



Tree Planting for Climate Change: Coverage in the UK Farming Sector Press

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1 Tree Planting for Climate Change: Coverage in the UK Farming Sector Press

2 ABSTRACT

3 In recent years tree planting as a response to climate change has acquired a very high profile
4 amongst policy-makers, scientists, the media, and the public. This 'afforestation', however, requires
5 space: that is, land. Agriculture currently occupies very large areas of land globally meaning that it is
6 commonly targeted as needing to make way for tree planting, and making farmers important
7 gatekeepers to this climate change mitigation strategy. Given the importance of farming sector
8 media outlets in reflecting, shaping and leading values and attitudes amongst the agricultural
9 community, this paper investigates how tree planting is presented within the UK's two leading
10 sectoral publications, *Farmers Guardian* and *Farmers Weekly*. We sample coverage at four points
11 over a two-year period (2019-2021) which began with high-profile national media and scientific
12 engagement with the topic. Our analysis reveals very low levels of coverage within these key
13 publications with, on average, just 1 in 200 articles within our sample focusing on tree planting.
14 Within this limited coverage we identify four themes which range from hostility towards the notion
15 of trees on farms replacing agricultural practices, through to occasional recognition of the positive
16 roles that trees on farms can play in climate change mitigation. Arguably, the lack of legitimisation
17 within the coverage constitutes a significant barrier to woodland expansion on agricultural land. We
18 conclude that farming media outlets could play a much stronger role in supporting the agricultural
19 community to understand how it could contribute to climate change mitigation through bringing
20 trees 'in' to farming systems, and to the normalisation of this within modern farming culture.

21 KEYWORDS

22 Tree planting; Farming; Sectoral media; Climate change mitigation; Thematic analysis.

23 1. INTRODUCTION

24 Advocacy for tree planting and 'woodland creation' in response to climate change has reached fever
25 pitch in the UK and beyond – in many ways becoming the *raison d'être* of contemporary forest
26 policy. The Intergovernmental Panel on Climate Change (IPCC) published their special report on
27 '*Climate Change and Land*' in August 2019 (Shukla *et al.*, 2019), which stressed the importance of
28 afforestation for its potential to deliver high impact on climate change mitigation. Echoing this at the
29 national level, the UK Climate Change Committee (CCC) '*Net Zero*' report (CCC, 2019). was published
30 in May 2019, recommending planting 30,000 to 50,000 hectares (ha) of trees annually to meet
31 commitments made under the Paris Agreement. These reports gained significant attention in
32 national media highlighting the need for afforestation and emphasising the need for changing diets

33 and moves away from livestock agriculture (Cauer, 2019; Harrabin, 2019; Schiermeier, 2019).
34 Numerous other articles have appeared across national, regional, and local popular press related to
35 tree planting for climate change mitigation or reporting contemporary ecological and forest sciences
36 in this subject area (BBC, 2017; Carrington, 2018; Flynn Mongensen, 2019).

37 In one particularly high-profile instance, July 2019 saw several media outlets reporting the
38 publication of '*The global tree restoration potential*', a paper by a group of environmental scientists
39 led by Jean-Francois Bastin, in the journal *Science* (Bastin *et al.*, 2019)¹. National media headlines
40 associated with this publication highlighted the 'mind blowing potential' of forest restoration to
41 remove green-house gasses (GHG) from the atmosphere (Carrington, 2019; see also Demarco, 2019;
42 McGrath, 2019). Related posts on social news websites became among the year's most 'upvoted'
43 posts within days (Mvea, 2019).

44 This narrative, drawing together a verifiable climate change mitigation technique with the widely
45 popular act of tree planting, has proved extremely popular amongst political leaders. During the UK's
46 2019 General Election, for example, political parties sought to outdo each other with manifesto
47 commitments to ever larger tree planting promises (BBC, 2019). Tree planting targets themselves
48 have had impactful media coverage (England and Wainwright, 2019; Weston, 2019), and form a
49 significant element of governmental policy (DEFRA, 2020; Scottish Government 2019; Welsh
50 Government 2018).

51 A critical dimension of the afforestation agenda is finding the space – land – to plant trees. It is
52 widely felt that much of the proposed afforestation across the UK will need to be undertaken on
53 land currently used for agricultural production. 'Marginal' upland areas typically used for extensive
54 livestock production are often highlighted as key opportunity spaces. As a climate change mitigation
55 strategy, large-scale tree planting is often deemed to compete for land with agricultural production
56 and is frequently considered to run counter to the cultural attachment of farmers and farming to the
57 land (Eves *et al.*, 2013). Land availability and the related socio-cultural context, attitudes, and goals
58 of the farming community are therefore central constraints here. There has been much analysis in
59 this arena with explanations of poor engagement with woodland creation and management
60 amongst the farming sector centring on the roles of economics, knowledge, cultural norms and
61 practices, governance design and advisory services (Dandy, 2016, Hardaker, 2018, Hardaker *et al.*,
62 2021; Wynne-Jones, 2013). These constraints are reflected in the very low rates of afforestation in
63 the UK in recent years (Forest Research, 2020).

¹ This paper subsequently became the target of considerable scientific scrutiny, critique, and debate (e.g., see 'Letters' and 'Response to Comments' in *Science*, Vol.366, Issue 6463 (18th October 2019) and resulted in the publication of an 'Erratum' (Bastin *et al.* 2020).

64 In western societies the media wields considerable power in disseminating ideas and defining
65 what is considered normal, or 'popular common sense' (O'Shaughnessy and Stadler, 2016) in
66 relation to specific issues. Mass media actors and society interact in complex dialogues, co-
67 producing public understanding and set political agendas, including in relation to sustainability and
68 land management challenges (e.g. Achong and Dodds, 2019; Soroka, 2002). Within this, diverse
69 media outlets interact in different ways (and at different scales) with their target audiences.
70 Sectoral, local, and other membership-oriented media have a distinct role in reflecting, defining, and
71 evolving or maintaining particular sets of understandings and values within relevant social groups
72 (e.g. Granner *et al.*, 2010). Whilst the media is not generally the immediate or direct motivation for
73 farm-level 'decision making' (see Rust *et al.*, 2021), coverage of issues affecting the agricultural
74 sector shapes farmer behaviour and decisions by representing issues in particular ways, expressing
75 (explicitly or implicitly) certain values, including or excluding topics, and outlining risks and
76 opportunities for change (Wanta, 2004; Ehlers and Sutherland, 2016). Thus, the farming media
77 actively 'frames' (Entman 1993; Lockie 2006) agricultural practice by purposively including,
78 emphasising, and promoting particular aspects of farming business and life, whilst omitting others.

