with farmers in High Priority Areas in catchments to help support CS implementation. For some farmers this support was proactive, for others reactive. In both cases, farm visits were made to assess the potential for agreements, either a 2-year capital only agreement or a 5-year land management and capital agreement. CSF approval was necessary for some popular or expensive items to ensure value for money and appropriate implementation of these items. CSFOs were also able to provide an uplift in the scores of CS Mid Tier applications through endorsements for applications with greater environmental benefit and farm engagement with CSF.

The focus of CSF has been to support farmers in the highest priority areas for water quality, targeted due to their sensitivity to water pollution from agriculture; a feature that continues under CS targeting, although CSF priority catchments and target areas were altered in Phase 4 to align with CS targeting for water quality.

The close integration of delivery by Natural England, with evidence and evaluation work undertaken by the Environment Agency and policy focus from Defra, has allowed us to apply many of the lessons learned from 12 years of CSF partnership work to current and future work. Further details on this are below. One immediate impact has allowed us to focus our work more closely than ever – we are now able to prioritise farms on the basis of their geography, enterprise and size related to local water quality issues. In 2015 this meant we were able to select farms with which we worked using national evidence and priorities, balanced with a need for flexibility to meet local demands.

This integration is reflected in the continuance of a programme management approach; overall governance is as follows:



CSF Programme Management structure

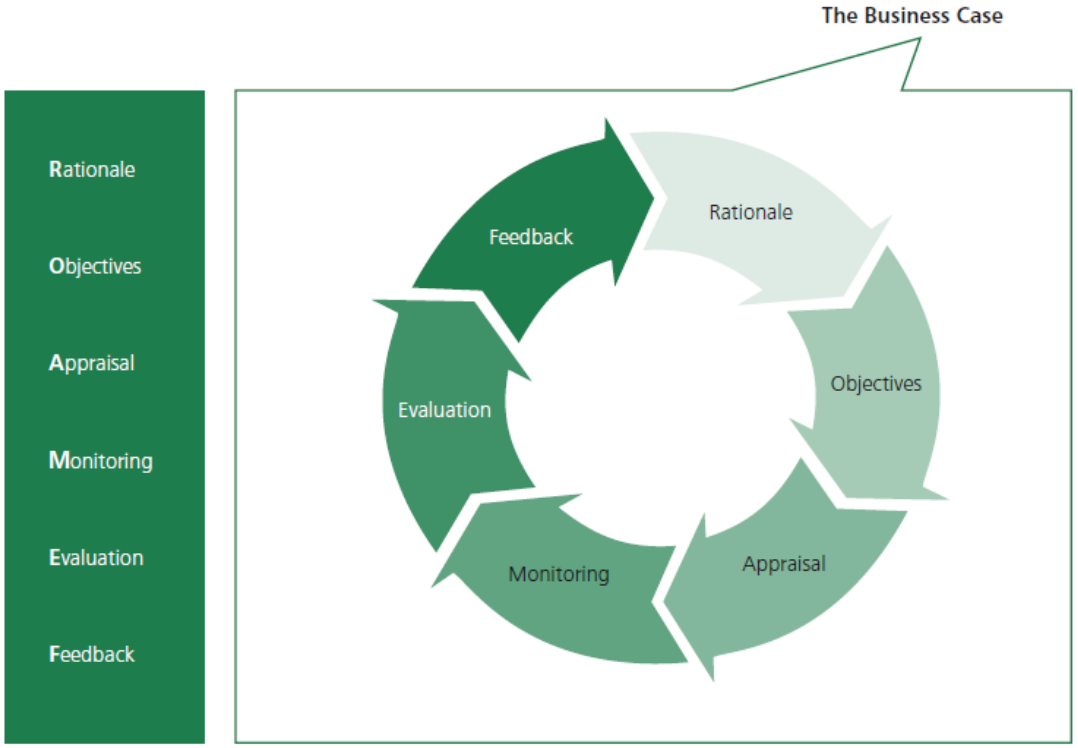
The roles of each element are:

- Programme Board – strategic oversight of the programme. Ensures escalation to Defra policy and/or Natural England/Environment Agency governance.
- Programme Management Group – operation programme management.
- Reference Group – drawn from across the programme to help shape new work and ways of working.
- Advisory group – national stakeholder group to help shape specific, strategic issues and provide feedback.
- River Basin Co-ordinators – leaders of regional delivery to integrate with Natural England area teams and regional partners; able to escalate issues for resolution and ground truth approaches.
- National team – to bring forward the views of the national Natural England and Environment Agency teams and lead on specific work area, supporting local delivery.
- Local CSF steering groups – to provide the local direction and guidance to CSFOs in order to make their delivery strategies locally relevant and to provide crucial local / customer based feedback.
- Natural England Area Teams – provide local direction and management of CSF delivery staff.

This Delivery Report brings together all aspects of the programme to provide an update on two years of delivery and evaluation. It describes the activities and themes in this section in more detail.

Evidence

Catchment Sensitive Farming is an evidence-based programme. Evidence underpins programme design, targeting, delivery and evaluation in line with HM Treasury's ROAMEF Cycle:

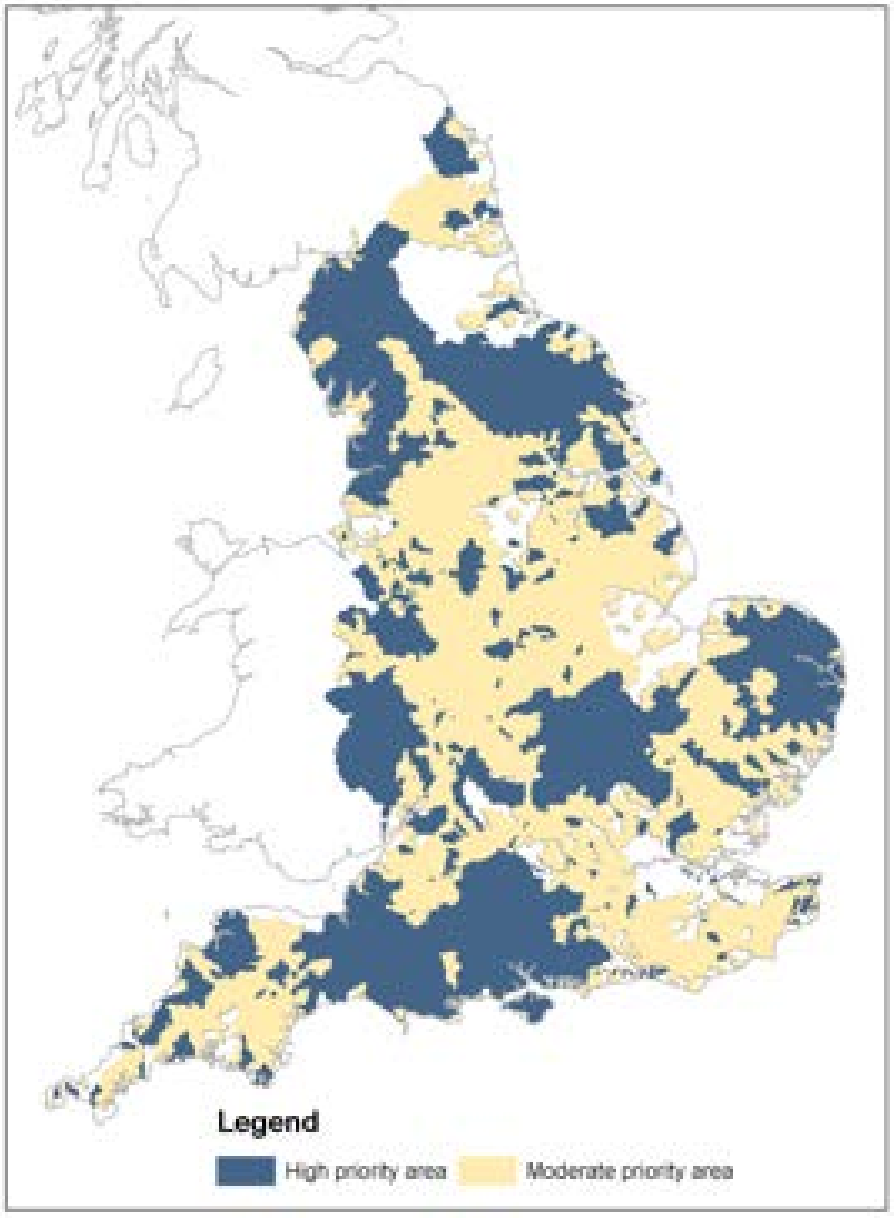


ROAMEF Cycle diagram

To date, the focus of our evidence work has been on CSF's water quality objectives. We are currently reviewing and adapting our approach in light of the new CSF objectives for air quality.

Catchment targeting

The catchment areas targeted by CSF were defined through the targeting work for Countryside Stewardship (CS), itself informed through previous CSF evaluations and undertaken by the Environment Agency's CSF Evidence Team. By focusing on priority environmental outcomes in areas with significant agriculture pressures and where appropriate mitigation measures can be implemented through CSF and CS, the approach helps maximise the environmental outcomes by bringing synergies between advisory and incentive based mechanisms.



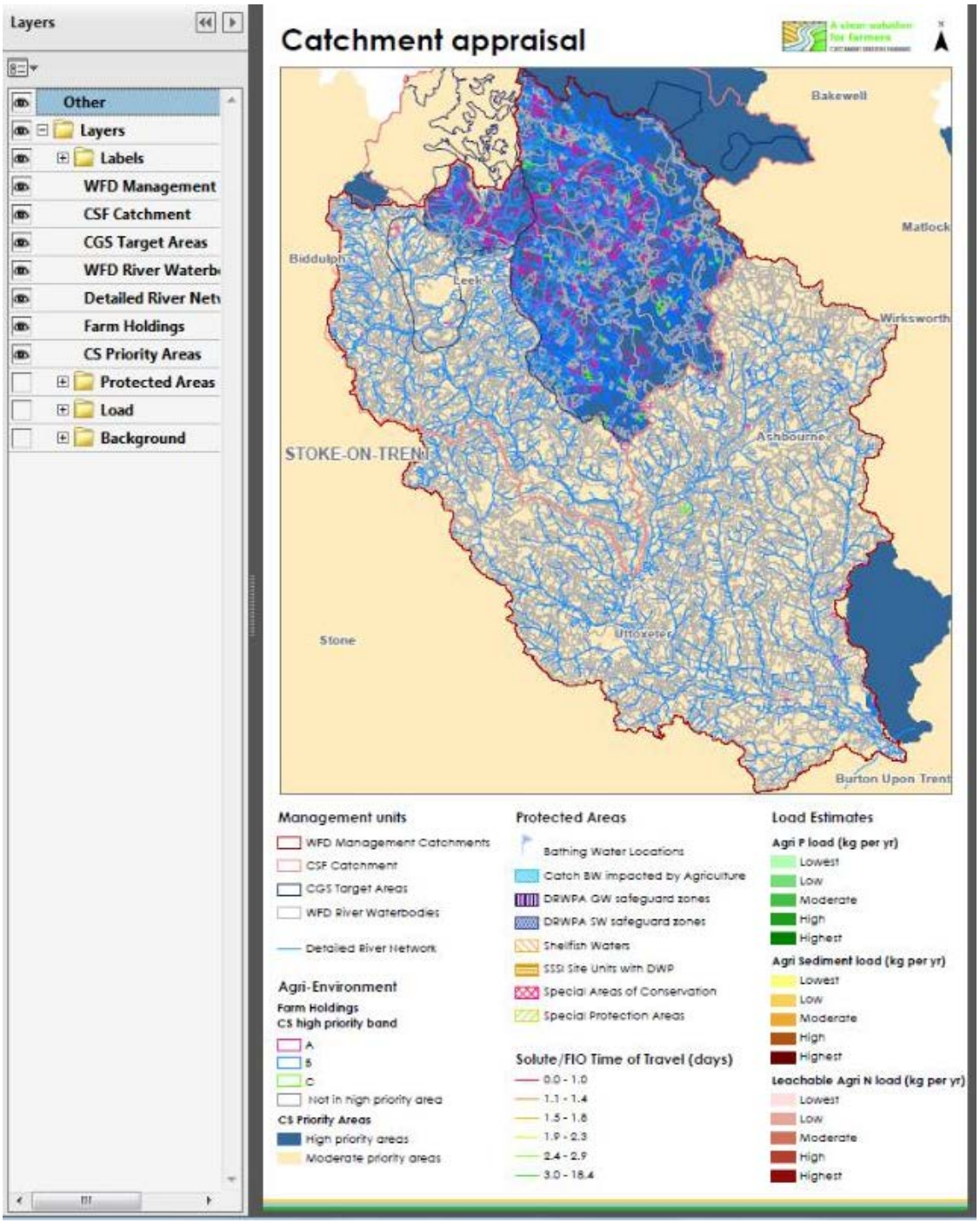
Map showing high and medium priority areas in England

Decision support tools

Within CSF decision support tools are used to target and inform the design of local advice delivery plans within the broad CS priority areas for water quality:

- The National Priority Holding Spreadsheet ranks farm holdings on the basis of modelled (potential) pollutant loadings – this initial prioritisation is subject to local ground-truthing.
- Catchment Appraisals map priority environmental receptors (eg bathing and drinking waters), modelled pollutant source areas, and existing CSF delivery.

Used together, these tools allow CSFOs to develop detailed local advice delivery plans.



Catchment appraisals map

To support CSF delivery, we plan to develop further evidence and tools, including: modelled breakdowns of the relative contribution of different sources of farm pollution (eg soil, fertiliser and manure losses from arable, grassland and farm yards); identifying the most effective pollution mitigation measures; and establishing CSF environmental outcome targets, for each Water Framework Directive (WFD) Management Catchment.

