Report

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APPENDIX 2: QUESTIONNAIRE FORMATS
2.1 Royal Welsh Show questionnaire 2008 (English)

Catchment Sensitive Farming

This survey is designed to gather information on your attitudes towards catchment sensitive farming. Please complete the details on this page by ticking the appropriate answer. This survey is conducted in the strictest confidence and the results will be used for research purposes only.

1 Gender ☐ Male ☐ Female

2 What is your age? *Please tick the appropriate box.*
☐ 16 - 24 ☐ 25 - 34 ☐ 35 – 44 ☐ 45 - 54 ☐ 55 - 64 ☐ 65+

3 What age did you complete full-time education? ☐ Or tick box if currently in full-time education.

4 Which of the following **best** describes the location of your home? *Please tick* **one** *box only*.
☐ Urban (city / town centre) ☐ Suburbs of town / city ☐ Village / hamlet ☐ Open countryside

5 In which county do you live?

6 Do you currently, own, manage or work on a farm? ☐ Yes ☐ No
If 'Yes' please go to question 7, if 'No' please go to question 12, then please answer the questions overleaf.

QUESTIONS FOR FARMERS

7 Which of the following best describes your role on the farm?
☐ Farm business owner / partner ☐ Farm worker ☐ Employed manager

8 How long have you worked in agriculture? ☐ years

9 What is the total area of land that you farm? ☐ acres **OR** ☐ hectares

10 What type of farm do you currently own, manage or work on? *Please tick* **one** *box only*.
☐ Mixed arable and livestock ☐ Mainly arable ☐ Mainly dairy ☐ Other
☐ Mixed livestock ☐ Mainly sheep ☐ Pigs and poultry

11 Are you currently taking part in any agri-environment or Stewardship schemes? ☐ Yes ☐ No

If **Yes**, which one(s)? _____

NOW PLEASE ANSWER THE QUESTIONS OVERLEAF

QUESTIONS FOR NON-FARMERS

12 Which of the following **best** describes your current employment situation? *Please tick* **one** *box only.*
☐ Employee ☐ Self-employed ☐ Seeking work
☐ Retired ☐ Looking after home/family ☐ Permanently sick/disabled

13 What is the title of your main job? _____

14 Are you the spouse/partner of a farmer? *Please tick* **one** *box.* ☐ Yes ☐ No

15 Have you left agricultural employment in the past 5 years? ☐ Yes ☐ No
If **Yes**, Which of the following best describes your former role on the farm?
☐ Farm business owner / partner ☐ Farm worker ☐ Employed manager

(second page)

Your opinions on water quality and the environment

Please circle one answer for each question

Had you heard the phrase 'catchment sensitive farming' before today?	YES	NO

Please indicate your feelings about the following statements on the 5 point scale, where 1 is strongly disagree and 5 is strongly agree. If you select the middle point (3), this means that you don't have an opinion either way

Environmental pressure groups are unhelpful to farmers	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Good farming always leads to a good environment	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Government legislation on water quality is helpful to the farmer	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Most of the pollution in our local rivers is caused by farmers	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Unmanaged buffer strips around fields and along riverbanks make a farm look untidy.	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
I would be embarrassed if my neighbours thought I was polluting the river.	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
If you can't see or smell pollution in a river then there isn't a major problem	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
It is good stock management to keep livestock away from watercourses	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
It is important to carefully calculate fertiliser requirements based on stocking, land use, manure usage and soil analysis	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
It is important to have some areas of natural habitat on farms.	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Grassland buffer strips along a river bank can't stop the river getting polluted	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Managing water quality at the catchment scale is a silly idea	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Muddy gateways don't have any impact on the quality of the streams and rivers on my farms.	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Production efficiency should be the first priority of farmers	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Public opinion should not dictate environmental policy on farms	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
The Government should pay for improvements in the environment	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Only if all the farmers in my area work together can we hope to see a major improvement in the quality of the water in the local streams and rivers.	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Rivers and streams are important wildlife habitats on farms	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
The amount of fertiliser that farmers use has little affect on the environment	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
The rivers and streams in my area are cleaner now than at any time in the last 20 years.	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Water pollution in my area is not caused by farmers	Strongly disagree	Disagree	Don't know	Agree	Strongly agree

Thank you for taking part in this survey and for spending your time filling in this questionnaire.

2.2 Royal Welsh Show questionnaire 2008 (Welsh)

Ffermio sy'n Sensitif i Ddalgylch

Mae'r arolwg hwn wedi'i lunio i gasglu gwybodaeth am eich agweddau tuag at ffermio sy'n sensitif i ddalgylch. A fyddech cystal â llenwi'r manylion ar y dudalen hon drwy roi tic wrth yr ateb priodol. Gwneir yr arolwg hwn yn hollol gyfrinachol a defnyddir y canlyniadau at ddibenion ymchwil yn unig.

1 Gender ☐ Gwrywaidd ☐ Benywaidd

2 Faint oed ydych chi? *Ticiwch y bocs priodol.*
☐ 16 - 24 ☐ 25 - 34 ☐ 35 – 44 ☐ 45 - 54 ☐ 55 - 64 ☐ 65+

3 Faint oed oeddech chi pan wnaethoch orffen addysg lawn-amser? ☐ neu ticiwch y bocs os ydych mewn addysg lawn-amser ar hyn o bryd.

4 Pa un o'r canlynol sy'n disgrifio lleoliad eich cartref **<u>orau</u>**? *Ticiwch* **un** *bocs yn unig*.
☐ Trefol (dinas / canol tref) ☐ Maestref tref / dinas ☐ Pentref / Pentrefan ☐ Cefn gwlad agored

5 Ym mha wlad ydych chi'n byw ynddi?

6 Ydych chi'n berchen ar fferm eich hun ar hyn o bryd, yn rheoli un neu'n gweithio ar un? ☐ Ydw ☐ Nac ydw
Os ydych, ewch i gwestiwn 7, os nad ydych, ewch i gwestiwn 12, yna atebwch y cwestiynau drosodd.

CWESTIYNAU I FFERMWYR

7 Pa un o'r canlynol sy'n disgrifio orau eich rôl ar y fferm?
☐ Perchennog / partner busnes y fferm ☐ Gweithiwr fferm ☐ Rheolwr cyflogedig

8 Pa mor hir ydych chi wedi gweithio mewn amaethyddiaeth? ☐ O flynyddoedd

9 Beth yw cyfanswm arwynebedd y tir yr ydych yn ei ☐ acer **neu** ☐ hectar

10 Pa fath o fferm ydych chi'n berchen arni ar hyn o bryd, yn ei rheoli neu'n gweithio arni? *Ticiwch* **un** *bocs yn unig*.
☐ Cymysgedd o dir âr a da byw ☐ Tir âr yn bennaf ☐ Gwartheg godro'n bennaf ☐ Arall
☐ Da byw cymysg ☐ Defaid yn bennaf ☐ Moch a dofednod

11 Ydych chi'n cymryd rhan mewn cynlluniau amaeth-amgylcheddol neu Stiwardiaeth ar hyn o bryd?
Os **ydych**, pa un / rai?

NAWR ATEBWCH Y CWESTIYNAU DROSODD, OS GWELWCH YN DDA

CWESTIYNAU I RAI NAD YDYNT YN FFERMWYR

12 Pa un o'r canlynol sy'n disgrifio **<u>orau</u>** eich sefyllfa gyflogaeth gyfredol? *Ticiwch* **un** *bocs yn unig*.
☐ Gweithiwr ☐ Hunangyflogedig ☐ Chwilio am waith
☐ Wedi ☐ Edrych ar ôl y cartref/teulu ☐ Anabl / sâl yn barhaol

13 Beth yw teitl eich prif swydd? _____

14 Ai ffermwr yw eich priod /partner? *Ticiwch* **un** *bocs yn unig*. ☐ Ie ☐ Na

15 Ydych chi wedi gadael cyflogaeth amaethyddol yn y 5 mlynedd ddiwethaf? ☐ Ydw ☐ Nac ydw
Os **ydych**, pa un o'r canlynol sy'n disgrifio'ch swyddogaeth flaenorol ar y fferm?
☐ Perchennog / partner busnes y fferm ☐ Gweithiwr fferm ☐ Rheolwr cyflogedig

NAWR ATEBWCH Y CWESTIYNAU DROSODD, OS GWELWCH YN DDA

(second page)

Eich barn ar ansawdd dŵr a'r amgylchedd

Rhowch gylch o amgylch un ateb ar gyfer bob cwestiwn.

Oeddech chi wedi clywed am yr ymadrodd 'ffermio sy'n sensitif i ddalgylch' cyn heddiw?	OEDDWN	NAC OEDDWN

Nodwch eich teimladau am y datganiadau canlynol ar y raddfa 5 pwynt lle mae 1 yn anghytuno'n gryf a 5 yn cytuno'n gryf. Os dewiswch y pwynt canol, 3, yna golyga hyn nad oes gennych farn y naill ffordd neu'r llall

Mae carfannau pwyso amgylcheddol yn ddi-fudd i ffermwyr.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Mae ffermio da bob tro'n arwain at amgylchedd da.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Mae deddfwriaeth y llywodraeth ar ansawdd dŵr yn ddefnyddiol i'r ffermwr.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Caiff y rhan fwyaf o'r llygredd yn ein hafonydd lleol ei achosi gan ffermwyr.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Mae lleiniau heb eu trin o amgylch caeau ac ar hyd glannau afonydd yn gwneud i ffermydd edrych yn flêr.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Byddai gen i gywilydd pe bai fy nghymdogion yn meddwl fy mod yn llygru'r afon.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Os na ellwch chi weld nac arogli llygredd mewn afon, yna nid oes problem fawr.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Mae'n arfer da o ran rheoli stoc i gadw da byw oddi wrth gyrsiau dŵr.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Mae'n bwysig cyfrifo gofynion gwrtaith yn ofalus yn ôl stocio, defnydd tir, defnydd tail a dadansoddiad pridd.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Mae'n bwysig cael rhai ardaloedd o gynefin naturiol ar ffermydd.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Ni all lleiniau o laswelltir ar hyd glan afon rwystro'r afon rhag cael ei llygru.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Mae rheoli ansawdd dŵr ar raddfa'r dalgylch yn syniad gwirion.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Nid oes gan fynedfeydd mwdlyd unrhyw effaith ar ansawdd y nentydd a'r afonydd ar fy ffermydd.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Dylai effeithlonrwydd cynhyrchu fod yn flaenoriaeth gyntaf ffermwyr.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Ni ddylai barn gyhoeddus bennu polisi amgylcheddol ar ffermydd.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Dylai'r llywodraeth dalu am welliannau yn yr amgylchedd.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Dim ond os yw'r holl ffermwyr yn fy ardal yn cydweithio y gallwn obeithio gweld gwelliant o bwys yn ansawdd y dŵr yn y nentydd a'r afonydd lleol.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Mae afonydd a nentydd yn gynefinoedd bywyd gwyllt pwysig ar ffermydd.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Nid yw faint o wrtaith mae ffermwyr yn ei ddefnyddio yn cael llawer o effaith ar yr amgylchedd.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Mae'r afonydd a'r nentydd ar fy fferm yn lanach yn awr nac ar unrhyw adeg yn yr 20 mlynedd ddiwethaf.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf
Nid yw llygredd dŵr yn fy ardal wedi'i achosi gan ffermwyr.	Anghytuno'n gryf	Anghytuno	Ddim yn gwybod	Cytuno	Cytuno'n gryf

Diolch yn fawr am gymryd rhan yn yr arolwg hwn ac am dreulio'ch amser yn llenwi'r holiadur.

APPENDIX 3: SUMMARY OF FARMS AND FARMERS IN THE CSF DEMONSTRATION PROJECT

Languages spoken in the three catchments:

Deepford Brook and Twrch are English – speaking and Llafar (predominantly) Welsh.

Catchment	Language		
Deepford Brook	English	37	(of 37)
Llafar	English	2	(of 36)
	Welsh	34	
Twrch	English	20	(of 20)
Total			**93**

Farm sizes (ha) by catchment and tenancy:

Catchment	Farm description	n	Average size (ha)	Size range (ha)
Deepford Brook	Owner-occupier	27	62.11	(5 - 174)
	Tenant-occupier	6	77.67	(7 - 223)
	Mixed owned/tenanted	4	115.37	(73 - 174)
Deepford Brook Catchment		***37***	***70.39***	
Llafar	Owner-occupier	31	88.95	(4 - 388)
	Tenant-occupier	4	9.60	(2 - 16)
	Mixed owned/tenanted	1	5.00	
Llafar Catchment		***36***	***77.80***	
Twrch	Owner-occupier	18	139.75	(7 - 425)
	Tenant-occupier	1	92.00	
	Mixed owned/tenanted	1	68.80	
Twrch Catchment		***20***	***133.82***	

Summary of farm enterprises in the three catchments, in rank order

Llafar and Twrch are sheep farming areas, many with beef as a second enterprise (see next table). Deepford is a cattle-farming area (beef and dairy) where sheep are less common.

Deepford		Llafar		Twrch		Overall	
beef	27	**sheep**	35	**sheep**	20	**beef**	72
dairy	24	**beef**	28	**beef**	17	**sheep**	64
arable	14	other	3	contracting	4	dairy	26
sheep	9	dairy	2	pigs	2	arable	15
contracting	6	pigs	2	forestry	1	contracting	11
forestry	4	arable	1	accommodation	1	other	8
other	4	contracting	1	other	1	pigs	7
pigs	3	forestry	1	*dairy*		forestry	6
food processing	2	accommodation	1	*arable*		accommodation	3
accommodation	1	caravans	1	*food processing*		food processing	2
caravans		*food processing*		*caravans*		caravans	1

Summary of common combinations of agricultural farm enterprises, in rank order for each catchment

Catchment	Enterprise combinations		Total	
Deepford	Farms producing beef		27	73%
(n=37)	Beef and…	Dairy	17	46%
		Arable	13	35%
		Sheep	8	22%
		Pigs	3	8%
		Forestry	3	8%
	(no beef)	Dairy	7	19%
		Sheep	1	3%
		Arable	1	3%
		Forestry	1	3%
		Pigs		
Llafar	Farms producing beef		28	78%
(n=36)	Beef and…	Sheep	28	78%
		Dairy	1	3%
		Arable	1	3%
		Pigs	1	3%
		Forestry	1	3%
	(no beef)	Sheep	7	19%
		Dairy	1	3%
		Pigs	1	3%
		Arable		
		Forestry		
Twrch	Farms producing beef		17	85%
(n=20)	Beef and…	Sheep	17	85%
		Pigs	2	10%
		Forestry	1	5%
		Dairy		
		Arable		
	(no beef)	Sheep	3	15%
		Dairy		
		Arable		
		Pigs		
		Forestry		

- Considering only agricultural enterprises, farms in Deepford catchment are the most diversified with 2.4 enterprises per farm; Twrch farms have 2.2 and Llafar 1.9.
- Considering all enterprises (including non-agricultural) farms are similar in the three catchments, with 3.5 enterprises per farm.
- Farmers with non-agricultural enterprises only have one at a time, and these may be food processing, accommodation, caravans and unspecified enterprises. Contracting is more common: 15 - 20 % of farmers in Deepford and Twrch make some of their income from contracting, but only one farmer in Llafar catchment.

Tenancy and employment

Farms in Deepford and Twrch catchments are predominantly owned by the occupier while in Llafar 61 % of farms are run by tenants.

Overall, farms in Twrch employ slightly more people (4.5 per farm) than farms in Llafar and Deepford (4.2 and 4.1, respectively).

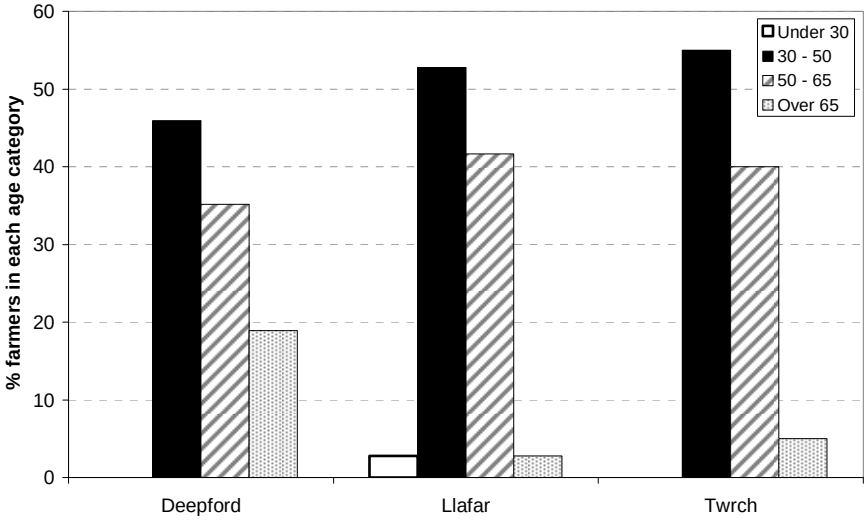
Catchment	Farm type		Employees / workers (average per farm)	
Deepford	Owned	70%	Full-time	1.8
	Tenanted	30%	Part-time	0.8
			Family	1.5
Llafar	Owned	39%	Full-time	1.3
	Tenanted	61%	Part-time	1.1
			Family	1.8
Twrch	Owned	95%	Full-time	1.2
	Tenanted	5%	Part-time	1.3
			Family	2.1

In Llafar and Twrch, each farm (on average) employs two family members, one full-time and one part-time employee. In Deepford, labour by family members is slightly lower (1.5 people per farm), with a bias towards full-time employees rather than part-time.

