

Tesco Project and Catchment Partnership
Report by Broadland Catchment Partnership Officer

Summary: A Water Sensitive Farming (WSF) partnership project between Tesco and the Authority in 2017 proved an effective way to help deliver the catchment management strategic priority and for Tesco to trial a mechanism to reduce the environmental impact of its products via its supply chain that it could replicate in other sourcing locations. The pilot project was run part-time by the Broadland Catchment Partnership Officer (BCPO), working temporarily in a farm liaison role, with local potato farmers by providing demonstrations, best-practice events and free trials of innovative kit to reduce run-off. This approach was well received and appears effective at engaging with 'hard to reach' farmers whilst improving relationships with those already engaged with sustainable farming and the protection of local water bodies. It has also provided opportunities for future projects using existing funding streams and staff resources currently in place.

Recommendations:

- (i) Continue to provide officer support to facilitate catchment plan actions including future kit trials via the Broadland Catchment Partnership (BCP);
- (ii) Support the suggestion to use ring fenced Tesco funding in the Catchment budget to purchase a new piece of innovative technology and expand engagement to include sugar beet and maize growers; and
- (iii) Continue to explore opportunities for private sector funding and strengthen the Tesco relationship to progress actions in the Broads Plan and Broadland River Catchment Plan beyond December 2018.

1 Introduction

- 1.1 Catchment management (through the implementation of small scale local interventions to reduce soil and nutrient loss from fields) is a strategic priority of the Authority for 2018/19 as it was in 2017/18. This meets aspirations to continue to improve water quality and biodiversity within the Broads Executive Area and reduce sediment input and improve water resources throughout the wider catchment. The activities of partner organisations are co-ordinated via the Broadland Catchment Partnership that the Authority co-hosts with the Norfolk Rivers Trust working towards actions in the Broadland Rivers Catchment Plan produced in 2014 to improve the water environment.
- 1.2 In 2016 Tesco was exploring opportunities to work with the UK's National Parks in relation to reducing the environmental impact of its top 20 products primarily in relation to greenhouse gas emissions but also through its commitment to source responsibly and support sustainable farming. Through conversations with the

Authority it became apparent that the largely arable Broadland Rivers Catchment is an important sourcing location for a range of Tesco's fresh produce, especially potatoes.

- 1.3 Tesco was keen to trial an approach to support viable farming whilst protecting and enhancing the environment that could be replicated in other sourcing locations in East Anglia and beyond. Tesco provided £52,873 to the Authority for equipment plus staff and management full cost recovery. Tesco was aware of the National Catchment Based Approach (CaBA) and keen that the project was integrated with existing delivery mechanisms through the Broadland Catchment Partnership as this may be the most suitable delivery vehicle for more widespread replication.
- 1.4 The project complimented the existing public and private sector approaches to reducing diffuse pollution from agriculture whilst maintaining or enhancing farm profits. The project took a novel approach of using free kit trials as a means to work within a specific sector (potato production) and 'liaising with' rather than 'advising' as a means to engage 'hard to reach' farmers and agronomists that had not previously engaged with water protection and also to continue to build trust and develop strong working relationships with those that had previously engaged.
- 1.5 The project built on historic scientific evidence from Defra funded research, which has shown how a range of techniques, especially disruption of field tramlines and wheelings, can be cost-effective at reducing soil, water, nutrient and chemical losses from fields. 80% of all losses were reported from tramlines.
- 1.6 Recruitment of a Broads Authority Farm Liaison Officer on a one year fixed term contract was unsuccessful. This ultimately became an opportunity to use the skills and technical knowledge of the Broadland Catchment Partnership Officer, who had recently achieved his BASIS Soil and Water qualification, to temporarily run the project and recruit a part time Catchment Co-ordinator on a fixed term 15 month contract from September 2017- December 2018 to assist in co-ordinating the BCP, developing a website and projects database, and supporting partner project applications and delivery.
- 1.7 The input of Authority officers and partners within the Steering Group is acknowledged especially the Authority's Senior Ecologist who Chairs the BCP meetings and took a lead role in securing the funding and initiating the project and helped in recruitment.

2 Project aims

- 2.1 To reduce the risk of losses of soil, water and chemicals from agricultural land, thereby helping to sustain farm profits.
- 2.2 To identify interventions that Tesco could scale up in other important sourcing locations beyond the Broadland Rivers Catchment.