79 Given the context of an increasingly frantic drive for afforestation and the importance of
80 attitudes towards trees amongst the farming community, in this paper we examine how tree
81 planting, or 'woodland creation', is featured within and represented by the UK's farming print
82 media. Whilst digital media and sources of information are increasingly prominent within the
83 agricultural sector, print media sources – especially dedicated 'trade' outlets - remain important
84 sources and communication channels (Chapman *et al.*, 2009; Corner-Thomas *et al.*, 2017; Rust *et al.*,
85 2021). Hence, the framing and communication of woodland planting and its relation to climate
86 change mitigation within these outlets is highly likely to both reflect and shape farmer culture,
87 preferences, and goals in relation to this issue.

88 A number of agricultural and other land management debates have been examined through the
89 'lens' of print media analysis – including with a focus on sector-specific press. Rust *et al.* (2021), for
90 example, analysed the framing of sustainable agricultural practices in the UK farming press to
91 understand if this influenced farmers to adopt these practices. This analysis found sustainable
92 farming practices were most frequently framed from an economic or agronomic perspective which
93 farmers identified as common drivers of adoption. However, the study also highlighted the limited
94 trust placed in the farming press by some farmers, who believed that, due to the need for continued
95 advertising revenues, reporting tended to favour agribusiness. The inclination to align publications
96 with the values and needs of agribusiness and present new product information as reportage, it
97 suggests, reduced trust and supported the maintenance of the status quo in agricultural practice.

98 Morris *et al.* (2016) compared the framing of antibiotic use in animal agriculture within national and
99 sectoral publications in the UK. This highlighted the emphasis placed on implications for human
100 health across outlets. It also, however, identified a distinct framing of the issue within the farming
101 press which itself highlights the perceived importance of the media within the sector. This framing
102 centred on the strength of public scrutiny and the consequent need for ‘informed and responsible’
103 decisions that successfully maintain consumer confidence. In her analysis of environmental
104 discourses within German farming media, McHenry (1996) showed that environmental problems
105 were commonly played down when established farming practices were ‘blamed’ for, or implicated
106 in, them. However, pro-environmental discourses were utilised when they ‘served the interest of
107 farmers’ (p. 384). She also described how internally diverse (and sometimes contradictory) elements
108 of the farming sector press can be.

109 Media analysis is less common in relation to trees and the forestry sector, however, Takala *et al*
110 (2019) used media print analysis across scales – regional newspapers and sectoral magazines – to
111 identify four primary discourses within the representation of Finnish forestry. A ‘wood production’
112 discourse has remained a dominant force in the sector despite the growth of alternative discourses
113 emphasising a broader, multifunctional understanding of forestry: demonstrating how well-
114 established framings can persist in sectoral media. Media coverage of urban forestry has also
115 received some attention from researchers (e.g., Silvera Seamans, 2013). Conway and Jalali (2017)
116 describe how urban trees have been framed within local media by their provision of aesthetic
117 benefits and role in ecological restoration, along with their connections to and values for specific
118 communities. These positive frames were countered, however, following a storm event after which
119 the damage they caused and the cost of clearing up debris dominated their framing.

120 In this paper our analysis explores how tree planting, especially for climate change mitigation
121 and adaptation, is covered by the farming print media, with reference to wider media interest in
122 scientific research on the issue.

123 **2. METHODS**

124 **2.1 Publication choice**

125 We used two publications for our examination of the coverage of tree planting, or ‘woodland
126 creation’, within the UK’s farming print media: *Farmers Guardian* and *Farmers Weekly*. These
127 magazines are published weekly and sold nationally across the UK. Both are aimed at the farming
128 industry across the entirety of the UK and provide coverage of topical news and industry insight for
129 both the livestock and arable sectors. Both these publications have broad readership; between
130 January to December 2019 *Farmers Guardian* had an average circulation per issue of 28,149 copies
131 and *Farmers Weekly* has an average circulation per issue of 41,533 (Audit Bureau of Circulation,

132 2020a, 2020b). *Farmers Weekly* estimate that on average 3 people read each printed copy, meaning
133 their readership is potentially >120,000. There are other sector specific publications such as *Dairy*
134 *Farmer* or *Arable Farming* and publications aimed at some of the devolved nations of the UK such as
135 *The Scottish Farmer* or *Wales Farmers*. However, these are not published on the same weekly basis
136 as *Farmers Guardian* and *Farmers Weekly*.

137

138 **2.2 Sampling approach**

139 *Farmers Guardian* and *Farmers Weekly* are not available as digitised versions in the Nexis News
140 database; hence our samples are based on paper copies of the two publications across four sample
141 period. We took two initial samples (S1 and S2) of issues of both *Farmers Guardian* and *Farmers*
142 *Weekly*, each spanning a three-month period encompassing high-level policy and academic activity
143 surrounding tree planting and climate change. The first sample covered a period starting a month
144 prior to the publication of the UK CCC 'Net Zero' report (April 2019) (CCC, 2019) and ending in the
145 month prior to the publication of the Bastin *et al.* paper (June 2019). The second sample extended
146 over a period beginning with the publication month of the Bastin *et al.* paper (July 2019) and running
147 to the month following the IPCC report on 'Climate Change and Land' (September 2019) (Shukla *et*
148 *al.*, 2019). This second sample period also encompassed publication of the National Farmers Union
149 'Achieving Net zero' report (September 2019) (NFU, 2019), which also placed significant emphasis on
150 farm carbon storage through tree planting. We took these two initial samples to look in depth at
151 media coverage of tree planting and to track short-term change during this period of intense and
152 high impact international and national debate on climate change and tree planting.

