

# Pearl Mussel Project EIP



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Department of Agriculture,  
Food and the Marine



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



# Pearl Mussel Project Team

- Based in Co Kerry and Co Mayo
- Six project staff
  - Ecologists
  - Agricultural scientists
  - Administrators
- O'Connor Pyne & Co Accountants
- Project Steering Group, external experts



# Project background

- European Innovation Partnership (EIP), total budget €10 million
- Funded by DAFM through the Rural Development Programme 2014-20
- Aim to address agricultural pressures on endangered freshwater pearl mussel



# Project background

- Design and implement innovative agri-environmental programme
  - Results-based approach to aquatic target
  - Locally adapted
  - Partnership between farmers, agricultural advisors, and researchers
- Added benefits
  - Address wider biodiversity loss
  - Rewards provision of ecosystem services
  - Sustain agriculture in ecologically sensitive areas
  - Improve effectiveness of agri-environment schemes
  - Linking payments to quality will ensure value for public funds

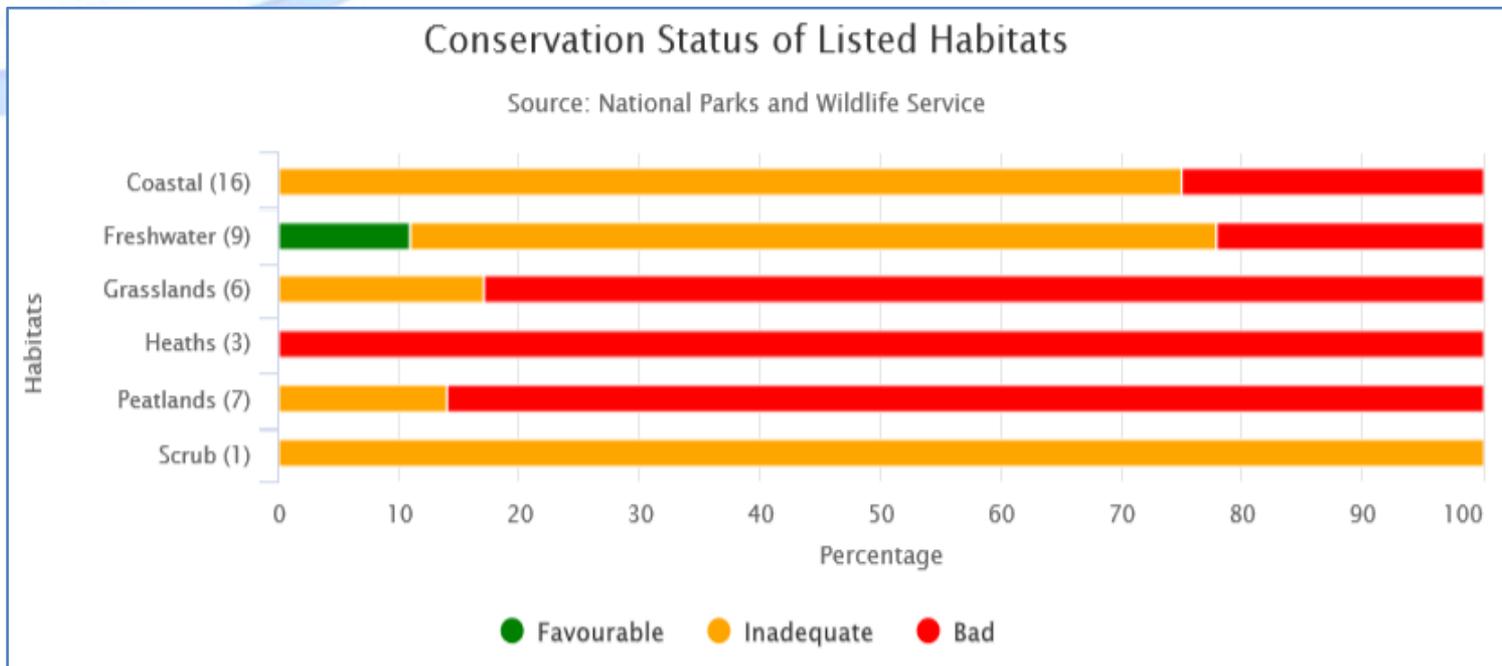


# Approach to agri-environmental schemes to date

- Funds were directed towards Natura 2000 sites
- Measures were prescription/rule-based agri-environment schemes
- Measures were general, not targeted at habitats/species (and not focused on results) (*one size fits all*)
- National approach, no local adaptation
- Advisory services not supported by specialists
- Monitoring and performance indicators were lacking
- There has been an understandable focus on administrative verifiability and control but....