3 Project delivery

- 3.1 The project promoted the use of innovative farm technology to reduce run-off, raised awareness about the status and protection of waterbodies in the catchment, and linked growers with important funding sources. The Broadland Catchment Partnership Officer (BCPO) organised all communications, events, 1-to-1 farmer engagement and reporting, amounting to two days per week for 15 months, or 130 days in total.
- 3.2 A central element within this project was the Tesco funded 'BE Wonder Wheel', which was purchased for £9,500 + VAT and offered to potato growers on a free trial. The BCPO liaised with local farmers to arrange delivery, collection and storage of the kit.
- 3.3 A reference group with regional National Farmers Union and national Catchment Sensitive Farming representatives was formed and a project engagement plan produced. A tour for Tesco representatives and BCP partners in January 2017 which included visits to local sites to demonstrate interventions to protect and improve the environment helped to scope the project.
- 3.4 Information about the project (using a flyer produced by the Authority Graphic Design Officer) was sent to more than 1,000 landowners throughout Norfolk, courtesy of the Norfolk Rivers Internal Drainage Board, to raise the profile of the project and promote the offer of free advice and kit trials.
- 3.5 The Authority set up a farming projects page on its website and the Tesco Responsible Sourcing Manager contacted a range of suppliers to promote the project and encourage uptake. The National Farmers Union and Anglia Farmers promoted the project and circulated event invites through magazine articles and newsletters.
- 3.6 A workshop was held for local producers in April 2017 to promote the kit trials and discuss cost-effective solutions to improve soil and water with Cranfield University and Cambridge University Farms. A kit demonstration and project discussion was held with Tesco executives at Neatishead Hall. A report summarising findings and recommendations has been submitted to Tesco.

4 Results

- 4.1 Evaluation forms show that the project was well received by the farmers involved. The project worked directly with 34 farmers (farming over 11,000 hectares) and engaged more than 100 other stakeholders including farm advisers, academics, engineers and supply chain representatives.
- 4.2 Six farmers trialled the Wonder Wheel kit for free on more than 400 acres including three who are directly in the Tesco supply chain via Branston and Green Vale. A large contractor, farming over 2,000 hectares in North East Norfolk was so impressed by the performance at reducing run-off that he is likely to purchase his own kit and four of the farmers are interested in using the kit again in spring 2018.

- 4.3 The two farmers that are not interested in using the kit again are smaller farms that do not have much land that is sloping or that they consider to have a high run-off risk. One of these farmers was also put off using the kit again as it involved a separate pass that he did not have the time for during a busy planting period despite being made aware of the potential cost savings to his business.
- 4.4 A farmer was concerned that the kit may remove soil from the edges of rows - increasing the risk of potatoes being exposed to light and thus a reduction in quality from 'greening'. The anecdotal reports from the farmers that used the kit suggest this is not likely providing the kit is used soon after, or following the planter, when the soil is moist.
- 4.5 One farmer reported anecdotally that potato yields may have been higher in the rows that had been disrupted using the kit and that it had 'certainly reduced erosion'. Some farmers suggested that the kit could be incorporated on to a potato planter but other farmers disagreed as they thought there was already enough that could potentially go wrong with a planting machine. One farmer suggested there may be the potential for the kit to be modified to provide liquid nutrient side dressing to the crop and he is in discussions with one of the machinery manufacturers about this.
- 4.6 Some farmers that were involved in the project had not engaged with Catchment Sensitive Farming in the past and offering free kit trials was a useful way to work with them. Our engagement with one farmer has led to the commencement of a Natural Flood Management scheme on his land. It is unlikely this would have happened without this project.
- 4.7 During the project there was close liaison with the Agricultural and Horticultural Development Board Strategic Potato Farm East trials at the Elveden Estate to share knowledge and learning. Without interested parties being brought together at a workshop as part of this project, the expansion of the scientific trials to monitor water quality and crop yield in response to different wheeling disruption and irrigation techniques is unlikely to have happened this year.
- 4.8 The Elveden trials evaluated the effectiveness of three different wheeling disruptors, including the Wonder Wheel, under different irrigation and rainfall events. Researchers from Cranfield University measured losses of phosphorus, nitrogen, and water and Cambridge University Farm recorded potato yields and crop quality.
- 4.9 The Elveden trials supported previous Defra findings and revealed that disruption of wheelings ('trafficked' by crop sprayers) reduced run-off and soil loss by around 90%. There were no effects on crop yield, tuber quality or fry colour. There was an indication that rows that had been disrupted following secondary trafficking by the sprayer had a higher yield than those without disruption.
- 4.10 It is estimated to cost £28 hectare to use the kit based on National Association of Agricultural Contractors (NAAC) 2017 costs for 100hp tractor + driver @ £35.19/hr and assuming 10 hectares per day. There may be a 14% water

efficiency saving which could amount to £168 based on 10 irrigation passes at £120 hectare reported in the Farmers Weekly. These assumptions are awaiting verification but if confirmed this would equate to a minimum £140 per hectare saving for water plus an additional £8-£88 per hectare saving in soil, nutrients and plant protection products that would otherwise have been washed away in surface run-off depending on the extremity of the erosion (using ADAS Demonstration Test catchments estimates of costs to farmers of erosion).