153 To track longer term changes in coverage we took two further samples, one year (April to June
154 2020; S3) and two years (April to June 2021; S4) after our first sample (S1). Resource constraints
155 meant that we could not access paper copies of *Farmers Guardian* for the 2020 and 2021 sample
156 periods (S3 and S4). For these two further samples we only included *Farmers Weekly*, the most
157 widely distributed and read publication, but we are confident that the four sample periods covered
158 by *Farmers Weekly* allowed us to consider how the narrative surrounding tree planting changed over
159 time. In total, our analysis encompassed 74 issues of these two publications. Table 1 outlines the
160 number of issues in each of the four samples and provides some descriptive statistics related to
161 article counts in each. We included all non-advertising content within our analysis including feature
162 articles, letters, opinion pieces, editorial, and news items - all of which herein we refer to as
163 'articles'.

Table 1: Comparison of tree planting and woodland creation related articles to total number of articles in Farmers Guardian and Farmers Weekly across the sample periods.

Sample period	Year	Months	Publication	Number of issues	Average number of articles per issue
S1	2019	April to June	Farmers Guardian	12	75 ± 5
			Farmers Weekly	12	69 ± 6
S2	2019	July to September	Farmers Guardian	13	77 ± 4
			Farmers Weekly	12	74 ± 5
S3	2020	April to June	Farmers Weekly	12	71 ± 6
S4	2021	April to June	Farmers Weekly	13	63 ± 5

164 2.3 Data Analysis

165 We (the three co-authors) read each issue in our four samples and identified every article where
 166 tree planting or woodland creation was the subject of ('full focus'), formed part of, or was
 167 mentioned in the article text. We each cross checked a proportion of the issues read through by the
 168 other researchers to ensure nothing was missed or included incorrectly. We created an archive of
 169 digital scans and photographs of the articles for further analysis.

170 Supplementary material Tables 1 to 4 contains a summary of each of the articles included in the
 171 analysis presented in this paper. We used a referencing system where the articles are referred to in
 172 the following manner 'SAMPLE YEAR/PUBLICATION/ARTICLE NUMBER' to cross reference article
 173 summaries in the supplementary material to the manuscript text. For example, '2019 FW 1' refers to
 174 article one from *Farmers Weekly* in the 2019 sample and '2019 FG 3' refers to article three from
 175 *Farmers Guardian* in the 2019 sample.

176 Once we had collated our sample news items, we undertook a thematic analysis. This entailed
 177 manual inductive coding of the texts (Maxwell, 2005; Thomas, 2006) to interpret their meanings and
 178 subsequently develop broad understandings of the coverage relating to tree planting and woodland
 179 creation – e.g., recurrent issues, perspectives, and messages – as common themes. Each article was
 180 analysed as an individual unit. Two co-authors took the lead on initial coding of the themes. In an
 181 effort to deepen our analysis and develop consensus amongst the researchers regarding our
 182 individual interpretations of the data we sought subsequently to verify our codes through re-reading
 183 and co-analysis of a proportion of articles. This included several analytically focused discussion
 184 meetings between all co-authors wherein the content and focus of each theme was checked and
 185 iterated.

186 **3. RESULTS**

187 **3.1 Extent of coverage**

188 The coverage of tree planting and woodland creation related articles² in *Farmers Guardian* and
 189 *Farmers Weekly* over the first two sample periods (S1 and S2) are shown in Table 2. In both
 190 publications, these articles amount to a very small proportion of the total number of articles
 191 published. In our 2019 samples tree related articles made up just 0.66 and 1.5 % of the total number
 192 of articles published in *Farmers Guardian*. The coverage of tree planting and woodland creation
 193 related articles in *Farmers Weekly* during S1 and S2 was marginally higher at 1.8 and 1.9 % of the
 194 total.

Table 2: Comparison of tree planting and woodland creation related articles to total number of articles in Farmers Guardian and Farmers Weekly across the two 2019 sample periods.

Sample	Publication	Number of articles	Number of tree planting related articles	Relative coverage of tree planting related articles (% of total number of articles)
S1	Farmers Guardian	899	6	0.66
	Farmers Weekly	830	15	1.8
S2	Farmers Guardian	1007	16	1.5
	Farmers Weekly	888	17	1.9

195 The coverage of tree planting and woodland creation in *Farmers Weekly* in the 2020 and 2021
 196 samples (S3 and S4) is shown in Table 3. The coverage dropped notably in S3 to less than 1 % of all
 197 articles published, a level lower than in S1 and S2. S4 coverage of tree related issues in *Farmers*
 198 *Weekly* returned to a similar level of coverage as in S1 and S2 of 1.8 %. Overall, from a total of
 199 >5,000 magazine articles (features; letters; opinion pieces) only 77 (around 1.5 %) mentioned tree
 200 planting. Of these, only 26 (just less than 0.5 %) could be considered as ‘fully focused’ on the subject.

Table 3: Comparison of tree planting and woodland creation related articles to total number of articles in Farmers Weekly across the 2020 and 2021 sample periods.

Sample	Number of articles	Number of tree planting related articles in <i>Farmers Weekly</i>	Relative coverage of tree planting related articles (% of total number of articles)
S3	848	8	0.94
S4	820	15	1.8

² Herein, 'article' refers to any distinct or individual textual entry within the sample publications and includes feature articles, letters, opinion pieces, interviews, and news items.

201 The breakdown of the coverage between articles with a 'full focus' on tree planting and
 202 woodland creation and articles which only mention tree planting and woodland creation over the
 203 four sample periods is shown in Figure 1. S1 included no articles that focussed on tree related issues
 204 in *Farmers Guardian* (Figure 1). During this time, while *Farmers Weekly* did include several articles
 205 focussing on tree planting and woodland creation, there were significantly more articles where trees
 206 were mentioned in passing. In S2 there was an increase in articles both focussing on and mentioning
 207 tree planting in *Farmers Guardian*. Whereas, in *Farmers Weekly* there was an increase in the number
 208 of articles focussing on tree planting, while the number of articles only mentioning trees declined.

