
Paying Farmers For Ecosystem Services: Costs and Characteristics of Long Term Agreements

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How Do We Protect Freshwater Resources?

- There is regulation



- There is advice



- There are financial incentives



- This presentation focuses on financial incentives

Incentive Approaches Adopted Thus Far

- Promotion of win-wins which deliver ecosystem services and save the farmer money
- Agri-environmental payments (based on income foregone and transaction costs)
- We are only going to get so far with the win-win approach
- Current agri-environmental payments tend to be based on short term contracts (ELS = 5 years, HLS = 10 years)
- Is it possible to secure multi-generational land management agreements to deliver long-term strategic protection of water resources?
- Ultimately, what is the farmers price?

Exploratory Research

- Our research team has investigated farmer attitudes towards a land management scheme (conceived by the Westcountry Rivers Trust in SW England) with the following features:
 - One-off payments to landowners who are prepared to take areas of farmland out of intensive agricultural production on a long-term basis (999 years)
 - Primarily focused on small plots of marginal land (such as wetlands or boggy ground, and key riparian buffers/strips); not prime agricultural land
 - Landowners will enter a Deed of Covenant (which subsequent owners must abide by) - the land may still be farmed but must not be ploughed, heavily grazed by livestock or receive applications of fertilisers or agro-chemicals
 - Payments will vary depending on the type of agricultural activities the landowner is prepared to give up on specific parcels of land

Exploratory Research (cont)

- All legal costs and agents fees associated with setting up the Deeds of Covenant will be paid by the scheme operator
- It is possible for a landowner to buy-out of a Deed of Covenant at any stage. The fee for doing this will be the sum initially paid to the landowner for entering into the Deed of Covenant, indexed linked to RPI so as to cover inflation
- Participation of landowners in the scheme will not preclude them in any way from benefiting from existing government managed schemes e.g The Higher Level and Entry Level schemes managed by Natural England
- Monitoring of landowner compliance with Agreements will be undertaken periodically by the scheme administrator, The Westcountry Rivers Trust

Exploratory Research Method

- The methodology adopted for the study comprised a questionnaire survey of 42 landowners located approximately evenly across 3 catchments in the South West of England (Tamar, Axe, Frome)
- Formal stratified random sampling procedure was not adopted; rather expert judgment and local knowledge was used to ensure a broad range of farming systems and farming families were included in the study
- 95% of respondents stated it was likely their farm would still be owned by their family in 10 years time. The sample selected for the survey, therefore, largely represented farming families that intended to remain in the agricultural industry for the foreseeable future
- Fieldwork consisted of a deliberative two-stage process: an initial face-to-face farm visit to provide a detail explanation of the proposed scheme and answer initial questions followed by a subsequent telephone interview. A period of three weeks (in some cases longer) was allowed between the initial visits and the telephone interviews to enable sufficient time for respondents to reflect on the scheme and ask further questions where necessary

Exploratory Research Survey Results

Levels Of Interest In Scheme

- Three quarters (76%) of respondents stated they would be interested; 38% responding they would be 'very' interested and the same proportion (38%) 'quite' interested
- There does not appear to be any significant difference in interest levels between different farmer demographic groups although intensive dairy farmers with little marginal land displayed lower than average levels of interest in the scheme
- Those respondents displaying a lack of interest in the proposed scheme cited the longevity of the agreements as the main reason for their position

Exploratory Research Survey Results (cont)

Types of Land Considered Appropriate

- Three quarters of respondents (78%) would consider 5m strips and 'other types of land' e.g wetlands, marsh, field corners and 'parts of fields too wet to farm easily'
- Interestingly, many farmers would prefer to establish >2m strips because wider strips are regarded as easier to manage than narrow strips due to the option to graze wider strips with livestock
- In the vast majority of cases, the maximum amount of land respondents would be prepared to enter into the scheme represents 3% or less of any given landholding. There were, however, a small number of individuals who would consider much higher proportions (40% or more)
- Response data shows a clear negative correlation between farm size and the area of land farmers are prepared to enter into the scheme

Exploratory Research Survey Results (cont)

Management Options

- Respondents were asked to consider the types of land management options they would be prepared to adopt. Two options were provided: one allowing grazing/topping and another involving no management other than the trimming back of vegetation and trees by the fence line
- 60% of respondents would only consider the grazing/topping option whilst 34% would consider both the grazing/topping option and the unmanaged option. 6% opted for the unmanaged option only
- Possibly not surprisingly, concerns with the unmanaged option focused on weed and scrub containment. Questions were also asked whether, by allowing land to revert to scrub, it might become ineligible for the Single Farm Payment

Exploratory Research Survey Results (cont)

Payment Levels Required

- The response profile is outlined below:

Amount Required (ha)	% Of Respondents
<£10,000	15%
£10,001 - £20,000	20%
£20,001 - £30,000	35%
£30,001 - £40,000	15%
£>40,000	15%

- In nearly all cases, respondents derived their figure by applying a multiple to the average per hectare land value across their farm
- Maintenance costs, for example replacement of fencing every 20-30 years were also taken into account (considered a significant burden)
- Some respondents mentioned they would want their payments to increase in proportion to the area of land they were prepared to enter into the scheme i.e the more land, the higher the payment per hectare.