Key Performance Indicators (KPIs)

CSF uses a range of KPIs to help track and manage delivery. We have and will continue to provide the data needed to report progress against the following KPIs:

1.1a: To increase each year the proportion of farmers and land managers who feel and understand that agriculture contributes a great deal or a fair amount to water pollution in their catchment area (c*overs all farmers in catchments)*
1.1b: To increase each year the proportion of farmers and land managers who feel and understand that agriculture contributes a great deal or a fair amount to water pollution in their catchment area *(covers CSF-engaged farmers only)*
1.2: Percentage of targeted farmers to have taken action to make a significant contribution to mitigating diffuse pollution from their farms
2.2: Percentage of farmers aware of the link between CSF and Countryside Stewardship (based on farmers within the CS High Priority Area for Water Quality who are aware of CS)
2.3: Percentage of farmers agreeing that contact with their CSFO helped them make the most of Countryside Stewardship

Local evidence base

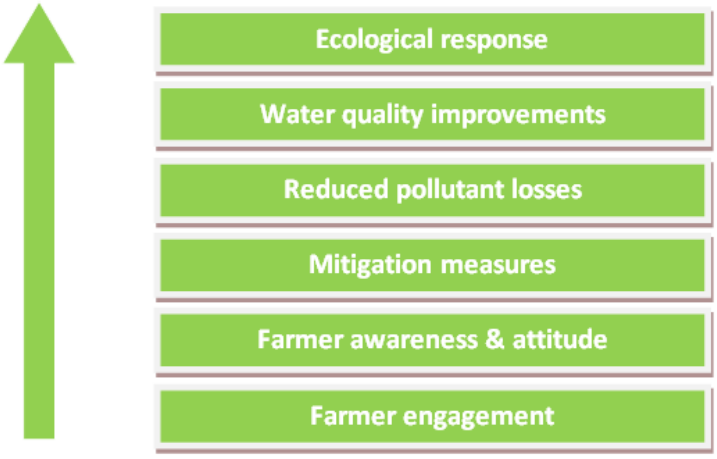
We have and will continue to support advice delivery, led by CSFOs, by building the local evidence base to convince farmers of the need for action, through:

- providing new, and updating existing, evidence (eg briefings on levels of pesticides detected in monitored CSF catchments);
- links with research/academia to facilitate knowledge exchange, including Defra's Demonstration Test Catchments Project; and
- using the CSF Evidence Prospectus as a 'one-stop-shop' for CSFOs to access the latest evidence.

CSF Evidence prospectus

Evaluation

The effectiveness of CSF is evaluated and the evaluation informs decisions on the future of CSF, including both ongoing improvement and reinvestment. Our evaluation approach is across 'six levels':



During the initial years of Phase 4, we have focused on maintaining and building existing long-term CSF datasets; further developing specific elements of the approach (eg our environmental modelling); integrating CSF and related policy evaluations (eg CS and the Farming Rules for Water); and analysis and synthesis to inform our latest CSF evaluation. Specific activities include:

- annual assessments of CSF advice uptake;
- surveys to assess farmers' awareness and attitudes to water pollution and the support available to help reduce it - the surveys have been expanded to include awareness of CS (and CSF's role in supporting its delivery) and the Farming Rules for Water;
- environmental monitoring, including water quality, ecology and sediment finger printing; and
- developing our environmental modelling of land and water environments and the interface between them.

Our Evaluation Report covering water quality Phases 1 to 4 from 2006 to 2018 CSF will be published by Natural England in 2019.

Delivery

The CSF Evidence Work Strand is led by the CSF Evidence Team, supported by:

- CSFOs (recording farmer engagement, advice delivery, advice uptake and implementation);
- wider Environment Agency (water quality and ecological monitoring);
- a collaboration with Rothamsted Research (sediment finger printing surveys); and
- independent consultants and academics (telephone surveys, analysis of monitoring data and research knowledge exchange).

Cost (£):

2016/17 - £1,038,000
2017/18 - £1,038,000

Advice Delivery

The request for advice, to increase farmer awareness and encourage voluntary action to reduce water pollution from agriculture, is initiated by and delivered through the trusted local CSFOs.

Through the Farm Advice Framework (FAF), the 1 to 1 advice visits and group events were contracted by CSF and delivered locally by tailoring information to suit local knowledge and issues. The contracts were funded through the Rural Development Programme – England (RDPE) and were managed by Natural England Lot Managers who are part-funded by CSF.

CSFOs also carried out advisory visits, including for CS, offering further tailored specialist advice through FAF, where relevant. They organised and worked with local stakeholders to deliver appropriate group events in their priority areas.

During this 2-year period (April 2016 to March 2018) CSF engaged with 9,799 farms covering just under 2 million ha in England. 7,654 farms received 1 to 1 advice, 4,025 farms attended an event and 81 farms received advice through 1 to 1 clinics.

The reason for this CSF engagement was recorded, as well as the recommended advice as described in the Mitigation Methods user guide.

Contact Type (1 to 1 only)	**Number**
Non-CS visit	4,788
Mid Tier Countryside Stewardship (June 2015 onwards)	2,866

CSFOs delivered advice directly to farmers and via the farm advisers contracted via FAF (RDPE funded) and also worked with a number of local and national partners to link relevant advice and information in cost effective and innovative ways. This included water companies, Rivers and Wildlife Trusts, Campaign for the Farmed Environment[1], Farm Advice Service and agricultural industry advisers etc.

Cost (£):

The type of advice delivered is illustrated below showing the breakdown of recommended advice by farm management measures:

[1] Now called Championing the Farmed Environment

Types of advice delivered

The voluntary uptake of the recommendations made at farm advice visits are assessed through CSFO follow up visits, as part of the CSF evaluation on an annual basis.

Grant Scheme Work

Natural England's customer services team played a central role in administering the now closed CSF Capital Grant Scheme, Countryside Stewardship (CS) transitional water capital grants and Farming Ammonia Reduction Grant (FARG) scheme.

CSF were involved in the development of the CS scheme architecture and options and items available. The integration of the former Environmental Stewardship scheme with the CSF Capital Grant Scheme and England Woodland Grant Scheme provided new opportunities for a wider range of farm types to adopt capital and land management measures to address water pollution and better integration with other outcomes including biodiversity, woodland creation and flood risk mitigation. However, this led to a complex scheme and application process, with less CSF control compared to the former Capital Grant Scheme (CGS). CSF were able to link the CSF advice to grant applications to ensure grants achieved the best environmental outcomes.

Natural England continues to work closely with RPA, and CSFO's important role in providing technical advice and support for new CS applications for Mid Tier capital grants to improve water and air quality in priority areas progresses. Some capital items require written support from a CSFO as part of the evidence requirement. Endorsement of a Mid Tier application by a CSFO will increase the chance of its success.

Countryside Stewardship

With the launch of Countryside Stewardship (CS) in July 2015, CSF targeting was aligned with CS targeting, which was modelled on the Water Framework Directive (WFD) and protected area failures due to diffuse water pollution from agriculture that could be addressed most effectively by CS measures. CSF aims to use CS as a tool to address water quality and of the range of multiple benefits and policy priorities in CS. CSF targeting is based on the CS High Priority Areas for Water Quality, colloquially known as the 'lavender' areas, where overlapping priorities occur. A further focus was possible using the catchment change matrix model to assess and select those farms posing the greatest risk of causing pollution and the most likely to cause environmental damage within the High Priority Areas. Holdings (tending towards the largest, most hydrologically connected and most productive/intensive farms) with the greatest potential for improvements to the water environment are prioritised for CSF support and pro-actively engaged by CSFOs.

Water Priority Areas have been identified to target both CS grants and CSF advice activities, based on a wide range of evidence. Water Priority Areas are where Diffuse Water Pollution from Agriculture (DWPA) impacts on water quality and where CS is predicted to be, effective in improving WFD and protected area outcomes. A range of evidence on DWPA pollutant pressures, farm types, soil and rainfall has been layered together to create the Water Priority Area in each Water Management catchment that CSFOs are working in.

The Environment Agency's Evidence Team developed a risk-based system to identify priority holdings where targeted advice and specific CS grant funding would deliver better WFD and protected area outcomes. Local knowledge and ground-truthing in the River Basin District will be part of the process and where local initiatives occur, then these can form part of CSF delivery.

CSFOs carried out a targeted approach with letters and visits based on Priority Farm lists. There were three main categories of farm:

- proactively engaged farmers;
- reactive engagement where farmers requested advice and support; and
- farmers which have been modelled to be having limited environmental impact and as such required no additional support.

Letters were written to farmers with expiring Environmental Stewardship Entry Level Scheme (ELS) agreements to invite them to FAF contractor Mid Tier events and clinics to promote CS.

Partners involved in CSF and CS delivery include:

- Natural England land management advisers
- FAF contractors
- Lot Managers
- partnership catchments
- national partnerships
- water companies.

Data from the evaluation of CS shows that CSF has an important role to play in ensuring CS is used effectively to target water quality issues but also offer integrated agreements covering wider biodiversity, geodiversity and historic environment and other outcomes where appropriate. Some highlights of the report show:

- Advice has been central to developing effective agreements, with the role of the CSFO in delivering a large number of well-targeted water capital items being particularly recognised. Farmers who have heard of, or interacted with the CSF Programme, and, specifically, who have met their CSFO, are more likely to acknowledge that their farm contributes to water pollution (across High Priority Areas).
- Farmers report increasing reliance on CSFO advice, which they identify as being highly influential in shaping CS applications. Of those who had contact with their CSFO in relation to their application, 95% found this to be very helpful or fairly helpful (across High Priority Areas). CSFOs are an initial point of contact for 40% of successful Water Capital Only (WCO) applicants; an important information source used to help complete applications (43%) and are cited as the main source of advice by 30%. There is an increased likelihood of a farmer planning to apply for a WCO with contact, and familiarity, with CSF.
- Surface water options are among those most frequently included in Mid Tier agreements, whilst water capital items account for the highest overall value.
- The shift to implementing a multi-objective scheme is being met with agreements covering multiple objectives, including water quality.
- Awareness of CS is positively correlated with water quality priority areas and previous CSF interaction - there is potential to further develop understanding of CS in these areas.
- 65% of those aware of CS and CSF agree CSF supports achievement of CS water quality aims.
- WCO agreement holders are the most positive about the effectiveness, outcomes, fit with the existing farming system and the advice and support received regarding options.
- Soil and water agreements account for 27% of the total CS budget, predominantly under Mid Tier (including WCO).
- Overall, options aimed at soil and water protection represent the greatest annual value - options in this group being a combination of 'common' Mid Tier management options and a small number of high value capital options with high uptake.

Further information is available from the CSF Telephone Survey, which is carried out every year to assess the impact on farmers of the advice they receive from the programme. The main headlines are as follows:

- Awareness of CS is high and higher in High Priority Areas[2].
- In High Priority Areas, awareness and familiarity with the CSF Programme correlates with improved understanding of water quality priority.
- Those who have had contact with, or have awareness of the CSF Programme are more likely to correctly identify their area as high priority, as are those who have met the CSFO.

[2] These are areas targeted by CSF.

Scheme take up

The total value of resource protection and soil / water options in live CS agreements is as follows: (data extracted September 2018)

Total value of Resource Protection options	£54,260,321.98
Total value of Soil and Water options	£35,330,554.90
Total value of RP & SW options combined	£89,590,876.88

Lessons Learned

- Close working with Countryside Stewardship Delivery Service (CSDS) has continued throughout CS which has proved helpful in identifying and resolving issues. The team in Nottingham have continued to administer the Water Capital Grants in CS which has provided consistency and expertise in the scheme and continuity of relationships with CSF and CS.
- This close working with CSDS has been beneficial in helping with processing application issues. The systems have proved overly complicated and demanding; leading to long delays in agreements going-live. Although this has been an issue for CSDS and not linked to CSF performance it has caused issues for CSFOs as they are usually the first point of contact for applicants with water quality options/items in applications.
- Improvements to the approval and endorsement processes have ensured that applicants are applying for the correct options and items in suitable locations in the right amounts to address the real issues behind DWPA.

Partnerships and Stakeholder Engagement

Partnerships continue to be an integral part of the CSF programme and an important delivery approach providing farmer advice and grant support as well as technical information and training for CSF staff. The CSF catchment partnerships have been the only delivery mechanism for CSF in 13 catchments or priority areas. Partners have match-funded, in cash or in kind, the Natural England (Defra) funding for the partnerships.

Overall, partners have remained committed and supportive of CSF and have input substantially to both delivery and the costs of projects.

The CSF Programme Board made a decision not to continue funding the national partnerships. CSF continued to work with the national partners involved in these projects and developed new partnership working arrangements with the Forestry Commission, Organic Sector bodies, Agricultural Industries Confederation and Agriculture and Horticulture Development Board.

The CSF Advisory Group of key national stakeholders was a very effective way of communicating changes to the programme, gathering feedback, considering the impacts of new policy on programme delivery, integration with industry and providing evidence of stakeholder support for the programme.

Through joint events, run through collaborative projects and national partnerships, the partners have provided expert speakers, event promotion and match-funding for events, making it a more cost-effective way of delivering high quality events. The joint farm events have had record attendances and excellent feedback.

The short-term local collaborative projects have provided a flexible way of setting up smaller partnership projects to fill CSF vacancies and gaps in resources and to supplement CSF activity in catchments to improve farmer engagement. This has enabled CSF to cover the new CS scheme in new target areas.

Criteria for CSF collaborative projects were revised to encourage more innovative projects and piloting. Delivering integrated objectives and project proposals were invited and prioritized for funding against these criteria.

Catchment Partnerships

Changes to the CSF catchment partnerships include:

- Fit with CSF Phase 4 targeting of the High Priority Areas, although medium priority areas were covered with additional funding from partners (Portsmouth Water in East Hampshire and Environment Agency in the Welland). Partnerships with Severn Trent Water, Essex and Suffolk Water and Environment Agency in the Leam, Chelmer and Blackwater catchments, that were no longer targeted by CSF, were dissolved and CSF worked with the partners on transitional arrangements.