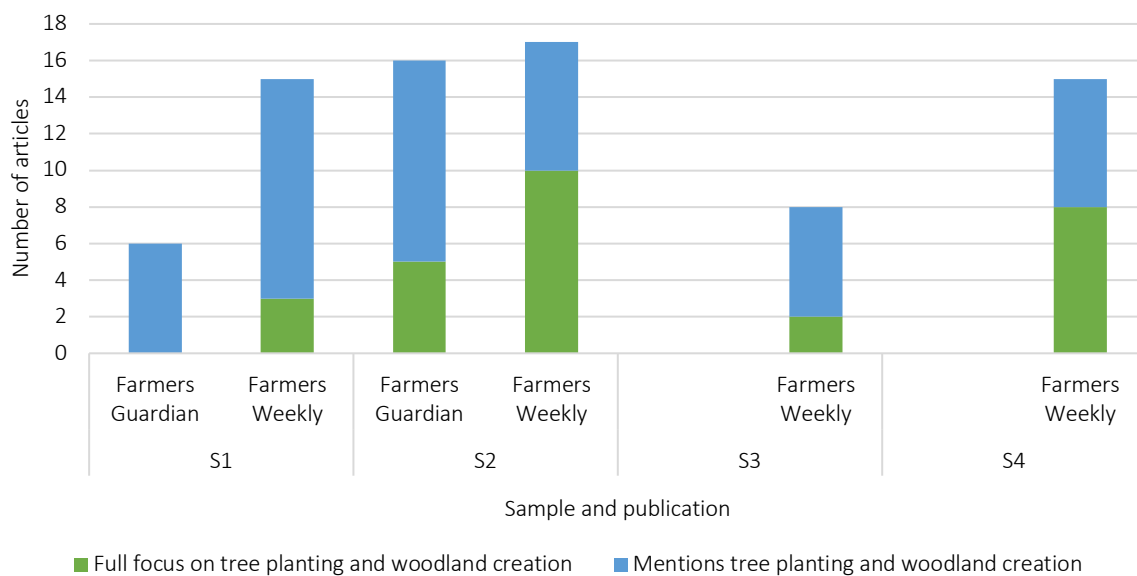


Figure 1: Number of tree planting and woodland creations related articles in *Farmers Guardian* and *Farmers Weekly* and split between articles that have a full focus on tree planting and woodland creation or only mention tree planting and woodland creation. S1 and S2 included both *Farmers Guardian* and *Farmers Weekly*, whereas sample three and four included *Farmers Weekly* only.

209 In S3, which included only *Farmers Weekly*, the number of articles both mentioning and
 210 focussing on tree planting fell to its lowest level across all four sample periods (Figure 1). The
 211 number of articles focussing on and mentioning trees in *Farmers Weekly* during S4 was back to a
 212 similar level of coverage as in 2019. Whilst the total number of articles focussed wholly on tree
 213 planting remained very small across our four samples, the number was notably higher in S2.

214 3.2 Themes

215 We identified four main themes running through the coverage of tree planting and woodland
 216 creation in *Farmers Guardian* and *Farmers Weekly*. These themes cover a spectrum from
 217 oppositional reporting pushing back against the 'replacement agenda' and financial issues to more
 218 positive coverage of the benefits of trees as part of the farming unit and, critically, the role of trees

219 on farms in the fight against climate change. The following explores each of these themes in more
220 detail and how their coverage changes through the four sample periods.

221 **3.2.1 The ‘Replacement’ agenda**

222 A notable theme across our samples frames tree planting as in direct competition with farming and
223 food production. Articles – particularly letters and opinion pieces - criticise tree planting on account
224 of its likely implications for the displacement or ‘replacement’ of existing agriculture from
225 substantial areas of land in the UK. This perceived ‘replacement’ agenda is particularly countered
226 rhetorically via reference to both food security and the potential export of carbon emissions
227 overseas. In S1, an article responding to the 2019 CCC report, for example, directly highlighted the
228 potential shift in land use by stating the report asserted that *“One-fifth of UK farmland should be*
229 *shifted into tree planting, energy crops and peatland restoration”* (2019 FW 3). In reply, a farming
230 union representative noted:

231 *“We will not halt climate change by curbing British production and exporting it to countries that*
232 *may not have the same environmental conscience, or ambition, to reduce their climate impact.”*
233 *(2019 FW 3)*

234 One article, within S2, illustrates this theme very clearly. Entitled *‘Fury at climate plea to turn*
235 *uplands to forest’*, the news item covers farming sector responses to a suggestion made within a
236 Parliamentary meeting that:

237 *“... particularly in Scotland, in the uplands, part of the least good land in terms of pasture may*
238 *have to be given over to afforestation and peatland because of its [carbon] storage potential, but*
239 *another half of it must stay.”* (2019 FG 7)

240 This clear ‘replacement’ statement was met with accusations that it *“completely”* neglected *“the*
241 *financial needs of hill farms and the rural communities surrounding them”* (2019 FG 7), along with
242 reminders of past conflict and consequences of upland afforestation in Wales. Within this article,
243 however, the potentially positive contribution that agroforestry could make to production and
244 sustainability was also suggested (see Theme three). Food production and security continued to
245 feature heavily within subsequent articles covering climate change, although with a significant shift
246 in emphasis. With publication of the IPCC’s report in particular the debate focused not primarily on
247 giving land over to tree planting but a more general criticism of the IPCC’s perceived *“anti-meat*
248 *agenda”* (2019 FG 13). One letter to the *Farmers Guardian* at this time singled out the CCC and
249 several other environmentally focused organisations as constituting the *“let’s get rid of farming”*
250 agenda (2019 FG 14).

251 Afforestation only features very occasionally within this debate with, for example, a sector
252 representative noting *“It’s not about reforesting vast tracts of our farmland or diminishing our meat*
253 *production. It’s about being cleverer in how we manage these things.”* (2019 FW 32). Scepticism of
254 the international implications of increased tree cover in the UK also continues to receive coverage
255 with, for example, a letter to *Farmers Weekly* stating *“... according to [labour politician] Mr Gardiner,*
256 *we need to plant more trees and grow less food. That, in turn, means importing more foodstuffs into*
257 *the UK, therefore defeating the whole objective of reducing our carbon footprint.”* (2019 FW 20).