# ...have they worked?



## Water Quality – EPA Reporting 2017

### Declining trends

**2015 to 2017** – 30 pristine sites reported, compared to >500 in the 1980s

Further reduction in **'High quality'** sites (**from 32% in 87-90 to 17% 2015-17** )

Phosphorus concentrations needed to support high-quality rivers present in only **48% of sites (reduced from 58% in 2014-16)**



# Results-based approach

- Payments linked to quality of the biodiversity
- Higher quality = Higher payment level
- Increased cost-effectiveness

Payments are linked to the nature quality of your farm  
**Higher nature quality = Higher payment level**



Each plot (field) is scored out of 10 using a scorecard that captures high and low quality habitat which reflect past and current management.

# Creating a market

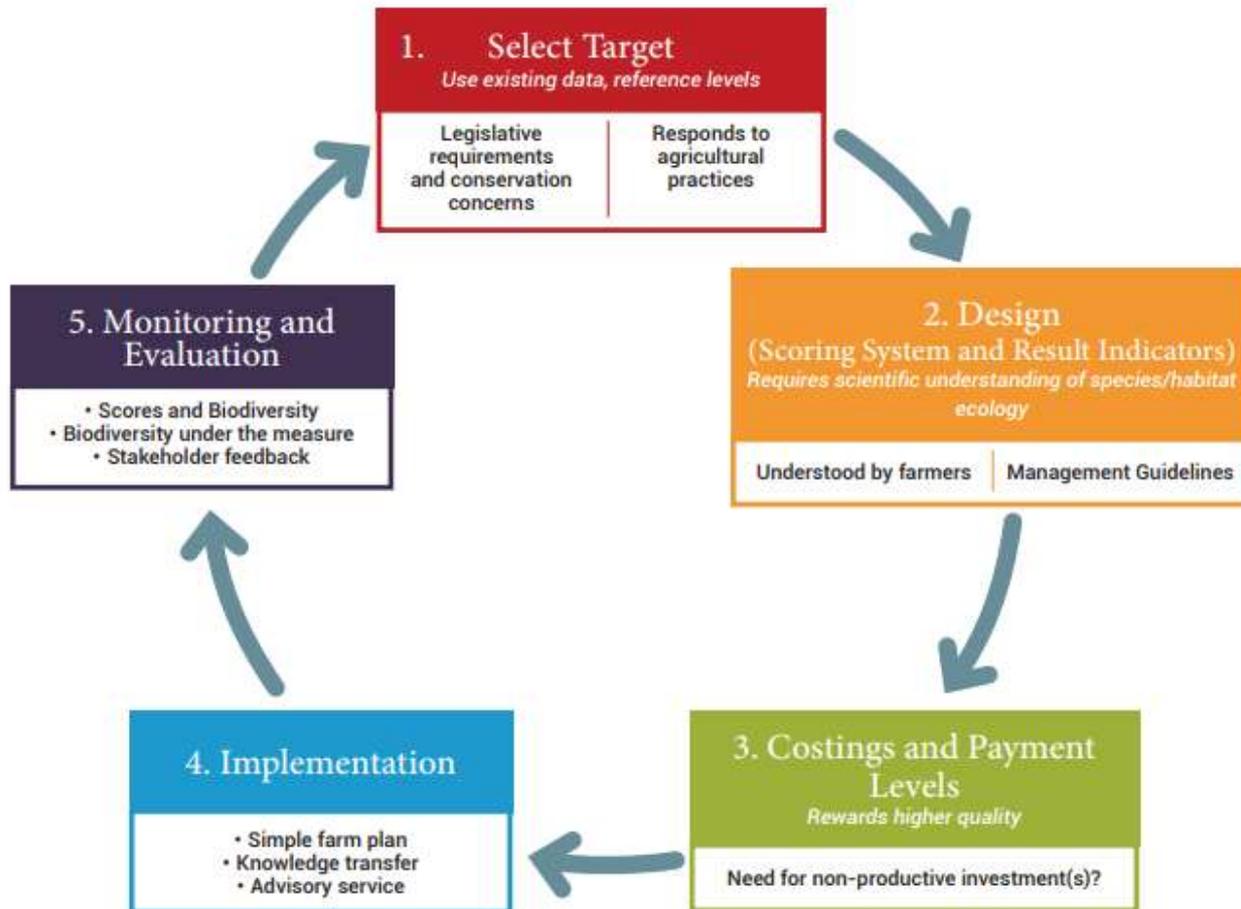
- Putting market value on the services that High Nature Value farmland provides