- Two new CSF catchment partnerships were set up in the Loddon, a new priority area, with Affinity Water contracting a CSFO from the Wildlife Trust and in the Hertfordshire catchments with the Environment Agency; allocation of a part-time CSFO, filling a long-standing vacancy.

- CSF enables Catchment partnership CSFOs to have access to the CSF Reporter, CS guidance and CLAD data directly to facilitate targeting of priority farmers, reporting and scheme delivery.

- CSF catchment partnerships supported farmers interested in applying for CS grants and agreements in the CS High Priority Areas. This scheme work became a larger part of the CSF catchment partnership delivery with challenges on the complexity of the scheme but new opportunities for soil and water options. Partners worked with CSF and Natural England land management advisers to develop better applications for Mid Tier and some Higher Tier CS 5-year agreements and WCO.

To achieve a more even spread of collaborative projects, each River Basin was allocated a budget for local projects and proposals were invited from CSFOs and RBCs. A range of topics for farm events and CSF training was offered via national collaborative projects.

Between April 2017 and March 2018, the CSF Catchment Partnerships provided advice on reducing diffuse water pollution to over 633 farmers (unique stakeholders) in total. Advice was provided to farmers via 1 to 1 farm advice visits and via training events.

National Partnerships

The CSF National Partnerships provided support to CSF on the themes of nutrients, soil and pesticide management and mitigation measures to reduce diffuse water pollution from agriculture. This was achieved through: training CSF staff; providing technical support; running joint farmer training events and agricultural shows; media activity and developing and distributing advice materials through partners and content via partner websites.

CSF advice through partner websites include:

- Agriculture and Horticulture Development Board;
- Campaign for the Farmed Environment (now called Championing the Farmed Environment) - events;
- Innovation for Agriculture - Learning from your land videos (with CSF and the Ernest Cook Memorial Trust);
- Professional Nutrient Management Group - Tried and tested;
- The Rivers Trust - Pinpoint;
- Soil and Water Management Centre - events; and
- The Voluntary Initiative - responsible use of pesticides.

Farm surveys show that 15% of farms with a nutrient management plan use Tried & Tested. A simple paper-based plan aimed at livestock farmers, developed with industry partners. The Tried & Tested website http://www.nutrientmanagement.org/home/ was viewed 19,000-32,000 times per quarter and over 113 paper copies of nutrient management guidance was distributed.

Pesticides levels have fallen significantly in catchments where CSF and the Voluntary Initiative (VI) have worked closely with agronomists and farmers. CSF has used the farm advice materials provided through the VI 'Think Water': oilseed rape herbicide campaign and Metaldehyde Stewardship Campaign and worked with these partners at events.

CSF set up a new partnership with the Forestry Commission with joint training between Forestry Commission officers and CSFOs, joint farm visits and events in pilot areas and a promotion of Woodland for Water Grants through CS applications.

CSF collaborated with Championing for the Farmed Environment (CFE) and the Woodland Trust to run 40 resource protection events for farmers across the country, with CSFOs speaking at the events organised by CFE.

CSF delivered a series of 22 events on soil health in partnership with Innovation for Agriculture in 2017-18, through which 550 farmers and advisers were engaged by CSF.

CSF ran a series of farmer events on soil biology with the Soil Association and provided feedback on the Soil Association standards in relation to water pollution.

CSF worked with the Maize Growers Association to provide training for CSFOs and published 6 case studies on mitigating the risks of water pollution associated with maize growing.

Collaborative Projects

In 2016/17, a total of 11 collaborative projects were delivered, including 10 with local partners for catchment-based projects and 1 with a national partner.

In 2017/18, 16 collaborative projects were delivered, including 13 catchment and 3 national projects. A total of 310 farmers were engaged through local collaborative projects in 2017-18.

Local projects supported farmer engagement, advice visits and events to extend the reach of CSF and complement delivery in large, vacant catchments with established local partners. Projects were set-up in new target areas, primarily to support CS.

The collaborative projects delivered joint events. CSFOs organised these locally, with partners providing guest speakers on topics such as precision farming, soil management and biology, soil organic matter, cover cropping, maize over-sowing and improving soil organic matter. See: CSF Workshops with Innovation for Agriculture and the Soil and Water Management Centre in 2016-17.

New farm advice videos were developed with partners and published on their websites including 8 Soil health videos and Healthy Soils Workshops with Innovation for Agriculture and Farm Infrastructure video made with Agriculture and Horticulture Development Board. CSF provided inputs into the new Nutrient Management Guide (RB209) published by Agriculture and Horticulture Development Board and revisions of supporting nutrient management tools published by Tried & Tested.

Table 1: CSF catchment partnerships - catchments and partners in 2016-17 and 2017-18

CSF Catchment partnership	WFD Catchment(s)	Partner(s)
Nene and Welland	River Nene and upper Welland	Environment Agency, River Nene Regional Park, Anglian Water, Wildlife Trust, Welland Rivers Trust
Isle of Wight	Isle of Wight	Environment Agency and Hampshire and Isle of Wight Wildlife Trust

CSF Catchment partnership	WFD Catchment(s)	Partner(s)
Downs and Harbours Clean Water Partnership	East Hampshire and part of Arun and Western Streams	Environment Agency and Portsmouth Water
Nidd	Parts of the Swale, Ure, Nidd and Upper Ouse in Nidderdale AONB	Harrogate Borough Council (Nidderdale AONB) and Yorkshire Water
Yorkshire Dales	Parts of the Swale, Ure, Nidd and Upper Ouse/Aire and Calder/Wharfe and lower Ouse catchments within the Yorkshire Dales National Park	Yorkshire Dales National Park
Hertfordshire	Roding, Beam and Ingrebourne; Colne, Lee and Stort	Environment Agency

Collaborative Projects with local partners including:

1. Action for the River Kennet
2. FWAG East
3. FWAG South East
4. West Cumbria Rivers Trust
5. Ribble Rivers Trust
6. North Devon Biosphere Reserve
7. Tees Rivers Trust
8. Norfolk Rivers Trust
9. Cornwall Wildlife Trust
10. Farming Life Centre
11. Northumberland Rivers Trust
12. East Devon AONB
13. Eden Rivers Trust
14. South Devon AONB
15. Southampton University.

Collaborative Projects with National Partners:

1. Soil and Water Management Centre
2. Royal Agricultural Society of England (Innovation for Agriculture)
3. Campaign for the Farmed Environment (CFE) (now called Championing the Farmed Environment)
4. Maize Growers Association.

Table 2: CSF and Partner inputs to partnerships

	CSF cash contribution £ grant in aid	**Partners cash and in-kind contribution £**
16/17 National Partnerships and Collaborative Projects	103,621.82	158,944.42
16/17 Catchment Partnerships	121,525.00	378,993.50
16/17 Local Collaborative Projects	74,681.52	29,197.64
Total 2016-17	**299,828.34**	**567,135.56**
17/18 National Partnerships and Collaborative Projects	34,270.00	27,500.00
17/18 Catchment Partnerships	134,951.00	403,482.00
17/18 Local Collaborative Projects	92,527.09	52,137.87
Total 2017-18	**£261,748.09**	**£483,119.87**

Working with Water Companies

CSF is working with water companies and their farm advice delivery partners to address water quality issues through:

- shared on-farm events
- co-funding of local CSFOs
- joint catchment advice products
- specialist advice services for farmers.

Since 2015, Natural England has developed a number of delivery partnerships with water companies. Nationally these partnerships have grown to support a complement of more than 20 CSFOs, approximately a quarter of the CSFO workforce. This represents a significant increase in Natural England's capacity to deliver farm advice and has been a valuable income stream to support Natural England's work. In the Thames and South East alone, water company partnerships account for £540,000 funding per annum. Severn Trent and Wessex Water, have bought into commercial arrangements with Natural England to procure advice services through our Farm Advice Framework (FAF). Annually a number of water companies also sponsor CSF's Great Farm Challenge project working with agricultural students.

In addition, CSF co-funded partnerships with water companies together with other stakeholders further demonstrating the willingness and interest from water companies to work with CSF. Future CSF work will focus on sustaining and extending contracts with existing clients, most of which run to 2021.

Woodgarston Catchment, Hampshire Story

The majority of Hampshire's river catchments are located above chalk aquafers which supply water to the public and feed the highly sensitive chalk rivers. Over the past 20 years there's been an increasing trend in the amount of nitrates found in the groundwater due to the solubility of nitrate and the porosity of chalk. Excess nitrate in water can push water quality above the legal drinking standard, lead to eutrophication and failing Water Framework Directive (WFD) targets. Much of this nitrate loading has been attributed to agriculture, from the application of both organic and inorganic fertilisers.

Picture showing the difference in cover crop growth between early sowing (right) to late sowing (left), highlighting the importance of establishing cover as soon as possible after the previous crop has been harvested. Photo credit Mark Slater (Natural England).

CSF are working in partnership with South East Water and the Farming and Wildlife Advisory Group South East (FWAG SE) to identify potential solutions to address this rising trend. One potential solution is the use of cover crops which are established on land that would otherwise be left fallow (bare) for a period of time, usually over winter.

The partnership have implemented cover crop trials in the Hampshire catchments over the past few years which aim to establish how cover crops can play a part in retaining soil nitrate over winter and reduce nitrate loading of rivers and groundwater. Plots have been set up with different seed mixes and sowing dates for comparison alongside control plots left bare, with no cover.

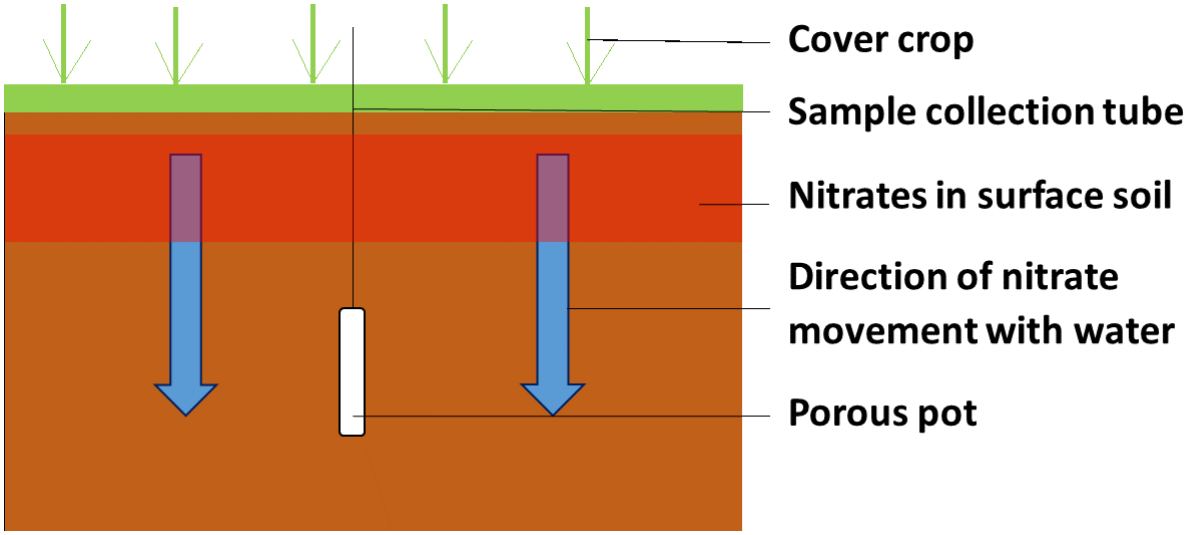


Diagram of how porous pots work.

Ceramic sampler pots have also been installed on 4 farms to collect samples of nitrate concentration leaching though the soil profile. As water moves down through the soil profile it takes residual nitrate with it, which can be sampled via the porous pot and subsequent estimates can be made of the nitrate quantity lost. A total of 50 porous pots have been placed on the farms, with 5 pots placed across each of the various cover crop mix plots as well as the bare ground control sites. In addition a further 20 pots have been installed in permanent pasture and woodland, to help build understanding of nitrate movement from different systems.

Mark Slater, CSFO River Test and Woodgarston explains, "*The data collected from these trials will be used to inform farmers of the benefits of using cover crops. The project helps raise awareness of the issues associated with nitrate leaching and uptake by cover crops; encourages planting of cover crops, supporting a reduction of nitrate loading of local rivers and groundwater. Additionally, this data is helping shape groundwater catchment management with South East Water who, following on from this trial, are offering farms incentives to increase overwinter ground cover through the establishment of cover crops".*

Working with Agricultural Colleges

CSF delivers the Great Farm Challenge project working in partnership with water companies, currently Severn Trent Water, Anglian Water and United Utilities, the Environment Agency and agricultural colleges to provide an educational opportunity for young farmers and land managers. Working together with like-minded partners and across the Defra family, the project also helps deliver on Natural England's Conservation 21 ambitions and Defra's 25 Year Environment Plan.

The Great Farm Challenge project is run as an inter-college competition with a full day's training provided. Since it started in 2011, the partnership project has engaged more than a thousand agricultural students.

Students learning about CSF. Photo credit Natural England.

At the interactive learning sessions we get students thinking about a range of environmental challenges such as slurry storage and nutrient management, diffuse pollution from agriculture and water quality issues. Students then visit a local working farm to see first-hand the challenges faced.

Following the training day, students have to work on a written project based on a hypothetical case study and their farm visit, identifying the DWPA issues and recommending remedial actions.

The reports are then judged by representatives from each delivery partnership, with the top two submissions from each college being invited to a regional final to explain to the judging panel the potential environmental impacts of farming, and how better farm management can help to protect the water environment.

The final itself is a three-quarter day event with each group presenting for 10 minutes and judges asking 5 minutes of questions.

Winning Students receiving their award from Stuart Roberts. Photo Credit: Natural England.