Demographics

The most common age category in all three catchments is 30 – 50 years old.

Almost all (95 %) of the farmers in Llafar and Twrch catchments are in the age range 30 – 65, while 20 % of Deepford farmers are over the age of 65.



Most farmers have children (average 2 children) Families' average ages differ between the catchments: the average age of children is highest in Deepford (22-23), slightly lower in Twrch (18-20) and lowest in Llafar (16–17).

Working hours

Most farmers in Deepford farm full-time (81 %) while the proportions in Llafar and Twrch are lower (47 and 45 % respectively).

Part-time farmers without other jobs work on the farm for between 3.5 and 5.5 days per week.

Farmers who farm part-time at home are likely to have other off-farm work (5 of 7 in Deepford; 11 of 19 in Llafar and 8 of 11 in Twrch).

Catchment	Off-farm work?		n	average days per week
Deepford		Full-time farming	30	7.0
	no	(less than full-time)	2	3.5
	yes	(less than full-time)	5	1.4
Deepford average			37	6.1
Llafar		Full-time farming	17	7.0
	no	(less than full-time)	8	5.4
	yes	(less than full-time)	11	3.1
Llafar average			36	5.4
Twrch		Full-time farming	9	7.0
	no	(less than full-time)	3	5.0
	yes	(less than full-time)	8	3.3
Twrch average			20	5.1

Planned and anticipated changes to farms

Changes to land area

Over the last 10 years, farms in Deepford have tended to increase in size (50 %) or stay roughly the same (33 %). Llafar and Twrch catchments are even more stable, with 50 % and 70 % of farms staying the same size.

Catchment	Land change	Farms	Catchment	Land change	Farms	Catchment	Land change	Farms
Deepford	Increased (total)	**19**	**Llafar**	Increased (total)	**16**	**Twrch**	Increased (total)	**5**
	By: 0-10%	3		By: 0-10%	5		By: 0-10%	1
	10-25%	7		10-25%	8			
	25-50%	6		25-50%	1		25-50%	2
				50-75%	2			
	75-100%	3					75-100%	2
	Decreased (total)	**5**		Decreased (total)	**2**		Decreased (total)	**1**
	By: 25-50%	2		By: 0-10%	1			
	50-75%	2		50-75%	1			
	75-100%	1						
	No change	**12**		No change	**18**		No change	**14**
	(not stated)	**1**						
		(37)			(36)			(20)

Reasons for increasing land area:

- In all three catchments, farms that have increased in size have done so primarily to increase financial margins.
- Secondary reasons for land increases vary in importance between catchments, including more environmentally friendly management (Llafar), expansion for a member of the family (all catchments) and response to changing agricultural policy (Twrch).
- Diversification into new enterprises was the lowest-scoring reason for land expansion in all three catchments.

Reasons for decreasing land area:

- Most farmers that have decreased the land area of their farms did not choose any of the reasons cited in the questionnaire (or refused to answer).
- The only reason cited in the questionnaire that farmers agreed had motivated some decreases in land area was disposing of land for capital.

Changes to stock

Catchment	n farms	Average change (%)	Catchment	n farms	Average change (%)	Catchment	n farms	Average change (%)
Deepford	**(19)**		**Llafar**	**(7)**		**Twrch**	**(9)**	
Dairy cows	27	140	Ewes	35	32	Ewes	19	17
Replacement heifers	26	35	Replacement ewe lambs	32	17	Replacement ewe lambs	19	17
Cattle 12-24 m.o.	21	60	(other animals)	32	50	Beef cattle	17	**-12**
Cattle 0-12 m.o.	20	152	Beef cattle	30	4	Cattle 0-12 m.o.	13	3
Beef cattle	12	62	Cattle 0-12 m.o.	29	12	Replacement heifers	9	61
Ewes	11	43	Replacement heifers	21	**-17**	Cattle 12-24 m.o.	6	**-35**
(other animals)	5	40	Cattle 12-24 m.o.	21	28	(other animals)	3	67
Replacement ewe lambs	3	**-11**	Dairy cows	2	**-84**	Dairy cows	0	

Stock has increased in most farms in the three catchments over the last 10 years, although not all the farms reporting changes consider them to be significant (ie fewer farms stated overall stock changes than reported specific changes in stock numbers).

Table showing detailed stock changes:

Enterprise	Deepford			Llafar			Twrch			Overall (average) change
	Out of this enterprise?	No. farms	Average % change	Out of this enterprise?	No. farms	Average % change	Out of this enterprise?	No. farms	Average % change	
Dairy cows	Yes	6		Yes	1		Yes			
	No	22	195	No	1	**-68**	No			
	Never had dairy	9		Never had dairy	34		Never had dairy	20		
		37	***132***		***36***	***-84***		***20***		***117.28***
Beef cows	Yes	1		Yes	2		Yes	3		
	No	11	77	No	28	12	No	15	6	
	Never had beef	25		Never had beef	6		Never had beef	2		
		37	***62***		***36***	***4***		***20***	***-12***	***11.15***
Replacement heifers	Yes	4		Yes	6		Yes	2		
	No	22	59	No	15	16	No	7	107	
	Never had heifers	11		Never had heifers	15		Never had heifers	11		
		37	***35***		***36***	***-17***		***20***	***61***	***19.58***
Cattle (0 - 12 months)	Yes	1		Yes	1		Yes	1		
	No	19	165	No	28	15	No	13	10	
	Never had young cattle	17		Never had young cattle	7		Never had young cattle	6		
		37	***152***		***36***	***12***		***20***	***2***	***54.02***
Cattle (12 - 24 months)	Yes	3		Yes			Yes	1		
	No	18	86	No	21	28	No	6	**-19**	
	Never had store cattle	16		Never had store cattle	15		Never had store cattle	13		
		37	***60***		***36***	***28***		***20***	***-30***	***33.24***
Ewes	Yes	1		Yes			Yes			
	No	10	57	No	36	31	No	20	16	
	Never had ewes	26		Never had ewes			Never had ewes			
		37	***43***		***36***	***31***		***20***	***16***	***28.71***
Replacement ewe lambs	Yes	1		Yes	1		Yes			
	No	2	33	No	32	20	No	20	17	
	Never had ewe lambs	34		Never had ewe lambs	3		Never had ewe lambs			
		37	***-11***		***36***	***16***		***20***	***17***	***14.75***
(other stock)	Yes	1		Yes			Yes			
	No	5	80	No	33	48	No	3	67	
	Never had (other) stock	31		Never had (other) stock	3		Never had (other) stock	17		
		37	***50***		***36***	***48***		***20***	***67***	***49.86***

Stock changes in more detail:

- ***Dairy -*** Most farms in Llafar and all farms in Twrch have never had dairy enterprises. Of the two farms in Llafar that had dairy 10 years ago, one has stopped the enterprise altogether and the other has decreased stock by 68 %.
- ***Beef –*** Most farms in Llafar and Twrch have beef cattle, few have stopped the enterprise or changed stock numbers. In contrast, 68 % of farms in Deepford have never had beef cattle, but those that do have (on average) increased their stock by 77 %.
- ***Young and replacement cattle –*** in the last 10 years, farms with young or replacement cattle have generally kept the enterprise and increased their stock. In Llafar and Twrch increases have tended to be smaller (10 – 30 %) than in Deepford (59 – 165 %). The exception is store cattle in Twrch which have on average decreased by 19 %.
- ***Ewes and ewe lambs –*** fewer farms in Deepford have ewes or ewe lambs (27 %) compared to the other two catchments (88 and 100 %, respectively). On farms with sheep, stock has increased by 33 – 57 % in Deepford, 20 – 31 % in Llafar and 16 – 17 % in Twrch. Only two farms (one in Deepford and one in Llafar) have stopped keeping sheep altogether in the last 10 years.

Anticipated changes in farm management in the next few years

Farmers expecting to be much the same: 40 % in Deepford, 80 % in Llafar and 30 % in Twrch

- Overall farmers scored membership of an agri-environment scheme most highly (somewhere between ‘probable’ and ‘maybe’).
- Membership of an agri-environment scheme was considered most likely by farmers in Llafar and Twrch, and rather less likely by farmers in Deepford.
- The most common secondary possibility overall was ‘keeping less stock’, but farmers in Deepford scored this as less likely than farmers in Llafar and Twrch.
- Farmers in Deepford consider expansion (acquiring land or increasing stock) more likely than stock reduction.
- Least likely possibilities for all the farmers included selling land or the business, and diversification.

Farmers less certain of staying the same: 43 % in Deepford, 11 % in Llafar and 50 % in Twrch

- Membership of an agri-environment scheme was considered most likely overall, and considered ‘probable’ in Llafar and ‘probable to maybe’ in Twrch.
- Farmers in Llafar and Twrch expect stock reductions and retirement to be the second most likely changes.
- Farmers in Deepford had different possible changes in mind, primarily stock increases. Retirement was the second most likely change.
- Least likely possibilities for all the farmers included selling land or the business, and diversification.

Farmers anticipating change: 16 % in Deepford, one in Llafar and four (20 %) in Twrch

- Overall, farmers considered membership of an agri-environment scheme to be the most likely possibility.
- Diversification into non-agricultural enterprises was ranked second (possible to probable) overall, along with stock reduction.
- Farmers considered selling either land or the business to be least likely to happen.

APPENDIX 4: Farmers' answers to open-ended questions posed in 2006 and 2008.

***Note**: A high proportion of answers in the Twrch and Llafar catchment were given in Welsh and have been translated into English for this report. Some answers have been edited slightly as some comments were disclosive and / or inappropriate.*

Table A4.1: Responses from farmers in the Twrch catchment to the question 'Are there any particular aspects of the catchment sensitive farming demonstration project that you consider to be impractical or unnecessary?' in 2006 and 2008.

ID	2006	2008
1	Fencing off is both impractical, unnecessary and a complete waste of money and time. Fencing off a stream is often very difficult and dangerous, especially in steep-sided valleys lined with trees. It's worth is very doubtful. I'm concerned that CSF will be targeting beef farmers more than sheep.	I feel that the guidance of the project was really narrow, and didn't offer any flexibility. Even though part of my land feeds the river Twrch, nearly everything reaches the lake through other streams. The help available to stop feeding animals outside was poor, I don't like this habit but more help is needed on farms to keep everything in. It is also a question of, are the animals better inside. They are healthier outside sometimes.
2	Cannot comment on this as I know so little about CSF.	
3	1. Fencing off streams and rivers is going to be difficult in the mountain- not bad on my land as I'm fortunate enough to farm near the lake. Stock have been entering the river for centuries, so why stop them now. 1. Flooding is bound to damage the fencing which will render the work useless. Who will have to pay for the repair work? The farmer probably!	
4	Fencing both sides of watercourses is impractical and nuisance for farmers. How else are we going to provide our stock with clean water? Is the CSF project going to pay us to install new water troughs in the field?	There were several aspects of the project that was impractical. Because the last two years have been incredibly bad for farmers, I didn't and a lot of other farmers didn't have enough money to contribute 50% towards the costs. As well, claiming the money back made things difficult with the money flow. I heard about a few people that had it difficult to get money back from the plan therefore I lost a lot of confidence. I also can't understand why we need to stop cows going into the river. There are only a few cows in the area anyway.
5	I haven't read much about the project really, and I missed the public meeting due to health problems. I have a big question mark over the effectiveness of fencing streams. I think this is unnecessary as animals have been drinking from ditches and streams for centuries.	
6	(Note: Interviewer confirmed that fencing off streams was part of CSF) Fencing off water courses is unnecessary and sometimes impractical to the point of being a health hazard. Stocking rates in the area have gone down recently, so any problems that may have existed on intensive farms has gone. What about the needs of animals? They need water to live.	
7	Not at the moment.	No, nothing.
8	I haven't had much information about it yet, so it's difficult to judge the practicalities. They said they wanted to start at the beginning of this year! I'm concerned that they'll be pumping money on fencing off watercourses again. Time and time again, flood water will erode the fencing away and we end up with a struggle between the farmer and the authorities over who pays for the repair work. I can't see anything wrong with letting animals drink from the river. Fencing only means that animals will congregate in one area to drink and thus intensifying soil erosion on that spot.	Nothing comes to mind

9	Too early to say yet, but I am concerned about plans to promote fencing off streams and rivers. Cattle have been drinking from rivers for centuries, may before any detrimental consequences were recorded in our rivers. Fencing off streams would make sense if we had large concentrated numbers of beef cattle, but we don't in Llanwrchllyn.	I felt that the rules were too tight concerning boundaries. It was only through luck that we discovered that the boundary was the upper side of the yard and therefore we could apply for a grant, FWAG officer Richard Roberts helped us to discover this. As well I feel that all the administrative and monitoring work wasn't needed and there was a way to improve efficiency – are 2 people really needed to test a river?
10	1. I have just received a diary to log all my farm activities relating to water management from October 2005 to October 2006. It's now June 2006! How will I know what I did 6 months ago! This is impractical and pour management. 2. Fencing off streams and the river will have little, if any effect on this farm. We're the first farm at the source of Twrch with very few cattle. It's going to a very expensive exercise and a waste of money as flood water and river erosion will destroy it.	1. I really question the purpose and benefit of fencing along the river banks. There are hardly any cows in the area anyway. If cows can't go into the river they will stay around troughs then. 2. We were asked to complete diaries, but we had to wait 8-10 months for them – no purpose for this. 3. It's a pity that the project was hurried in the end.
11	Too early to say really. I think the speed they're progressing is unnecessarily slow. They are already months behind the schedule they originally outlined. We get penalised for being 1 day behind with the IACS forms. The soil samples were supposed to be taken in January, but it was March before anybody came, and that was after a lot of phone calls.	
12	I haven't noticed anything yet.	Nothing was impractical or unnecessary. I welcome the steps that have been taken.
13	Fencing off riverbanks is unnecessary, and impractical. I can assure you that the fences will be dismantled during the first high water of the winter, leaving the farmer with extra work and probably a bill to repair it I think there's little logic in this idea - animals need to drink water. Fencing off streams is a waste of money.	Getting farmers to fence rivers and streams in the uplands is laughable as the high flow in the river during the winter would carry the fence with it. It's a waste of time and money.
14	1. I feel that the rules on applying fertilisers are unnecessary, as so little chemical fertiliser is applied in the locality already. This would be acceptable on lowland farms possibly where they depend more on fertilisers. 2. Fencing off streams is impractical and a complete waste of money. Sometimes it can be very dangerous to fence a stream at the bottom of a deep gorge, and it will only be there for a couple of seasons at most before flood water destroys it.	
15	I don't think so - all the measures will contribute towards improving the water quality - "remember the small things" (A well-known Welsh proverb).	No.
16	Not many. I accept that there are a few (farmers) who may cause concerns to the authorities, so I suppose there is a need for the measures to tackle them. I think it's unacceptable to be pointing the blame for the algae growth in the lake on farmers. Algae growth has been recorded for decades before chemicals and fertilisers were widely used. Having attended the meeting last year on CSF, I think people take farmers as being stupid. We're not! They shouldn't look down at us - we want to know the 'technicalities' to learn.	The fertilizer guidelines were completely impractical. I was advised by the plan to put straight N but its nearly impossible to find this and its very expensive. They were advising me to put 3 bags per acre of 24:4:14 on grass fields whilst I only used to put 1 bag like everyone else. The plan told me to put 3 times more fertilizer. And it was a wet summer with little growth.
17	I think fencing off streams and rivers is a waste of resources. High water is bound to take any fencing down, leaving the farmer and officials with a problem of who pays for the repair work. It's a complete waste of money in the uplands considering how extensive we already farm.	

18	Like many farmers I think fencing off watercourses from livestock is pointless. Who benefits? The animals suffer because their water supply is limited overnight, farmers have to carry out risky fencing work, and the taxpayer ends up paying for something that the river will destroy in a few months. There's no need for it in the uplands. CSF needs to distinguish between river bank erosion on the lowlands especially on intensive cattle farms, and the upland scenario. I would also like to see more positive help e.g. helping us adapt our practices to benefit the environment as opposed to stopping us. I hope there's sufficient flexibility in the scheme to treat all the businesses individually as we are all different.	
19	Slightly too early to comment in detail. I heard that some farmers will be encouraged to grow buffer strips along river banks. Putting stones along banks would be much more effective, as the river flows too fast in the uplands for anything to grow properly along its bank. I'm also concerned that the projects' protocol or criteria will be too narrow or inflexible to make a practical improvement on many farms. My biggest problem is disposing tonnes of dog manure. Will the project be able to assist with my situation, and all the others that are unusual?	1. The project should include Lliw and Dyfrdwy if you are going to have any real difference in the water quality in the lake. 2. Trying to stop animals standing in the water is totally impractical. Cows have done this forever and it's natural. 3. Was a water sample from the river from every farm necessary? And why were two people needed to get one water sample?
20	Not that I'm aware of	

Table A4.2: Responses from farmers in the Llafar catchment to the question 'Are there any particular aspects of the catchment sensitive farming demonstration project that you consider to be impractical or unnecessary?' in 2006 and 2008.