Pearl Mussel Project



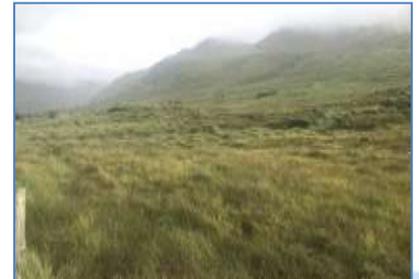
# How do we apply this approach?



# Pearl Mussel Programme

## Design approach

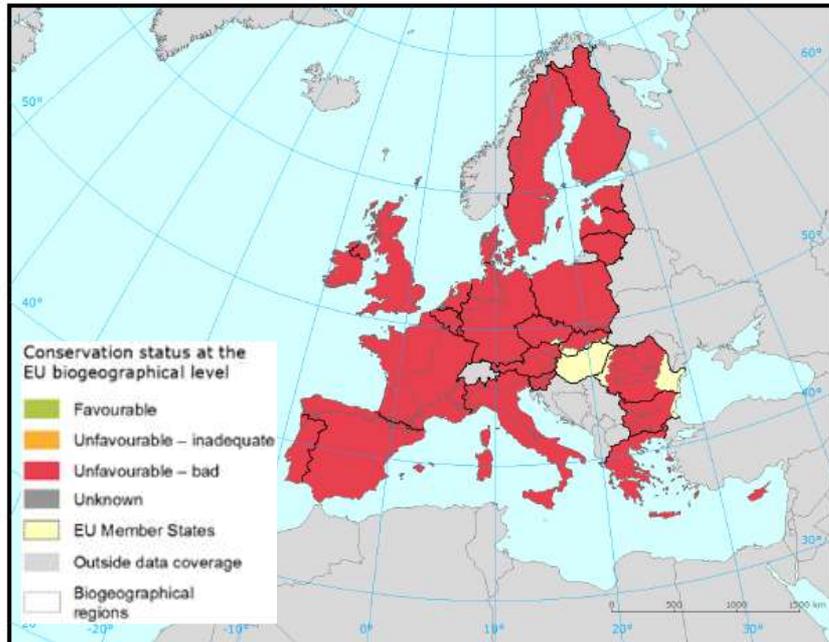
- Locally adapted, practical and results-based
- Incentivise higher quality results
- Flexible and adaptive management on farm
- Account for factors outside farmers control
- Pilot programme ability to evolve



# Freshwater Pearl Mussel

*Margaritifera margaritifera*

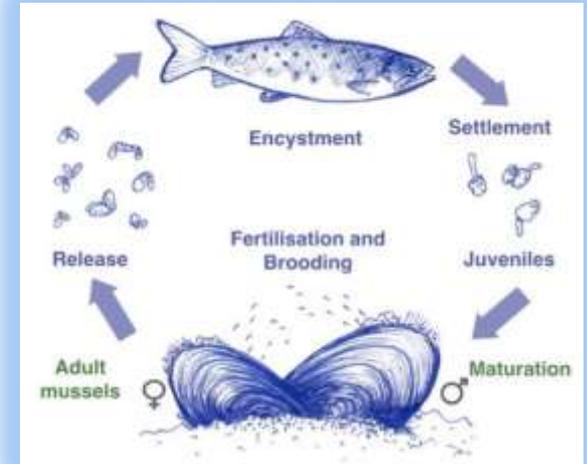
IUCN (International Union for Conservation of Nature) Red List Classification



# Freshwater Pearl Mussel

*Margaritifera margaritifera*

- Biology
  - Complex life cycle
  - Live to 140 years
  - Indicator of exceptional water quality
  - 8 catchments, 80% Irish population
- Pressures
  - Flow
  - Sediment
  - Nutrients
- Conservation
  - Concentrating on top eight catchments



