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Water Quality
The challenge of understanding and valuing water

Fundamental for change

Bernie O'Flaherty
Local Authority Waters Programme
Regional Coordinator Border & West

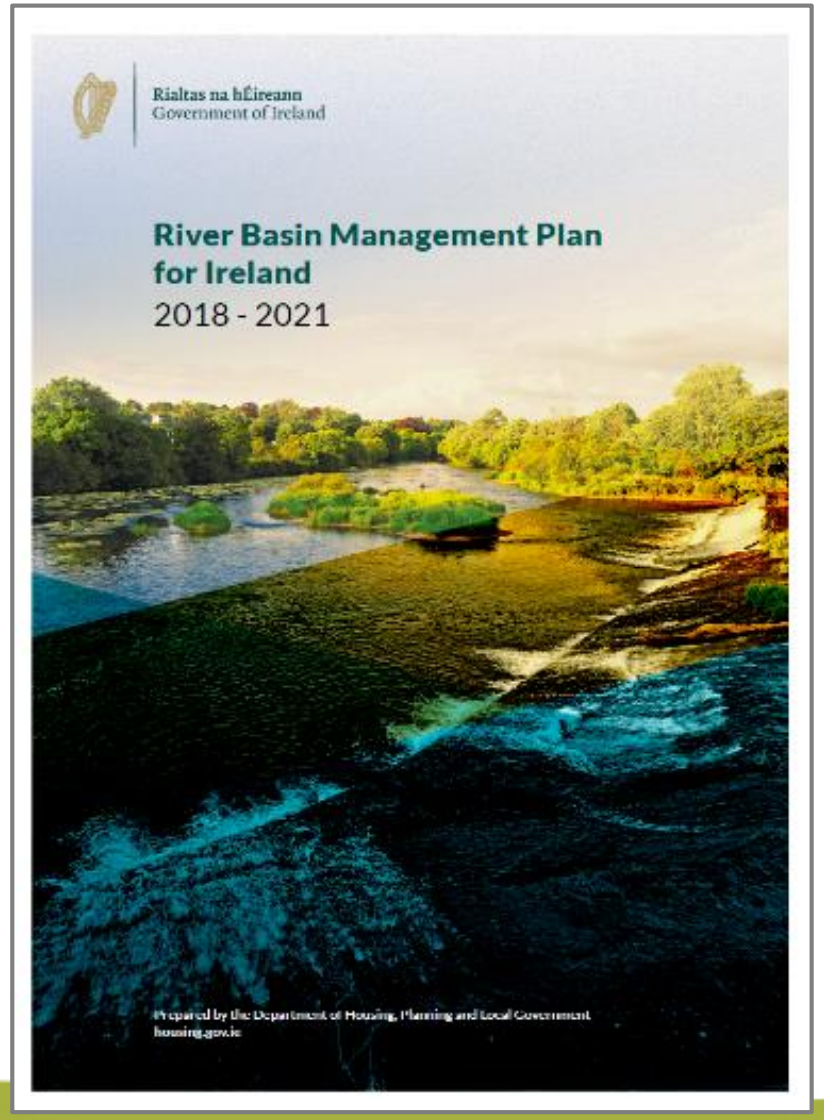
Contents

- Overview of the Local Authority Waters Programme (LAWPRO) & water quality
- Catchment management, valuing & understanding water
- LAWPRO's Community Engagement Programme
- Farm Survey Case Study from Co Monaghan
- Catchment management tools & concepts
- Concluding remarks

Overview: current RBMP & new approach

EU Water Framework Directive (WFD) 2000

…… “to achieve good ecological status (good water quality) in all waters”…..by 2027



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eagasc Agricultural Sustainability Support and Advisory Programme (ASSAP)

Farming For Water Quality

CARBERY dairygold LacPatrick glanbia Arrabawn Lakeland DAIRIES TIPPERARY KERRY North Cork Creameries