ID	2006	2008
1	Fence river banks - don't agree with this - put places where cows can go into the river. There will be more erosion if he does fence. Fence untidy as it gathers rubbish, fence doesn't look very nice. Cattle have always had water from the rivers - this is not a new practice. The things that are new are a lot more campsites, caravan parks that have many chemicals etc, and also no lime being put on agricultural land - before tonnes were put on the land.	
2	Waiting too long for permission to start on the work - no contract yet. Fencing along river banks - and put places for cattle to have water - this makes more mess.	
3	Fence rivers - if you only fence part of the rivers out - O.K. if you have troughs but if you leave open areas you have erosion on those parts. 10 M of width is too much also. £50 charge from the Environmental Agency	Fence stream and river banks, and leave a bay for the stock to go out from it, the pollution is then concentrated in one place.
4	Fence the river out – weeds increasing. 2 year plan – not long enough to see any effect	
5	Too many different agencies related to the project: would be better to have 1 person to do all the work for the farm. Environmental Agency charge £50. They treat farmers like they don't know how to do the work needed – some of then tended to do this. Too much money being spent on administration, instead of doing the work on the farm	The farmer felt that there was a lack of communication and organisation between the partners within the project. E.g. the planning application took a long time to go through (by the National Park). And the officers hadn't thought about the work that every farmer could do thoroughly e.g. after putting an application in to form a new manure store it was decided afterwards that a roof needed to be built and because of this, the application had to be prepared again and the process was further delayed.
6	Know very little about it yet- haven't had a visit + didn't attend the meeting- no paperwork sent. (heard about it via the slephead at NatDdu).	Too much attention to "detail". -colours prescribed by National Park. Locations changed of sheep dips etc.

7	Impractical: that there isn't enough emphasis on liming grants	
8	No – a good thing that they offer grants for putting roofs over manure stores etc	No, it has suited the ones that have been able to benefit from the plan
9	Don't know enough about the project since there was none available here. Not unwanted – everything helps	
10	Doesn't know about the plan yet	
11	Haven't looked enough into the plan to know enough about it	Fence river banks – problems with weeds taking over and poisoning the soil/water. Problems with floods etc.
12	No. One place where there is an aspect that I disagree with is the grants available to put pipes over ditches, the farmer only gets a 60% grant, the other 40% comes from the farmer's pocket, but there isn't a big advantage to it after doing the work	
13	Think that every aspect of the plan is good and that it should have happened sooner	N/A
14	It's impractical that everyone isn't included in the plan. If the farmer between two farms that have joined the plan didn't join the plan, the work the two farmers every side does is in vain as the one in the middle continues to make the water dirty	No apart from the fact that the full grant wasn't given to do the work, therefore everybody didn't have to do the work therefore the water quality wasn't being protected.
15	The offer to put wicker panels on the corners of the ditches to prevent erosion is a bit over the top and expensive	Use willow as revetments to stop erosion on the river sides. The specification changed twice and this caused the cost to change (increase) as a licence was needed to do the work. The farmer pulled out of the plan because of this.
16	Spending too much without seeing the value of the investment	
17	No	The demand for a permit to interfere with the water course, when the cost for the work sometimes isn't always more than the permit fee.
18	There are too many bodies involved with the project; it would be more practical if one body dealt with the whole project. Foresee that there will be a lack of communication between the different bodies will be a problem as the different bodies will not know what each other do or say.	I saw the project as quite useful but the percentage of money going towards administrating the project was too high.
19	Roof over the dry manure store, the manure store doesn't get wet throughout. Can see that putting a roof will be expensive even with the grants. It appears that the grants available will not be enough to cover the costs.	No, but the application forms went lost in the post, and because of this the contract work was delayed.
20	Don't agree with fencing streams and rivers out	Fence streams and rivers out, the cows have been going into them over the years and there was no effect on water quality as there was enough fish half a century ago. Also, with the change in climate, floods are happening more often. It is likely that a new fence would be needed every year.
21	Too many different bodies are associated with the plan, lots of different people from different bodies have been to visit the farm but the paper work or the process of joining is still quite slow	Stop poisoning boars. Stopping poisoning boars would not be practical as the soil the boars dig up goes somewhere.
22	Soil sampling in the pilot, if the plan goes nationwide the sampling would be impractical.	No, the administrative part of the plan is essential by now.
23	The project is not unwanted, pollution problem in Llyn Bala therefore something needs to be done to improve the water quality.	
24	Thinks that the plan has been go-efficiently designed.	
25	No	
26	Fence river and stream banks, if the stock had to cross in only one place it would make the river dirty anyway and if there would be a strong flow the fence would break.	

27	Making special areas for live cows to cross rivers is impractical as they make one place in the river dirty. Too tight rules make the farmer's life difficult as the farmer can't control the weather and sometimes you have to put manure on the land when it is dry in the winter because the manure store is full and it is convenient to go out to put manure on the land.	
28	Fence the rivers and streams – there will be more erosion in one place if the stock could only go into the water in one place	
29	Just that the project hasn't extended over every river area that feeds Llyn tepid.	If the objective of the project was to improve Llyn Tegid water quality, to be practical, work would have to be done on the 4 rivers that go into the lake.
30	Felt that a lot of the work that was to be done under the plan was beneficial to the environmental agency people, e.g. fence stream banks but the farmer doesn't have much benefit himself.	
31	It all boils down to stocking density, there is certainly a doubt whether we can clean up the rivers whilst continuing to farm intensively.	One of the newsletters mentioned that some fields in the Bala catchment were lacking in NP & K and required more. This seems to go against the aims of the project, and this application of fertilizer will have/ is bound to have a detrimental effect on wildlife.
32	No, agree with the particular elements.	
33	It is impossible to control dirty water, you can't control every drop	Not on our part, only the soil sampling we had done as part of the plan.
34	Fencing the river banks is impractical as the first strong flow will break the fence anyway. The fact that they can't put rocks in the river corners to try and reduce erosion and to stop the river eating into the land is also impractical. Felt that the plan once again limits the farmer.	
35	Having to pay the Environmental Agency for permission to pipe ditches. Felt that other bodies are benefiting over the farmers. Having 3 estimates by 3 different companies to do the work is impractical, they make it difficult for everyone to do the work.	
36	Haven't looked in detail into the project as it wasn't relevant/beneficial to the farm's business	

Table A4.3: Responses from farmers in the Deepford catchment to the question 'Are there any particular aspects of the catchment sensitive farming demonstration project that you consider to be impractical or unnecessary?' in 2006 and 2008.

ID	2006	2008
1	Water troughs for sheep at least 1.6 m long?	It's all necessary, surely. Can't think of anything that wasn't.
2	Each farm should be treated separately / individually on 'its' merits/ problem areas.	
3	Unsure of detail	
4	Farms with only 1 or 2 fields in the catchment area should be included. i.e. whole farm approach.	
5	Unsure of full detail	Don't know.
6	Including farms on the outskirts of the catchment with only a few fields in the scheme area.	Don't know if I know enough about it, as didn't get into the nitty gritty of it.
7	Unsure of detail of scheme as yet. Clarifying good farmer practise.	
8	Don't know enough to comment.	Roofing over manure stores is pointless. Better to erect building to house livestock and put farmyard manure in a field heap
9	No.	Don't think so. It's all for improvement and not impractical. Would have done more but sold the farm at same time as scheme started.
10	None.	Not with fencing, don't know about other things.

11	Nego to be a closer relationship with all parties involved, with better communication from the environment agency.	No. Some may not be as practical as they just seem to be. There are so many variations on farms, you can't have a standard rule- book and you need the best compromise.
12	None.	" We were told to fence at the river and an adjoining area of bank (c. 4 acres) so did so and then another official came out and said that it would get overgrown and stock should be allowed in. We are now having to cut a gap through so that stock can be allowed back into the area".
13	No.	No.
14	Buffer zones on streams are too wide. It will encourage brambles and weeds to take over.	
15	If it is similar to Farming Connect ' farm improvement grant'. It would involve too much administration.	Not really
16	We have land in the area but the farmyard is not included so I don't get help to reduce the quantity of dirty water.	No.
17	Separation of dirty + clean water is sometimes impractical given the amount of concrete area.	No.
18	None.	No.
19	Nothing so far.	No.
20	For example: fencing off stream to improve water quality will cut off my water supply for cattle, as there is no water main on the land.	From our point of view, no. Everything was ok.
21	No. I think the catchment scheme is quite flexible and the staff have a positive approach to the problems.	No. All quite rational the way they come out and look at things. It is all geared towards the ultimate objective to reduce pollution.
22	Limiting the cash available to this scheme will handicap the scheme before it stars.	Instead of using a blanket treatment, one should identify the problems and tackle each section until the correct outcome is obtained. Also, with the limitation of £20K per farm you are only going to get £20k worth of answer, whereas if the project was to cost more, one could be in the position of obtaining the full effect
23	Why can't we use standard costs instead of fussing with so many quotes for intended projects.	No.
24	I don't know enough to comment the scheme.	
25	Some of the targets are unachievable because there isn't the money available to achieve them. The scheme seems to be more environmentally based than farming based. Helping with the cost of machinery to get slurry/dirty water out into the field.	Fencing off large areas of streams is rather unnecessary. Run into SFP trouble as there are areas of your rough grazing that you are not grazing. Areas turn into a wilderness that are not managed. Rivers need oxygen and light.
26	None.	Putting fences 3m out: in 3-5 years there will be a mess. The growth will cover the ditch and there won't be direct sunlight on the ditches which insects such as dragonflies need and salmon.
27	None.	No.
28	None, because we don't know enough about the project.	
29	I don't know enough about the scheme to comment.	
30	I don't know enough about it to comment.	
31	The amount of staff involved with the scheme and the high admin cost. Fencing off buffer strips takes too much land out of production for smaller farm enterprises.	Not in a position to say.
32	Nothing.	Can't think of any of them. Free ADAS/ MAF survey and dirty water-quite useful.
33	More paperwork to fill in.	A bit pushed for time due to the wet weather and would have done more work if we were able to get it done. There is still more here that needs to be done. Nothing else- they went about it in a down- to earth, basic way. Excellent staff- Dorian was very, very helpful. As well as Gravell.
34	No.	
35	Don't know enough abut it to comment.	

36	Fencing off some of the river is impractical because we will loose too much ground.	
37	No.	No.

Farmer opinions on purpose and philosophy of the scheme

Table A4.4: Responses from farmers in the Twrch catchment to the question 'How would you feel about joining with your neighbours in a formal scheme to improve water quality in the catchment?' in 2006.

ID	2006
1	I would feel comfortable working with my immediate neighbours. However I think it's unfair for other farmers in the area not to be given the same opportunity.
2	Difficult to say until I see the details, but in principle I have no objections. It makes sense to work together.
3	I would feel comfortable working with my neighbours, but I think the CSF project at Twrch and Llafar is unfair on those who farm land on other near-by rivers.
4	Yes fine- not bothered really. Farmers who work together will continue like so, and those who don't will stick to their ways. CSF can't change years of tradition.
5	I have no problem working with other people in the area, but there's no point fencing vast areas to stop sheep. Everybody in the area believes that sheep do not damage to river banks.
6	Fine, no problem, but I'm sure that I have no land in the Twrch area. If I have, then it must only be a tiny slither. Farmers work together already- we need the authorities to work with us and communicate better.
7	I think this sound sensible enough, but to some extent farmers are doing it already. We all want a better environment, and we don't want to be responsible for polluting water that flows through other farms.
8	I think it's a good apporach- but it's very tricky keeping everybody happy. This project could create some ill feeling between those allowed to participate and those not. For example the far next door is the SSSI, but I'm not. Yet I contribute to feeding the increasing have population as much as the next door farm.
9	I'm happy to do this kind of work with my neighbours, as long as it continues to be voluntary. I would be against it if people were force into agreements together. It makes sense to focus on the same issues whilst aiming for a common goal.
10	It stands to reason that if everybody pulls together, then the input and the end-result will be much better. Every farmer is a link in the Twrch 'chain', and you nly need one weak link, the pollution, to spoil that 'chain'.
11	In principle, I am very happy to work with farmers but it will largely depend on those delivering the scheme. I would also like to see more collaboartion with other valleys, so they at least know what's going on. All the rivers feeding Tegid need to be involved if Tegid's quality is to improve.
12	Nothing against this - a good and sensible idea.
13	If everybody keeps to their promises and do what they're supposed to do, then I think it should work very well. It will depend to a large extent on how the officers manage the project.
14	I would be happy to participate - I think it's a good idea to work together and support each other with ideas and experiences. The danger though is a small number not taking it seriously and letting everybody down. The officers need to be firm to avoid this.
15	I'm comfortable working with other farmers, but I often feel frustrated when one or two are much worse at polluting, but we all get the same treatment. The guilty farmers need to be named and shamed.
16	I'm more than happy to cooperate with my local neighbours, but in reality I'm not sure whether the 'cooperation' will take place. I take we'll be told what to do and get on with it.
17	Personally I would feel fine working in partnership with other farmers to achieve the same goal. The problem comes when one disagrees and spoils everyone's good effort.
18	Very happy indeed, no problem.
19	Everybody working together makes sense. As long as everybody achieves and implements what they are supposed to do, then this should be workable.
20	No problem - a good idea to work towards a common goal

Table A4.5: Responses from farmers in the Llafar catchment to the question 'How would you feel about joining with your neighbours in a formal scheme to improve water quality in the catchment?' in 2006 and 2008.

ID	2006
1	Us ourselves joining is one thing but to get the benefit we need to get our neighbours to join also
2	Quite hard to get farmers to work together
3	No objections, not keen. Happy enough to discuss it if others are willing.
4	Not likely to happen as farmers can't agree

5	Always difficult to get farmers to agree. It would be better to have a plan for each farm individually and one official person to discuss every plan
6	Would be willing, but doubt would get co- operation of all others to be involved- major problem. What would suit one, wouldn't suit another.
7	O.K.
8	I would be willing to try
9	Happy enough to consider it
10	Happy enough to try
11	A group plan where a group of farmers dip together is a good idea where one person gets rid of the dip is a good idea.
12	Not relevant
13	Would be willing to join
14	Doesn't think that he will join in a plan like this as everybody has different priorities
15	O.K. would be quite happy
16	Wouldn't be willing to join due to his priorities from the farm's standpoint
17	Sounds fair, would be willing to try it
18	I would be willing, but it is a big job to get everyone to agree usually
19	It depends on the terms and which benefits there are to the individual.
20	I would be willing if everybody could agree on a fair plan and that if everybody could work together
21	It would be very difficult to try and get everyone to work together in a group plan. Everybody has different priorities which could cause bad feeling between farmers if there was a disagreement within a group
22	I would consider joining the plan but where there is the potential to have a formal plan in this area there isn't a water pollution problem
23	I would be quite satisfied.
24	Would be willing as there is a payment available to cooperate and to do the work
25	N/A
26	I think that an unique plan for every farmer would be more practical.
27	If it is possible to make a profit from being part of the group plan. If the group plan is a plan to improve water quality associated with a business (e.g. bottled water or fishing) it would be a good idea but it would be very difficult to get everyone to agree and cooperate.
28	Think it would be easier if everyone could sort their own problems with an individual plan
29	Thought it was impractical, the grant plan never works if everybody's in together, need a system that pays everybody individually.
30	Would be supportive
31	Can't imagine such a scheme working around here, better and easier if everyone keeps doing their own thing.
32	Question not relevant to the business.
33	I wouldn't be willing, foresee that the plan would become too complicated.
34	Would be willing if everybody could work together.
35	Felt that it is easier to get an individual contract, people's priorities are different therefore it would be simpler to keep a contract for the plan to improve water quality individually for each farm.
36	N/A

Table A4.6 Responses from farmers in the Deepford catchment to the question 'How would you feel about joining with your neighbours in a formal scheme to improve water quality in the catchment?' in 2006..

ID	2006
1	No problem. Would encourage it.
2	Happy. Nice to see a final result.
3	Happy + proactive
4	Happy as long as the payment matches any loss of income.
5	Unsure. Depends on payments + scheme requirements. Wouldn't want to fall out with neighbours about it.
6	Fine in theory
7	Pro- active. Happy to do so.
8	Good in principle.
9	I would not personally want to get involved because I expect there would be too much paper work.
10	In theory I would be reluctant to take on other farmers problems. i.e If a neighbour was polluting the river with effluent or slurry I would not want to help with that.
11	I would be prepared to do that in principle.
12	I will be willing to do that.
13	To complicated too much work not practical.
14	It all depends on what we have to do and how much we get paid.
15	Depends on who in our area is involved in the scheme.