# What services are being provided?

- Biodiversity
- Carbon sequestration
- Protection of soil
- Clean water
- Flood management
- Aesthetic value
- Recreation + well-being

# Top eight catchments

(c.884 eligible farmers, 40,000ha (400km<sup>2</sup>))



<http://bit.ly/PMPcatchments>

# Catchment characteristics

- Peat based soils, marginal farmland
- High rainfall (>2m/ yr)
- Extensive agriculture
- Mixed cattle and sheep
- Mountain and lowland
- Commonage and Private
- SAC and non SAC



# Challenge posed by target species

- Results-based approach for aquatic species
- Within farmers control
- Incentivise farmers to address problems and improve low scoring lands
- Catchment scale & whole-farm



# Pearl Mussel Programme

## Results-based Approach

- Indicators of results
  - Farm habitat quality
    - Grassland
    - Peatland
    - Scrub
  - Floodplain quality
  - Drainage and watercourses
  - Farm and nutrient management



# Pearl Mussel Programme

## Assessing Results

- Habitat Quality assessment (field / plot level)
- Floodplain assessment
- Whole-farm assessment

**WQPS WMA (Watershed Assessment) Sheet**

Location: \_\_\_\_\_ Date: \_\_\_\_\_  
 WMA Number: \_\_\_\_\_ Survey: \_\_\_\_\_  
 Farm No. & No. \_\_\_\_\_ Date: \_\_\_\_\_

Current grazing and feeding management (tick or appropriate)

Grazing				Feeding			
Winter	Summer	Year-round	Other	Other	Other	Other	Other
Not used	Yes	Temp	Other	None	Other	Large lot	Other

**A. Ecological Integrity and species** Species code: \_\_\_\_\_

**A.1 Number of positive indicator species well represented through the field** Species code: \_\_\_\_\_

No. of positive species	0	1	2	3	4	5	6	7	8	9	10
Score	1	2	3	4	5	6	7	8	9	10	11

**A.2 Number of high quality positive indicator species occurring throughout the field** Species code: \_\_\_\_\_

No. of high quality species	0	1	2	3	4	5	6	7	8	9	10
Score	1	2	3	4	5	6	7	8	9	10	11

**A.3 Cover of negative indicator species (if/where) occurring throughout the field** Species code: \_\_\_\_\_

Cover class	High >40%	Medium 10-40%	Med-Low 0-10%	Low-Med 0-10%	Low 0-10%	Low-Low 0-10%	None
Score	1	2	3	4	5	6	7

**A.4 What is the cover of most dominant species?** Species code: \_\_\_\_\_

Cover class	High >40%	High-Med 10-40%	Medium 10-40%	Low-Med 0-10%	Low 0-10%	Low-Low 0-10%	None
Score	1	2	3	4	5	6	7

**B. Site management**

**B.1 Closing back** Species code: \_\_\_\_\_

Management	High >40%	High-Med 10-40%	Medium 10-40%	Low-Med 0-10%	Low 0-10%	Low-Low 0-10%	None
Score	1	2	3	4	5	6	7

**B.2 What is the site used?** Species code: \_\_\_\_\_

Management	High >40%	High-Med 10-40%	Medium 10-40%	Low-Med 0-10%	Low 0-10%	Low-Low 0-10%	None
Score	1	2	3	4	5	6	7

**B.3 Level of surrounding scrub/vegetation?** Species code: \_\_\_\_\_

Management	High >40%	High-Med 10-40%	Medium 10-40%	Low-Med 0-10%	Low 0-10%	Low-Low 0-10%	None
Score	1	2	3	4	5	6	7

**B.4 Is there bare soil or erosion?** Species code: \_\_\_\_\_

Management	High >40%	High-Med 10-40%	Medium 10-40%	Low-Med 0-10%	Low 0-10%	Low-Low 0-10%	None
Score	1	2	3	4	5	6	7

**B.5 Is there damage to natural water sources?** Species code: \_\_\_\_\_

Management	High >40%	High-Med 10-40%	Medium 10-40%	Low-Med 0-10%	Low 0-10%	Low-Low 0-10%	None
Score	1	2	3	4	5	6	7

**B.6 Are there any damaging activities in the field (cumulative score)?** Species code: \_\_\_\_\_

Management	High >40%	High-Med 10-40%	Medium 10-40%	Low-Med 0-10%	Low 0-10%	Low-Low 0-10%	None
Score	1	2	3	4	5	6	7

**Notes:** Where a grassland occurs in part of the field (e.g. 10% of the field), it will be scored on a scale of 1-10 for the PEARL WMA (Watershed Assessment) Sheet.