- 4.11 Based on the above assumptions a farmer would only need to crop around 60 hectares to break even on the purchase of the kit and its use could also help demonstrate increased water efficiency that is an essential criteria for farmers applying for Rural Development funding for reservoir construction.

5 Conclusions

- 5.1 It was difficult to get farmers to take-up 1:1 'advisory' visits as all are busy and can sometimes view this type of approach as interfering or not providing sufficient specialist expert knowledge to be worthwhile. Entering discussions about the protection of waterbodies was difficult but discussing potential cost-savings to the business (whilst potentially protecting downstream waterbodies) and offering free trials to encourage uptake of sustainable practices proved much more effective.
- 5.2 Tesco has agreed that the Wonder Wheel will continue to be made available to growers within the Broadland Rivers, and neighbouring North and West Norfolk and Cam & Ely Ouse catchments - promoted and supported through catchment partnerships. It will continue to support Water Sensitive Farming initiatives in 2018 via the Rivers Trusts throughout East Anglia region and sees the Broads Authority as pivotal in this process within the Broadland Rivers Catchment.
- 5.3 There is another type of kit - the Creyke Wheel Track Combi - that performs a similar function to the Wonder Wheel by reducing water and wind erosion in spring sown row crops. This kit will be available in Spring 2018 and could make for an interesting project working with maize and sugar beet growers (high risk crops for water quality) possibly via the Maize Growers Association and the British Beet Research Organisation using existing Tesco funding ring fenced in the Catchment budget.

6 Recommendations

- 6.1 The Broadland Catchment Partnership Officer (BCPO) continues to co-ordinate the use of the Wonder Wheel by growers within the Broadland Rivers and neighbouring catchments in 2018.
- 6.2 Tesco funding that is currently ring fenced in the catchment budget is used to purchase a Creyke Wheel Track Combi and this is offered to sugar beet and maize producers as well as potato growers and is also co-ordinated by the BCPO.

6.3 The Broads Authority continues to explore opportunities for private sector funding and also strengthens the Tesco relationship to progress actions in the Broads Plan and Broadland River Catchment Plan beyond December 2018.

Background papers: None

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Broads Plan Actions: 1.1, 2.2, 3.2

Appendices: Appendix 1 - Supplementary information regarding existing public and private sector initiatives to reduce diffuse pollution from agriculture

Supplementary information regarding existing public and private sector initiatives to reduce diffuse pollution from agriculture

The Catchment Sensitive Farming (CSF) initiative is led by Natural England using government funding to reduce diffuse pollution from agriculture. CSF officers deliver advice, support stewardship and grant applications, arrange 1:1 specialist advisory visits, and training events. Defra has announced further funding until 2021 with CSF Officers in place for each of the Bure, Waveney, Wensum and Yare catchments. Anglian Water employs a catchment adviser for Norfolk focussed on groundwater source protection zones and the Wensum catchment surface drinking water protected area. Essex and Suffolk Water also employ a catchment adviser to work in the Waveney and Bure catchment surface water protected areas.

Recognising both the success and limitations of these approaches a Water Sensitive Farming initiative was established by the Rivers Trust in association with the EU WaterLIFE and WWF/Coca-Cola Freshwater partnership. The initiative employed a project manager and farm advisers via Norfolk Rivers Trust in both the Broadland Rivers Catchment and neighbouring Cam & Ely Ouse catchment for 2016-18. This was in line with Action 1.1 of the Broadland Rivers Catchment Plan and the BCPO has worked part-time in the post of farm adviser for the Broadland Rivers Catchment as part of a job share whilst also running the Tesco pilot and co-ordinating the BCP. Within our catchment over 1000 farmers have been engaged, two knowledge share events delivered, 11 silt traps constructed, and land use improvements reported for over 3000 acres including cover crops, reduced cultivations, tramline management and soil improvement.