16	I would be reluctant to join. Because I feel neighbours never work well together and its up to each farmer to do his own bit to improve water quality.
17	Yes I would agree to that. Although would farmers who are in agri- environment schemes clash with, the scheme, given that they are already helping improve the environment. Would they be double funded if there was a whole farm payment for this new catchment scheme?
18	I would be willing to co-operate, although you could end up with a situation where, only people who are not polluting join the scheme, and therefore nothing would be achieved.
19	It's a good idea, but would it work in practice?
20	It would be too complicated to administer.
21	No. I can see too many problems with such a scheme. It would be better to continue with this scheme but with a higher level of funding.
22	Yes I would be in favour of that, as long as everyone cooperated.
23	I would agree to it in principle, it depends on the funding structure, and it depends on your neighbours.
24	Yes I would agree to it as long as everyone agrees to it.
25	I can't see that being practical. Because we all have our own business goal, which may not give enough common ground. How would a dairy enterpirse be able to fit in with a scheme with a beef + sheep enterprise. Would a beef / sheep enterpirise loose out financially because they don't produce dirty water/ slurry.
26	The danger with that is, that if one farmer breaks the rules then it would be a waste of time.
27	No. I would not want to be tied to that, I would rather go my own way.
28	I am not sure about that. Farmers don't always agree with each other.
29	I would agree to that although I don't see how I could help improve water quality.
30	No I would not be very keen on that, because I don't see how all the farmers would be able to work together.
31	If it was an advantage to other farmers we would join.
32	Good in principle but what would happen if one farmer pollutes and lets everyone down.
33	Depends on the funding available in order to get farmers to agree.
34	No. There would be no advantage to me as I only rent the land out for silage crops and growing young cattle. There are also no streams on my land.
35	I would not agree to that.
36	No. Because farmers would not work together.
37	I would not mind as long as it was workable and practical and fair.

Table A4.7 Responses from farmers in the Twrch catchment to the question 'Would you say that the catchment sensitive farming demonstration project was a good use of money?' in 2006 and 2008.

ID	2006	2008
1	I feel these kind of projects are often designed to safeguard 'white-collar' positions in the civil service. I doubt very much whether this is the best way to spend public money. However I accept that the CSF project offers useful funding to farmers and other important local beneficiaries such as water users on the Tegid, which in turn supports vital jobs. I would like to know how much money is spent for every pound that reaches the farmer. I suspect it would demonstrate poor efficiency.	Quite satisfied. It would have been better to spend on more long term things like buildings and roads. Pads and fences could be destroyed in less than 5 years. Apart from that everything is a help.
2	"If they keep them happy!" The environment is important, but I'm concerned how much money they will squander on administration. All my family drink water from a well on our farm, and my mother who lived until she was 96 years old drank from the well- so it must be clean!	
3	I'm not sure. It's important to ensure high water quality and to investigate new ways of farming and managing land, but I doubt whether the CSF methodology in the best way. There is a bound to be a lot of money wasted. For example why do they send materials to me in English when I've got a name like 'Robyn' living in Llanuwchllyn?	

4	If it's successful, then yes. We'll be in a better position to answer after the projects completed. I suspect that the main impetus is to safeguard office jobs. I accept that everybody needs a living, but the share of the money distributed to farmers is incredibly small due to the inefficient bureaucracy. It would also be much better to give farmers the grant before undertaking the work, rather than afterwards.	I welcome spending on the environment but the spending on this project was very ineffective. Too much money was spent on administration and monitoring instead of paying farmers to improve their farms. It would be better to give farmers £20,000 to improve. As well, there are several areas a lot worse than the Twrch river that need work to decrease pollution.
5	Yes. The Government throws money at other less deserving projects.	
6	The aims are worth financing, but the administration burden will probably mean a lot of money will be wasted. Cut the paperwork and focus on giving farmers the resources to implement the changes.	
7	Yes, on the condition it achieves its aim of improving the environment.	I would – very happy to see the Government investing in a better environment. More of this is needed.
8	More and more money is spent nowadays on the environment, so I guess it's a good thing for some of that money to be spent locally. As the environment doesn't generate money for farmers, it's important to provide adequate funding as everybody appreciates the environment and farmers can deliver a better environment if properly compensated/ financed. but, he water quality is fantastic already! All the farms in the top of the valley, including us have our own water supply!!!	I find this difficult to believe. The shed contractors had the greatest benefit from the plan. As the work was hurried in the end, they had also raised their prices.
9	Basing my opinion on previous schemes, I think it would be much better to spend the money on other areas such as the Health Service e.g Maelor hospital, Wrexham. There was biodiversity in Llanwrchllyn a millenium ago, and there will still be by the year 3000 AD, regardless of project like these. I think the money would be better spent on health and education- something that benefits everybody. I don't really think that conservationists and scientists know how to progress properly e.g there was a case recently where "experts" had fenced off an area of marshlaed to protect a rare plant, but they managed to smother the species and kill it!	I agree with spending money on this kind of thing but I feel there is a place to lower the amount of money spent. There are too many bodies as part of the project and they don't know what everybody does. There is a place to improve efficiency and to avoid over lapping between everyone.
10	It's extremely difficult hypothesise- hindsight would be useful. It boils down to the results. If we see a definite improvement in water quality, then it will be money well spent. If not, it will have seen an expensive lesson to learn. Water quality is important, so I don't begrudge money been spent like this.	Of course for us! It has helped to save pollution problems which mean that more than agriculture has benefited, like the tourist industry in the area. I would like to see the results from monitoring the water quality to see if there is any change.
11	Yes and no. The money spent on actual physical improvements is useful, and will remain so for years. But the finance invested in running, administrating and monitoring this, that and the other, is a complete waste of money. I suppose we should expect to have to take the evil and the good together.	
12	It's still early days to pass comment, but in principle the expenditure is ok. I have concerns over how well the project will be executed - money will be wasted knowing the pace and errors the Government achieve.	Yes on the whole, especially for the large farms.
13	A difficult question when there's so many worthy ways of spending public money. Spending it on actual measures to reduce water pollution is a good idea probably, as is spending money on soil and water tests. I'm not as sure whether speding it on other things like paperwork is a good idea.	I would. It's a pity that the project didn't contain more rivers in the area such as Dyfrdwy. Every river that feeds the Tegid should be part of the project.

14	Looking at it holistically, no. To achieve the goals CSF is supposed to achieve then I think we need a financial commitment for a longer period e.g. 10 years. Spending money for 2-3 years, hoping for a quick answer is a waste of money in my poinion; it isn't sustainable for the long-term.	
15	Yes - if it leads to better water, then everybody in the area benefits.	Yes, on the whole. There is a need and demand for this kind of work where farmers and the environment benefit. Grants have led towards more work in the area but it came at a bad time to be honest between poor prices and foot and mouth disease.
16	I'm very concerned about the amount spent on administration and getting experts in. I wonder how much of the total budget will actually be spent on actual measures? I think there's a strong element here of 'jobs for the boys' - where does the £1.7 million go? The communication between farmers and project officers has been terrible up to now. We want to know more, because we're interested and care about the water quality. We haven't even been told properly why Twrch and Llafar have been chosen or what the problem actually is. Feedback and updates would be great - surely there's money for this?	I wouldn't. Too much money was wasted running and administrating the project instead of giving financial support to the farmers.
17	I'm not sure whether it's the best possible use of public money, but I appreciate that it does employ a number of local people which is good.	
18	A cautious yes. I'm always pleased to see money spent on trying to improve things, especially the environment which is important for farming, tourism and our way of living. I would really appreciate to be told more information on how CSF is progressing, because up to now, people have spotted scientists taking samples from our rivers, but we never know what they're taking or the results. I think the money spent could be used better by including forestry in the project.	
19	Yes, as it should benefit the wider community in the end by giving all of us a cleaner environment to live, work and relax. Cleaner water will ensure that Llyn Tegid continues to attract tourists, and that farmers can be confident in drinking it. It's good that the Assembly recognises that a cleaner environment benefits everybody, and that the farmer should be supported to deliver this.	The objective is very good but the implementation has been disappointing. I didn't have a clue about how the grant plan worked and I feel that the administrative costs were very wasteful.
20	Yes - benefits the environment and farmers, which in turn will contribute towards the rural economy	

Table A4.8: Responses from farmers in the Llafar catchment to the question 'Would you say that the catchment sensitive farming demonstration project was a good use of money?' in 2006 and 2008.

ID	2006	2008
1	Yes - beneficial for the farmer and the environment	
2	Yes. Good if it stops manure going into the river	
3	Too many officers - the balance wasn't right. The money going to agencies not the farmers. Too soon to give an opinion	Yes but a lot of people were trying to get the money given to the plan and all the money wasn't given to the farmers. A percentage has to go for administration but too much money was being wasted in my opinion.
4	If it is a success (i.e. improving water), yes	
5	Yes. Conservation and environment benefits – worth the money by having cleaner water going into the rivers. Otters here now (not before)	I would, the water quality is bound to improve and I hope that the algae problems in Llyn Tegid decreases/disappears. As well as this it has been beneficial to the local people/contractors as they have been doing capital work for the farmer that is going to be good for the area in general by keeping people in the country.

6	Yes- great help to a lot of farmers.	Fair to good use.
7	Not bad, but it could be better with financial aid for liming. It is more important to concentrate on drinking water (this doesn't mean that Llyn Tegid water is used as drinking water)	
8	For me personally it is a waste of time as I live too far from the river. Good for closer farms	No, too much money has been spent on administrating the project.
9	Yes	
10	Yes	
11	Yes, it improves local water quality	I would, these things have to be tried out in small areas first to see what works and what doesn't. It has also given local farmers the chance to improve their farms as perhaps they wouldn't have been able to without a grant and also local boys have had jobs building sheds etc.
12	I would, the farmers couldn't do the work to improve water quality without the financial aid	
13	She would	Yes (see previous question). Opportunities for local people. Chance for farmers to make improvements that could perhaps protect their SFP.
14	Yes, the farmer feels that the money is being spent fairly and that only a few benefit from the plan.	There are a lot of more important things the public money could have been spent on. The grant was given to farmers that own their farms to improve the farm and increase its value but in the end is this going to improve water quality.
15	Yes, very supportive of the plan and happy to see the efforts to improve the environment	Yes, we will never know if the higher percentage of work went to the right place. I feel that a lot of the money was spent on controlling/administrating the project. But in theory it's a good idea, with a good purpose.
16	Don't know. It depends how much is being spent on what, and what the results will be in the end. E.g. lots of people have put a roof over their manure stores to keep the rain away from the manure then people but manure on the land early, the land then gets wet and all the manure goes into the river.	
17	Yes, if it is possible to confirm that a large % of the money would go on the projects and not on administration	I would on the whole, and it's a good example of collaboration between the agencies. The team that was gathered together were competent with their advice and information.
18	It is right that the money is being spent on the plan, but feels that too much of the money that is available is being spent on paper work and on all the bodies that are involved with the plan.	No, as too much of the money was spent on administration.
19	It is a good use of money for some things like preventing pollution but where there is no pollution or a big problem e.g. fence ditches out with the big corridors, it is wasteful	Yes
20	I don't think that the plan is a total waste of money but it is difficult to say until we see the results	I would (see question 29). The government ask/insist that farmers comply with the environmental rules and the project has given farmers the chance to make improvements to comply without investing all the money themselves.
21	To do improvements on the farm someone tends to employ local people – create work. If the plan is successful I wouldn't say that the plan is a waste of money. The farmer would like to point out that a lot of officers or a lot of people from different bodies have visited the farm with the plan, he hopes that the money is being spent on what's important.	Yes, it has been a good use of money but you have to remember that us farmers have to find the other 40% to do the work that is asked for us to do to comply with the government and public requirements.
22	Don't know how much has been spent yet, it depends if we see an improvement in water quality, it's difficult to say at the start of the plan.	I wouldn't, the money spent on administration for the plan was very high and I haven't seen any results for the water tests. Can't say if the plan will really have any substantial effect on water quality.
23	I would especially the money that goes straight to the farmers.	

24	Yes, everything benefits from the money that is invested therefore I can't see any disadvantages or a waste of money if enough money goes towards the important things.	
25	If it is spent wisely	
26	Yes, the plan will definitely improve things.	
27	The money should be spent on looking at all the rivers that go into the lake. The information that is going to be collected is going to be limited to the Llafar and Twrch where more rivers go into the lake.	
28	Probably if it is going to clean the water in the area, the plan will encourage us to do something about the problem.	
29	The idea is good, not a waste of money	No, as only a small percentage of the money available goes to the farmers for them to do capital work on their farms to improve water quality. And too much of the money is wasted on trying to publicly justify the money that was spent e.g. newsletter.
30	I would, water quality is important. As long as the money goes to where it is really needed it is a good use of money.	
31	Doesn't know enough about the scheme.	It is difficult to comment as the farmer doesn't know much has been spent and what has been achieved.
32	If it is spent wisely.	
33	I would because there are benefits for farmers and the public.	I would, but only to some extent, but I'm not sure if all the spending was justified.
34	Worried that the officers will have the majority of the money that has been put into the plan and not enough money will go where it is needed the most, to the farmers, the people that are doing the work to improve water quality.	
35	The aim is correct but an aim and without anything being done doesn't end up in the right place. If the money is spent on what is important it wouldn't be a waste of money.	
36	N/A	

Table A4.9: Responses from farmers in the Deepford catchment to the question 'Would you say that the catchment sensitive farming demonstration project was a good use of money?' in 2006 and 2008.

ID	2006	2008
1	Yes. Very generous grant funding 60%.	Yes-would say. It wasn't a big grant, but it is good to improve the water as everybody drinks the water and most people like fish.
2	Too much money is wasted.	
3	"Definitely" but " doesn't suit everyone"	
4	Yes. Glad to be part of the project.	
5	Unsure of full detail. " haven't heard anything to suggest otherwise."	Yes if the public want to ensure the quality of the environment and good as farmers get work funded well.
6	Unsure of full details so can't give an honest and correct opinion.	Could raise a big debate on this one. First, meeting at Llawhaden Hall- official said Welsh Office Had put in 1.8 million to the scheme, and said max. £10,000 per farm. And only 30 farms in catchment. Where did the rest of the money go? Admin-huge costs. I counted 12-13 officials in the meeting-waste of money. Even with £ 10,000, each farmer had to spend a lot of his own money too, so not really that much money is coming back to the farmer. If you multiply it to the whole of Wales, the amount of money is huge, with not too much coming back to the farmer. Better than nothing though.
7	Yes- No consultant fees on farming concret.	
8	Probably. Don't know full details.	Not always. 'farmer' is already perceived as rich, money-grabbing people. Must be careful to ensure that farmers are not portrayed in a bad way for receiving public money for improvements to their farms.

9	Yes. Although it has not been proved that it is value for money.	Yes.
10	Yes to a degree. If it stops one farmer from polluting then it has done its job.	Yes. Nobody did anything that was wasteful.
11	On this farm it has some merit. As a scheme as a whole, difficult to say without detailed knowledge of the whole finance package.	Yes.
12	It's a better use of money than other government schemes.	Well, we have had benefits out of it, so yes.
13	Too an extent. If the funding ceiling was raised we would do more work.	Yes.
14	People need to know how much money is actually given to farmers and how much is spent on administration.	
15	Yes if it helps me to be more environmentally friendly.	Yes
16	Yes. Because it gives farmers the opportunity to make improvements that they might not otherwise afford.	Yes.
17	It is a good use of money, but more should be available to farmers, and less going towards administration.	Yes.
18	Yes. As long as enough people take advantage of the scheme.	Difficult. If public was aware of it, they wouldn't think it was a good idea. It is a good idea in the fact that it promoted farmers to be responsible and to carry out work that they would not usually do. Whether it was a good use of public funds though. I don't know unless it was actually improving the water quality or the water that finds its way into the public's houses as drinking water. In that way, it is indirectly beneficial. Definitely benefit to the environment.
19	Yes.Although, concrete works soon eats up the available money. More money should be available for projects.	"To us, yes!"
20	Yes, the government are seen to be doing something to help farmers improve the environment.	Yes.
21	Yes. I think it is an efficient use of money, by targeting particular problems.	Yes. Had to be approved- not just dished out. All done properly and complying. Had engineers out. EA. Inspected. Happy it has been done to a standard.
22	It's necessary use, because the spin-off's, (such a tourism) are far + wide reaching.	I'd go further, I'd say it was an excellent use of public money because of the social and economic effect it will have. Example: clean water=abundant aquatic life=healthy fish stocks =fishermen=revenue
23	Yes. But is it an efficient use of money given that half of the budget goes towards administration, (although I know this is a pilot project)	Yes.
24	Yes. Because something needs to be done to improve water quality.	
25	It is a good use of money, because it is helping farmers to comply with legislation that has been imposed on us.	Yes-just not enough money.
26	Yes. As long as it does improve water quality.	Yes.
27	Yes. Because it will improve water quality.	Yes.
28	Yes. Because something has to be done to improve the water quality. Slurry is very harmful to the environment, and so if there is help to improve management of manure then that is a good.	
29	Yes. Because it will help improve water quality, and help the environment by helping encourage more wildlife to flourish.	
30	Yes. As long as it improves water quality.	
31	As long as the bulk of the money goes to the farmer and not to administration.	Honestly, no...well maybe. Went to meeting in Llawhaden- 12 of us there, 10 people telling us what to do. Waste of money. A lot of money into administration. Not much more money goes back to the farmer.
32	If the farmers had a larger proportion of the money available.	Yes.
33	Not if the admin cost is too high.	Yes.

34	Administration costs are a bit high, so therefore the money would be better spent on the farms instead of consultants.	
35	No because the amount of money does not give us enough incentive to carry out improvements. If more money was available more work would be done to improve the water quality.	
36	It is with respect to helping cover the cost of capital works, although there should be more money available.	
37	Yes.	Yes.

Table A4.10: Responses from farmers in the Twrch catchment to the question 'Imagine you had to tell another farmer what catchment sensitive farming was. How would you define it?' in 2006 and 2008.