**Other information:** Other notes: \_\_\_\_\_

**Comments and Management Actions (if any):** \_\_\_\_\_



# Sample habitat quality

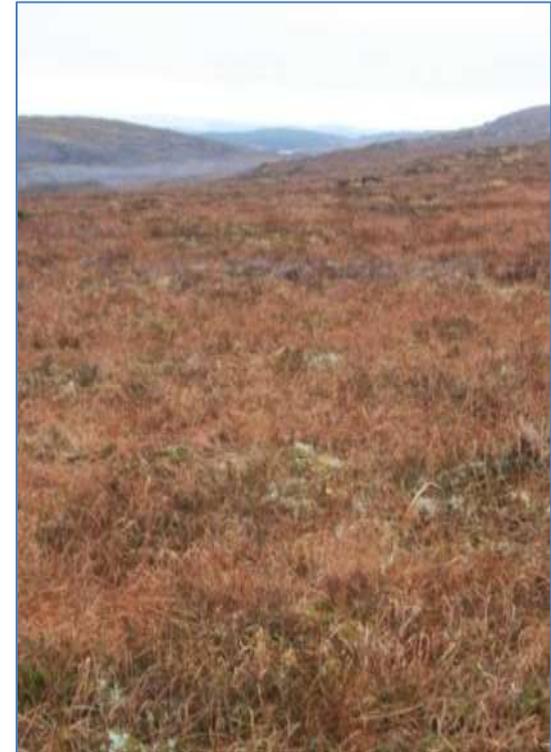
## Blanket bog / Wet Heath



Low quality  
(Score 0-3)  
€ 0



Moderate quality  
(Score 4-6)  
€ € €



High quality  
(Score 8-10)  
€ € € €

# Results-based payment scale



# Habitat Quality Payment

- Each plot (field) attains a score 0-10
- Plots ranked according to score
- Score paid on four area bands

Payment rates according to quality per ha (€)				
Plot score	A 0-15 <sub>ha</sub>	B >15-30 <sub>ha</sub>	C >30-60 <sub>ha</sub>	D > 60 <sub>ha</sub>
<4	0	0	0	0
4	68	41	15	4
5	79	47	18	5
6	90	54	20	6
7	101	61	23	7
8	180	108	40	12
9	203	122	45	14
10	225	135	50	15

*Payment rates for quality score achieved across four bands*



# Floodplain assessment

- Floodplains maintain good conditions for freshwater pearl mussel
- Rivers overflow banks onto farmland
- Uncommon within PMP catchments
- Assessment and payment relates to
  - Length of river channel that overflows
  - Average habitat quality of lands that flood



# Whole-farm assessment

- Connectivity with water courses
- Farmyard and nutrient management
- Farm score adjusted based on result of assessment



<b>Result based payment</b> (before watercourse assessment)	<b>€1000</b>
<b>Whole-farm assessment</b>	<b>Final payment</b>
Excellent (x 1.2)	€1200
Good (x 1)	€1000
Inadequate (x 0.6)	€600
Poor (x 0.3)	€300

# Pearl Mussel Programme

## Payment streams

### Results Payments



Supporting  
Actions  
Payments



# Private land example: 50ha

Plot 1  
Grassland  
6/10

Plot 2  
Grassland  
0/10

Plot 3  
Peatland  
6/10

	Plot #	Field Score	Area (ha)	Payment calculation	Total payment	Payments at 8/10
<b>Band 1</b>	2	0	5	No payment	0	€900
	1	6	5	5ha x €90	€450	€900
	3	6	5	5ha x €90	€450	€900
<b>Band 2</b>	4	8	5	5ha x €108	€540	€540
	5	10	10	10ha x €135	€1035	€540
<b>Band 3</b>	5	10	20	20ha x €50	€1000	€800
					<b>€3475</b>	<b>€4580</b>
Whole-farm adjustment factor of 0.3					€1043	