Winners and runners up receive certificates, trophies and Amazon vouchers which are presented by a high ranking individual from the agricultural industry; in 2017, this was the newly elected vice president of the NFU, Stuart Roberts.

Geoff Sansome, Natural England's Head of Agriculture who was a judge at the Midlands regional final explains *"It's really wonderful to see such a great learning and development opportunity for the students and it is a superb way of building bridges out to the industry. Also great to secure someone like the NFU Vice President to support the day, but also observe the positive things we can do. By creating the awareness*

of good water quality practices we will hopefully avoid problems in the future, safeguarding the environment and the farm business whilst minimising costs of water treatment which could have an impact on the water bill paying customer".

Positive feedback was received from students who felt they had learned more about soil, pesticide, nutrient and manure management as a direct result from the events. College lecturers said that the content of the competition ties in and complements their curriculum. The involvement of industry partners also brings added credibility to the competition.

The water companies currently involved in the project are keen to see the expansion of the competition within their own areas. A number of potential colleges across the country are also interested in taking part. There has also been interest from other water companies who would like to develop a similar project in their own regions.

The cost of the project was minimal with Natural England (CSF) being the major contributor. All water companies pledged staff time and some funding to the project to enable a roll out into their area. Environment Agency also pledged staff time.

Table 3: Costs

F/Y	GIA £
2016/17	9,176
2017/2018	7,266*
Total	**16,442**

*plus financial input from Severn Trent Water, United Utilities and Anglian Water.

Communications and Advocacy

The principal communication objective for CSF is raising awareness of Diffuse Water Pollution from Agriculture (DWPA) to encourage farmers and land managers to improve water quality through voluntary action.

During Phase 4, we continued to build on the CSF brand - credibility and trust.

Our vision is to support farmers in achieving clean water and a healthy diverse environment; to benefit people and the economy for future generations.

Our communication objectives:

- **Raise awareness** amongst farmers and land managers of the impacts of diffuse water pollution from agriculture.
- **Encourage farmers and land managers in catchments** to take voluntary action to mitigate diffuse water pollution from agriculture.
- **Encourage voluntary action to help achieve Water Framework Directive**.
- **Facilitate synergy and integration** with related programmes and mechanisms to tackle diffuse water pollution from agriculture.
- **Work with stakeholders to develop and deliver partnerships** to encourage action to address diffuse water pollution from agriculture.

We continue to align our communications work with Defra and the Environment Agency and identified four main themes:

- **cleaner water**
- **boosting the economy**
- **working in partnership**
- **leading, inspiring and engaging.**

To help achieve the following strategic outcomes:

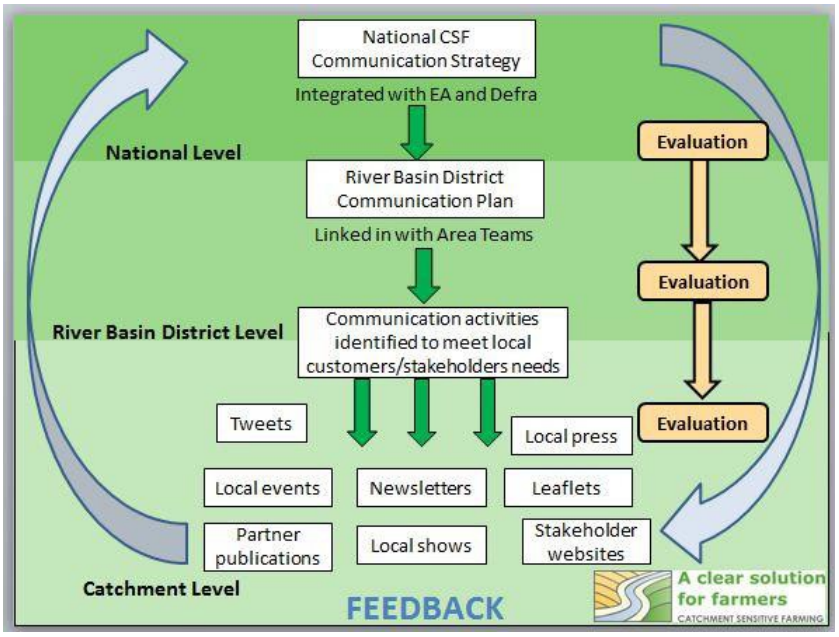
- We play our part in achieving Defra's objectives:
  - a cleaner, healthier environment, benefiting people and the economy, and
  - a world leading food and farming industry.

- More farmers and land managers are aware of the impacts and effects of diffuse water pollution, CSF priority areas and where to go for support and understand:
  - the economic value of protecting the environment; and
  - best practice to address pollution through CSF advice, information and events.

- The environmental benefits of previous CSF delivery is maintained and enhanced by working with farmers, local delivery partners and stakeholders.

- Inspire trust and confidence in CSF internally and externally.

- CSF work is understood and valued internally and externally.



How CSF engages across the programme

Communication principles

Our guiding principles:

- continue to produce evidence-based communications, particularly at a local level;
- share best practice, knowledge and advice to demonstrate our expertise and experience;
- use advocacy to influence partners and stakeholders;
- work in an integrated way with CSF Programme Partners (Defra and Environment Agency) to produce joint communications activities, where appropriate; and
- be consistent in our approach, everything we say and do must be mutually reinforcing.

Communication Tools:

- case studies to demonstrate how CSF advice and incentives can help
- E-Bulletin to staff and partners
- media activity including joint press releases with partners
- GOV.UK
- Twitter
- online publications catalogue to share best practice, knowledge and advice
- key national Agricultural Shows
- advice and tools for CSFO engagement, for example, a local newsletter template
- joint activities with National Partnership.

To work effectively it is necessary to link up with existing farmer networks, partners, stakeholders and landowners. This includes raising awareness of CSF with farmers within the catchment area, agronomists, NFU, CLA, local authorities (including Highways), NGOs such as Wildlife Trusts and Rivers Trusts.

Setting up farmer-led steering groups at the start of the programme has been very successful, with some members being around for the full 10 years. They are an important vehicle for our communications.

Cost (£)

With no communication budget and Natural England marketing restrictions in place, CSF has worked by developing 'no cost' communications channels, for example using social media. We make the most out of our partnership and stakeholder channels and work closely with the wider Defra Group, particularly with regards to attendance at key national agricultural shows.

The CSF National Partnerships enables us to promote information to farmers, partners and stakeholders.

- A new strategy, outcomes and focus for the new current climate/situation.
- CSF's increased web presence has resulted in increased levels of digitally available publications. Our list of CSFOs for farmers to get in touch with us was download more than 10,000 times.
- Our page on GOV.UK was visited more than 37,000 times.
- Our videos on our YouTube channel were watched 4,787 times.
- In 2016 we attended 8 national agricultural shows, as well as a number of local shows.
- In 2017 we engaged more than 500 customers at 6 national agricultural shows.
- Distributed a local newsletter template to further enhance the CSF successful brand and to allow for local input to meet local customer needs. Our national template is pre-filled with some core national CSF news and information, whilst offering space for teams to add their own content.

Lessons learned:

- We need to invest more time and effort in raising CSF brand at a national and regional level to reach and influence more farmers and stakeholders.
- Collaborate more with partners to communicate CSF key messages.
- Systematically use the CSF brand to build our profile.
- Inform and value CSF staff so they feel valued and better able to do their jobs.
- Continue to innovate and use new digital tools to build brand presence.

Piloting Integrated Delivery for Flood risk and Water Quality

Overview

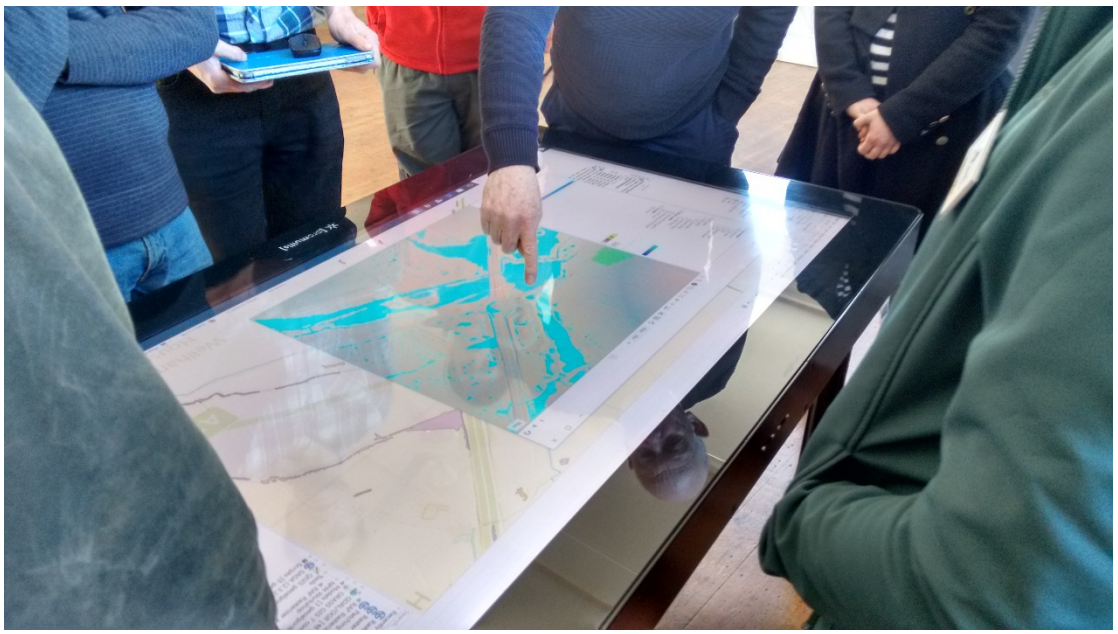
Piloting began in 2014 following the Somerset floods where CSF were invited to help target and deliver the work of FWAG South West in delivering the catchment element of the Somerset Flood Action Plan. Storm Desmond catalysed the next wave of development in the North West largely focusing on the Eden but supported by area wide engagement with Natural England and CSF. This has since developed with the advent of the Environment Agency's Natural Flood Management (NFM) Programme, CSFOs are supporting this work at the catchment scale in Alconbury, Evenlode and with the Community Project in the Piddle. Effective joint liaison with NFM projects is also developing, a notable example being in Stroud where the CSFO and Stroud NFM Officer have developed an efficient joint working approach. In Yorkshire close working with NFM projects includes providing these projects with relevant specialist visits.

NFM Tools

CSF was also commissioned to develop tools to support this work, these included:

- testing an interactive engagement tool;
- videos Natural Flood Risk Management Overview on Vimeo;
- 1 to 1 visit specifications;
- development of multi objective supply chain tools – LENS; and
- review of social science to inform engagement approaches.

The interactive engagement tool was trialled in three catchments. This proved a very welcome and positive approach and at each event farmers identified measures they could adopt and the modelling showed these would make a difference to flood risk in the downstream community at risk. The picture below shows a group of farmers discussing around the table where measures could be deployed in their catchment.



An interactive table used to map Natural Flood Management

The new 1 to 1 NFM Visit Specification has been used in Cumbria and put forward to form part of the new framework specifications.

A social science guidance booklet has been created designed to support CSFOs as they consider appropriate engagement on flood risk in their catchment. It provides relevant international examples of paid ecosystem approaches for flood risk.

Reverse Auction Somerset

CSF has provided technical leadership to the Environment Agency's recent trial of a Reverse Auction system working with FWAG SW to deliver this. The contract was awarded to NaturEtrade whose platform was adjusted to enable 6 NFM measures to be offered to farmers for bidding, this included some permanent measures such as hedgerows across the contour. Local press releases announced this and FWAG SW working with CSF contacted farmers and provided local support such as follow up visits and calls. See NaturEtrade NFM.

- Farmers welcomed this approach but bidders were largely those already engaged with CSF / FWAG SW with an understanding of resource protection and flood risk.
- Farmers support the development of this approach but appreciated the advice available to help them apply and then develop their measures is essential to secure the desired outcomes.
- Most farmers bid for maize management as this was something they were already familiar with but all options were bid for and the approach was extremely efficient.
- Environment Agency are planning a second auction with FWAG SW in 2019 taking on board both technical and practical findings.