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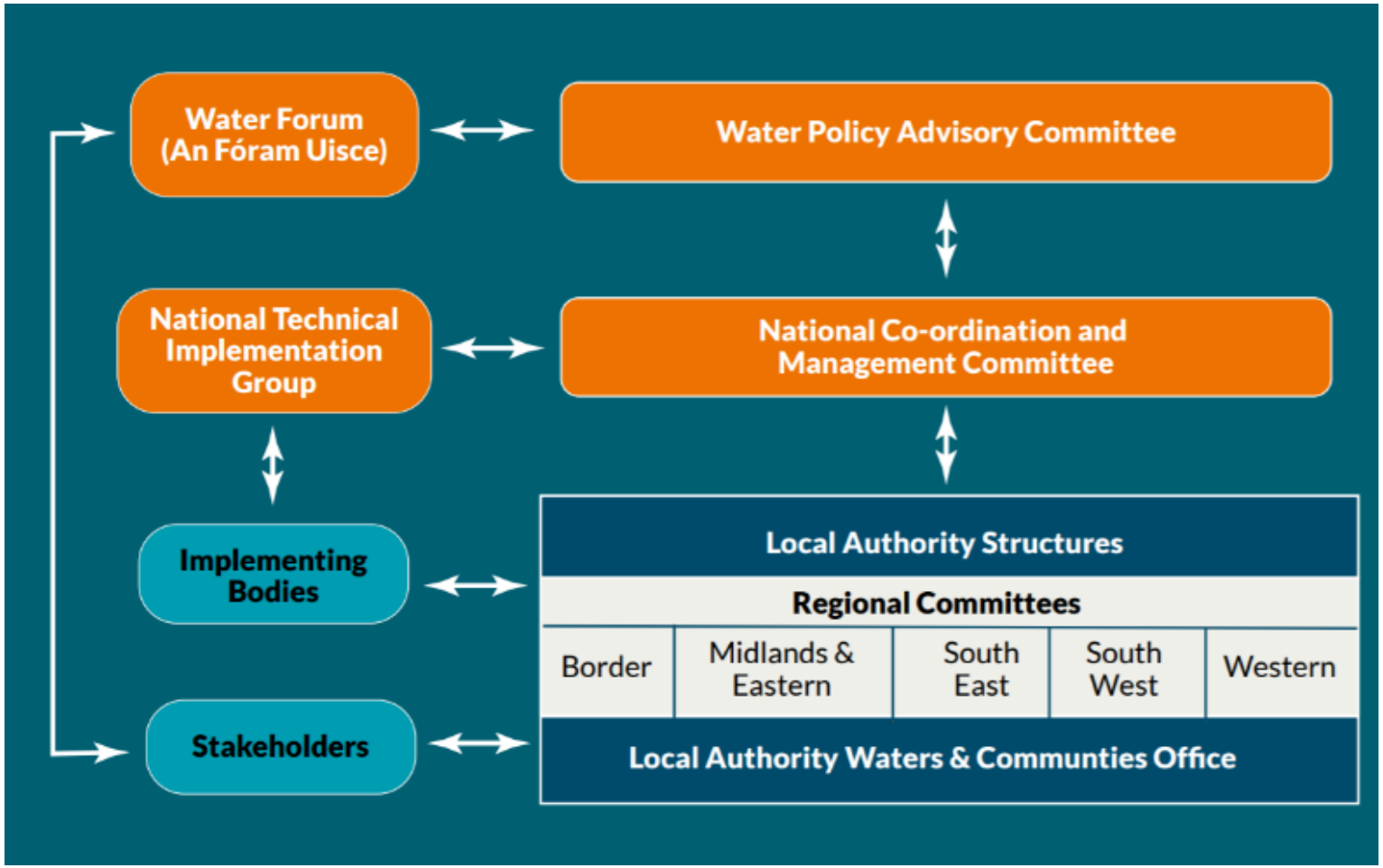
LA hosted & LA shared service
Supporting new governance structures (coordinated response)
Funded by DHLGH



WFD & RBMP - Implementing Bodies

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epa
Environmental Protection Agency

UISCE ÉIREANN : IRISH WATER

An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine

teagasc
Agriculture and Food Development Authority

Dublin City Council
Comhairle Cathrach Bhaile Átha Cliath

Offaly County Council
Comhairle Chontae Uíbh Fhailí

Iascach Intíre Éireann
Inland Fisheries Ireland

An Roinn Tithíochta, Pleanála agus Rialtais Áitiúil
Department of Housing, Planning and Local Government

comhairle chontae na mí
meath county council

AN LONGFORT
Longford County Council

Comhairle Contae Fhine Gall
Fingal County Council

Forest Service

Kildare County Council
Comhairle Contae Chill Dara

Wicklow County Council
COMHAIRLE CHONTAE CHILL MHANTAIN

WESTMEATH COUNTY COUNCIL
Comhairle Chontae na hIarmhí

Comhairle Contae Átha Cliath Theas
South Dublin County Council

dlr
Comhairle Contae County Council

BORD NA MÓNA

OPW
Oifig na nOibreacha Poiblí
The Office of Public Works

Working Together to improve water quality…

Structure of LAWPRO

Communities Team (2016)

- 13 Community Water Officers
- 3 Regional Managers

KEY ROLE:
Community engagement –
encouraging communities to value water in their catchment and to participate in actions to **protect water**

Catchment Team (2018)