Plot 4  
Grassland  
10/10

Plot 5  
Grassland  
8/10



# Potential Supporting Actions

- Advisor can highlight areas where farmer can increase overall score
- The annual allowance of €1,200
- Examples of some options:
  - Water troughs
  - Drain management
  - Farm access (bridging, etc.)
  - Conversion to lighter breed
- Other site specific measures



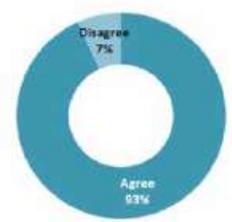
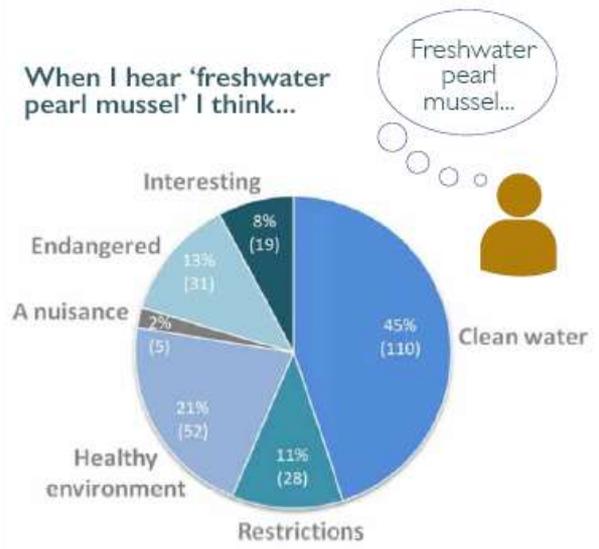
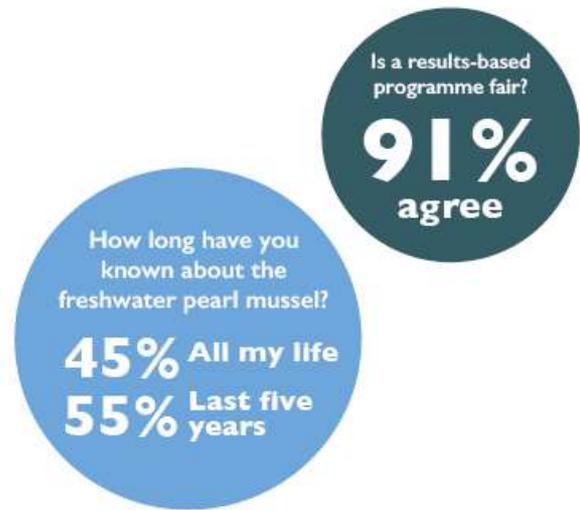
# Progress to date

- Project set-up
- Publicity – website, social media, leaflet
- Developing contact list
- Steering group establishment
- Data management system
- Consultation
  - Stakeholder meetings & consultation
    - National and local interest groups
    - Eligible farmers
    - Farm advisors
- Staff recruitment
- Programme design, booklet and T&Cs
- Programme launch
- Recruiting participant farmers
- Advisor training

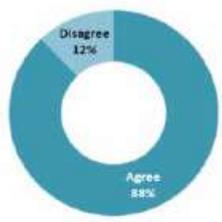


# The Pearl Mussel Project Ltd.

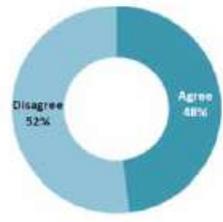
Farmer Consultation Meetings  
(data from 176 questionnaires returned)



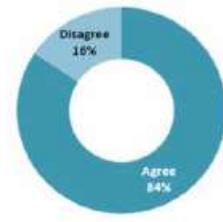
Farming is important for helping wildlife



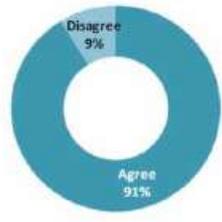
Farmers are not paid enough for the wildlife they protect, support or manage



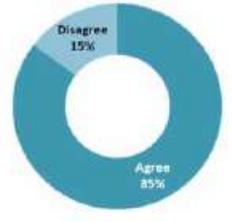
It is difficult for farming & wildlife to exist together on a profitable farm