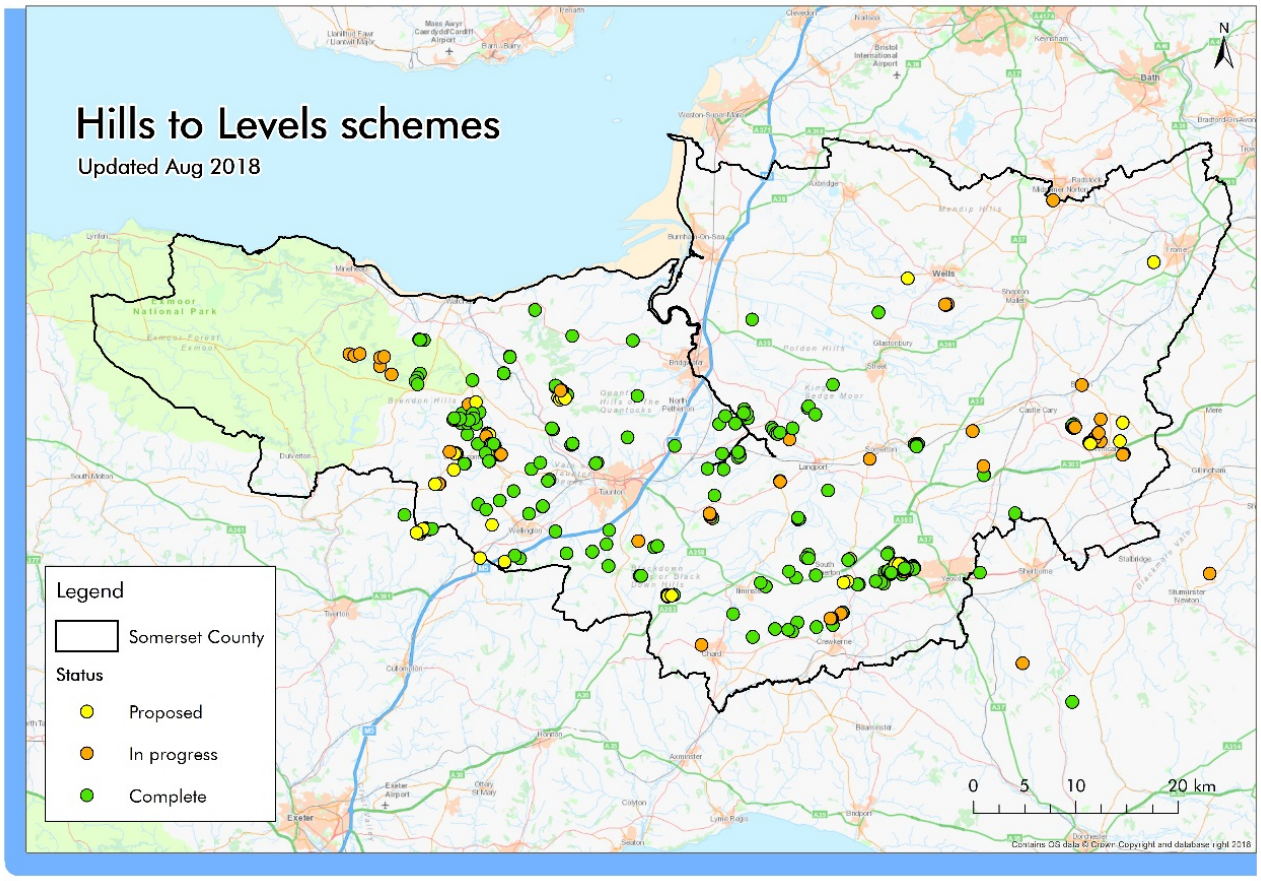
Examples of Integrated Delivery

Somerset
CSFO Roy Hayes secondment to FWAG SW ended in 2017, his role is now part funded by FWAG SW (2 day per week) enabling the strong links to continue and CSF to deliver against Water Quality objectives 3 days per week. This work forms part of the Somerset 20 year Flood Action Plan. Jointly, working with FWAG SW delivery under the Hills to Levels project has continued apace. This project has contributed to national policy development, regional training and the development of guidance.

Significant achievements include:

- **501 NFM** structures in progress or complete (£493,000);
- working with flood wardens - community led to better use local resources, knowledge and contractors;
- working with FWAG SW - enabled development and use of innovative measures and bespoke solutions;
- working with FWAG SW enabled CSFO to access wider funding providing greater flexibility for innovation;
- flow path mapping and historic water catchment maps;
- using CSF/ Natural England funded soil & water filter measures addressing both water quality and flood risk objectives; and
- the project was announced as a 2018 UK River Prize finalist in March 2018.

Filter fence helps manage silt and runoff to local roads

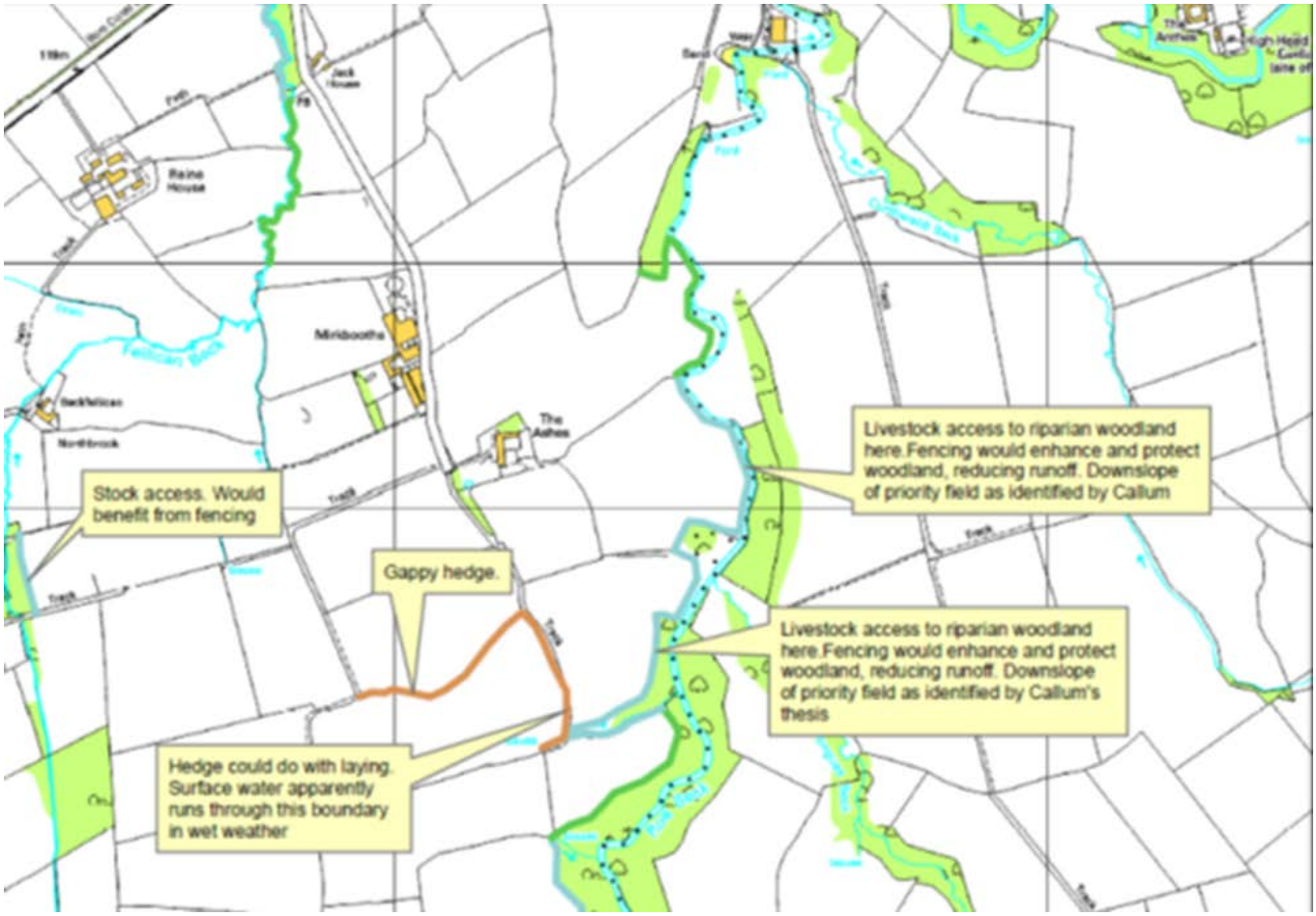


Map showing NFM measures across Somerset county

Eden

Following Storm Desmond CSFOs in Cumbria supported Natural England's recovery work, in the Eden further work to help mitigate flood risk was developed.

CSF has developed an effective joint working approach working with Eden Rivers Trust (ERT) to broaden the area covered and deliver efficiently across water quality and flood risk. This is funded by a CSF collaborative project. Both organisations are out engaging farmers in the catchment but the ERT refer farmers onto CSF for CS applications and CSF provide technical support at engagement meetings. ERT share their SCIMAP flow pathway targeting to support engagement and CSF develop solutions with farmers to the issues identified. These may employ the use of CS or the CS Hedgerows and Boundaries Grant. The example below shows how solutions have been identified across a landscape:



Map showing solutions identified across a landscape

Alconbury, Evenlode

These catchments have new projects in the Environment Agency's Catchment NFM Programme. In each case the CSFO is engaging farmers for water quality but has developed their understanding of flood risk management and NFM measures and is supporting the delivery of measures on the ground. Both are unfunded at this stage.

Piddle - a tributary of the Dorset Frome
This is one of the Environment Agency NFM community projects, the CSFO has led the farmer engagement through both her normal work and an additional launch event. Tracks and pathways play a very important role in conveying water rapidly in this catchment and track drainage improvements secure both water quality and flood risk benefits.

Stroud
This is an example of effective liaison which broadens engagement for both projects and helps farmers access both CS and local funding. In this example, an established NFM project with secure engagement was of value to the new CSFO; targeting a new and enabled the NFM project to reach a wider range of farms. Whilst this was cost neutral it provided greater engagement and delivery across both projects.

CSF Air Quality Pilots

In 2017, an increasing awareness of agriculture's contribution to air pollution led to the running of three pilots to look at how easily advice on reducing ammonia emissions, could be integrated with CSF's existing advice and training on diffuse water pollution. The pilots were run in three areas, Cumbria, Shropshire and Dorset. These areas were selected based on the co-existence of CSF catchments and protected sites that were vulnerable to the effects of ammonia.

The period of the pilots also coincided with the running of Defra's Farming Ammonia Reduction Grant (FARG) scheme.

For the period of the pilot the three CSFOs involved carried out their normal range of activities but where appropriate they also gave advice on reducing ammonia emissions including signposting to FARG and arranging for farmers to receive a visit through the Farm Advice Framework (FAF) to support their application.

The main findings of the pilot were as follows:

1. All CSFOs found that there were no problems associated with adding ammonia advice onto their existing water quality advice.
2. Ammonia mitigation alone didn't provide a strong driver for taking action. Most ammonia mitigation measures that were adopted were done primarily because of their benefit to water quality. In particular, the interest in and subsequent application for FARG funding for slurry store covers was much higher in Cumbria than the other two areas because of the stronger need to exclude rain water from stores.
3. Although applications were submitted for FARG following CSFO advice this was limited due to the short timescale involved with FARG and also the limited knowledge of both farmers and advisers about covering slurry stores. This highlighted the need for a realistic timescale for funding and completing work and also the need for CSFOs and other advisers to be provided with sufficient knowledge to be able to provide farmers with advice on the practical aspects of fitting slurry store covers.
4. It is important to think about all potential sources of ammonia as reduced emissions from one area of activity, eg, storage, can easily be undone by poor practice elsewhere, eg, during spreading.
5. Existing CSF catchments don't necessarily provide a logical framework for offering advice on air quality. Where farms affecting a protected site lay outside a CSF catchment then it wasn't possible to engage with them and this limited the effectiveness of CSF advice in addressing the ammonia emissions affecting the site.

The following appendices give a summary by the CSFOs of the approach taken to delivering ammonia advice alongside water advice and Shropshire and a case study showing the installation of a slurry store cover in Cumbria.

Appendix 1: Ammonia discussions on farms – Ken Downward

CSF invests a lot of time engaging with farmers. It's our gateway into the way the countryside is managed for both food production and for wildlife. Getting onto a farm, sitting around the farm kitchen table is a real privilege that CSFO's get to experience. That privilege comes with a great deal of responsibility and provides us with insight into the way farms work – farms that are dealing with very high levels of nutrients across the landscape.

In North Shropshire CSF ran a pilot project in which the topic of ammonia emissions was introduced into the structure of our farmer discussions. This work was carried out mainly on small to medium sized, mixed dairy farms.

When CSFO's engage a farmer and get onto farm, we spend most of the initial time talking to the farmer and listening to what he or she has to say. This interaction varies enormously depending on the type of farmer we are working with and the operation being managed. In short we deal with a whole range of land managers who may be owners, landlords or tenants or any combination of these. All make use of the land, their infrastructure and machinery for agricultural production and management of the countryside.

The discussion generally follows a pattern, beginning with what is brought onto the farm, what is managed or grown, what is stored and how. We then consider the type and condition of the infrastructure used and finally how the soil is managed. This discussion provides the CSFO with a preview of what to look out for in the farm yard and wider farmed environment.

As part of the initial discussion, the CSFO talks to the farmer about ammonia that arises from animal manures and chemical fertilisers. This is a natural extension of our normal diffuse water pollution work, where we already consider inputs such as feed, fertilisers or any imported manures brought onto the farm. The discussion extends to how various materials are stored, the type, age and condition of infrastructure used. We then consider how fertiliser and organic manures are utilised on the land. Issues such as equipment calibration and the manner in which, for example slurries are applied, are discussed. At each stage ammonia is discussed as a natural extension to existing diffuse water pollution topics and we talk about ways to consider reducing ammonia losses.

Finally, we will talk about how the soil is managed in terms of soil testing and nutrient management planning and recycling of nutrients back to land. A key point is that a range of solutions to reduce ammonia emissions across the farm are considered, from inputs, storage, usage, outputs and recycling to land. Introducing ammonia saving solutions at one stage can be jeopardised if these are not then followed through at each subsequent stage of the farming system and this has implications for funding. At present there are funding options under CS for slurry covers on suitable stores. The Countryside Productivity Small Grants offer funding for slurry spreading equipment and related slurry technologies.

In some respects this work is pushing new boundaries. It has not been a massive change, but it is bringing up new issues and highlighting funding needs. It is building on the idea of keeping nitrogen on the farm where it can be a valuable crop nutrient so that it is not lost as ammonia into the atmosphere where it becomes a pollutant. This is additional to consideration of nitrogen leaching which is the other risk associated with slurry and fertiliser applications to land.

CSF is making connections between both atmospheric ammonia nitrogen as well as dissolved nitrates in drainage water, both of which can affect sensitive habitats when they leave the farming system. Both forms of nitrogen cause eutrophication, an adverse change in the abundance and types of vegetation recorded in protected sites. In Shropshire, ammonia sensitive habitats include a number of meres and mosses such as Fenn's and Whixall, a Site of Special Scientific Interest and National Nature Reserve.

Whilst introducing ammonia issues on top of our usual diffuse water pollution issues, the CSFO has to be aware that there is only so much the farm business and the farmer can undertake at a time and it is down to the CSFO's judgement, intuition and empathy to manage knowledge transfer where investment can be very low or gradual and sometimes sporadic.