258 There is a notable absence of articles within this theme in S3, but within S4 the theme re-
259 emerges clearly. Articles repeat the arguments brought forward already: such as that large scale tree
260 planting *“could rob Wales of productive farmland”* (2021 FW 1), and *“... while more forestry and*
261 *rewilding encourages wildlife, it does not feed the people”* (2021 FW 4). Further articles note this loss
262 of food production may have detrimental effects overseas:

263 *“... despite increasing tree cover inside their own borders in response to concerns over climate*
264 *change and habitat loss, the ecological footprint of the G7 nations abroad is growing ... cutting*
265 *down a tropical tree cannot be compensated by planting a pine tree”* (2021 FW 7)

266 **3.2.2 From inadequate grants to carbon credits: financial aspects of tree planting on farms**

267 Our analysis found repeated reporting on some of the financial aspects of tree planting, particularly
268 relating to grant assistance and some of the of the issues surrounding forestry as a financial asset
269 class. In S1, several short news pieces report on some of the grant assistance available for
270 landowners to plant trees, such as some of the funding associated with the ‘Northern Forest’
271 initiative (2019 FW 1). This reporting also claims that the administration of current grant schemes is
272 not fit for purpose with many farmers having to wait substantial amounts of time before payments
273 were made (2019 FW 14). One article notes that in many cases the payments are insufficient stating:
274 *“In England, grants including the Woodland Grant Scheme ... are substantial but the numbers do not*
275 *always stack up”* (2019 FG 4). Reporting in S1 also highlighted that the potential returns from
276 forestry are significantly inflating the prices of farmland that is suitable for tree planting beyond the
277 reach of many farmers (2019 FG1 and 2019 FW 10).

278 During S2 the critique of existing grant assistance for tree planting is continued in short news
279 and opinion pieces about the bureaucracy associated with applying for grant funding being a *“major*
280 *barrier”* to farmers engaging with tree planting (2019 FW 23). Articles in S2 also note that public
281 funding is currently not available for agroforestry (2019 FW 26) or more *“scruffy”* and *“untidy”*
282 approaches such as rewilding and allowing trees to (re)colonise naturally are not supported by
283 current grant schemes:

284 *“The problem with these schemes is that everything has to tick the box. Field margins and hedges*
285 *are an exact width; a field is grass or woodland, not both”* (2019 FW 30)

286 Two months following the publication of the Bastin *et al* article, one piece writes that the farming
287 sector should be a leader in climate change mitigation, as the Net Zero 2050 target will not be met
288 without their help. This piece featured opinion from the CLA president stating:

289 *“This will require long-term government support supplemented by new environmental payments,*
290 *to ensure increasing planting of trees”* (2019 FG 8)

291 In S3 the narrative shifts towards the opportunities for biodiversity offsetting and - for the first
292 time - carbon credits to provide finance and income streams for woodland creation projects on
293 farms (2020 FW 1 and 2020 FW 5). For example:

294 *“There are lots of ways to improve biodiversity. If you were thinking of putting a site down to*
295 *trees or changing management practices ... you could receive payment from the developer for*
296 *this”* (2020 FW 3).

297 Coverage of this theme in the S4 focusses on how revenue streams from alternative uses of land
298 for natural capital and biodiversity enhancement and generating carbon credits will compete with
299 agriculture; tree planting is identified as one of these alternative uses of land. Two feature articles
300 note these new revenue streams are likely to bolster demand for land and increase the value of
301 grassland suitable for planting and existing woodland (2021 FW 5 and 2021 FW 12). This reporting
302 picks up on a prevailing concern among the farming sector that once land is turned over to
303 woodland it is worth less than bare agricultural land but argues that this is likely to no longer be the
304 case. A further article reports that green buyers typically looking for farmland to plant trees and
305 generate carbon credits are no longer solely looking for marginal land in the uplands:

306 *“Interestingly, such buyers are starting to become active in lowland areas of England, as well as*
307 *the uplands ... growth in environmental land investment is a trend we are also seeing in Scotland*
308 *and Wales”* (2020 FW 2)

309 **3.2.3 Trees as an enhancement of the farming unit**

310 Our searches found varied reporting on the role of tree planting on agricultural land as a means of
311 *enhancing* the farming unit alongside their role as a response to climate change. In the first sample,
312 tree planting is touched on briefly in feature articles as being a means to enhance both the natural
313 capital and sale values of farms. These pieces refer to the common rhetoric that trees planting is a
314 great opportunity to put ‘marginal’ farmland to better use, for example,

315 *“Rough, unproductive corners of land could be suited to trees, but, of course, it requires taking a*
316 *long-term view ... very few farms are not improved somehow by woodland planting – from*
317 *reducing soil erosion by cutting down wind and providing a potential source of diversification”*
318 (2019 FG 3)

319 This frequently used argument is not furnished with examples of tree planting doing so and very
320 much focusses on ways agricultural land can be given over to trees.

321 During S2 (post publication of the Bastin *et al* paper) the narrative shifts towards ways tree can
322 be integrated into farming systems to improve agricultural production within the farming unit, and
323 potentially creating collateral benefits for the environment in the process. The articles in S2 include a
324 range of types (e.g., news, letters, features) commenting or reporting on how hedgerows and
325 agroforestry can create *“sustainable farming systems”* (2019 FG 12). These pieces address climate
326 change directly by noting the significant potential for agroforestry to contribute to climate change
327 mitigation, for example,

328 *“Agroforestry is something of the poor relation when it comes to increasing the country’s tree*
329 *cover, but its potential contribution to offsetting climate change should not be underestimated”*
330 (2019 FW 26)

331 This potential is elaborated on with examples of how agroforestry has been put into action in
332 existing farming units with one detailed case study of the integration of fruit trees into an organic
333 farm using a silvopastoral system. The farmer is quoted on aspects of how the trees interact with the
334 farming activity, for example,

335 *“Since dividing up the pasture with trees, we have introduced a paddock grazing system for the*
336 *dairy followers and beef, moving the cattle to a different strip of grass every two days ... we let*
337 *the grass grown a bit longer which is good for biodiversity, but also benefits the rumen function*
338 *of the young cows, while building up carbon in the soil”* (2019 FW 28)

339 These articles make a concerted effort to relate tree planting with core matters of farming interest
340 (e.g., productivity, labour requirement, costs, and operating requirement). Some articles also go
341 beyond improving agricultural production itself and make a more adventurous case for creating
342 additional diversified income streams, for example by creating woodland burial grounds (2019 FG
343 21).

344 S3 contained little coverage related to this theme other than two short news items highlighting a
345 new tool that shows where tree planting may be beneficial (2020 FW 6) and calls from stakeholders
346 for greater focus on agroforestry in future farm support packages (2020 FW 8). However, in S4

347 several substantial feature articles explored the potential for commercial orchards as way to link
348 tree planting and food production hand in hand (2021 FW 2 and 2021 FW 10).