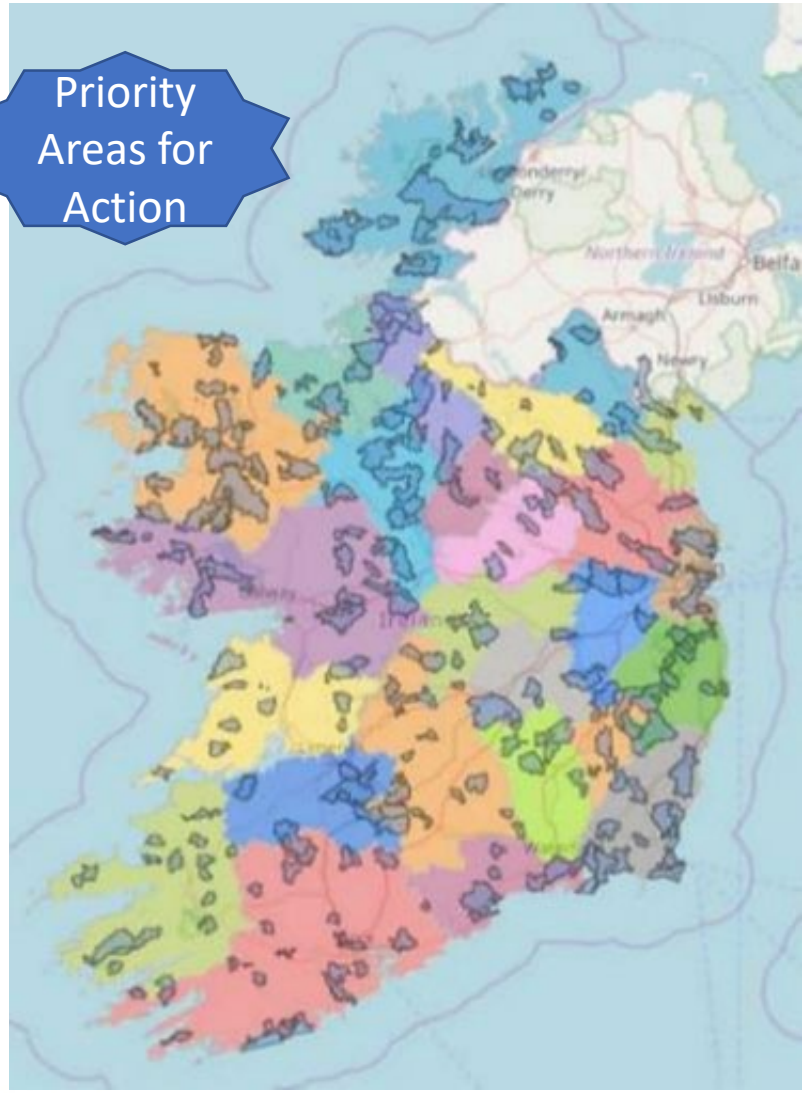
- 37 science staff

KEY ROLE:
Scientific assessments –
identify the right measure in the right place to help **improve water quality**