ID	2006	2008
1	CSF is a response to how farming the uplands has developed in recent years, with more emphasis on the environmental rather than production. The purpose of CSF is to safeguard streams and rivers in a catchment area from pollution. However I don't feel there's a need for safeguarding rivers as they were here before people, and will be here after we've left	It is a plan to ensure that the water going into Llyn Tegid is clean and hasn't been poisoned. To do this it offers help to farmers to stop dirty water from their farms reaching the river.
2	I wouldn't have a clue because I haven't read or heard anything about CSF until Madryn Cyf contacted me. Following this interview however, I would probably explain that CSF is about reducing the risk of water pollution from farms.	
3	1. CSF is about improving the water quality- yet I can't understand why the forestry isn't a part of the scheme. (the reason why the Llafar and Twrch have been chosen in my opinion is because the catchment areas include no forestry worth mentioning). 2. Improving the water quality that cuters Llyn Teqid- but the Lliw and Dypfrwy rivers need to be included to achieve this.	
4	CSF is about keeping the rivers clean and conserving wildlife- both aquatic and terrrain creatures. Farmers have always been conservationists but rarely acknowledged for it. Agriculture in many ways has given us what we have today.	This project is a plan to try and sort out the algae problem on the lake and to clean the water in Tegid for the people that use it. I can't understand the reason why every river that feeds the Tegid wasn't included as part of the project. The Lliw and Dyfrdwy rivers are bigger! I strongly doubt if the government didn't want to include the Lliw and Dyfrdwy because there is so much trees in these areas. Forestry causes a lot of pollution.
5	As far as I understand, CSF is most relevant to farmers who keep cattle i.e those with manure or slurry on their farms, or to farmers who are still dipping their sheep. CSF is a scheme that aims to adress the pollution risks associated with these through education farmers and providing some finantial assistance to solve problems.	
6	I know very little about CSF, but I'd say something along the lines of keeping or ensuring that the water that flows from our farms is clean and helps to reduce incidents of pollution.	
7	CSF is a project that aims to improve the environment in the Twrch area through reducing water pollution and stopping farmers from burning plastics. Mu understanding is very skecthy at the moment though.	The aim of the plan is to help farmers to improve the quality of the water running through my farm, and in the end to improve water quality in Llyn Tegid.
8	Implementing a number of changes to improve the water quality of Twrch and the environment in general. It helps to maintain a rich diversity of wildlife especially in the watercourses and along the banks.	The purpose of the plan is to improve the water quality in the Twrch river by cleaning and protecting the river from pollution.

9	To improve the water quality of Twrch river through careful nutrient management e.g efficient use of manure and fertilisers, and minimising pollution risks e.g blocking run-off water from farmyards, fencing riverbanks...	The purpose of the project is to improve water quality in the rivers and streams in Garth Isaf and the areas nearby.
10	CSF attempts to establish whether offering farmers grants and advice on their water managements will actually lead to an improvement in the water quality of streams of rivers. If this pilot project is deemed sucessful, then it be expanded all over Wales.	There are a number of purposes to the project. 1. Prevent pollution to the river by taking steps on farms to decrease the risk. 2. Clean the streams and the river to improve water quality. 3. Help wildlife especially around streams and rivers. 4. Help to tidy farms and ease the work on the farms.
11	The purpose of CSF in 'Twrch' is to improve the quality of the water that enters Tegid. There have been a lot of issues lately regarding Tegid's quality, and the finger is obviously being pointed directly on farmers. There appears to be a lot of contradicting figures - on the one hand wildlife biodiversity is improving (e.g. the population of 'y gwyniad' is increasing in the lake) but they still think the water quality is poorer. The CCW is part of the problem - they need to leave things to nature more, rather than interfering to justify their existence.	
12	CSF is about improving the water quality of the river Twrch by concentrating on all the streams and watercourses that feed it.I sincerely hope that CSF staff know exactly what they are doing, as I'm afraid that farmers will be blamed as we're an easy target.	The objective of the project is to try and improve water quality in the area. Like a number of other projects and plans, it's likely to benefit the larger farms more.
13	CSF tries to purify water in a particular river catchment area - I think. This includes streams, ditches and all other watercourses.	Change things on the farm to decrease the chance of dirt and chemicals reaching the river e.g. put a roof over the manure store. The purpose of the project in this area is to try and improve the quality of the water in Llyn Tegid.
14	CSF is a project to clean the water that flows into the Twrch and in the end to Tegid. It involves ensuring that farmers use dips and chemicals carefully on their land.	
15	It's a project offering assistance to farmers to improve the water quality of Twrch, and to help improve the quality of Llyn Tegid to tourists and wildlife. In reality, I don't think there's much of a problem in my area with farming polluting watercourses. There was a case of dipping pollution a few years ago in the valley which might have given us all a bad name but very few dip nowadays.	The purpose of the work is to clean the water in the river and take steps to make sure that it is not polluted. It contains a variety of help from controlling water that runs from the yard to placing tanks. Personally I think that rivers are very good at purifying itself, especially in the uplands where the flow is stronger which makes the water mix with the air.
16	CSF is about ensureing that the water that flows from the rivers into Llyn Tegid is kept clean and free from pollutant. I don't think there's a problem here, but I look at the CSF project as a way of minimising future risks of pollution, as accidents can always happen. CSF is also important to maintain the tourism around the lake.	A plan to try and improve the water quality in the rivers and in the lake.
17	To be honest, if I was speaking to another farmer I would start by saying CSF is yet another scheme where officials keep an eye on what we do as farmers and create mountains of paperwork. The official definition of CSF is a project that attempts to improve the water quality of Twrch and Llafar, but there are so many bodies and organisations responsible for this and the other already. Farmers don't want to see pollution, just like everybody else.	
18	It's a grant-scheme designed to help farmers invest in their farms towards improving water management and thus reducing the risk of polluting ditches, streams and rivers.	

19	Like all other industries, farming has to be extra careful with using or polluting water. CSF helps farmers to reduce the risk of pollution and to handle farm waste in a safer manner - al because of the need to take care of the environment. CSF is a good project to tidy up a farm by installing new systems of dealing with waste water and storing manure.	The purpose of the project is to try and improve and clean the water in the Twrch valley rivers and streams to stop the growth of algae on Llyn Tegid again. I don't understand why only Llafar and Twrch are part of the prject – Lliw and Dyfrdwy rivers should have also been included. I think that this was because there was a lot of trees in the Lliw river area that she wasn't part of the project – a lot easier to blame and treat farmers.
20	CSF is trying to keep the source of rivers and marsh as clean as possible to help bring back fish and their food	

Table A4.11: Responses from farmers in the Llafar catchment to the question 'Imagine you had to tell another farmer what catchment sensitive farming was. How would you define it?' in 2006 and 2008.

ID	2006	2008
1	Get rid of the algae in the lake. Improve water quality around the lake	
2	Keep the water in the river as clean as possible. Soil sampling, how to use fertilizer. Decide how much lime is needed	
3	A project to try and reduce phosphates that go into Llyn Tegid by changing agricultural practices.	A plan to decrease the amount of phosphates in Llyn Tegid, and improve water quality in the area and increase the amount of wildlife in the area by forming habitats on farms and improve buildings and other resources in the yards.
4	A plan where big brother is watching you. Need to go into it. Should be a plan to improve the river, and as I can see now there will not be a lot of effect. One way to improve water quality would be to lime – need a grant to do this	
5	By improving water quality, it could improve buildings. A cost for the farmers: £6000 is the highest grant available for an item within the project. Do work on the ditches – keep stock out of the ditches and have somewhere for them to go – good farming plan	Think about how to comply with clean water rules (groundwater), think about how to keep within the conformation requirements. And a grant is available to help the farmers there to get work done on their farms that needs to get done e.g. improve resources (yard, storehouses etc).
6	Improve quality of water- keep water clean.	Grant to undertake farm improvements, re- new antiquated facilities-buildings, sheep dips, manure storage facilities.
7	We have to in the Parc area improve the water that goes into Llyn Tegid, important for us to do this and have the government's support	
8	Clean the water system in the rivers – try to stop the pollution from going into them	A plan to try and keep the river clean by raising awareness about good practice and give farmers the chance to control the muck on their farms so less will go into the rivers, streams and ditches.
9	Help the environment especially by putting roofs on yards to keep dirty water from clean water. Roof over a manure store is a good thing within the plan and altering the farm is a good thing for farmers in the end. Helps the banks by placing crossing area	
10	A project to improve water quality that goes down the river to Llyn Tegid	
11	Farm in a way that's not going to pollute the water courses by being careful about where you feed stock and spread manure	Farm in a way that pollution doesn't go into rivers/water courses. Make sure through good practice that muck and manure is scattered far away and that dirt from the farm yard doesn't escape to the ground or water courses.
12	Llyn Bala has got algae – pollution comes from somewhere to cause this. A plan to try to improve water quality by improving areas that cause the potential to pollute the water e.g. where the sheep cross the river	

13	A plan to stop polluting the river, help farmers to do everything they could to decrease the pollution in the rivers and to encourage wildlife back to the area. To protect livestock from high tide by fencing out the rivers and streams.	Grant available to help to keep slurry and dirty water out of the rivers and streams to improve water quality in the area.
14	Common sense farming, don't over stock, don't throw any dirt, manure, dip etc to the water courses	Farm in a way that's good towards the environment by decreasing the amount of nutrients that is put on the land and controlling the amount of unnatural chemicals e.g. dip fertilizer etc that is put on the land and water courses.
15	A plan to improve water quality and decrease pollution, farm carefully on the yard and on the land to try and decrease the amount of chemicals that goes into the water	A good plan for the environment that is going to make the farm and the area in general more tidy
16	A plan to alter wildlife and water quality in the local area	
17	Farm in a way that nothing unacceptable that the individual does effects badly on the other farmers' effort to farm in a friendly way towards the environment	Farm in a sensitive way towards the environment by making sure that muck and manure doesn't pollute the water by careful control during storage. The plan tried to get the farmers in the whole area to adopt the practices to improve the water standard.
18	A plan to try and control what is being put on the land, the land is tested for the farmer to know exactly what to put on the land and not to put anything on the land to try and decrease the amount of pollution that goes into Llyn Bala.	Plan to improve water quality in the river by offering money to farmers as a grant to make improvements on their farms e.g. fence streams, build sheds to store muck etc.
19	A scheme to improve water quality, to improve cleanliness on the farm to decrease dirtiness and pollution. Improve buildings etc e.g. put a roof over the yard and the manure store to decrease potential pollution	A plan to give capital grants to farmers to improve their resources to decrease the pollution that does/could come from the yard or fields.
20	To make the water in the local rivers purer. Grants available to improve farm buildings and to decrease pollution from the farm yard reaching the water in the streams.	A plan that pays farmers to improve their farms to decrease the pollution from the yard and the farm.
21	A plan to try and improve water quality and to stop manure and slurry going into water courses and polluting it	Good plan to keep farms tidy and also a plan that has created jobs for people. We have built sheds, some others have been fenced, concreting etc to improve Llyn Tegid water quality.
22	A plan to improve water quality by: separating clean and dirty water, pipe ditches, fence ditches and streams	Farm in a way that's sensitive to the environment by decreasing what's going into the local streams and rivers by being careful about controlling muck, manure and stocking.
23	A plan to improve water standard in the area and to give farmers help to do improvements on the farm they couldn't do without the grant aid. Improvements that are going to help to improve water quality. Jobs to assembly members/workers and give work to local contractors.	
24	A plan that offers a grant to help farmers to cooperate with the single payment plan and to help improve local water quality to try and improve water quality problems in Llyn Tegid.	
25	A plan to stop or decrease the amount of pollution from the yard that goes into water courses to improve water quality by giving grants to improve resources on the farm. Soil sampling in order to be able to make a manure plan.	
26	A plan to improve water quality by offering grants to do improvements like putting hard standing under feeding places in the fields, putting crossing areas for animals over streams and rivers and improve manure control and cleanliness on the farm.	

27	Improve water quality is the plan's priority through improving manure control, fencing stream banks, decrease the rate of stock over the year and try not to churn the land or make the land dirty with cows/tractors etc. by ensuring that the land is dry when we go on it.	
28	There is a problem in the lake and they are trying to monitor us to see if there will be a change in water quality in the lake. Within the plan people will do things a little different and this will be monitored to see if there will be improvements.	
29	A plan to improve water quality if it runs into Llyn Tegid, concentrating on half the water that goes into Llyn Tegid as a pilot plan.	A plan that pays a lot of money, the majority of it for administration and publicity and a small percentage of the money available goes towards improving Llyn Tegid water quality.
30	A plan to try and improve water quality by encouraging farmers to do work on their farm buildings to decrease potential pollution and to separate clean and dirty water and also controlling what is put on the land at different times.	
31	Avoiding high nutrient levels getting into the water, or any other pollutants, which is fairly impossible if you've got high stocking rates.	Cutting down the nutrients that are getting into water courses by a variety of mechanisms.
32	A way to stop pollution from the yard and to get money to help improve water quality. Help through soil sampling from or through the plan to be able to fertilize. Have outside advice on environmental issues.	
33	That farmers do their best not to pollute the rivers or the soil, and to consider the effect that farmers have on rivers/water courses and the soil.	A plan to increase farmers' awareness to improve their yards and resources to improve water quality in the area. The soil tests and advice on fertilizers have been beneficial.
34	A back door way to see what's going on on farms, and they want something to blame due to all the algae that is on llyn Tegid. Good idea to join the plan to ensure that the farmer that doesn't join the plan doesn't get blamed for causing pollution in the rivers, streams and lake.	
35	Lots of different ways to look at it: Basically a plan to see if the water from farms causes all the trouble in Llyn Bala. Farm in a way that ensures that the water isn't being polluted by being careful with fertilizing etc.	
36	Farm in a way that's better for the environment to improve water quality	

Table A4.12. Responses from farmers in the Deepford catchment to the question 'Imagine you had to tell another farmer what catchment sensitive farming was. How would you define it?' in 2006 and 2008.

ID	2006	2008
1	Improving water quality.	Improving the water quality.
2	Aim is to reduce pollution from farms + improve water quality.	
3	Improving water quality.	
4	Grant funding in return for improving facilities on farm yards, fencing off water courses to avoid pollution.	
5	Fencing off water courses + Restricting slurry + fertiliser application.	Never looked into it at all as it didn't really apply to us. It is all to do with the pollution and there was no stock on the area of land in the catchment.
6	Improving /Maintaining high water quality	Awareness of diffuse pollution that we didn't even know was there a few years ago. Effect on your farming and what pollution can be caused. Never really thought bout it much.
7	Keep waters clean + maintain quality.	
8	Something about water quality & Fencing off streams.	A project to improve water quality looking at how to reduce pollution from farms and livestock

9	Not using nitrates. Protecting waterways.	Protecting the waterways and the environment and improving traditional building.
10	It's about improving the cleanliness of water. Although I think it refers more to dairy farms as opposed to sheep/ beef farms.	Help to keep the streams and tributaries clear and clean. And help with the fencing in order to maintain this.
11	Highlighting environmental issues within the farming industry. It's to do with the quality of water.	To be able to a farm economically and at the same time being mindful of its environmental impact.
12	Monitoring whether farming activity affects water quality.	Improving your management to make sure you don't pollute enviroment and water courses.
13	A scheme involving farmers to improve water quality.	Farming in such a way that won't harm the environment.
14	Another way for the ministry to control farmers.	
15	To keep the water in farms as clean as possible.	Definitely has made the farm more efficient. The cow tracks have been the bain benefit as have reduced poaching and the scheme really has helped with conservation. It is an incentive to apply to the regulations.
16	Its for improving water quality, and, covering yards, fencing off streams.	Haven't done much with the scheme but have heard that you need to keep dirty and clean waoer separate, so reducing dirty water. Know this as people have had grants for covering yards.
17	Trying to be more sensitive to the environment.	Trying to improve water quality and environment at same time as running a heavy, intensive farm.
18	It provides an opportunity for farmers to farm in a more environmental way. It will help to reduce pollution.	Cross between farm environment scheme and farm assurance. Something that is legally required and something you can do by choice. Encourages each farmer to take responsibility for their environment and be more aware.
19	A way of improving water quality. A way of balancing farming + good environment.	Way of improving water quality and water run-off.
20	It's a scheme that analyses your soil to see what nutrients are lacking/ required by the land. It will also give advice to stop run-off from fields.	The protection of the water course from pollution and run-off from the fields. It protects an area for the wildlife as well.
21	A government aided pilot scheme to asses the viability of government funds being used to help farmers reduce pollution.	Government pilot scheme whose sole objective is to reduce diffuse pollution from farms. Must be evenly spread so: so between field and buildings.
22	Improving the water quality that flows through your farm. It will encourage cleaner rivers and so bring more fish and therefore create revenue.	A scheme to improve water quality of the rivers and protect the flora and fauna of the riverside corridors
23	A group of farmers coming together to improve the quality of the environment in the area.	Picking an area which possibly needs improving. Grants are offered to entice farmers to do improvement works. Along with talks and explanations regarding what the objective is.
24	Monitoring water quality in the Deepford area, to see who is and who isn't polluting the water table. To see if nitrates are leaching into water courses.	
25	I think it's NVZ through the back door.	NVZ through the back door. Unless it is aided by money, it is impractical in the current economic climate. By 2015 was said in Llawhaden Hall that all stream and river should be good quality. However, no-one knows what "good-quality" is. There is no baseline, how do we know what the quality was pre-industrial farming?
26	Improving water quality and the environment.	Basically common sense. We have been at it long enough not to let effluent get into the water course. One of the main things was to keep cattle away from ditches.
27	If there is any work on the farm relating to improving water quality you can get help to fund those schemes.	Improving slurry pits, silage pits, and run off and preventing pollution. You would really have to write the farmer a letter to tell them about it or meet up.
28	About educating farmers on how to manage their slurry and manure.	
29	It's scheme to improve water quality.	
30	Improve the water quality.	
31	It's a scheme to improve the water quality.	Fencing off the wet ground and to increase the wildlife population.
32	To improve the environment	It's bound to benefit the farm. Financial incentive to improve things that may not otherwise be done.