Measuring ammonia using passive diffusion tubes at Fenn's and Whixall Moss in Shropshire (courtesy of Dr Joan Daniels)

A slurry store cover helps to reduce the loss of ammonia from storage and needs to be part of an overall farm package that considers inputs, usage, storage and recycling to land.

Appendix 2: Slurry Store Cover in Cumbria – Chris Turner

Farmer's view: winter rainfall pumping costs from this 3 million gallon lagoon would be £6,500

1 week's water savings after completion of slurry cover

Staffing

The table below shows the number of delivery staff, their employment status and length of time in role over the two years.

Table 4: Staffing Information

	2016/17	**2017/18**
No. of Priority Catchments	80 (including 9 partnerships)	80 (including 9 partnerships)
Staffing budget	£2,890,099 **Natural England** £337,600 **Environment Agency**	£3,523,674 **Natural England** £333,019 **Environment Agency**
Total Programme FTE	**88.8**	**121.0**
RBCs		
Number / FTE	**10** (**9** FTE)	**12** (**11** FTE)
Employment Status	**10** Permanent	**12** Permanent
Length of time in role	**0** (< 6months) **1** (6 months - 1 year) **0** (1-2 years) **9** (2 years +)	1(< 6months) 4(6 months - 1 year) **0** (1-2 years) **7** (2 years +)
Vacancies (no. of posts)	**0**	0
CSFOs		
Number / FTE	**51** (**45.9** FTE)	**85** (**75.5** FTE)
Employment Status	**10** Fixed Term Appointments (FTA)/Short Term Appointments (STA) **41** Permanent	**42** FTA/STA **43** Permanent
Length of time in role	**0** (<6 months) **2** (6 months - 1 year) **6** (1-2 years) **43** (2 years +)	**24** (<6 months) **8** (6 months - 1 year) **16** (1-2 years) **37** (2 years +)
Vacancies (no. of posts)	**20**	**8**
CSF Support		
Number / FTE	**6** (**2.4** FTE)	**12** (**7.55** FTE)

	2016/17	**2017/18**
Employment Status	**6** Permanent	**6** Permanent 6 FTA
Length of time in role	**6** (2 years +)	**4** (<6 months) **2** (6 months - 1 year) **0** (1-2 years) **6** (2 years +)
Vacancies (no. of posts)	**3**	**3**
CSF National Team Natural England		
Number / FTE	**14** (**12.9** FTE)	**15** (**13.7** FTE)
Employment Status	**0** Temp **14** Permanent	**0** Temp **15** Permanent
Length of time in role	**1** (1-2 years) **13** (2 years +)	**3** (< 6months) **0** (1-2 years) **12** (2 years +)
Vacancies (no. of posts)	**2**	**3**
CSF National Team Environment Agency		
Number / FTE	**7** (**6.2** FTE)	**7** (**6.2** FTE)
Employment Status	**7** Permanent	**7** Permanent
Length of time in role	**7** (2 years +)	**7** (2 years +)
Vacancies (no. of posts)	**0**	**0**

Roles

Role descriptions are available for all programme roles, of which the key ones are described below. Delivery roles have remained consistent from Phase 1 of the programme.

River Basin District Co-ordinator (RBC): Senior Adviser. Responsible for advocating CSF and liaising with the Environment Agency, Natural England Catchment Based Approach (CaBA) catchment partnerships, water companies and other partners to ensure CSF is effectively contributing to WFD and SSSI priorities and integrating with other delivery mechanisms. RBCs oversee delivery within the River Basin District including CSFOs, FAF contracts, partnerships including contracts with water companies and increasingly leading for Natural England on a range of other DWPA related projects including the Catchment Based Approach and SSSI Diffuse Water Pollution (DWP) Plans.

Catchment Sensitive Farming Officer (CSFO): Lead Adviser. Key delivery role responsible for overseeing and delivering farm advice within catchments. CSFOs are line managed within integrated local delivery teams and functionally managed by the RBC. CSFOs engage farmer and provide CS endorsements.

Catchment Sensitive Farming Support: Support Adviser. Supporting delivery in River Basin Districts eg producing farmer mailings, GIA procurement, and CSF Reporter data entry and event organisation.

CSF National Team: a mix of Senior Advisers, Lead Advisers and Advisers. Responsible for National coordination and delivery of the Countryside Stewardship/Water Capital Only Grants, partnerships, collaborative agreements, training for CSF staff, internal and external communications and programme promotion. Also, national projects such as demonstration farms and agricultural colleges work.

The Environment Agency National Team is responsible for the monitoring and evaluation programme including enhanced water quality monitoring, the annual CSF telephone survey and the CSF Reporter.

CSF budget also pays for a proportion of other roles in Natural England which contribute to CSF Delivery such as FAF Contracts staff (average 5% of total Natural England CSF staffing budget); FAF supplier staff (average 6% of total Natural England CSF staffing budget). A proportion of the total Environment Agency CSF staffing budget is also used to pay for other managerial roles within the Environment Agency. These are not included in the table above.

Staff turnover and recruitment

Staff numbers have increased since the Interim Phase to enhance capacity to deliver the increase in programme budget in both years, this is following the cuts, where we were unable to fill the vacancies.

CSFO staff turnover has however been high, due to the number of staff on fixed term appointments (FTAs) or short term contracts, which has, at times, resulted in reduced delivery.

Staffing costs for 2016/17 & 2017/18 are shown in Table 4. Staffing is the highest cost for the programme accounting for about 70% of total programme Grant in Aid (GIA) budget.

The key lessons learned are as follows:

- Longer-term FTA or permanent staff is needed for effective delivery.
- In the Anglian River Basin Districts, staff churn has been high for a variety of reasons. This has created some challenges for local delivery which we are currently addressing.
- When fixed and short term contracts have been extended, confirmation of this has not been given until just a few months before the contract end dates, resulting in staff leaving before the end of their contracts due to job uncertainty.

It is sometimes difficult for CSFOs on fixed or short term contracts to build meaningful and lasting relationships with farmers.

Training

Catchment Sensitive Farming (CSF) partnership has always placed great emphasis on the training and development of its staff and this has continued throughout Phase 4. All staff across the programme have access to relevant training and development opportunities. The CSFO role can be considered to be quite specialist when compared with other Lead Adviser roles in Natural England and this is reflected in the range of high-quality technical training available to CSFOs.

The aims of CSF training during Phase 4 were to:

- Bring new CSFOs to a common standard of knowledge in DWPA related issues and CSF delivery to allow them to carry out their role effectively.
- Provide opportunities for established CSFOs and RBCs to further develop their technical knowledge and personal skills whilst fostering a sound understanding of corporate issues around DWPA and the technical agricultural solutions.
- Provide training for CSF Support and National team staff to develop their particular specialisms and offer the opportunity to develop their knowledge and understanding of DWPA issues and their solutions.

A skills profile for CSFOs has been developed outlining potential technical training and personal development; appropriate to the time in their role. The skills profile recognises the need for technical development in the early years of a CSFO, whilst supporting specialist training for more experienced CSFOs. The need for personal skills training including an understanding of social science is incorporated into this profile.

Each year a training plan is drafted with input from Programme Management Group, River Basin Co-ordinators and the National Team. This plan includes a range of introductory courses; industry recognised courses and specialist topics. Allowance is made for development and maintenance of individual specialisms.

Table 5: Delivery of training activities and attendance

Training Course	2016/17 Attendees	2017/18 Attendees
Agri Awareness	10	3
BASIS Facts	1	3
BASIS Foundation	2	0
BASIS Soil & Water	5	4
BETA conservation management or BETA	1	1
Category Incident Training	42	0
Conferences	10	26
CSF Induction	16	42
CSF Staff Training Conference	110	115
Fluvial Geomorphology	9	0
FQA/NMP	8	2
Introduction to Farm Business Management	10	16
Introduction to Fertilisers	8	0
Introduction to Soils	8	0
Induction	0	42
Maize Growers	0	18
NFM	20	26

Training Course	2016/17 Attendees	2017/18 Attendees
NVZ/SAFFO	8	0
Pesticides Introductory & Advanced	10	11
Slowing the Flow & Mitigation of Soil & Pesticide Losses	0	13
Social Science	26	22
Specialist Courses	4	12
Sustainable Wetlands	19	0
Webinars technical & staff updates	800+	1000+

Figures include attendance by partners

Webinars have been organised, with topics including monthly updates, CS training, agricultural updates, technical topics such as herbicides, concrete, GIS, CS & Flooding, CSF Measures Advice to Climate Change & Extreme Weather, Metaldehydes, Swales CS for Water Quality, CS for Water Quality, Remote Sensing Tool . Webinars are open to Natural England staff and partners and are recorded for future use.

Technical training sessions formed an integral part of the annual CSF Staff Conferences in 2016 and 2017. Topics included:

- Natural Flood Management – Louise Webb & Emilie Vrain, UEA
- Woodlands for Water – Vince Carter, Forestry Commission
- Improving Countryside Stewardship - Steven Bailey, Natural England
- CSF and Ammonia - Bryn Thomas, Ken Downward, Natural England & Fionnuala Byrne, Defra
- Focus Areas & CSF – Alex Lowe, Natural England
- Improving Air Quality through CSF – Zoe Russell, Defra and James Grischeff, Natural England.

New topics introduced into the CSF training programme include Maize Training, Slowing the Flow and Mitigation of Soil & Pesticide Loss.

BASIS courses including Soil & Water, Conservation Management/BETA & FACTS remain popular and provide staff with an industry recognised qualification.

BASIS CPD points are applied for where applicable eg webinars, CSF Conference. CSF team members are encouraged to retain their membership of professional organisations (eg Prince 2 Practitioner, BASIS Professional Register) once obtained.

Every effort has been made to continue working with partners and deliver joint training. Working in partnership with the Environment Agency has allowed CSF to use pre-developed training modules (eg RB209, NVZ and SSAFO training) and access Environment Agency's training providers at a known cost derived from a competitive bid process. Natural England and Environment Agency have opened their courses to each other when spare training places exist.

Joint CSF and partnership training events have included delivery of maize training with the Maize Growers Association.

Table 6: Cost (£) for Training

Financial Year	Funding Amount
2016/17	£54,087 GIA
2017/18	£68,331 RDPE

The majority of spend is related to the individual courses listed above; however the training budget has also covered some other costs related to training.

Internal courses such as Social Science and Category Incident Training have been delivered at no cost. Where possible, in-house facilities and venues have been used.

All staff new to CSF have been offered a place on a CSF Induction Training course, the aim is to provide induction training within the first few months of someone joining CSF, in 2016/17 there were 16 delegates and in 2017/18 there were 42 delegates for the induction course.

Staff new to the CSF programme have commented that having a structured training plan is beneficial. The training programme has continued to evolve to meet the on-going needs of the CSF Team.

CSF's training plan, skills profile and links with the Natural England Skills Framework have been shared internally with Natural England colleagues and externally with partners and water companies.

CSF's philosophy of offering all CSFOs the opportunity to gain nationally recognised qualifications and undertake technical training means that those on shorter term contracts can offer the industry a set of recognized skills and knowledge, helping staff find alternative employment whilst increasing the skill base of the industry as a whole.

It is recognised that for individuals to develop their career within CSF and maintain high satisfaction within their role, new challenges such as the development of specialist knowledge must be supported.

The on-going CSF training programme has created a large number of highly trained CSF staff in a wide range of different disciplines. In 2016/17 the average spend on training per member of the CSF team was £609 and in 2017/18 the average spend on training per member of the CSF team was £565.

Financial Statement

Phase 4 Delivery Report (2016/17 & 2017/18) – Finance

Overall

F/Y	GIA £	RDPE/TA £	Total £
2016/17	4,765,077	951,512	5,716,590
2017/18	1,842,495	4,374,291	6,216,786
Total	6,607,572	5,325,803	11,933,376

Partnerships

F/Y	GIA £
2016/17	296,437
2017/18	243,617
Total	540,054

Advice Delivery (inc Farm Events team)

F/Y	GIA £	RDPE £	Total £
2016/17	388,492	951,512	1,340,004
2017/18	169,245	1,136,718	1,305,963
Total	557,737	2,088,230	2,645,967

Evidence

F/Y	GIA £	TA £	Total £
2016/17	779,696	0	779,969
2017/18	149,916	585,000	734,916
Total	929,885	585,000	1,514,885

Great Farm Challenge

F/Y	GIA £
2016/17	9,176
2017/18	7,266
Total	16,442

Training

F/Y	GIA £	RDPE £	Total £
2016/17	54,087	0	54,087
2017/18	0	68,331	68,331
Total	54,087	68,331	122,418

Staffing

F/Y	GIA £	RDPE £	Total £
2016/17	3,237,205	0	3,237,205
2017/18	1,272,451	2,584,242	3,856,693
Total	4,509656	2,584,242	7,093,898

Annex

CSF - 10 years on and still going strong

Catchment Sensitive Farming has been working with farmers to reduce water pollution for almost a decade.

Word cloud created to celebrate CSF's 10 year anniversary

In April 2016 the programme had been running for 10 years, run in partnership with Natural England, Defra and Environment Agency, it has helped the environment by working with farmers to reduce Diffuse Water Pollution (DWPA) by giving technical advice, running events, managing grants and working with partners such as Wildlife Trusts and National Parks. As we approach April we look back at where it all started, talk to a stakeholder and discover two highlights from one of our CSFOs.

Huge congratulations

Rory Stewart, Environment and Water Minister, produced a video for December's Catchment Sensitive Farming Conference in which he said: "Huge congratulations for the Catchment Sensitive Farming conference and also for the tenth anniversary. I want to pay huge tribute to the work that you've done over the last 10 years." Rory illuminated the success of CSF as a national programme and the value and

Local people and local partnerships know more, care more, and can do more than distant officials – Rory Stewart

importance of our work at a local level saying: "You are at the sharp end because you are showing that local people and local partnerships know more, care more, can do more than distant officials and I want to pay huge tribute to the work that you've done over the last 10 years."