Catchment Assessment Team

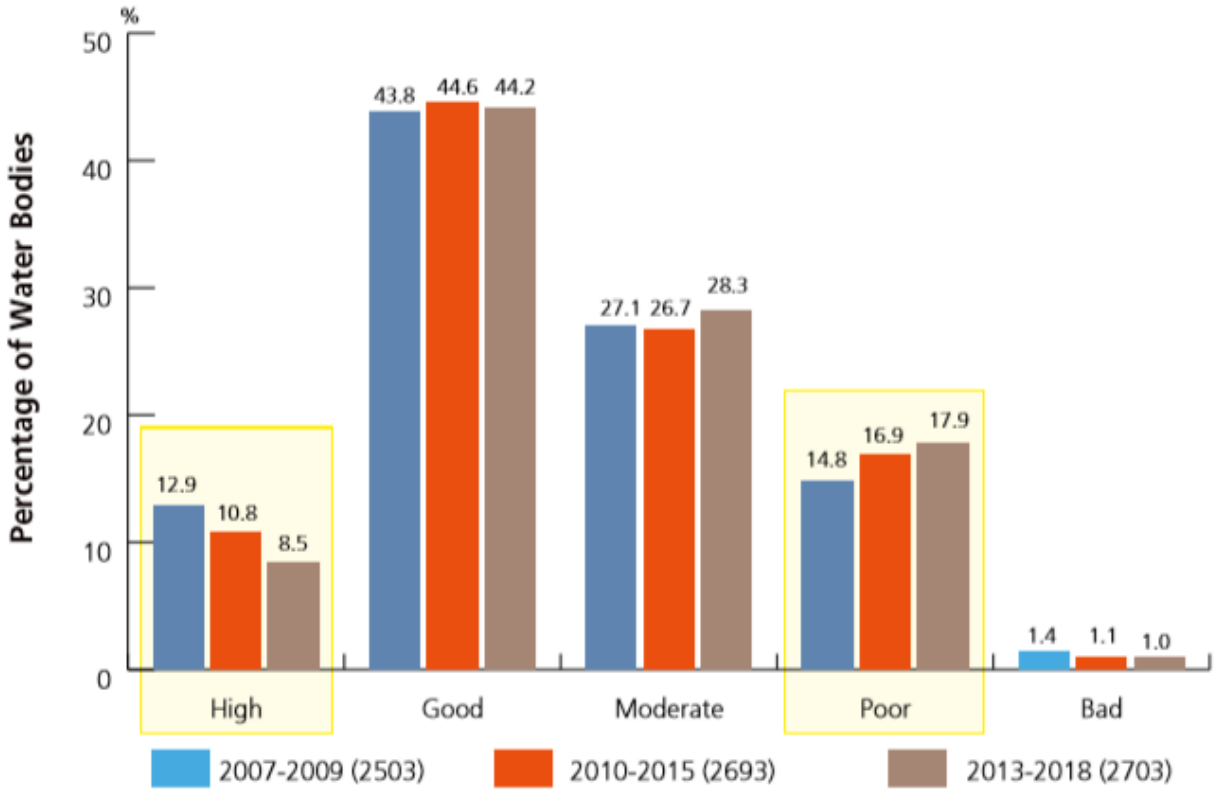
Catchment Assessment Team

Priority Areas for Action



ASSAP Programme

Water quality trends



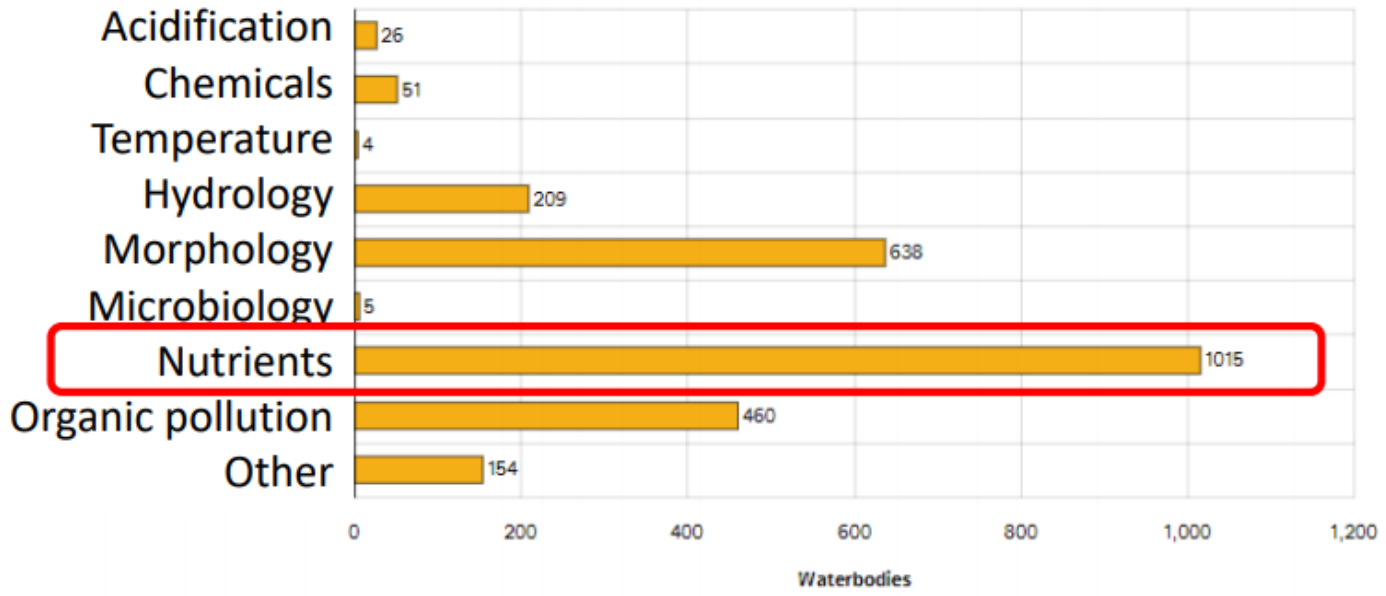
Change in the percentage of each of the five WFD status classes over three assessment periods for all surface waters – key trends highlighted.