349 **3.2.4 Farming, trees, and the fight against climate change**

350 Our searches identified consistent, albeit very low profile, acknowledgement of the increased
351 integration of woodlands on UK farms as a valid response to climate change. Tree planting is noted
352 very briefly across different article formats (e.g., letters; opinion pieces; interviews) as being one of a
353 range of options available to farmers as the sector adapts to deliver 'net zero' as part of ongoing
354 'environmental' agriculture. These pieces often feature opinion from policy-leaders such as
355 government ministers or sector representatives with afforestation generally characterised positively.
356 Within these pieces, tree planting is set out as a necessarily government incentive driven route to
357 climate adaptation through farm diversification, hence enabling farm business as usual. A small
358 number of articles within S1 carried this theme, for example,

359 *"Producing good quality food and at the same time delivering on net-zero carbon is going to be a*
360 *particular challenge. But part of the way we can deliver that is through environmental land*
361 *management - looking at carbon sinks, forestry and more sustainable methods of farming."*

362 (Government Minister interview) (2019 FW4)

363 One article notes that perceived climate friendly nature of Welsh farming is undermined by
364 conflating its emissions together with worldwide statistics:

365 *"Our animals are mainly fed on natural grass and the Welsh agricultural industry uses rainwater*
366 *and more renewable energy, but we are still lumped in with countries which are far less*
367 *environmentally friendly."* (2019 FG 5)

368 Immediately following publication of the Bastin *et al* paper (during S2) - although with no direct
369 reference to it - these messages of diversification remained, including explicitly in response to the
370 IPCC report. For example, one feature article mapped out the key IPCC report messages including:

371 *"Governments must prioritise farming systems that improve our environment, such as*
372 *agroecology, mixed farming using extensive grass-based systems and agroforestry, where*
373 *commercial crops are mixed with trees."* (2019 FW24)

374 Sector representatives consistently advocate farm adaptation, for example noting:

375 *"... the industry could reduce emissions by promoting sustainable farming practices and systems,*
376 *planting trees and better managing existing woodland ... this will require long-term government*
377 *support ..."* (CLA) (2019 FG 8)

378 Two months after the Bastin paper’s publication, some coverage within this theme was generated by
379 the publication of the National Farmers’ Union’s (NFU) *Achieving NET ZERO: Farming’s 2040 Goal*
380 report. Within this the NFU clearly echo this diversification theme by identifying ‘boosting carbon
381 storage’, though increasing woodland, alongside improved production efficiency and increased
382 renewable energy use as three ‘pillars’ of the sector’s contribution to climate change mitigation
383 (2019 FG 17). There are fewer items carrying this theme within our later sample periods (S3 & S4).

384 In one news item responding to policy development in Scotland, however, trees are identified as
385 ‘part of the solution’ to climate change, albeit not such that farming should be affected
386 detrimentally by woodland expansion:

387 *“A major emphasis in the [land use] strategy is on woodland expansion and peatland restoration*
388 *as central planks in tackling climate change ... While part of the solution, these must not result in*
389 *more efficient and sustainable agriculture being marginalised, undermining economic activity in*
390 *rural areas”* (2021 FW3)

391 Indeed, much of this type of coverage engages closely with our first theme: that agriculture should
392 not be replaced to address climate change.

393 **4. DISCUSSION**

394 Our exploration of the coverage of tree planting, or ‘woodland creation’, within the UK’s farming
395 print media found that such topics occupy only an extremely small proportion of the pages of two
396 key publications. Across our four samples less than 2% of articles focussed, or even commented, on
397 tree planting (Table 2 and 3). Where these subjects *are* covered, most articles only mention the topic
398 in passing (Figure 1). While we might not expect tree planting to feature to an *equal* extent in the
399 farming press as other core agricultural matters (such as livestock management or crop protection),
400 it does receive an extremely low amount of coverage. If we accept that media outlets and elements
401 of society co-produce accepted group norms, values, and practices, this suggests that tree planting
402 and woodland creation are simply not considered as a currently significant or legitimate element of
403 farming culture and practice. Given that farmers are not only responsible for the management of
404 extensive existing woodlands, but also their aforementioned position as managers of the vast
405 majority of land that could potentially be afforested, this can be seen as a significant problem.
406 Within our sample, coverage, including pieces that focused fully on tree planting, was greatest
407 (albeit still very small) during the period which saw substantial relevant policy and research activity –
408 that is S2. One alternative, less problematic, potential explanation for the virtual absence of
409 coverage during S3 might be the prominence of the covid-19 pandemic at that time. April to June
410 2020 was a period of widespread restrictions and heightened concern about the disease which

411 provided important content for media outlets across all professional sectors and at local and
412 national scales. However, as coverage of all traditionally core dimensions of farming continued
413 throughout the pandemic, it appears more likely that trees – let alone tree planting as a pathway to
414 climate change mitigation – have not yet made their way onto the agenda of the farming sector. It
415 seems unquestionable that greater coverage of trees, tree planting and ‘woodland creation’ is
416 needed in the farming sector press if any substantive change in land use is to become evident.

417 Much like the analysis of McHenry (1996), we found quite internally diverse coverage. The
418 farming sector press in the UK over 2019, 2020 and 2021 presented two sets of relatively polarised
419 perspectives and associated messages on tree planting and woodland creation. A generally negative
420 perspective is constructed around the view that climate change will not be solved by *replacing*
421 agriculture with trees, that the real asset status of forestry (and possibly carbon trading) is inflating
422 already high agricultural land values out of reach of many farming businesses, and that government
423 incentives for tree planting are not fit for purpose and do not address the poor economic potential
424 that trees and woodlands offer. Much of this negative coverage takes the form of opinion pieces or
425 letters. A more positive perspective is predicated around two themes. First, that there are
426 opportunities for trees to *enhance* the farming unit and the agri-environment, and second, rare
427 acknowledgements that woodland creation on farmland can intrinsically be a positive step towards
428 combatting climate change.

429 **4.1 The interaction of policy, research and the farming press**

430 Our initial two samples of articles in *Farmers Weekly* and *Farmers Guardian* were taken during a
431 period coinciding with the publication of a number of high-level policy and science outputs (Figure 2)
432 and thus intense and widespread debate of the role of tree planting in fighting climate change.
433 These received significant attention in the UK’s national media but generated relatively little
434 attention within the farming press itself.