33	It will improve water quality.	Excellent. Something that makes life a lot easier for you and helps the environment. Something that needs to be done in all places. Couldn't have done the work without the grants. Now the ditches work wonderfully.
34	Fencing off the streams to keep the banks tidy in order to improve water quality.	
35	It's a scheme to clean up the river and inprove the environment.	
36	The scheme will help test for soil nutrients. Through the scheme, it will improve the water quality.	
37	It's a pilot scheme to see if water quality can be improved by monitoring water before, during and after the project.	Trying to improve the water quality of Deepford Brook by making certain improvements in the way we farm.

Table A4.13: Responses from farmers in the Twrch catchment to the question 'What do you think are the main benefits of catchment sensitive farming?' in 2006 and 2008.

ID	2006	2008
1	1. Opportunity to improve the farm in terms of facilities such as manure storage and dipping. 2. Reduce pollution risk. 3. Improved stock management may come from smaller fields fenced through the project. 4. Gaining useful knowledge on best-practice.	One aspect that I did like was the help for pads to ease feeding outside. Pads out of hard core can be very useful if the animal's breed is suitable.
2	No idea really- something towards securing a cleaner environment most likely.	
3	CSF could be a good opportunity for farmers who might be considering putting a roof over the manure store or a system in to separate clean and dirty water.	
4	Not many benefits for the farmers nor the environment in reality. Conservation is a long-term activity, not a 3-5 year project. It might do some good to the river, and if the authorities can claim that Llyn Tegid is clean then it could help tourism in the area. Work undertaken for grants on-farm end up being much more expensive as we have to pay someone else to do it rather than us doing it. It's often not worth the effort.	I agree with the principals of the project but I find it difficult to think about the advantages for the farmers. It is an useful plan for well off farmers that have money to improve their farms.
5	1. Grants- CSF may provide useful money to carry out expensive improvements on-farm. 2. Improve conditions for wildlife.	
6	Financial assistance to carry out improvements to farm buildings- this must be the biggest "carrot" to farmers.	
7	I don't know enough to make that kind of assesment- ask me in a couple of years time.	Farming that's sensitive to an area has been a win win situation, as it has helped to improve the business and helped the environment. The soil analysis was very useful as it allowed me to know how to control the land. Lately we have had some cows, the timing of the project was very good for me.
8	I think farmers and people living further down the river will benefit the most, especially people using the lake. To be honest, it means extra work for farmers near the top of the valley. I hope to have benefits to my own business such a fencing (in the right place!) and possibly some concrete.	I believe that the help that was available to treat muck was really useful to cattle people. I don't have cows now. Having better muck helps financially, where a lot of other things in the plan offered no financial benefits. Things like fencing ditches or a roof to keep the yard dry don't help to get more money – these are environmental benefits.
9	The main benefit is the grant funding msde available to improve the farms. These alterations will in turn benefit the wider public through minimising pollution risks.	1. Less mucking out work for us and has therefore eased our work. 2. Easier to keep the farm clean as less water was mixed with the muck and slurry. Concrete has cleaned the farm also. 3. I feel better now as I know there is less chance for me to poison the river.

10	The biggest benefit for us is to receive a grant to improve our water management, which will help us to meet our cross- compliance requirements. We hope we'll get funding for things we'd have to tackle any way. I think it's fair for the taxpayer to contribute if we're expected to protect water quality for the wider benefit. Secondly, the project will promote more cooperation by farmers.	There are a number of advantages to having concrete and drier yards like keeping things (stock and machines) cleaner and easing work on the farm. It saves time treating wet muck and the muck we have now is of higher quality.
11	1. Very useful to have soil analysis to help manage the farm. 2.Advice and financial support on how to build a proper manure storage facility that will meet regulations for years to come.	
12	I'm not sure what the main benefits are - am I allowed to say money/grants? For me, it will help to plan for the future legislative requirements and cross-compliance. Through support offered by the CSF, I will be able to cope better with these new regulations. All the river users should benefit from cleaner water from anglers to people sailing on the Tegid.	Once again, there was a lot more benefit to the larger farms in the area, as businesses needed to find 50-60% of the capital. It's more of a challenge for smaller businesses to find this kind of money. For large businesses the project was a very good help to improve the standards of their buildings.
13	I'm not sure. The water will be even cleaner hopefully, but I can't think of major benefits to the farmer. I suppose knowing your river is clean is reassuring. My son is an avid angler, so he's very supportive of initiatives that protect or improve the water. So, I guess he and his friends will see benefits.	It's very useful for investing in better resources to treat muck on the farm. It keeps the manure stores tidier and drier therefore its better stuff for us to put on the land especially when the price of fertilizer is so high. Putting hard standing under gates is very useful under the project also to keep the farm clean and tidy.
14	The biggest benefit will be to those that are contemplating investing their money on improvements that the CSF includes in it's grant package.	
15	1. Cleaner water in our streams and river. 2. Ensuring that the water is fit to drink - many people in Cynllyd drink their own water. 3. Ensuring that everybody along the river lakes good care of the water, as it's only with htem temporarily before it flows to someone else who might end up drinking it. 4. Helping the economy by attracting tourists to the lake.	If a farmer has capital available, then the project is highly advantageous to improve farm resources and facilities. It gives someone a piece of mind as there is less chance to pollute the river. It is also beneficial to cattle farmers to have drier, more nutrient muck.
16	1. The project offers the opportunity for financial assistance to carry out farm improvements 2. It will help to protect the lake's image as a clean and peaceful place to relax and enjoy. 3. Securing a clean environment will help the local economy and all those businesses that depend on tourism	The main advantage was the financial help to improve the farm. This was a good opportunity for farmers to invest but regretfully I was outside the boundaries.
17	1. Financial assistance to farmers who want to improve their manure stores or repair yard drainage systems etc. Very handy for those considering doing this anyway.	
18	1. Grants to help improve our farms by managing potential water pollution risks much better. 2. A cleaner environemnt hopefully. Nobody wants to see pollution.	
19	1. Helping to restore agriculture's good name in environmental conservation. By participating in the project, the risk of accidentally polluting rivers will be minimised. 2. Help farmers to 'clean up their act'. There are a small number of 'bad apples' in teh area that let everybody else down. 3. Better use of slurry and manure to cut down costs of applying fertilisers	The project has the potential to create a win win situation for everyone. The public get cleaner water, the government can hit their target and farmers have the chance to improve their farms. The project wouldn't help to make more profit but it would do the work of farming easier.
20	Better management of the farm and it's environment; improving habitat for wildlife, especially fish	

Table A4.14: Responses from farmers in the Llafar catchment to the question 'What do you think are the main benefits of catchment sensitive farming?' in 2006 and 2008.

ID	2006	2008
1	Soil sampling - beneficial to the agriculturalist and the environment. Grant available	
2	Money. Convenience	
3	Soil sampling. An opportunity to improve the facilities on the yard	That the farmer that has joined the plan can have better control over their muck and that they don't need to spread muck in the winter.
4	The level of lime is higher (farmers spreading lime as the pH of the soil is so low). Doesn't have to worry about conforming	
5	1. Money available to improve the farming method. (not possible for farmers to invest in their business without contributing a high % towards the cost) 2. Advantages to the Environmental agencies by improving water quality	The grant. Soil sampling. The information and advice was a big advantage. The advice given was beneficial to be able to plan and think about which direction to go in the future.
6	Help to improve holding + biulding + make everything sufer from polluting.	Improving the environment and improving farm's delapidated in poorer areas to bring up to more manageable standard-updating.
7	I strongly expect that grants will be available for liming as this in my opinion will improve water quality	
8	Putting roof over stores etc. Soil sampling	So dirt/pollution is kept out of the river and to improve water quality
9	Alter the farm yard – putting up roofs, culverts etc	
10	Be able to get a grant for the work	
11	Improve water quality	Improve water quality and increase the number of fish in the rivers/streams and wildlife in these habitats.
12	A grant to the farmers – a big help to be able to do improvements. Makes beef/cattle farmers think twice about conformation maters	
13	Encourage wildlife, decrease pollution, protect live cows, and tidy the local environment	N/A. The plan has given a lot of local people the chance to e.g. build sheds and it has given local people the chance to do work to improve their resources that they wouldn't do otherwise.
14	Make the farmer and everyone else in the area realise that the days of unnecessary polluting have passes and there is a need to be more careful	No benefits for me but benefits to the water quality in the lake and local rivers.
15	Improve water quality and have more wildlife around	Decrease erosion by placing culverts on my farm and improve the water quality in the area as a whole.
16	Improve water quality in the area and increase the amount of wildlife here	
17	Combine the efforts of every farmer in the area to farm in a more friendly way to the environment	Soil analysis – Sampling soil gave the farmer the opportunity to get to know their land better, and it is what is needed in the long run to improve the standard of the water on the farm.
18	Had the land tested to analyse the nutrients to know exactly what is needed to be scattered. Having the river fenced out to secure the stock. Improve the pens and the dipping tub	Be able to test the nutrients in the land that would be beneficial to us, and the grant would allow lime to be put on the land which would be highly beneficial. We fenced the sides of a stream that was very dangerous as part of the project which was a great help. For farmers that had buildings in the area, the grant aided improvements of these buildings and new ones to be built which was also very beneficial.
19	The water will be cleaner, if we make the water dirty	The grant to do capital work. Even though the grant was not enough every time as material costs has increased.
20	Improve local water quality	Even though I didn't take advantage, I believe that the main advantage is the chance to improve the farms resources with a grant from the government. The control on muck and slurry comes under cross compliance and the project gave farmers the chance to do something about their muck control to comply with the government demands.

21	Improve local water quality (if the plan works) and then it will give wildlife the chance to come back to the area	Give local farmers the chance to comply with legal requirements and improve/tidy their farms and the plan has given local people jobs. It gives young boys a good introduction to start their careers.
22	For the farmer: help to keep within the cooperation rules	That the farmer has a 60% grant to improve resources on his farm and increase awareness about better farming practices to improve water quality.
23	Grants to do improvements and environmental benefits.	
24	Everything benefits from having improved cleanliness, water quality, increase in wildlife etc. There is a knock on effect from the benefits.	
25	To help the farmer to improve water quality by giving financial support to improve cleanliness etc on the yard on the farm and to decrease more direct pollution into water courses.	
26	Improve water quality and have the aid of a grant to decrease pollution on the farm and improve cleanliness that is advantageous by considering the new rules under the SFP	
27	The financing, it is a great help for farmers to get grant money to do improvements. Soil sampling is also beneficial for the farmer. Having the agencies advice and opinions if there is a problem is very easy.	
28	To be able to make sure that the manure doesn't run to the river. By having a shed over the yard and having a big enough manure store, we could store the manure until the summer or the spring and therefore the manure wouldn't be washed away.	
29	Improve Llyn Tegid water quality and keep people in jobs.	To the farmers that can claim a grant, the main advantage is to get money for capital work e.g. build/improve sheds, build manure stores.
30	That grants were offered.	
31	Wildlife benefits, especially aquatic wildlife.	Cleaner waterways and cleaner environment.
32	Help for farmers to do improvements on the farm and improve water quality.	
33	Protect the environment	For me the advice on fertilizers and the soil testing was the main advantage as this will probably be beneficial to the water quality in the area.
34	Make someone aware of their responsibilities to ensure good water standard in the local rivers. Soil analysis is good in order to act in an appropriate way depending on the results and reduces the potential of polluting the water by treating the land.	
35	Only a little for farmers, felt that farmers have to do someone else's work.	
36	N/A	

Table A4.15. Responses from farmers in the Deepford catchment to the question 'What do you think are the main benefits of catchment sensitive farming ?' in 2006 and 2008.

ID	2006	2008
1	Soil sampling + analysis. Grant funded work.	Main benefit is to the river, to the wildlife and the fish. It's not benefitting the farm animals unless for these people who have put up sheds. It would have been handly to put up some sheds, but unfortunately the farmyard was not in the catchment. Also would have been good to have money to collect rainwater.
2	Grant funding + soil sampling.	
3	Grant funding	
4	Grant funding of covering concrete yards.	
5	Good grant money / good rate @ 60%. Soil sampling.	Having the grants to improve the storage facilities for slurry and manure and at the same time helping the enviroment.

6	£20t grant funding ceiling with a 60% contribution	That is what they were hoping to find out. They said that there wasn't a problem in Deepford Brook but they wanted to evaluate the effect of spending the money. I suppose a reduction in pollution, but are they measuring it? It certainly raises your awareness of what problems can be caused.
7	Free soil testing. Proactive action to avoid further problems.	
8	Grants	Meeting cross-compliance regulations to ensure single farm payment is received in full. Also environmental benefits
9	To the farmer it gives guidance and financial help. To the public it would give better water quality.	Financial assistance to do some of the jobs that need doing and otherwise would probably not have got done.
10	No particular benefits. Not for this farm. Scheme as whole: To improve the general awareness of water quality.	Has helped to keep tributaries. Has probably in general made farmers more aware of the importance of water. Personal biggest bonus-fencing. Delighted about the fencing as it has made life so much easier and resolved any problems with neighbours. Free soil sampling was great. Would have had odd field done, but now had lots done.
11	Trying to marry efficient farming with high quality of water.	The audit creates awareness. It's so easy when you are working on the same things to not notice a larger picture what is going on.
12	The soil sampling was a particular benefit.	They did soil analysis for fertiliser applications. Concreting the livestock handing area makes things much easier.
13	Tidy the farm. Improve public opinion.	Grants to the farmer and help to the environment.
14	I don't see any benefits at all, to us.	
15	If it helps me to be more environmentally friendly, and to help keep within cross- compliance it would be beneficial.	Helps to farm efficiantly and it works well with the environmental schemes
16	Improving the water quality. It will provide us a financial gain, because we won't have the quantity of dirty water to deal with. Benefits to animal welfare.	Save and pollution.
17	It makes us more aware of fertiliser application given the price of fertiliser. So therefore saving us money.	Not more confident if have an inspection. Farm looks a lot tidier. As 27. Also good for wildlife.
18	From our point of view it will benefit our farmland by allowing us to install a new slurry store, which will in turn benefit our grassland.	It has got to improve the quality of your own land. It makes it more profitable in an indirect way.
19	It will clean up rivers. Soil analysis has helped us cut down on fertiliser.	Improvements of water quality.
20	We won't waste money on fertiliser that is not needed.	To try to prevent the pollution of water. It is a good idea. I don't think people appreciate water enough.
21	It will improve the water quality.	Cash handout of max. 60% of capital costs. Fairly fexible so can tackle projects a number of ways. Very farmer-friendly and people in carms have been willing to discuss ideas.
22	Improvement in habitat + water quality, and public opinion.	Clean water is the route to a healthy environment, therefore the value of CSF should not be measured in £. By looking after the river, we are looking after the insects and bugs which are eaten by fish and birds. Humans then utilise the fish and therefore by looking after the rivers leads to economic improvement
23	For me, it encourages me to carry out these grant aided works, that will help to improve the quality of the watercourses.	Potentially these should be an improvement in water quality and some farms projects that you would have been putting and get done move quickly. As it is a catchment, you are talking to neighbours about the different projects.
24	I think there will be environmental benefits by making farmers more aware of the risks of pollution associated with nitrate run-off.	

25	If it works it will help the environment. On my farm it will help to improve water quality by bridging stream crossing. It may go someway towards helping with single farm payment/ cross-compliance legislation.	Not as environmentally sound as it makes out to be. Perception that farmers add nitrogen, chemicals etc. on the land willy-nilly but it's not practical of affordable so maybe this is unneccessary. Can't quantify benefits other than providing some funding for doing jobs that are needed.
26	If the water quality is only improved by 1% over then it will be a success.	Gives you the awareness of what is going on.
27	Improving water quality.	Stop pollution and improve the quality of the water: that is the whole idea of it.
28	It will help stop dirty water getting into the Deepford Brook.	
29	It will help to improve the environment + the countryside.	
30	It helps pay for the improvements for sheds, and also benefit water quality.	
31	For farmers who have brooks as boundaries, you will have your boundaries fenced. Seperating rain water from dirty water.	The money aspects-grants. Everything else is a waste of money.
32	It will tidy the river. It will improve water quality.	Improvement of run-off from the farm. The water is cleaner.
33	I will not benefit if I loose land through buffer zones.	Move animal friendly and stopping all this dirty water entering streams and preventing cattle pulling ditches in and spreading them back into the field.
34	Clean up the water in the rivers.	
35	There aren't many benefits because the amount of money is not enough to carry out major improvements.	
36	Covering yards will help the pollution problem.	
37	Allowing us to carry out capital works that would not do without grant aid. It will also help improve water quality.	Good thing to be involved in as is of benefit to the area and the water quality. Have done jobs without grant aid. There have been big benefits.