EPA: Water Quality in Ireland 2013-2018

Water quality impacts

Impacts of Significant Pressures on At Risk Waterbodies

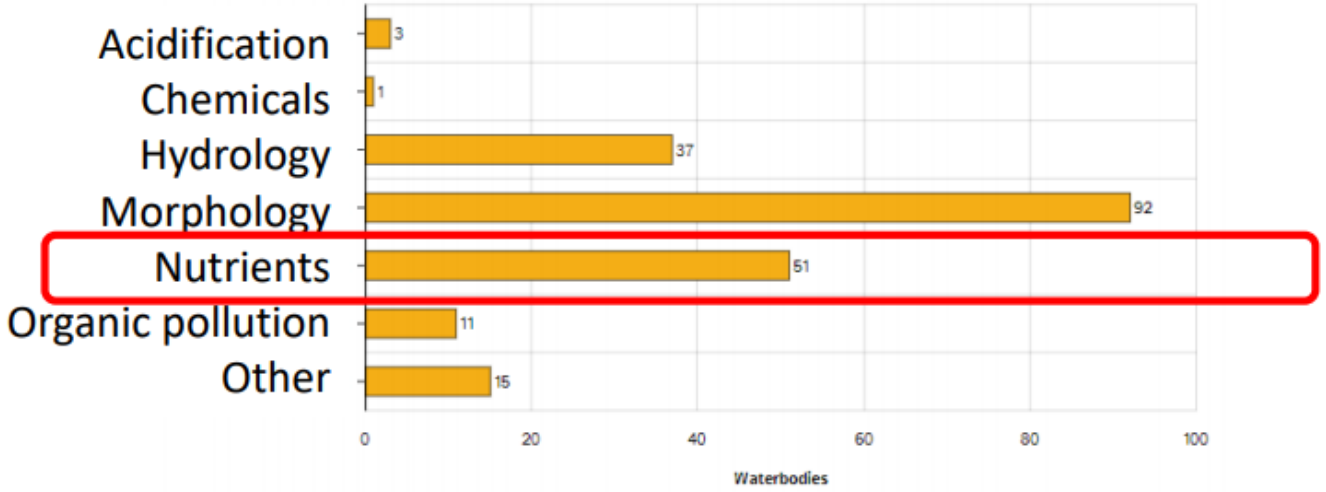
EPA Slide



Good status objective water bodies

1. Excess Nutrients
2. Morphology
3. Organic pollution

Impacts of Significant Pressures on At Risk Waterbodies

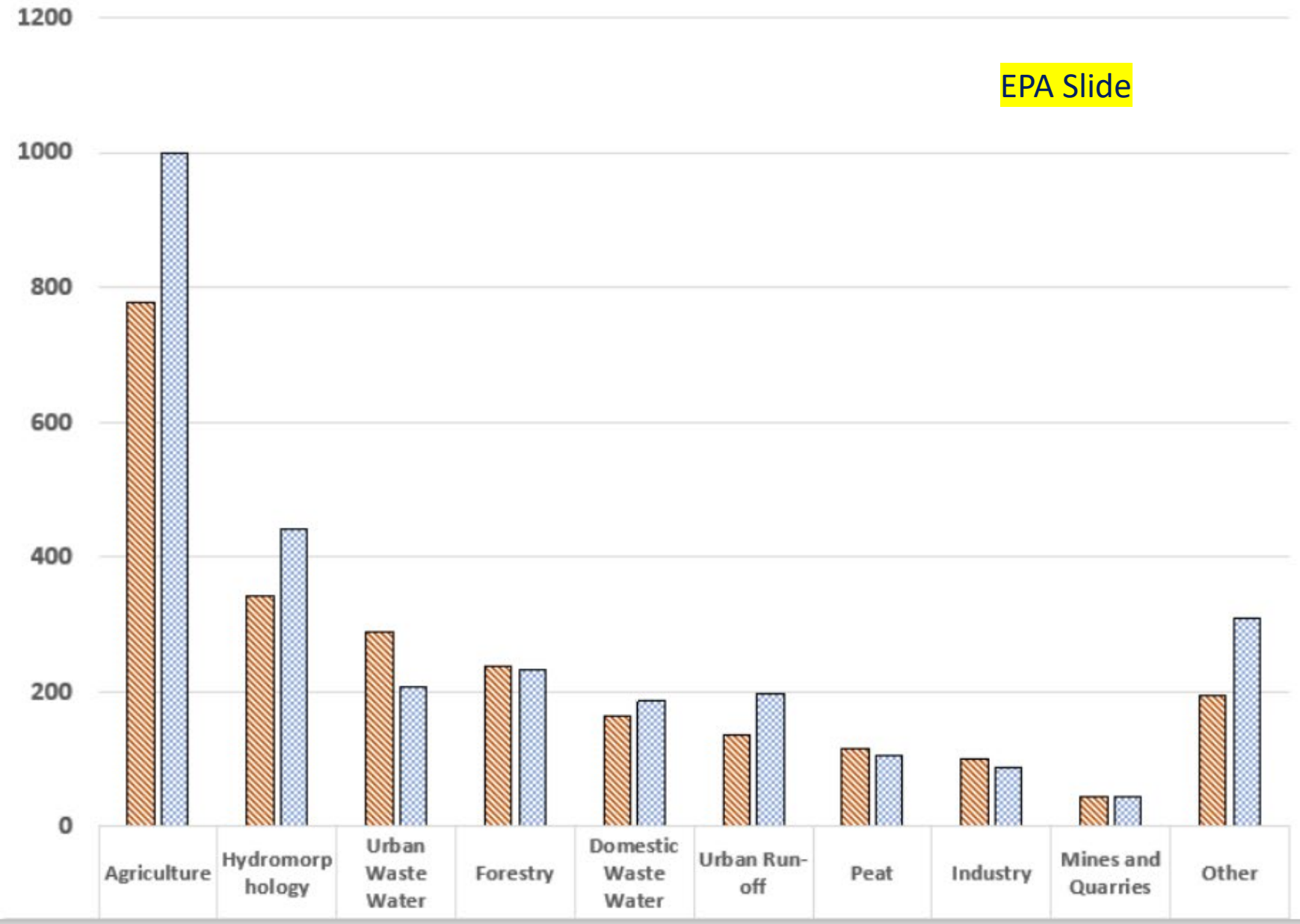


High status objective water bodies

1. Morphology
2. Excess Nutrients
3. Hydrology

Comparison of Significant Pressures between the 2nd and 3rd Cycle

EPA Slide



Integrated Catchment Management approach ‘a wicked problem’

How do you eat an elephant?

Problems are multi-sectoral

Problems are interrelated: water quality, abstraction, flooding

Competing rural priorities jobs/environment

Need to address environmental challenges

New approach top down & bottom up

Need collaboration & coordinated response

A broad societal response

Challenge: How do ‘we’ get wider public buy in
… the agricultural sector is critical to success

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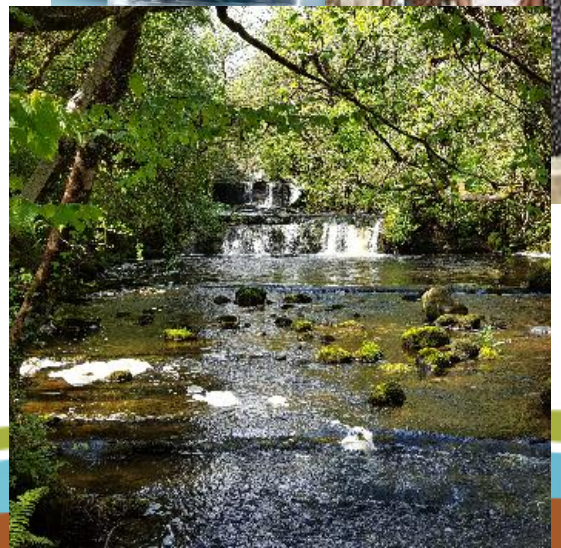
Water Management is complex

(H2O)



Community Engagement - some words of wisdom

Bob Harris, The Catchment Based Approach, DEFRA and University of Sheffield

- The starting point for a bottom up approach to catchment management are the **'issues that people identify with'**
- Issues around water quality e.g. phosphates, pesticides, etc can be **detached issues** for communities
- Government priorities ≠ community priorities

No blue print for engagement

Varied responses

So What!

‘Switch channels’

‘I never thought about our river’

‘I’ve waited 40 years’ for a meeting about the river’

Do we **value** our water resources & do we promote the values?