So where did it all begin?

"Dedicated advisers will soon be on hand to help farmers tackle the causes of harmful water pollution;" Environment Minister Elliot Morley announced in December 2005. The CSF voluntary initiative was to focus on local engagement, and further partnership working, with farmers, farm advisers, conservation bodies, water companies and a wide range of other interests. The initiative was rolled out in April 2006.

Harriet Greene, Defra water quality says :"Over the past 10 years CSF has combined local knowledge, behavioral insights and data about what works (and what doesn't) with the passion and innovation of its staff. The result has been important improvements to the water environment benefiting both people and the economy."

The evidence

In the early days, we made sure we put monitoring programmes in place to measure water quality improvements which meant we could demonstrate the benefits of CSF. Recently we've analysed the monitoring data and been able to show, for example, a 50% decline of in-river pesticide levels and reductions in sediment pressures. A clear relationship is evident between farms receiving CSF advice and water quality improvements. Really encouraging- we have also seen improvements in river ecology, primarily in response to reductions in sediment pressure.
Phil Smith, CSF Evidence Manager at the Environment Agency, said "It's been fantastic to see that all the effort that has gone into planning and delivering CSF over the years has resulted in measurable improvements to the water environment." Full details on our evidence are available in the CSF Phase 1-3 Evaluation Report.

So, we have the evidence that the environment is benefitting from CSF; but what are our CSFOs working on with farmers to improve our landscape.

Top 10 recommendations taken up by farmers:

- separation of clean and dirty water
- soil analysis
- adopting a nutrient plan
- adopting a soil management plan
- integrated fertiliser and manure management
- reducing compaction in the soil
- reducing volume of dirty water produced
- fencing off rivers
- reduction of phosphate fertiliser application
- maintenance of farm tracks.

CSF is a great example of the impact we can make by bringing together the best evidence with dedicated, skilled people at a local level – Bob Middleton, CSF Programme Manager

Bob Middleton reflects on the achievements of the programme to date: "CSF is a great example of the impact we can make by bringing together the best evidence with dedicated, skilled people at a local level. What is really encouraging is that the outcomes we have achieved are down to farmers making significant changes on a voluntary basis for the long term."

Some achievements over the years

39 CSFOs, together with programme staff, were originally appointed to the programme. A fair number of these are still around. Over the coming months, we will be sharing the views of our staff on what they have experienced whilst working on CSF.

Stuart Moss, CSFO in the North East, kicks-off with two memorable moments

Stuart says, "A small farm on the Northumberland Coastal strip had problems with livestock poaching. During one of my visits I suggested to the farmer that he plant some trees in this area. When I returned recently, the farmer took me down to the river to show me the trees and said it was one of the best things he'd done on the farm for ages. The trees have re-connected two ancient semi-natural woodlands and there are now no cows / slurry in the water."

"Setting up farmer-led steering groups at the start of the project has also proved to be a real success, with some members being around for the full 10 years", says Stuart. They are really active and contribute a lot to the delivery strategy. Ray Field, Agricultural Adviser, has been a valuable member throughout this time. Ray shared his views with us: "The first time I had any contact with CSF was with Lydia Nixon. Lydia survived a scary ride around a steep muddy field, she accepted that we were not breaking any rules and we were carrying out good farming practice. Her common sense approach and that of other CSF officers I have worked with has led me to stick with the Steering Group. We have had some heated discussions, and other bodies have suggested some far-fetched ideas, but the CSF team have always understood the need for practical cost effective solutions."

Looking ahead

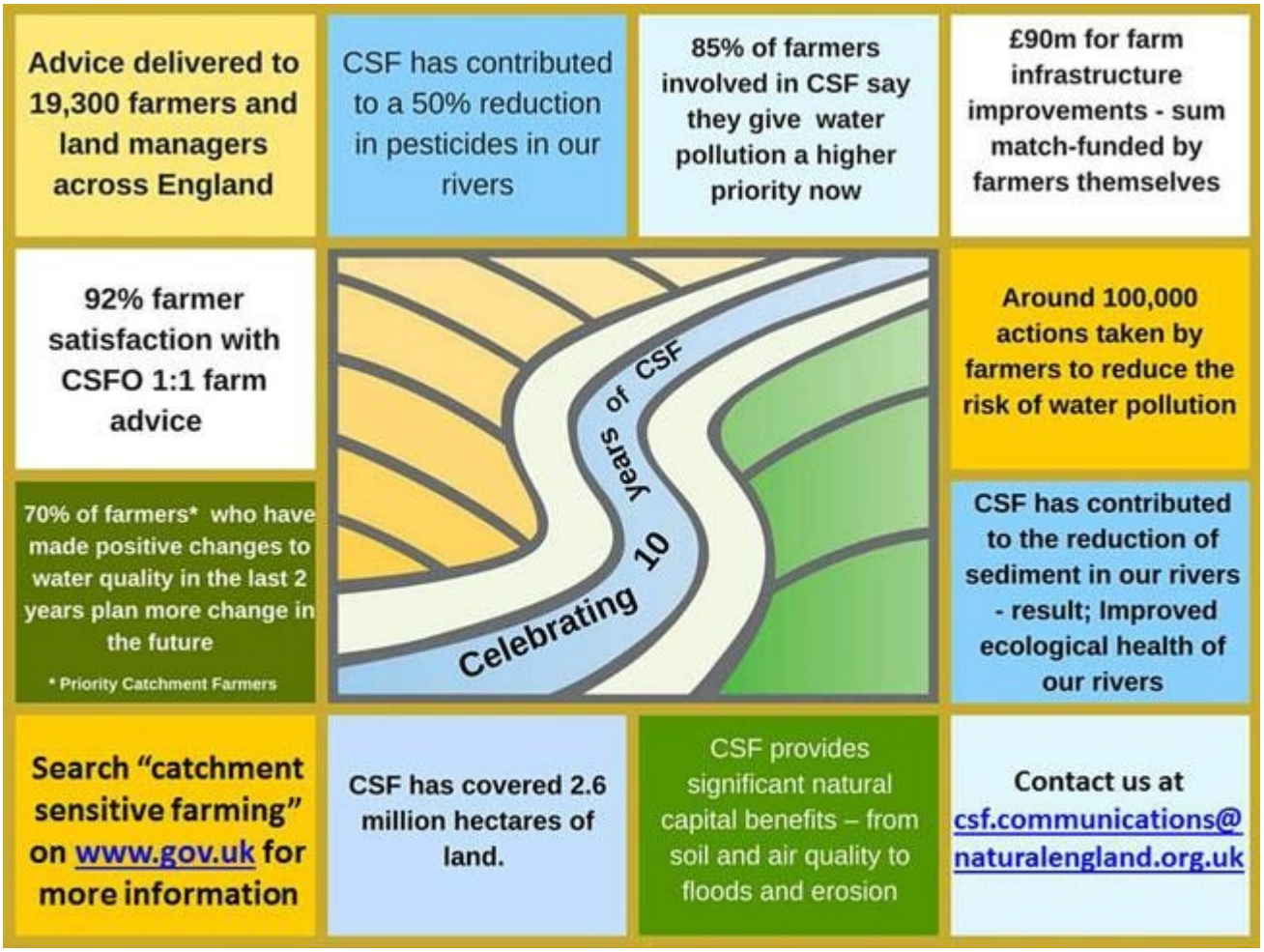
Looking to the future, Bob says: "Whilst we have made real progress, diffuse pollution remains a significant water quality issue. We are working with our programme partners, Defra and Environment Agency, to develop a next phase of work through to 2021. I am very much looking forward to the opportunities and challenges that they will bring."

Reflecting on 10 years of CSF

Catchment Sensitive Farming staff reflect on the achievements of the last decade.

Catchment Sensitive Farming has just reached its 10 year anniversary. We look back at how this programme, run in partnership with Defra and the Environment Agency, has helped the environment by working with farmers to reduce diffuse water pollution from agriculture (DWPA), by giving technical advice, running events and working with partners.

As well as looking at the achievements from the 10 years of the programme we find out what makes those working in CSF happy.



Infographic showing CSF achievements

Looking back to where it all started

The CSF voluntary initiative was rolled out in April 2006 to focus on local engagement and further partnership working with farmers, farm advisers, conservation bodies, water companies and a wide range of other interests.

What motivates CSF staff?

We asked colleagues what motivates them; many felt getting out and hearing from farmers to find out what they have been doing to improve diffuse water pollution makes them happy, as well as feeling part of the CSF family.

Emma Bullock, River Basin Co-ordinator (RBC) in Cumbria says: "I enjoy getting out and seeing the outcomes of our hard work and hearing from farmers about what they have been doing to improve diffuse pollution. Just the other day a Natural England adviser told me about a farmer who, unprompted, had been talking to them about the importance of soil health – that made me happy!"

Rosanna Kellingray, former RBC in North Anglia, talked about what she felt was the best bit of her job: "The variety of work I get involved with – from setting up and delivering partnerships, hunting for and negotiating new income sources, to speaking at conferences, helping farmers with Countryside Stewardship and training new staff. The RBC role is definitely the best job in Natural England – every day is different."

David Stirling, Farm Advice Framework Lot Manager for Yorkshire, North East and

The funding we are able to offer farmers means not only are we working with them to improve their businesses, we are also helping to achieve good outcomes for the environment – David Stirling, Farm Advice Framework Lot Manager

North West, told us he enjoys working with his Farm Advice colleagues to help CSFOs get the best out of the Farm Advice Framework (FAF). "The funding we are able to offer farmers through the framework means not only are we working with them to improve their businesses, we are also helping to achieve good outcomes for the environment."

Angie Grace is an adviser in the CSF partnership team who has been with the programme since it started. Angie has seen the programme grow and develop over the years and said: "It hasn't all been plain sailing, but when there have been obstacles, the team has always pulled together to find solutions. In a nutshell, feeling part of a successful and motivated team and working with open, friendly people, gets me out of bed in the morning and puts a smile on my face."

Achievements

CSF has always focused in catchments most at risk from water pollution from agriculture, and where our work can make the most difference. Some of our achievements are listed below, and can also be seen in the infographic at the top of the page:

- 85% of farmers working with CSF on 1 to 1 basis indicate the programme increases the priority they give to water pollution.
- 92% of farmers satisfied with advice received (from 1 to 1 advice).
- 70% of farmers have trust and confidence in the programme's effectiveness in tackling water pollution (based on those receiving 1 to 1 advice).

- CSF has contributed to a 50% reduction in pesticides in our rivers.
- Improved ecological status of rivers resulting from reduced sediment pressures.
- Significant wider natural capital benefits, especially fisheries, soil and air quality, floods/ erosion, climate regulation and water supply.

Simon West, Defra policy lead, has been impressed with the measurable impact CSF's work has had on progress towards policy objectives and its potential to further increase its impact. He says: "CSF contributes or has the potential to contribute to most aspects of water quality and agriculture policy. For example, CSF can help steer our demonstration test catchment research to apply science to the catchment level and in turn can refine CSF training modules. In addition, CSF can help food and drink businesses provide a clear mandate to their agricultural producers as part of supply chain engagement."

Thoughts from some of our 10 year stalwarts

I have seen the phosphate levels in the River Eye reduce by half - Des Kay, CSFO

Des Kay is CSFO for the River Eye in the Humber catchment. The opportunity to clean up rivers and the environment and develop the understanding of others about good environmental outcomes, balanced against the need to produce food, have been the best things about his role. Des says: "I have seen the phosphate levels in the River Eye reduce by half, some of which I would like to credit to 'voluntary farmer power' and my constant efforts to increase the profile of the river in the catchment."

Philippa Mansfield, Senior Adviser for CSF partnerships in the Terrestrial Biodiversity team, told us about one achievement she is particularly proud of: "Publishing the Constructed Wetlands Guidance through the collaborative project with the Wildfowl and Wetlands Trust was a real achievement. This has led to new Countryside Stewardship items and training for CSFOs."

Phil Smith, Evidence Partner with the Environment Agency has derived real satisfaction seeing complex pieces of work coming together successfully; for example the CSF Evaluation Reports. Phil says: "These are a great example as they result from a lot of hard work by a large number of people – the Evidence Team, consultants, CSFOs – and really push the boundaries."

Seeing changes on the ground is a real motivator for staff. We have a selection of before and after photos which show some of the ways CSF has helped on the ground.

To sum up Des said: "You meet some great folks in this job, both internal and external, and we have a chance to make a real difference in an area we value. If you enjoy the natural environment, understand how it works and don't mind getting dirty, I would highly recommend it. But please bring sensible shoes and a packed lunch!"

Working with CS in Bedfordshire

Winter bird food at Cherry Orchard Farm

Catchment Sensitive Farming plays an important part in the successful delivery of Countryside Stewardship Mid Tier and is continuing to raise awareness of diffuse water pollution from agriculture (DWPA) by offering free training and advice to farmers in priority areas.

Whilst focusing on water, CSF also delivers other environmental benefits through the capital items and land management options available through Countryside Stewardship. These include traditional CSF grants, and CS field options which protect watercourses, historical sites, SSSI's and the wider environment.

Improving habitats at Cherry Orchard Farm, Bedfordshire

In 2015, Andrew Down, CSFO for the Lower Great Ouse, visited James Hopperton of Cherry Orchard Farm in Bedfordshire. James farms 180 Ha with combinable crops, permanent and temporary pasture, sheep and pigs. The farm is close to Grafham Water SSSI, lies on the edge of the village and on the brow of the hill so forms part of the vista of the area.

James is working hard to build a good future for his farm and to ensure he can be compliant with regulation and pesticide use. James is also keen to improve habitats on his land and encourage wildlife to flourish so he and Andrew spent time working out how Countryside Stewardship could help meet James's aspirations.