Farmer opinions on water quality, pollution and mitigation

Table A4.16. Responses from farmers in the Twrch catchment to the question 'What changes would you make to your farm to improve water quality that are not already funded by catchment sensitive farming?' in 2006 and 2008.

ID	2006	2008
1	Replace ditches with underground pipes. This will stop soil erosion along ditches from animals seeking access to clean water. These pipes would need to be large in order to handle large volumes	There is a need to improve farm building resources in the area. Improving impractical old fashioned buildings is not a good use of money – new purposeful buildings are needed that suits the environment. The plan should also offer better help for young farmers under 40 years old, especially the ones that have just started farming. Every farms situation is difficult and I would like to see more flexibility. I believe that a new business should have more help than a business that has been around for years without any bank loans. Help the young for a better future!!
2	Put a cover over my slurry and manure store. Would CSF cover this?	
3	1. I would like to learn more about using and applying manure and fertiliser efficiently i.e optimise their use whilst minimising their effect on the environment and wildlife. 2. Seminars and open day showing practical ways of reducing water pollution.	

4	Stricter management of forestry in the area. The best thing that the officers could do is carry out spot-checks on the forestry people as they pollute by careless and storind diesel for machinery inadequately. CSF also needs to take into account the effect of pine trees as well.	Help needs to be re introduced to farmers, especially farms in the uplands to put lime. Putting lime will improve water quality for fish and birds.
5	Liming would help to improve water quality without a doubt. They used to support lime application, and CSF should start this again. The area's soil is extremely acidic by now, as most farmer's opt not to lime to sore costs. A grant would reverse this damaging trend, and it wouldn't cost that much to the taxpayer.	
6	Apply the same rules to the forestry industry as those imposed on farming. Forestry on the whole is good but we need to be consistant.	
7	1.I would invest in a new slurry pit on the farm so that any run-off would be captured or stopped.2. New dipping facilities that complies with regulation.	One thing I was surprised about was that there wasn't any help available to improve the safety standards of the diesel tanks to stop then causing pollution. The majority of farms have diesel tanks and it would be a good idea to have bundled tanks for everyone as some of the tanks are very close to ditches and streams.
8	Bring back liming with great urgency. The acidity of the soil in this area has got worst, and has affected the water quality more than anything else. I think there are so many external factors affecting water quality. For example, 20 years ago, a small tributary to the Twrch right at the top of the mountain was full of fish. There are now none, despite the same farming practices. No chemicals or fertiliser has been applied. So it must be something in the rain water!	I strongly doubt how much effect farming has on water quality in our rivers in reality. 15-20 years ago, the streams and rivers on the top of the mountain even had lots of fish. Now there isn't any fish to be seen in the mountain even though agriculture has stayed the same on the tops of mountains. There must be something in the rain, or that stopping the habit of opening ditches on the mountain has meant that water settles more and therefore turns more acidic.
9	Nothing I can think of- ask me again in the future!	There is a need to look at other pollution factors outside farming such as village sewerage systems.
10	I'm not sure- I can't think of any at the moment.	Definitely liming. There has to be an increase in lime used, especially on the mountain. If we have help to lime, then we would use much less fertilizer for example.
11	Nothing I can think of- ask me again in the future!	
12	I would like to further improve my manure store, so that all the run-off is collected, or better still have a roof installed.	Nothing obvious comes to mind. Personally I doubt if a problem exists at all. No one has showed us any figures about the river. A lot of it has to do with the weather we get. Even the ditches in the top lake has algae on it, therefore it has to be something to do with the rain that falls or the acidic water from peat land.
13	1. Liming without a doubt. The soil in this area has become very acidic, especially since liming grants ceased and things became tight in farming. I don't think there's much else I can do, as I already undertake a number of precautions such as a 10m buffer strip from the river when applying manure, because of Tir Gofal. My son would let me know straight away if I was polluting the water anyway!	I haven't got any other suggestion to be honest. I would like to know properly if there is a problem in the Twrch. Is it possible to see the results? Testing the soil annually would be something good to do.
14	1. Liming - one of the best things CSF could do. The pH is very low in this area. 2. I would like more clear and concise information from one source rather than the 'mishmash' I receive from a number of different bodies, often contradicting each other. I would simply like to know what affects the water quality and why, then I would do something about it - we're not children!	

15	1. There's a lot of runoff from my farmyard, especially when it's raining heavily. It would be good to have a drainage system to collect any dirty water, but an expert who visited me recently said that I shouldn't worry, because it's not a big problem. 2. I would like to measure the radioactivity of the water in the streams, because I think the water is polluted before landing on our land. Why can't they be open about this, rather than try to blame us. 3. I would also like to see them putting a stop to transporting sewage from all over the place to Llanwrchllyn's treatment plant. This is far too risky when the lake and river are so close.	Liming – Help to put lime has to be re introduced. It's difficult to justify for this cost based on the prices of things today but there are environmental advantages. As the project assessed the soil and showed that the pH was too low in a few farms, steps should be taken to help with lime. There is no purpose to encourage us to put on a specific amount of manure if the pH is incorrect.
16	1. Liming - I'm sure lime application would help. Many have cut down on this over the years. 2. Avoid leaving the cattle out for too long in the autumn or putting them out too early in the spring - this can cause severe poaching if the weather is poor. I would like better facilities on my farm to keep cattle in for a longer period.	1. Tackle the Forestry Commission. These have been left out on purpose in my opinion. I know that they are responsible for a lot of dirty water that goes into the river. 2. Include Llanuwchllyn sewerage system in any work to improve the standard of the water in the area. The system needs to be modernised as the village has grown a lot over the years. 3. I know of farmers that have put hard standing under feeding troughs and have been refused payment from the project as weeds had grown through. This is very disappointing.
17	1. I think fertiliser application is a big issue regarding water quality. There are a few heavy users in the area. CSF should consider implementing a quota or an upper limit when applying fertiliser. I would also like more information on when is the best time and what's the best method of spreading fertiliser. 2. Liming would help to improve the water quality. Very little done these days compared to years ago.	
18	1. I would first of all include forestry in this project, as they're guilty of polluting watercourses as much as anyone. 2. Apply more lime or slag on the land to neutralise the pH. Currently it's far too acidic, and I think this contributes to the pollution they might be detecting in Twrch and the Tegid. 3. More awareness of how fertilisers can affect water quality anda better understanding of how to optimise their use.	
19	Re-introduce liming onto farms to tackle the acidity of the soil. Although farms around Twrch are becoming more extensive in terms of stocking rate, the increasing size of farms is causing a problem that a lot of organisations isn't really aware of. For example, some of the larger farms have bought 2-3 farms over the years, and farm the land as one business. However, they bring all the livestock home to the main farm over winter, where these animals may have previously been on 2 or 3 farms. Therefore the problem of storing slurry or manure is worst on big farms because of this tendency. Can CSF encourage farmers to keep animals on the original farms?	The ideas are quite good on the whole apart from fencing the streams. It would be a good idea to re introduce lime grants to increase the pH of the soil in the area.
20	I have insufficient information on CSF to comment, but I hope there's funding to fence off streams and upland ditches	

Table A4.17. Responses from farmers in the Llafar catchment to the question 'What changes would you make to your farm to improve water quality that are not already funded by catchment sensitive farming?' in 2006 and 2008.

ID	2006	2008
1	Have done a lot already - roof over yards etc	
2	Decrease the liquid that comes from silage. Carry on without dipping	
3	Nothing	Build a roof over the where the silage is stored where the big bales are stored over the winter and have a tank to hold any effluent off the bales.

4	Nothing. Liming would improve water quality. Need a grant to make sure that this happens	
5	Nothing	Fence ditches and since the plan finished the farmer has built another shed to keep the sheep in during the winter to decrease the amount of mess on the fields and soil erosion by the stock.
6	Already improved sheep dipping facilities 5 years ago.	[Increase slurry storage on main' farm- outside to CSF area]
7	LIMING	
8	Nothing	Build a roof over the muck mound and put a system in place to separate clean water and dirty water.
9	Maybe putting up a cow shed but nearly defiantly won't be keeping cows for much longer	
10	Liming	
11	No	N/A.
12	No changes	
13	Lime the land to raise the pH of the land and therefore improving the water quality in the river. Use more organic manure instead of artificial fertilizer.	N/A.
14	Nothing	There wasn't a lot of changes we could do in the first place.
15	Nothing	I wouldn't have done a lot to improve water quality apart from placing culverts. If I had the chance to join the plan again (and everything was arranged a little better i.e. that the specification had been confirmed and that the body agreed before the farmer was given the specification) I would definitely join.
16	Lime the land, having a grant to lime in order to improve the water and land	
17	To strive to decrease the run off of dirty water	Lime to neutralise the soil, and prevent poaching. I have seen the benefit this year by bringing in stock before Halloween.
18	Control lime, controlling lime would be highly beneficial as fertiliser would be taken up better and the lime levels would be O.K.	For the farm that is within the area we couldn't do anything. On the farm we have outside the area we could build a shed over the manure store to improve the water quality.
19	No changes	There is not a lot I could do to change things, besides creating a hard area for the cows to stand by the water troughs that is considered a dirty yard.
20	Nothing	Nothing
21	Lime the land, a grant to lime would be beneficial to the farmer and it would help to improve water quality	Nothing, everything by now is of good standard and is kept like that.
22	Pipe open ditches where there is soil erosion in fields outside the plan but the pollution reaches another river's area (Tryweryn)	No, there are not a lot of big changes we can do here if the farm system doesn't change drastically over the next few years.
23	Try not to ruin the fields by feeding in the winter and not letting the cows out in the spring.	
24	LIMING! Liming is going to hold the phosphates in the soil and the phosphates are the problem	
25	Clean water for the stock everywhere	
26	Have the aid of a grant to lime; this would improve the quality of the water and the land.	
27	Liming, putting lime on the land improves the land and it will have a positive effect on water quality.	
28	Having a grant to lime the land	
29	Extend yards buildings to be able to keep all the cows in over the winter. Isn't being financed through the plan as the yard isn't within the river area.	Keep more sheep indoors in the winter giving the land a chance to rest.
30	I would lime the land, getting grants to lime would be a great help for farmers and this would improve water quality.	
31	Keeping less stocking will improve water quality.	Reduce stocking further.
32	Clean water for the cattle inside and outside.	

33	Help to lime, the nutrient analysis has shown that there is a need to lime and financial aid to lime would be beneficial to farmers and to improve water quality.	Nothing, the stock has been away over the winter and there are no buildings or yards on the farm that cause problems.
34	Give grants to farmers to lime their land. Liming will improve the land quality and the quality of the water which should be financed by the plan.	
35	Give grants to put lime.	
36	N/A	

TableA4.18: Responses from farmers in the Deepford catchment to the question 'What changes would you make to your farm to improve water quality that are not already funded by catchment sensitive farming?' in 2006 and 2008.

ID	2006	2008
1	Utilising clean water on farm for stock.	Trying to get well instead of using mains.
2	Unsure.	
3	Not at all	
4	Put a buffer between arable ground and water courses.	
5	" Wouldn't change a thing if I had joined or not.	Try to retain more dirty water as the price of fertiliser at the moment is so clear. Increase storege facilities as need to spread during the winter. Building a bigger storage area would be very helpful.
6	Use of reed-builds in soakaways	I don't know what was funded by it. Don't know enough about the scheme to make a judgement.
7	Having to house cattle overwinter. Reluctant to do so because of housing/slurry handling costs.	
8	L&G pipeline currently doing everything then can to get a better profile and throwing money at Mr. Rees.	All done really… Possibly look at slurry injecting, and buffer zones for maize fields
9	None.	What else can one do? Got own well. Other than more of the same.
10	Install more water butts to catch rainwater.	"Inspired me to invest in fencing off my own initiative".
11	None.	Not sure.
12	Nothing at the moment.	Don't think we have a problem really until water quality. In the past, they test the stream regularly and there has never been shown to be high levels of pollution. Re-inforced earth bank of lagoon- perhaps we could have built a new one. It would have been of benefit to have a grant towards it.
13	None.	Slurry tower isn't big enough, so are having to spread monthly.
14	Nothing because we have no pollution problems.	
15	There isn't much more we can do.	1. Dirty water separation 2. Discharge licence from EA - not sure if reedbed will need re-doing. Would be good to be able to do this esp. due to recent local heavy rains. Will do these if Cartlett Brook project takes off.
16	None.	See 19. All these works were carried out on own.
17	Set the total amount payable to a higher level, and I would carry out more work.	Try to do everything with the grant that they have had. Might slurry store- catch 22- Make slurry too thick, can't pump it.
18	None.	I don't think there is anything. Only improvement we could make would be to put hard standing under one water trough, but this is being done very soon.
19	None.	Slurry stores, dirty water run- off.
20	None.	Don't know. We are virtually organic, careful where we spread slurry (injection).
21	I would like to build a new slurry store although the funding ceiling is too low at this stage to make this possible.	Always more to do. Also on going maintenance eg. Fixing gutters. Most people have infrastucture in place, but they need sorting out eg. Leaks, asbestos gutters replaced with plastic. More yard area- roots -expensive past time to spend money and, maybe better to pump it out. In an ideal world would do it.
22	I would like to install reedbeds.	We need to be able to correctly manage slurry, so that 1. we don't pollute 2. we get the correct calorific usage out of it

23	Trying to make use of rainwater, off roofs.	Probably put more catle housing up mainly one to TB.
24	None because we are organic. We are not aware of any pollution issues on our farm.	
25	None.	Put in bridges-fundind isn't sufficient to allow them to do it all this time. Direct roof water better (clean water). Don't intentionally dirty the water.
26	None.	Done it already: before being singled out fot clean rivers up.
27	None.	We are all up to date. We can not do any more. Only thing that could be done is to cover more yards.
28	None.	
29	Fencing off all areas and running water to help improve water quality..	
30	Reduce stocking levels, will help improve water quality on my farm.	
31	None.	N/A.
32	None.	Improve what we have already got. As he wanting to retire-v. different to a young farmer making big capital investments.
33	None.	Lots of ditches want re- cleaning and re-opening and fencing off.
34	None.	
35	There are no improvements we can make, that we are aware of.	
36	None.	
37	None.	Covered pretty much all aspects with scheme.

Adoption and non-adoption

TableA4.19: Responses from farmers in the Twrch catchment to the question 'Would you do it again?' in 2008.

ID	2006
1	I would definitely. We need to take an advantage on everything but I would like to see more help for young people.
2	
3	
4	I wouldn't rush to join even if I had the money. The plan needs to employ people that understand farming better.
5	
6	
7	Because I have been travelling a lot lately I haven't been able to do that much on the farm. I would definitely take part in the plan again and possibly try to do more.
8	I would have liked to have joined because of the pigs but the plan was closed. If I knew that I would have moved faster.
9	I would – the project works in two ways with everyone benefiting from it.
10	I don't regret being part of the plan and I would recommend it to any other farmer.
11	
12	I would. It helped me tidy some parts of the farm. It's a pity that there wasn't more support.
13	I haven't joined in the first place, but if the project was available for the Dyfrdwy I would join.
14	
15	I have more money now after selling an old holding on the farm therefore I would like a second chance. I have nothing against the project.
16	I would but it would be nice to have a yard within the boundaries next time!
17	
18	
19	Possibly, it depends if the project is clear on the payment process.
20	

TableA4.20: Responses from farmers in the Llafar catchment to the question 'Would you do it again?' in 2008. Some answers removed / edited as original answer was disclosive.

ID	2006
1	
2	
3	I would probably consider doing it if what was being offered was going to benefit me
4	
5	I would, if a grant was available. There are enough things to do on the farm again to improve water quality. But, the grant would have to be enough. Even though the grant is 60% this time the farmer had to find the rest.
6	If farm Y was in the CSF area, Mr XX would have joined-would have upgraded yard, sheep pens + dip.
7	
8	I would, to see what else is offered.
9	
10	
11	N/A.
12	
13	I would if the opportunities would be suitable to the farm.
14	If my situation was different I would but as I don't own the farm there was no advantage for me to join the project.
15	See question 30
16	
17	Definitely, there are things I would consider including in the plan if I had the opportunity e.g. fencing.
18	I would, especially if it was in the area where our main farm is, where I have buildings and manure stores etc
19	I would definitely to do anything else if there was a grant available. E.g. fence, build a shed, build a roof over another dirty place.
20	No, I am satisfied with the systems we have in place already, and I don't want the administrative burden that's involved with the plan.
21	I would, probably. It has been a good advantage to us here, helping work from day to day and also hopefully improving water quality.
22	I probably would, to benefit on the chance to get a grant to do work on the farm.
23	
24	
25	
26	
27	
28	
29	I would
30	
31	No, as it isn't relevant / applicable to the other farm business at X
32	
33	I would.
34	
35	
36	

Table A4.21. Responses from farmers in the Deepford catchment to the question 'Would you do it again?' in 2008. Some answers removed / edited as original answer was disclosive.

ID	2006
1	Yes.
2	
3	
4	
5	No.
6	Don't think we would have been taken into the scheme if we had tried to enter as not enough land in catchment. Farmyard etc. not in it. Did have a word with some officials and they agreed that it wasn't worth it, but I didn't push it.