Soil

+

Rainfall

=

Ireland is a Water-Rich Country
Supports our food production
Our life support system

Do we value our water resources?
for health and wellbeing

WATER IS A FOOD

Drinking water comes from our rivers, lakes and groundwater

Our **Blue Flag beaches** are important to communities and tourism

Ireland's **shellfish industry** is dependent on clean water

Do we value our plentiful supply of water?
Global water situation

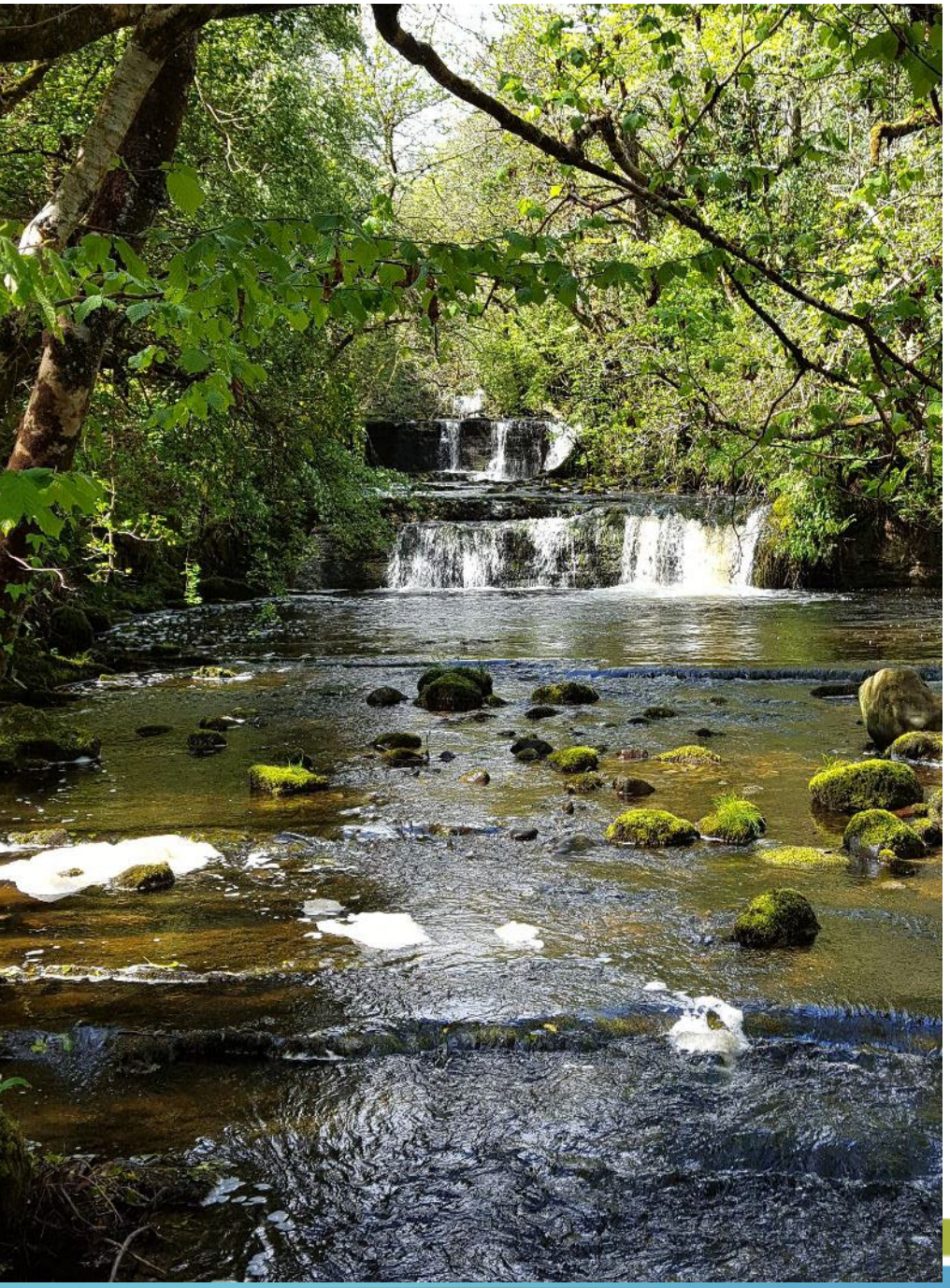
Courtesy of the National Federation of Group Water Schemes

- It takes between 25 and 50 litres of water, free from harmful contaminants, to meet a person's basic daily needs (UNESCO)

- Millions don’t have access to clean and safe drinking water supplies

In Ireland

‘Few people could say where their water comes from …
Do we care?



The Heritage Council

"..the water in Ireland is so good and so plentiful that we take it for granted …we fail to see that our water is a precious resource that needs to be safeguarded so that future generations can benefit from the same plentiful clean water that we enjoy today."

Do we value of our water resources sufficiently to take action to protect them?

'We get what we value'

ERSI: Pro Environmental Behaviours (2020)
(Water Research Programme)

External factors:

- regulation
- social norms
- cultural taboos

Internal factors that influence behaviour:

- beliefs
- values
- attitudes
- emotions
- environmental knowledge

Behaviour change methods (Wallen & Daut)

- Education and Awareness
- Outreach and relationship building
- Social Influence (peer to peer learning)
- Nudges and behavioural insights
- Incentives: monetary & non-monetary

Reference: Encouraging pro-environmental behaviours: A review of methods; by Gianluca Grilli & John Curtis June 2020 ELSEVIER Renewable and Sustainable Energy Reviews

The concept of ‘water literacy’

Adapting text from ‘Irish Ocean literacy network’ …

*A water literate society is one which **understands waters** influence on us and vice versa….a water literate citizen:*

- *Understands the importance of water to humankind*
- *Can communicate about water in a meaningful way*
- *Can make informed and responsible decisions regarding water resources*