Putting together a package

The scheme offered some good choices and Andrew was able to pull a strong application together. This included buffer strips to protect water courses and hedges, using 12-24 metre buffers on the more challenging slopes (SW4). The permanent grassland was put into low input grassland (GS2) and, where the farm has ridge and furrow grassland, management of historic and archaeological features on grassland (HS5) was added. The legume and herb-rich swards (GS4) was another good option and was used in one field. This is one of Andrew's favorite options as it does a bit for everyone! To finish off the package, nectar flower mix (AB1) and winter bird food options (AB9) were placed around the farm in strategic spots.

Andrew comments: 'It was a shame we couldn't quite make the pollinator package work for the farm, but we still achieved quite a lot. The CS options we used mean we are protecting water and historic features whilst providing habitat for wildlife and keeping a green space in a sea of arable.'

Upgrading the pesticide facility

James has also chosen to upgrade his pesticide facility with a new filling area and roof combined with rainwater harvesting.

Due to cost, and the need to ensure the right environmental improvements, these items need more help with planning and design and require CSFO approval. Andrew therefore arranged a specialist visit to help with design and placement. As Andrew says "pesticide handling areas can offer significant improvements to both the farm and the environment. Not only does it mean pesticides can be handled safely, but also productivity can improve and James should be able to spray at optimum times, leading to better yields and less risk of run off or drifting spray".

'A real boon'

Speaking early in 2017, James said "I had been in Entry Level Stewardship for 10 years and it made sense to follow onto the new Countryside Stewardship scheme. One of the advantages of the new scheme is the ability to carry out work over 2 years.

"Having this option is a real boon, as it enables works to be spread out, helping with cash flow. The start of the scheme coincided with a busy time of year, but with the help of Andy we were able to build a good package. The winter bird food option has been particularly successful and is really helping to attract more species onto the land."

Maize Charter

Maize

Back in November, Dorset's Catchment Sensitive Farming team was involved in the launch of a proposed Maize Charter for Dorset maize growers.

Why maize?

Here in Dorset we are seeing more and more maize being grown, with recent increases in demand coming from the move towards 'green power' which sees more farmers looking at it as an energy crop for use in anaerobic digesters.

This shift in the use of maize in what is regarded as an efficient means of generating green energy. It is not just seen in Dorset but across the country, with recent figures suggesting that we are now growing 183,000 ha of maize in the UK.

Because of this expansion it is increasingly becoming a contentious crop, particularly due to the high-input and high-output nature of its cultivation, which presents us with some environmental challenges. Maize is often one of the last crops to be harvested, in late September and into October, and because of this farmers often have little time to get a following crop in and established sufficiently over the winter months.

More often than not we see too many fields left with bare soils and stubbles that pose a risk to the water environment due to either loss of soils and nutrients through runoff, as well as nutrients leaching to ground-waters.

Reducing the risks posed by maize

Through Dorset's Maize Charter we see great opportunities to pioneer the effective management of maize to reduce the risks to the water environment. To commence the project, a meeting was held at Athelhampton House near Dorchester, and was delivered as a joint partnership with the Maize Growers Association, Catchment Sensitive Farming and Wessex Water.

The meeting launched the concept of the charter to a number of key maize growers in Dorset and sparked healthy discussions on its potential contents and principles.

The benefits of winter green cover, the management of bare ground, over winter post-cultivations and techniques for soil management were all examined with a receptive audience of farmers, agronomists and others.

Draft principles of the charter

The charter commits farmers who sign up to some form of active winter management of their maize ground, after receiving free specialist advice in a site visit. Options which were discussed include:

- crop rotation
- winter cropping
- under-sowing
- post-harvest cultivation
- post-harvest cover crops.

Farmers signing up to the charter will be required to provide photographic evidence of the active winter management practice in place.

Farmer recognition

Many invaluable suggestions came from these initial discussions including the idea of using a form of certification in recognition and to distinguish the growers who sign-up. From the meeting an initial pilot of ten farmers signed-up to the charter and it is hoped that they will encourage more farmers to sign up, providing a model which can be replicated for all maize growers across the country.

Water company partnerships – a view of the future?

Land use and water quality are closely linked, and evidence shows working directly with farmers can clean-up water, help meet drinking water standards and contribute to 'good ecological status' in rivers and streams.

Watercourse

'Catchment approaches' were highlighted in The Drinking Water Inspectorate's 2014 Periodic Review as a way to minimise treatment costs and offer customers better value for money.

Pioneering Partnerships

Catchment Sensitive Farming (CSF) is pioneering partnerships with water companies to work more closely with the farming industry to help prevent soil, nutrients and agro-chemicals reaching water, and bring wider benefits to the environment and ecosystem services.

In the South East alone, this includes commercial partnerships with four water companies in ten catchments, generating £600,000 per annum to support twelve catchment officer posts.

Reducing Nitrates - Portsmouth Water Partnership

The Downs & Harbours Clean Water Partnership (DHCWP) was a CSF Catchment Partnership 2009-2018, covering a catchment area reaching from the River Hamble in the east to Bognor Regis in the west. It is a collaboration between Portsmouth Water, Natural England and the Environment Agency.

The partnership was established to meet Water Framework Directive (WFD) objectives to protect groundwater sources from agricultural pollution, and specifically targets the reduction of nitrates in drinking water, rivers, lakes and harbours.

The Project Manager/CSFO, Alastair Stewart, was funded by the partnership, together with delivery costs for farmer advice, farm events and research. Equal emphasis is placed on environmental and drinking water improvements, meaning a gain for both people and wildlife.

The collaboration has enabled new catchment management work which may otherwise not have been possible. For example: farm visits, targeted events, and specialist advice on subjects such as precision fertiliser applications, soil, yard and pesticide management, and best practice handling of slurry and manure has led to changes in farming methods.

Alastair has supported and encouraged farmers to apply for Countryside Stewardship and capital grants to achieve on-farm improvements. Alastair explains, "This partnership has resulted in closer working between Natural England and Environment Agency. We have also been working with owners of riparian land on the Hamble and Wallington rivers, looking at Water Framework Directive, flooding and Safeguard Zone issues. By bringing our aims for the area into one place, we can now work with previously unengaged farmers and develop plans for joint farm visits, improving both efficiency and effectiveness".

Since 2018, Portsmouth Water have co-funded a new Natural England CSFO, James Farr, to continue work in the DHCWP area, as Alastair acquired a job with Southern Water.

Creating resilient landscapes - River Ouse Catchment

In 2015, Catchment Sensitive Farming began its partnership with South East Water in the River Ouse Catchment in East Sussex. A key element here was stakeholder engagement. CSFO, Robin Kelly looked to engage with the National Trust at Sheffield Park.

The National Trust wanted to reconnect the River Ouse with its historical meanders to enhance biodiversity and improve visitors' experiences. The opportunity to support this project, by using funding from South East Water, was taken. It also presented the chance to further highlight the concern of turbidity (a key water quality issue) in the River Ouse.

Robin negotiated with the Trust to re-connect the river to its natural floodplain to help alleviate downstream flooding of Lewes. The result has been a commitment by South East Water to grant £10,000 towards this exciting project which is now underway.

Supporting conservation of special sites - Cuckmere & Pevensey catchment

Watercourse

In East Sussex, South East Water and CSF are working in partnership in the Cuckmere & Pevensey catchment, which is important for the abstraction of drinking water. One key issue is the high concentrations of the chemical metaldehyde used in slug pellets.

Catchment delivery is contributing towards a Natural England landscape-scale project on the Pevensey Levels - one of the largest freshwater European protected areas in the South East.

The South East Water partnership is an important part of a wider group which includes local authorities, the water management board and the Environment Agency. CSFO, Tobias Jackson, works closely with Cath Jackson (Pevensey Focus Area Project Lead), on developing joint plans on how CSF delivery can complement Natural England's agri-environment and sustainable development objectives.

Joint land management and Catchment Sensitive Farming event

Earlier this year, a well-attended joint land management and CSF event was held to promote Countryside Stewardship Mid-Tier and to wrap-in resource protection messages. Cath says, "We have a coherent story to tell farmers and partners about water and wildlife, and are developing ways of working which use existing land management tools, like the Countryside Stewardship Mid Tier scheme."

This type of partnership increases our capacity to deliver integrated catchment management. As a further example CSFO Graham Earl is working with Natural England SSSI Adviser Phil Williams in the Kentish Stour catchment, to deliver improvements to Stodmarsh National Nature Reserve.

Graham, Phil and NNR managers Robin Hanson and Stephen Etherington identified opportunities to improve the flood defenses around the NNR. Graham is also engaging with farmers who manage land adjacent to the NNR, to support Countryside Stewardship applications.

Supporting Modern Farming - River Teise and Beult Catchments

CSF stand at an event

CSFO, James Woodward, works across the River Teise and Beult catchments. In July, together with farming groups and agricultural organisations; two events were organised to exchange knowledge on best practice and modern farming techniques, as a way of improving how land is managed within the environment.

At the first event, over 60 local farmers, agronomists and agricultural advisers attended the talks and farm tour at East Lenham Farm, near Ashford.

Farm manager, Andy Barr, together with Agriculture and Horticulture Development Board, CSF and Campaign for the Farmed Environment (CFE), designed the event to demonstrate progressive farming, including companion cropping, integrated pest management and alternatives to metaldehyde.

The second event attracted over 30 local farmers and agronomists. Farm Manager William Steel, CSF and Innovation for Agriculture organised the event to discuss soil management to support cultural and biological control of pests and achieve reduced agro-chemical inputs.

Through water company partnerships, CSF has looked to engage with farmers and other land owners by running stalls at ploughing match events throughout this autumn in Sussex and Kent. This has presented an opportunity to engage with the wider farming communities by talking about the objectives catchment management and C21 are working towards.

Great examples

These areas of work are great examples of CSF working alongside partners and Natural England to deliver C21 and Water Framework Directive objectives by using funding from external partners to put people at the heart of the environment and create resilient landscapes.

Find out more

For further information please contact Charles Chantler, River Basin Co-ordinator or Anne Blokhus, Catchment Sensitive Farming Officer, Pevensey.

Glossary

AHDB	Agriculture and Horticulture Development Board
AONB	Area of Outstanding Natural Beauty
BASIS	BASIS Professional Register
BETA	Biodiversity and Environmental Training for Advisers
CaBA	Catchment Based Approach
CATCH	Database holding now closed CSF capital grant and FARG grant scheme information
CFE	Campaign/Championing for the Farmed Environment
CGS	Capital Grant Scheme
CLA	Country Land and Business Association
CLAD	Customer and Land Database (administered by RPA and Defra)
CPD	Continued Professional Development
CPH	County Parish Holding number
CS	Countryside Stewardship scheme
CSF	Catchment Sensitive Farming
CSFO	Catchment Sensitive Farming Officer
CSFRD	CSF Reporter Database
CSG	Catchment Steering Groups
DTC	Demonstration Test Catchment
DWPA	Diffuse Water Pollution from Agriculture
EWQMP	Enhanced Water Quality Monitoring Programme
FACTS	Fertiliser Advisers Certification and Training Scheme
FAF	Farm Advice Framework
FARG	Farming Ammonia Reduction Grant
FAS	Farm Advice Service
FATI	Farm Advice Training and Information
FIOs	Faecal Indicator Organisms
FTA	Fixed Term Appointment
FTE	Full Time Equivalent
GES	Good Ecological Status
GIA	Grant in Aid
H2L	Hills to Levels project, Somerset
KPI	Key Performance Indicators
Legacy areas	These are Phase 3 areas where CSF can no longer provide advice in Phase 4, due to new Countryside Stewardship targeting. The approach will depend on individual circumstance, as CSF endeavours to support advice through partners
Legacy approach	See 'Legacy areas'
LFA	Less Favoured Area
Local campaigns	This will be unique to each water priority area and may only be targeted to specific areas and/or types of farms to improve water quality
N2K	Natura 2000 Sites
NFM	Natural Flood Management
NGO	Non-Government Organisation
Non-priority farms	These are farms that have been identified through desk-based modelling to have the lowest risk to water quality. General

	advice on best practice will be made available to farms in this group
NVZ	Nitrate Vulnerable Zone
Phase 4	This the fourth phase of CSF from 2016 to 2021
PMG	Programme Management Group
PR19	Price Review 2019 (Ofwat)
Priority Farms	These are farms that have been identified through desk-based modelling to benefit most from CSF help and advice. Throughout Phase 4 advisers will be pro-active in working with these farms
Protected Area	eg Shellfish Water, Bathing Water, Natura 2000 sites, Drinking Water
RASE	Royal Agricultural Society of England
RBC	River Basin District Co-ordinator
RBD	River Basin District
RDPE	Rural Development Programme – England
RB209	Nutrient Management Guide (AHDB)
RBMP	River Basin Management Plan
Reduced Area Catchments	These are catchments that through new targeting have significantly reduced in water priority area in Phase 4.
RPA	Rural Payments Agency
SSAFO	Silage, Slurry and Agricultural Fuel Oil regulations
SGZ	Safeguard Zone
SSSI	Sites of Special Scientific Interest
STA	Short Term Appointment
SUDs	Sustainable Drainage Systems
TA	Technical Assistance Funding
TFA	Tenant Farmers Association
VI	Voluntary Initiative
Water quality elements of Countryside Stewardship	Options in CS Water Quality Issues – eg Sediment, phosphate, nitrate, FIO, pesticides
Water quality items	Grant measures available through Countryside Stewardship to reduce diffuse pollution
Water Quality Objectives	eg our aims to mitigate the water quality issues above
WFD	Water Framework Directive
WPA	Water Priority Area, this is the area defined as having the highest priority for improvements in water quality through Countryside Stewardship. In each catchment these are the core target areas for CSF Phase 4.

Front cover image: Cows in field. © South East Water

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NATURAL ENGLAND

The European Agricultural Fund for Rural Development: Europe investing in rural areas

Environment Agency