7	
8	Yes. Without a doubt. Principle of scheme is very good.
9	Yes.
10	Yes, but would have thought about it more and used the project to more of an extent eg. Shed (which was already being built before she applied to CSF) and guttering.
11	Yes.
12	Yes, probably would.
13	Yes.
14	
15	yes
16	Yes. Did try, but probably not enough land.
17	Yes. Definitely. Bit aware in the beginning. Worried about people looking into the farm and poking into things. Staff very approachable and know what they were talking about. Easy to get and phone. No problems with people looking where they shouldn't.
18	Yes. Main problem was that the ground was so wet. They had time to do it in the winter, but the conditions didn't allow. When conditions did allow, they were too busy doing the CSF work for loyal customers that they could not turn down.
19	Yes-most probably.
20	Yes.
21	Definitely. Very pleased could use it to the full and used all the funds that were available.
22	yes
23	Yes.
24	
25	Yes. NOTE: Not really enough funding to enable a number of works to be carried out. Costs are up equal if not more to prices. 60% is not enough. These were the original things they wanted to do.
26	Yes.
27	Yes.
28	
29	
30	
31	N/A.
32	Yes. Definitely.
33	Yes-definitely. Made the winter so much easier- feedind cattle and a concrete yard and under cover and less dirty water.
34	
35	
36	
37	Yes.

Appendix 5. Costs of the different on-farm measures used in the economic analysis

	item	size	cost
dirty water tank (m3)		0	0
		5	330
		8	536
		10	680
		20	1380
		25	1750
		40	2840
		45	3246
dirty water lagoon (m3)		0	0
		350	3828
		750	8203
sheep dip store tank (m3)		0	0
		5	330
		8	536
slurry store: tower		0	0
		500	23053
		1250	45415
		1800	59483
slurry store: lagoon		n/r	0
		1080	9692
		1890	16962
New Building		0	0
		21	3990
		125	23750
		209	39710
		223	42370
		234	44460
		251	47690
		280	53200
		600	114000
roofing (m2)	fym	0	0
		42	2310
		288	15840
		372	20460
		400	22000
		419	23045
		1517	83435
			0
	lagoon	0	0
		375	20625
		1172	64460
			0

	feed area 1	0	0
		144	7920
		220	12100
		320	17600
		360	19800
		432	23760
		640	35200
		1200	66000
			0
	feed area 2	0	0
		81	4455
		265	14575
			0
	hand area 1	0	0
		45	2475
		63	3465
		72	3960
		130	7150
		215	11825
		244	13420
		360	19800
		372	20460
		477	26235
			0
	hand area 2	0	0
		89	4895
			0
	hand area 3	0	0
		181	9955
			0
	loafing area	0	0
		430	23650
		600	33000
		1200	66000
			0
	sillage store 1	0	0
		225	12375
		375	20625
		432	23760
		572	31460
		1920	105600
		2400	132000
			0
	silage store 2	0.00	0
		480.00	26400
		672.00	36960
		700.00	38500
		1900.00	104500
			0
	sillage store	0	0

	3	800	44000
			0
	collecting yard	0	0
		72	3960
		225	12375
		375	20625
		450	24750
			0
	other	0	0
		5.22	287
		90	4950
		100	5500
		130	7150
		276	15180
		323	17765
		445	24475
		486	26730
		499	27445
guttering to existing buildings	gutter: replace	0	0
		10	43
		15	43
		18	43
		20	43
		27	73
		40	79
		45	109
		49	109
		50	115
		150	295
	gutter: new	0	0
		10	43
		15	43
		18	43
		20	43
		24	43
		25	43
		50	115
		125	253
		200	397
		250	505
		800	1566
	downpipe	0	0
		5	36
		10	36
		12	36
		15	36
		20	65

		25	72
		30	72
		250	584
concrete (m2)	skim/repair	0	0
		10	255
		100	2550
		103	2627
		279	7115
	silage clamp (new)	0	0
		50	1275
		1900	48450
	loafing area	0	0
		600	15300
	feeding area	0	0
		432	11016
	handling yard	0	0
		5.22	133
		45	1148
		63	1607
		72	1836
		75.6	1928
		300	7650
		372	9486
	fym	0	0
		42	1071
hard standing	hard standing: repair	0	0
		84	588
		112	784
		335	2345
	hard standing: new	0	0
		11	77
		335	2345
length of retaining wall (m *1.83m high)		0	0
		13.73	1244
		24.4	2210
fuel tank and bunding	single tank (L)	n/r	0
		900	636
		1000	656
		1200	697
		1500	759

		2000	862
		2300	923
		2500	964
		2700	1005
		4500	1375
		n/r	0
		900	636
		1000	656
		1200	697
	twin tank (L each)	1500	759
		2000	862
		2300	923
		2500	964
		2700	1005
		4500	1375
drainage pipe		0	0
		20	14
		50	35
		80	55
fencing (m double)		0	0
		600	1320
		1215	2673
		1515	3333
		1560	3432
		1600	3520
		1965	4323
		2850	6270
		2985	6567
		4545	9999
		5235	11517
		5490	12078
		5625	12375
		5865	12903
		12255	26961
		13560	29832
		15420	33924
culvert (qty)		0	0
		1	300
		2	600
		3	900
		4	1200
		5	1500
		6	1800
		7	2100
		8	2400

drinking bays (qty)	0	0
	1	58
	2	116
	3	174
troughs (qty)	0	0
	2	116
	4	232
	5	290
	6	347
	8	463
	12	695
	14	811
	15	869
pipework (m length of 25mm)	0	0
	50	95
	80	151
	120	227
	130	246
	150	284
	210	397
	320	605
	450	851
	590	1115
	1120	2117
	1640	3100
	1670	3156
	1810	3421
lift pumps (qty)	0	0
	1	140
	2	280
	3	420
	4	560
	5	700
	6	840
pipe watercourse (m)	0	0
	120	83
	190	131
hardcore gateways (qty)	0	0
	2	38
	3	56
	5	94
	10	188
	12	225
	26	488

feedpad (m2)		0	0
		25	638
trackway (m)		0	0
		20	460
		30	690
		35	805
		90	2070
		200	4600
		650	14950
		1200	27600
		2500	57500
divert drain (qty)		0	0
		5	13
bridge vehicular (span m) (3m wide * 5 tonne)		0	0
		3	1500
		5.94	4000
		6.1	6000
	bridge foot (span m) (1m wide * 0.5 tonne)	0	0
		3	800

Appendix 6: STAKEHOLDER ANALYSIS
6.1: Interview *pro forma* for semi-structured interviews

Wales Catchment Sensitive Farming Demonstration Project

1.1 **What is informant's connection with the CSF demonstration project?** (*Distinguish between functionaries within the project, identified members of stakeholder groups at demonstration sites and other stakeholders*).
1.2 **What information have they received about it and when** (*number of occasions, dates, type of information*)?
1.3 **Are they aware of what was happening at both Llyn Tegid and Deepford Brook**? *(also in the wider context of the CSF demonstration projects in England, Scotland and Northern Ireland)*

2.1 **What do they know about the objectives of the Wales Catchment Sensitive Farming Demonstration project?** (*Try and obtain a succinct statement of what they think they are*)

2.2 **What do they think about the scope and relevance of the objectives?**

2.3 **Do you feel other stakeholders understand these objectives?**

3.1 **What do they know about the progress of the project**?
(*Clarify how they know this. Outputs received/presentations/web etc*)
3.2 How and when did they receive information?

4. What do they know about:
4.1 **What the project comprised (capital works)?**
4.2 **How it was implemented?**
4.3 **Progress with implementation and outcomes**
4.4 **Data for evaluation / monitoring?**
For each of these did they want more, less, different information (if applicable)

5.1 **What is their view about other lessons learnt** (*both positive and negative*)

6.1 **Other comments**?

Additional questions for those with direct involvement: *(if applicable)*

1. Will project generate information needed to evaluate project
2. Evaluate the monitoring in relation to scale of operation? (EAW/CCW)
3. Do the results matter – are they important? In what way?
4. How does demonstration project fit into policy context and/or work environment? (EA England has 23 demonstration projects – Wales only 2 – how does this fit in?)
5. How well has the farmer (and other stakeholder) engagement process worked? *Was there a satisfactory stakeholder analysis conducted at the outset of the project?*

Table 6.2: Key stakeholders provided by CSF staff

Stakeholder	Organisation	Role	Catchments
Kevin Jones	WAG	F	All
Peter Samual	WAG	F	
Chris Uttley	CCW	F	
Iona Parry Thomas	WAG	F	Llyn Tegid
Rob Thomas	EAW	F	
Helen Milliband	EAW	F	
Emyr Williams	APCE	F	
Rhys Owen	APCE	F	
Gethin Prys Davies	APCE	F	
Dafydd Jarrett	NFU	S	
Robin Pratt	Council Member	S	
Steven Bradley	Farming Connect	S	
Dorian Davis	WAG	F	Deepford Brook
Bob Merriman	EAW	F	
Conner Doherty	EAW	F	
Roland Long	EAW	F	
Rebecca Williams	FUW	S	
Gayle Wootton	CCW	F	
Helen Johnston	Pembrokeshire Rivers Trust	S	
Chris Lawrence	CCW	F	
Julian Salmon	CLA	S	All

APPENDIX 7: FARM SURVEY METHODOLOGY

7.1 Farm Pollution Audit Methodology

General recommendations to CSF Project Officers

Persuade the farmer to join the officer for the visit.
Aim to visit during the winter as this will highlight any problem areas on the farm.
Consider other factors which influence the usual farm practices such as over-stocking due to TB; soil erosion caused by poor weather.
Identify problems which can be solved by a simple change of system and planning by the farmer rather than CSF investment (i.e. zero-budget options).

Farm pollution audit

1. Off-Farm Issues.

Open Water / Streams / Rivers
Fence off all areas where livestock have access to open water. Measure length of fencing required. Provide drinking troughs where required and estimate length of pipe-work required.

Cow Tracks & Gateways.
Measure estimated length / area of track which requires restoration and construction and fencing. Number of gateways which require hardcore to prevent poaching and soil erosion near roadways & road drains.

2. Farmyard Issues

General Repairs
Estimate & list the length & area of rainwater goods and downpipes which require upgrading or repair. Any repairs required to cracked concrete by means of sealing or re-surfacing.

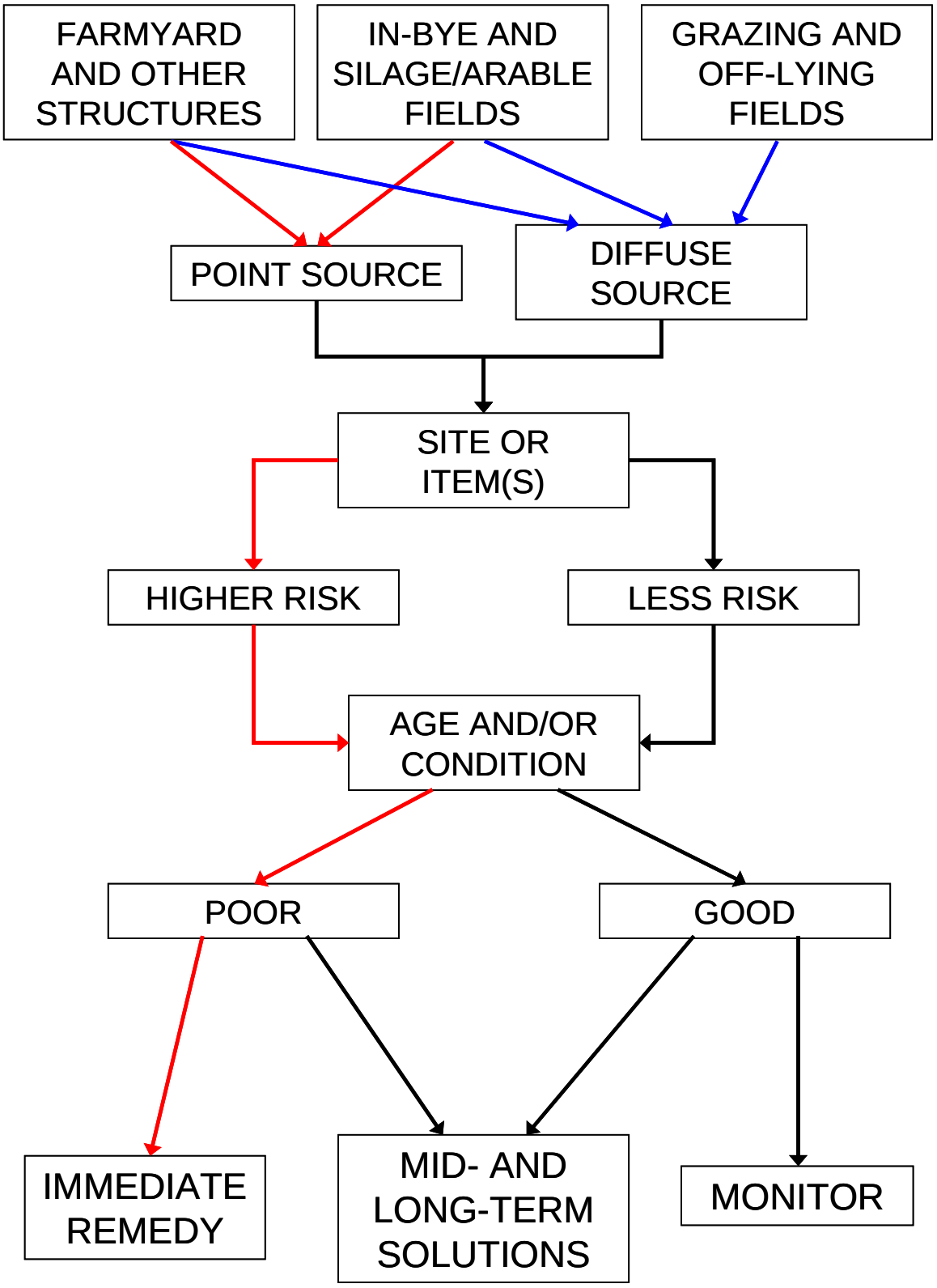
Clean & Dirty Water Separation
Estimate & list length of extra rainwater goods required to divert clean water away.
Put in place any provisions / storage which can utilise clean water.
Consider ‘sleeping policemen’ to divert clean & dirty water to correct areas.

Reducing dirty Water
Covering and roofing over concrete feeding / collecting yards, silage clamps. Also slurry lagoons & FYM clamps where practical.

Assessing manure storage capacity AFTER improvements have been made.
Calculate storage requirements for existing stock based on a minimum six month storage requirement for all liquid manures. Recommend improvements for any shortfall. Installation of dirty water tanks to replace existing soak-away systems.

3. Other
Upgrading fuel tanks to bunded units
Installing bunded pesticide stores
Creating reed beds?

7.2 Farm Pollution Audit decision-making flowchart



7.3 Interpretation of Pollution Audit decision-making flowchart

Farmyard & Other Structures – Always start in the farmyard (and immediate environs) as this is likely to be the main source of any pollution incidences. Also consider other off-lying buildings that may be used for livestock etc.

- Potential point-sources (Sites & Items): Silos; Slurry Lagoons; Farm-yard Middens; Chemical Stores; Spray Fill Points; Diesel Tank(s) & stands; Machinery; Fertiliser Stores; Milk Bulk Tanks; Reception Pits & dedicated channelling
- Potential diffuse sources (Sites & Items): Raingoods; Channels & Drains; Concrete including falls; Walls,

In-bye & Silage/Arable Fields: Will be ranked second behind the farmyard due to likely presence of field manure heaps, enhanced fertiliser applications, spray activity, greater use of machinery, likelihood of improved field drainage including mole-ploughing

- Point Sources: Field Heaps; Trailers with Fertiliser, Gateways; Supplementary Feeding sites; Loading/Handling site(s), Tracks – wheels or hooves
- Diffuse sources: Field drains, watercourses & other water bodies; fields for which sheep dip disposal granted; Private Sewage Treatment soakaways

Grazing & Off Lying Fields – likely to cause least problems.

- Point sources: Gateways or un-bridged / un-culverted streams / ditches, supplementary feeding sites & drinking points, livestock handling and/or loading areas.
- Diffuse sources: animal walkways (i.e. tracks esp. for sheep), drains

Assessment of Risk:

RISK – What is the likelihood of item causing a pollution risk? Is there anything visible e.g. evidence of a leak/seepage or growth of nettles indicating nutrient enrichment or lush grass or dead/dying material etc; what immediate effect is this having? Is the risk exacerbated by the age & condition of item or by mechanical or other activity likely to increase risk? Degree of any slope; presence of drains, watercourse & other water bodies; degree of field drainage & soil type(s); attitude of owner/occupier

LESS RISK – Does the item look new & of good condition? Has any remedial activity taken place eg painting of diesel tank; does the owner/occupier take a pro-active attitude to mitigation & remedial actions? Do the items meet current legislation eg are they compliant?

SOLUTIONS:

Immediate Remedies – Stop, repair and/or renew. Replace with items meeting current compliance

Mid- to Long-Term – put in place a programme of replacement / repair. Programme should be flexible enough to adapt to changing legislation and other opportunities

Monitor – Daily, Weekly, Monthly and/or Annual evaluation of structures, practices and remedial actions