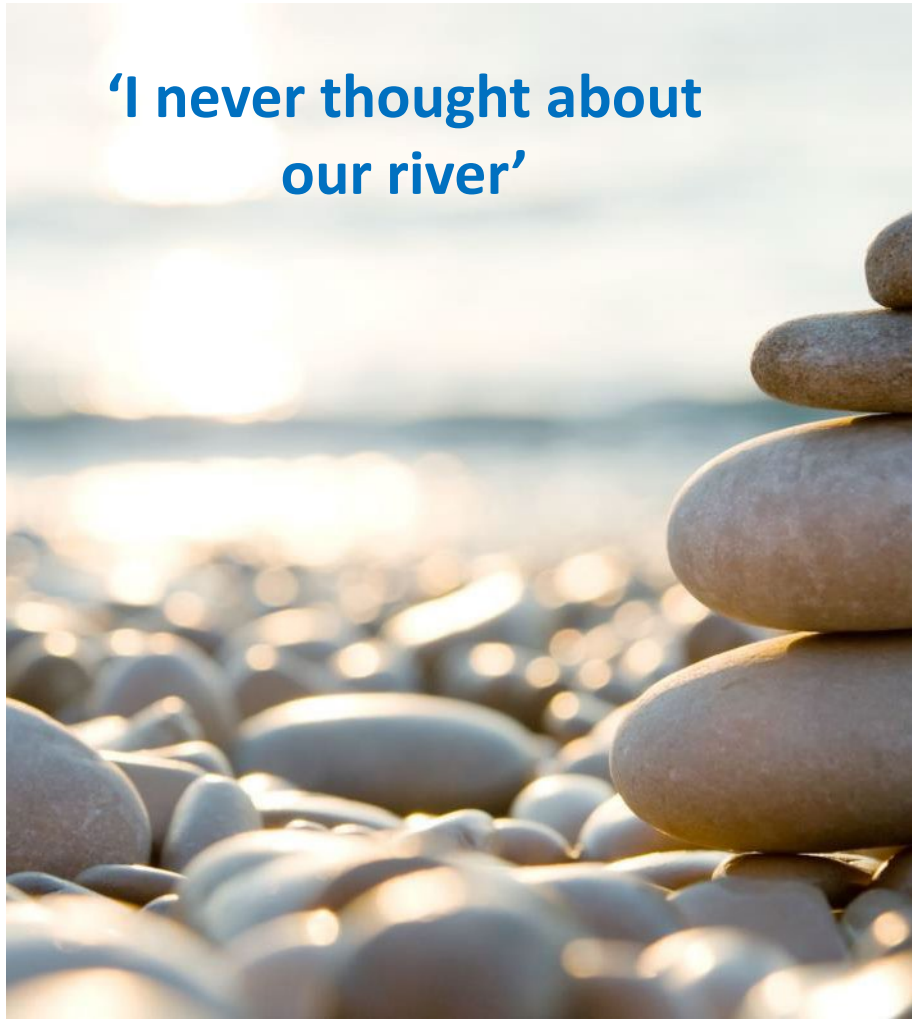
The Water Literacy Foundation India

Are there opportunities to strengthen community & agricultural sector training & engagement ?

LAWPRO & Community Engagement since 2016

- Appetite for information and involvement
- New interest in environmental matters across society (Climate/Biodiversity/Water)
- Community Water Development Fund (from 2018)
- LAWPRO community team – range of background & skills
- Synergies with work of DRCD; PPNs, Rural Development programmes
- LEADER (2014– 2020) Programme: 5m for Water Conservation and 8m for Biodiversity
- Partnership with the Rivers Trust & learnings from UK

LAWPRO's Community Engagement "Programme" (Community Water Officers)



New conversations

Building a Connection with our waters, our local environment & our landscape

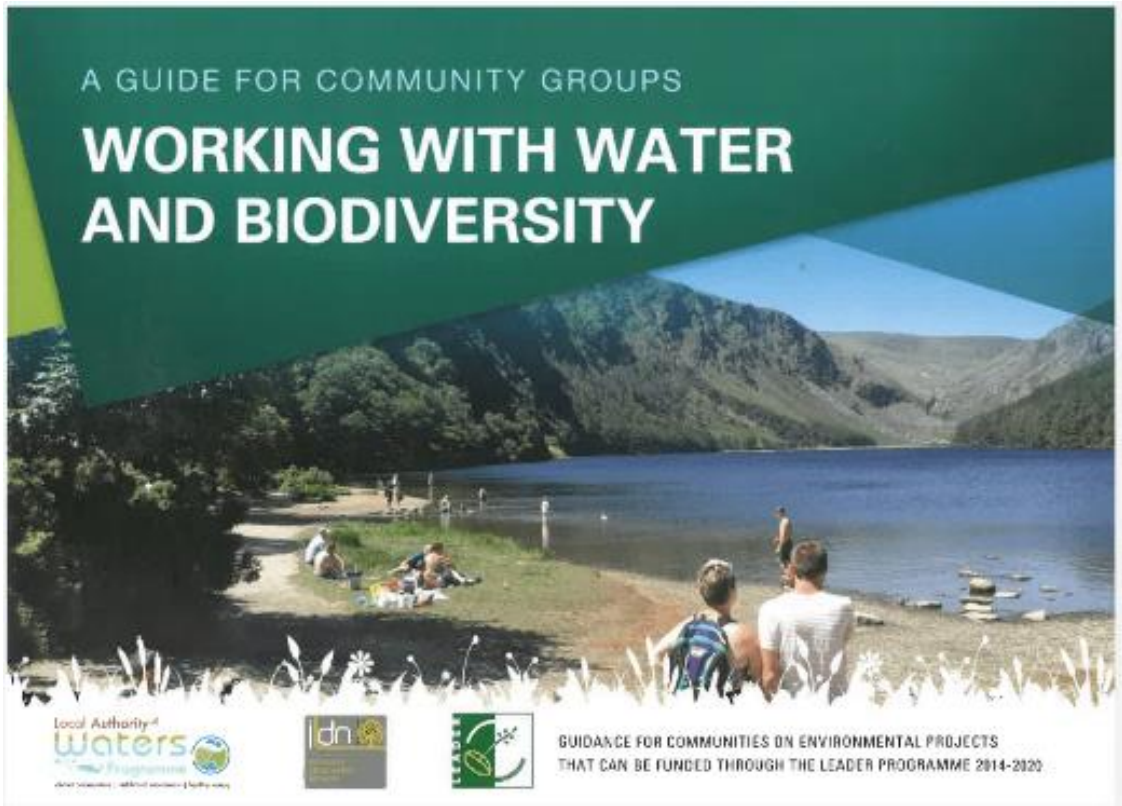
Building Trust in the science, the new approach and new relationships with public bodies