435 The UK CCC Net Zero report published in May 2019 discussed the role of woodland creation on
436 UK agricultural land in decarbonising the economy, among several other climate change mitigation
437 and adaption measures. This tree planting message was widely picked up in the national media
438 (Gosden, 2019; England and Wainwright, 2019). However, reflecting once again perceptions within
439 the sector regarding the core elements of farming, coverage of this report in the farming press
440 focussed mainly on the messages surrounding reducing livestock numbers and meat consumption
441 rather than the role of tree planting on agricultural land.

442 The Bastin *et al.* paper published in July 2019 took a global view of tree planting for climate
443 change mitigation, arguing that large swathes of agricultural (primarily grazing) land across the world
444 was suitable for tree planting. The UK national media again widely picked up on this message

445 (Carrington, 2019b; McGrath, 2019; Flynn Mongensen, 2019; Maslin and Lewis, 2019) but few made
446 links to implications for UK agriculture. In particular, how this woodland expansion may be achieved
447 (globally or in the UK) was more or less ignored by the national media coverage. Given the potential
448 implications of the finding of the Bastin *et al.* paper for UK agriculture, it is perhaps surprising that
449 there was no direct coverage of it in the farming press at the time. The national media also
450 published a range of critical responses to the Bastin *et al.* paper immediately after the initial public
451 attention; much of that echoed some of the themes identified in our analysis. Trees can only work as
452 a “most effective solution” for climate change if they are not misused as an offset for continued
453 emissions elsewhere (e.g., McGrath, 2019; Branford *et al.*, 2019); an argument that is very similar to
454 the worries of farmers getting disproportionately saddled with outsourced emission reductions from
455 other sectors of the economy. There was, however, a secondary wave of criticism which went
456 without coverage by either national media or farming press. A range of scientific comments were
457 published months after the original paper, primarily arguing that the calculation methods used by
458 Bastin *et al.* were incorrect and significantly overstated the potential of carbon sequestration via
459 tree planting (Skidmore *et al.*, 2019; Friedlingstein *et al.*, 2019; Lewis *et al.*, 2019). As a result, the
460 authors issued an erratum in 2020, clarifying and changing some of the original statements (Bastin *et al.*, 2020). Neither popular nor sectoral media reported this.

462 The IPCC *Climate Change and Land* report published in August 2019 placed great emphasis on
463 reducing emissions from food production e.g., through reductions in livestock numbers and moves
464 to plant-based diets. The national media again picked up on this message (Carrington, 2019a) with
465 tree planting only noted as a further mitigation measure. As with the UK CCC report a few months
466 earlier, this was reflected in several articles in the farming press where the anti-meat agenda formed
467 the main topic of the article, and planting trees was only mentioned in passing.

468 The NFU, a central institution within the farming sector with considerable media presence,
469 published their *Achieving Net Zero* report at the start of September 2019, outlining how the UK
470 farming sector intends to reach net zero by 2040. Increasing farm tree cover (woodland and
471 hedgerows) is, together with enhancing soil carbon storage, seen as the main pillar to boost carbon
472 sequestration on farms. The national media, focused primarily on the claim in the report that this
473 does not need to come at a cost to beef production (Carrington, 2019; George, 2019). The coverage
474 of the NFU report by the farming press speaks positively about the “unique position” of the UK’s
475 farming sector to become a role model in producing “*the most climate friendly meat in the world*”.

476 The principal messages from these high-level policy documents that were interpreted and
477 reported in the farming press were perceived, or framed, as ‘attacks’ on agriculture. The coverage of
478 these reports related principally to theme one (the ‘replacement’ agenda), with much of the

479 coverage reactionary in nature, critically overlooking some of the other recommendations of these
480 reports, such as the potential for agroforestry to assist with decarbonising farming and the wider
481 economy. Much of the coverage of these reports doesn't examine how the agricultural sector in the
482 UK might address some of their findings. Only the NFU Net Zero report was presented positively by
483 the farming press, highlighting the complementarities between tree planting and implementation of
484 other efficiency measures on farms. This perhaps demonstrates the strength of established interests
485 within the farming media. Much like the findings of McHenry (1996), our analysis suggests the
486 farming press play down or exclude the messages of these major reports when the farming sector is
487 criticised and promote positive messages that maintain the existing position, structure and values of
488 the sector.

489 Overall, the UK's farming press successfully continued to steer a steady course for the sector
490 through the 'storm' created around it by major policy works and scientific analyses. Whilst there is
491 significant value for the sector in achieving this feat, arguably the sector's media has a much more
492 significant and constructive role to play.

493 **4.2 What's not being talked about?**

494 Farming sector publications give the readers detailed coverage of selected industry and business
495 insights, latest technological developments, market trends and specialist enterprise advice. As noted
496 above a key role of this media is the reflection, maintenance of and engagement with particular
497 values, practices and topics perceived as core to farming. However, farming sector publications
498 arguably have a broader role in agenda setting and modifying the narrative surrounding topical
499 issues that affect the sector, including climate change, tree planting and woodland creation.

500 Substantive coverage of novel topics such as these within key, trusted publications would provide
501 farmers with important opportunities to make sense of them and interpret their meanings and
502 implications relative to established core concerns. Based on our analysis we would argue there are
503 at least two key elements missing from the coverage of tree planting and woodland creation on
504 farmland that ought to be firmly within the scope of the farming sector and its media outlets. First,
505 coverage should extend to the implications of how the agricultural sector may contribute to
506 achieving high level 'strategy' for tree planting and woodland creation to resolve climate change – a
507 collective environmental challenge. Second, it should explore how trees can be (re)incorporated to
508 benefit productive farming systems in considerably more depth.

509 **4.2.1 How can the agricultural sector deliver high-level aspiration for increases in tree cover?**

510 While we might not expect that the key messages of the high-level policy documents and the Bastin
511 *et al* paper to be repeated verbatim within the farming sector press, there is very little coverage (if

512 any) relating to the implications of this high-level momentum surrounding significant afforestation
513 for the farming sector in the UK, nor how the farming sector may contribute to it. The momentum
514 for tree planting and woodland creation to decarbonise society will require significant change in
515 rural farmed landscapes (Burke *et al.*, 2021). The perceived negative view of farmers towards tree
516 planting and woodland creation is understood to be more towards past experiences of the way
517 woodland creation occurred within farming landscapes, not tree planting *per se* (Iversen, 2019). The
518 farming sector press informs the identity and desires of their readership and arguably, therefore, has
519 a role to play in supporting cultural change towards embracing tree planting strategies within farm
520 systems as one element of the climate change mitigation agenda (Chapman *et al.*, 2009; Corner-
521 Thomas *et al.*, 2017).