Wildlife is a valuable asset to my farm



It is important to me that the wildlife on my farm is conserved



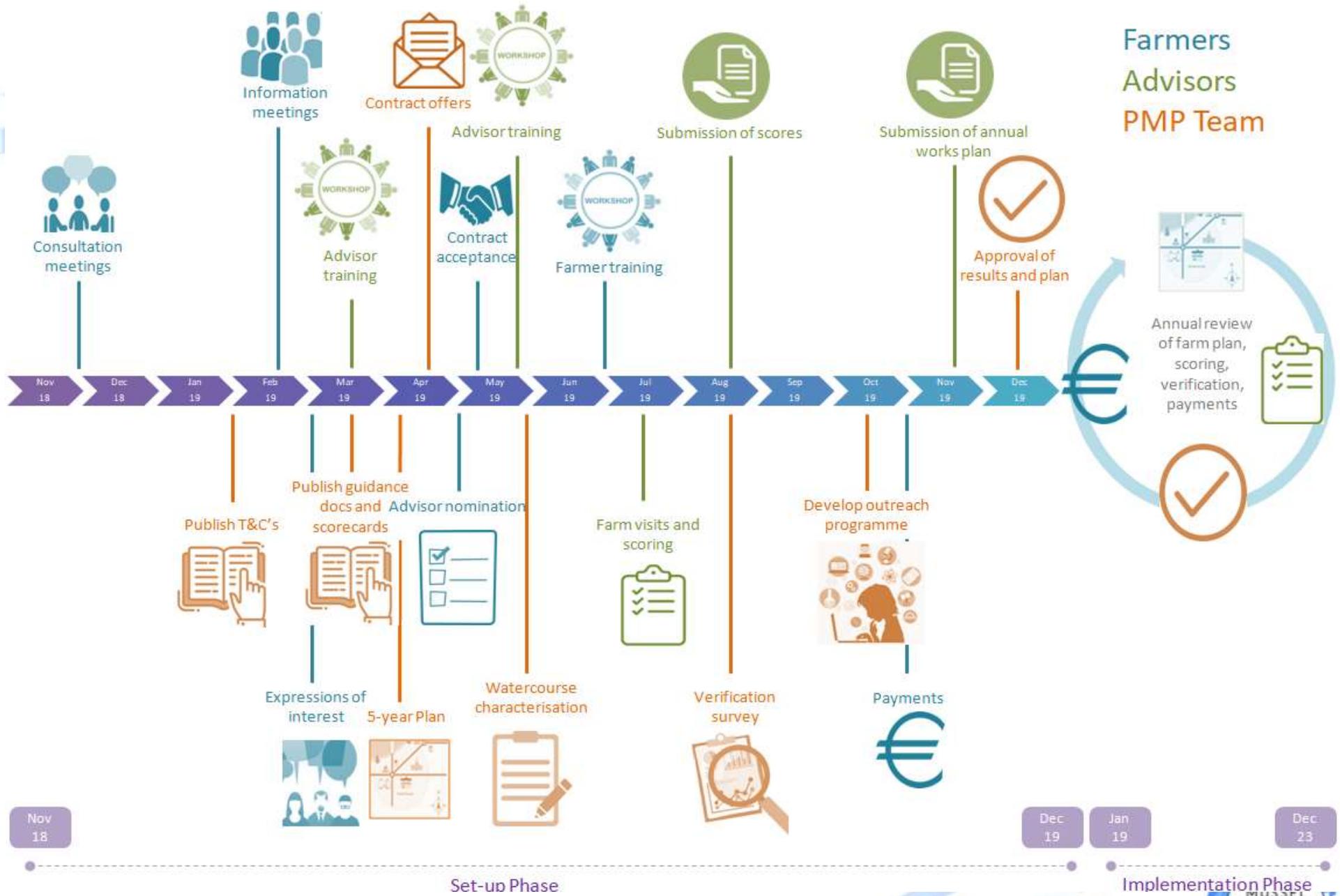
It is important to me to leave my farm in a better environmental condition

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Farmers  
Advisors  
PMP Team



Nov 18

Dec 19

Jan 19

Dec 23

Set-up Phase

Implementation Phase

Pearl Mussel Project





Field-based training

Indoor sessions

Scoring guidance

**Farmer and Advisor supports**

Guidance & training for completing supporting actions

Best practice management guidance



# Thank You!

## Contact us:

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## Find out more:

Download at [pmproject.ie](http://pmproject.ie)