Exploratory Research Survey Results (cont)

What Farmers Like About The Proposed Scheme

- Respondents regarded the scheme as offering a 'reward' for providing environmental services to society
- They did not see the scheme as requiring them to fundamentally change their farming systems, given the land they have in mind for inclusion is not currently farmed intensively. The initiative, therefore, represents an opportunity to add value to poorer land which is 'difficult to farm'
- The fact that the scheme will be managed outside government control was also mentioned as a selling point by some

Exploratory Research Survey Results (cont)

What Farmers Do Not Like About The Proposed Scheme

- Dislikes with the scheme focused on the longevity of the agreements with 63% stating they disliked the length of the commitment involved
- A smaller number of respondents (10%) also remarked on the one-off payment idea, preferring on-going payments capable of taking into account potential increases in the 'ecosystem services market'
- Potential impacts on future farm value was also a concern for a few respondents but most believed deeds of covenant on relatively small areas of marginal land would not detract from overall capital value in the future
- One respondent was concerned that the scheme might not allow for unforeseen opportunities to be taken advantage of e.g running an oil or gas pipeline through covenanted land. Provision for such activities would make the scheme more desirable

Choice Modelling Survey

- To complement the initial survey, we have undertaken a subsequent Choice Modelling study to further examine relative farmer preferences for different versions of the envisaged land management scheme
- Random sample n=106 of farmers interviewed comprising landowners across Cornwall and Devon border
- Respondents were presented with a sequence of alternative scheme options, each with a different combination or set of attribute levels

Payment Level	£2,000	£5,000	£15,000	£25,000	£35,000	£45,000
Length Of Agreement	49 Years	149 Years	499 Years	999 Years		
Buy Out Option	Yes	No				
Land Required	Marginal Land	Marginal Land (buffers)	Good Land	Good Land (buffers)		
Management Requirement	Reversion To Scrub	Extensive Permanent Pasture				
Public Access	No Access	Managed Access	Full Access			

Choice Modelling Survey

Choice Set Example	Option 1	Option 2	Option 3
Payment Level (ha)	£15,000	£35,000	£25,000
Length Of Agreement	499	149	499
Buy Out Option	Yes	Yes	No
Type Of Land	Good Land (not buffer)	Marginal Land (not buffer)	Buffer Strip (on Marginal Land)
Management Requirement	Reversion To Scrub	Extensive Permanent Pasture	Reversion To Scrub
Provision Of Public Access	Full Public Access	Full Public Access	No Public Access

- From the stated preference data, it is possible to derive a valuation for each attribute level which corresponds to the level of payment (WTA) farmers require to adopt each attribute level
- Stated preference data can also be used to assess how farmers trade-off attributes against each other

Choice Modelling Survey Overview Of Results

	Preferred Agreement Options	Least Preferred Agreement Options	Payment Requirement Differential (per ha)
Length Of Agreement	49 Yrs	499+ Yrs	£24,950
Buy Out Available	Yes	No	£19,268
Management Option Required	Topping/Light Grazing	Reversion To Scrub	£17,071
Level Of Public Access	None	Full	£37,430
Type Of Land Given Up	Buffer Strip (Marginal Land)	Good Land (Not Buffer Strip)	£17,950

Choice Modelling Survey Overview Of Results

Agreement Attribute Level	Payment Requirement Differential (per ha)
To go beyond 49 Years.....	
149 Years	£4,210
Over 499 Years	£24,950
To allow public access.....	
Partial Access	£18,715
Full Access	£37,430
To go beyond marginal land on	
Marginal Land Outside Buffers	£1,760
Buffer Strips On Good Land	£9,790
Good Land Outside Buffers	£17,950

Summary Conclusions

- High levels of potential adoption of scheme by farmers if the price is right (scheme not seen as disruptive to core farming business)
- 4 out of 10 farmers would consider reversion to scrub option (i.e. a complete cessation of production)
- Payment levels will be significant (maybe £30-40,000/ha) but this can be compared to current agri-payments extrapolated over 999 years (for example, current HLS successional scrub creation/semi-natural grassland/arable reversion options vary between £100/ha/year and £280/ha/year – multiplied over 999 years, the figures are large)
- Choice Modelling reveals moving agreements from relatively short timeframes (49 Yrs) to very long term commitments (499+ Yrs) will cost a lot but moving to medium length agreements (149 Yrs....still a long time) will not cost that much more
- Farmers in this sample do not like public access!.....this will cost a lot to obtain from them

Summary Conclusions (cont)

- Buffer strips on marginal land are the least cost option. However, securing marginal land outside buffers will not cost that much more which is good news for catchment managers as this wider land is often crucial for water protecting water quality. Significantly more money will be needed for good land

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Project Principals and Partners

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Other institutions:

- The Westcountry Rivers Trust
- The Association of Rivers Trusts
- The Upper Susquehanna Coalition, NY and Pa, USA

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For more information:
<http://www.watervgov.org/>



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