522 Recent research suggests, however, that the trustworthiness of messaging from the farming
523 press is increasingly questioned by farmers (Rust *et al.*, 2021). While peer-to-peer learning is a key
524 element of knowledge exchange for farmers, the farming press (including *Farmers Guardian* and
525 *Farmers Weekly*) still play an important role in change (Rust *et al.*, 2021). However, much of the
526 coverage of high-level policy surrounding tree planting and climate change form reactionary opinion
527 and editorial pieces, reinforcing negative attitudes to planting trees on agricultural land. We would
528 argue that coverage of these issues in important publications such as *Farmers Weekly* and *Farmers*
529 *Guardian* is currently missing constructive examination of how they can be navigated and engaged
530 with by the agricultural sector to feed into peer-to-peer learning, discussion and cultural change.

531 **4.2.2 Re-normalising trees as part of a productive farming system**

532 Numerous articles in the farming press focus in detail on how different livestock housing
533 arrangements, machinery or production techniques contribute to the productivity of the farming
534 business. Tree planting currently does not get depicted nor explored in the same way or to the same
535 depth. In many of the articles where tree planting, woodland creation and associated topics are the
536 full focus of the article, it is often presented as somewhat 'maverick' - that is, outside of the norm or
537 a diversification option disconnected from agricultural production. This disconnect may stem from a
538 historic deep rooted cultural view of farming and forestry as two very separate systems, that is
539 particularly prevalent in the UK (Scambler, 1989; Dhubháin and Gardiner, 1994; Lawrence and Dandy
540 2014), and negative connotations of past large-scale afforestation of farmed landscapes in the 20th
541 century (Raum, 2020). Nonetheless there is momentum towards their greater integration as part of
542 a low carbon economy.

543 A limited amount of coverage links trees into 'the productive farming system' - which we identify
544 within our third theme focused on 'enhancement' - demonstrating how they could be adopted as a
545 stand-alone diversification option, but also how they might enhance the agricultural productivity of

546 the farming unit. One example includes examination of a farming unit where fruit trees are
547 integrated into their livestock systems (2019 FW 28), however this does not feature in the dedicated
548 livestock section of the publication, nor does it provide much detail on the benefits of this for the
549 livestock element of the system. Such types of coverage were found by Rust et al. (2021) to be the
550 most common pieces of coverage to stimulate farmers to try things out having read about them in
551 the farming press. Farmer attitudes towards tree planting shouldn't be assumed to simply be 'for' or
552 'against'. Rather, alongside tree planting by some enthusiastic farmers, it is clear that there are
553 opportunities to capitalise on farmers' "accidental environmentalism" (Marr and Howley, 2019) via
554 which farmers undertake pro-environmental actions (e.g., production improvements or chemical
555 reductions) for reasons which have little, if anything, directly to do with pro-environmental
556 motivations. This reveals an area wherein the farming press could play a strong role in facilitating
557 afforestation – identifying opportunities for tree planting which meet core farming objectives and
558 sequester carbon incidentally.

559 **4.3 Implications for future research**

560 The findings of this study raise a number of further questions which were beyond the scope of this
561 present research, but which generate opportunities for follow-up investigations. We recommend,
562 for example, further in-depth research via interview or survey methods, to more fully understand
563 how farmers engage with media like *Farmers Guardian* and *Farmers Weekly* in their decision-making
564 process around tree planting. In addition, it would be productive to explore whether the themes
565 identified above are manifest within other media outlets and social media channels (Casey, 2016;
566 Stanley, 2020), and how they relate to and may be representative of different groups of farmers. To
567 deepen appreciation of the process of co-producing media content in this arena, we also
568 recommend further work with sector journalists to understand their decision-making on what to
569 print and how narratives are constructed, as has recently been done, for example, in relation to
570 coverage of sustainable finance in Europe (Strauß, 2021). Finally, additional analysis is also needed
571 to explore the relationships between the content of sectoral publications such as those analysed
572 here, and their need to ensure advertising and sponsorship revenues. Such publications often have
573 substantial advertising and 'classifieds' sections and, whilst strict ethical guidelines deter direct
574 influence of the content of individual stories, overall content needs to focus on issues, themes and
575 subjects that attract a readership relevant to those marketing opportunities. Rust et al (2021)
576 identify this relationship as a key influence on how much trust farmers place in their sector's press.

577 **5. CONCLUSIONS**

578 The farming press have an important role in shaping industry agendas and farm level decision
579 making around agricultural practices and awareness of environmental measures. Is the farming
580 press a supporter of, or a barrier to, achieving meaningful carbon sequestration via tree planting on
581 farmland in the UK? In our study we found a very low level of coverage of tree planting on farmland
582 as a means of climate change mitigation. We found that some key messages from high level policy
583 documents and academic research relating to tree planting and climate change are either
584 overlooked by the farming press or only covered when they support the established agenda of the
585 farming sector. Rather than seeking ways to bring farmers together with foresters and other tree-
586 focused stakeholders, much current coverage builds on historical legacies to engender an angry
587 defensiveness or at best a resigned scepticism towards trees in the farming sector. A determined
588 scepticism of the economic dimensions of tree planting is maintained within the farming press, with
589 few efforts to actively explore the potential positive contributions to farming businesses it could
590 bring. This enables farmers to dismiss this particular route to diversification and climate change
591 mitigation if they wish. By breaking down rather than constructively exploring the opportunity for
592 trees to contribute to a productive farming unit that assists with decarbonisation of the wider
593 economy, coverage of tree planting within the farming press seemingly remains a barrier to
594 meaningful afforestation on farmland in the UK. Nonetheless, there is a greater opportunity here for
595 the farming press in the UK to better support farmers exploring new ideas such as mixing trees into
596 their farming business through more in-depth coverage of such issues. There is a need to explore
597 and clearly describe through case-study and demonstration how trees in farming systems can be
598 used to meet policy goals and enhance the productive capacity of farming systems. Integrating tree
599 related topics among other technical agricultural coverage arguably plays a key role in modifying the
600 narrative away from trees versus farming towards normalising trees on farms and achieving the
601 additional co-benefits of climate change mitigation.

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