Developing community around water: Bringing likeminded people together, developing **pride and understanding** around our waters

Furthering knowledge

Encourage informed action, understanding the issue and its impact

Training & Citizen Science



Further engagement with LEADER Companies Planned 2021 - 2022

[WATER & BIODIVERSITY TRAINING FOR LOCAL COMMUNITIES - Local Authority Waters Programme (watersandcommunities.ie)]

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Supporting Stewardship

Supporting the establishment of a strong, knowledgeable, community

Rivers Trust and Catchment Partnership Conference

Supporting community involvement

INISHOWEN RIVER GUARDIANS
Survey | Monitor | Restore

- Riverfly Monitoring (ARMI Training)
- Small Stream Characterisation Course (Atlantic Salmon Trust)
- Electrofishing
- Bank Erosion Control
- Hydromorphology
- Invasive Species Control
- ArcGIS Online
- Chainsaw Certification

green club GAA

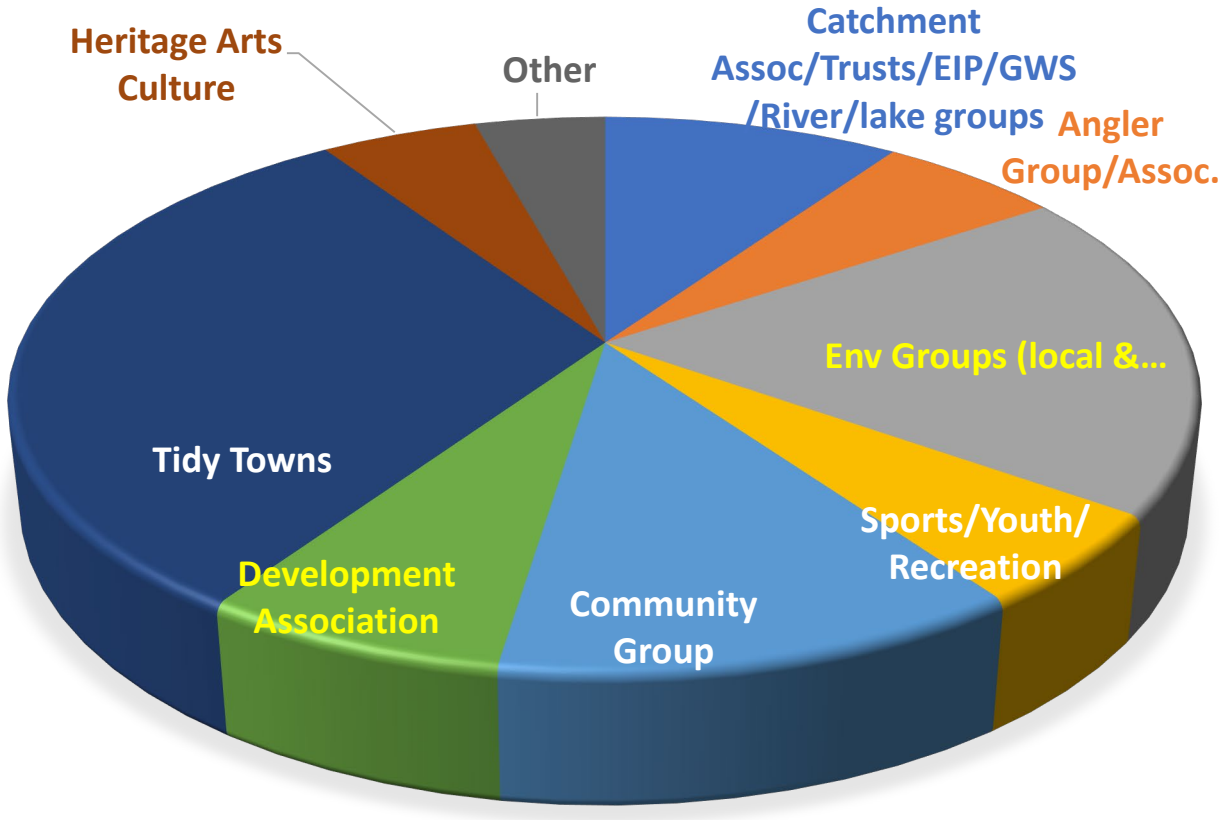
SUSTAINABLE DEVELOPMENT GOALS

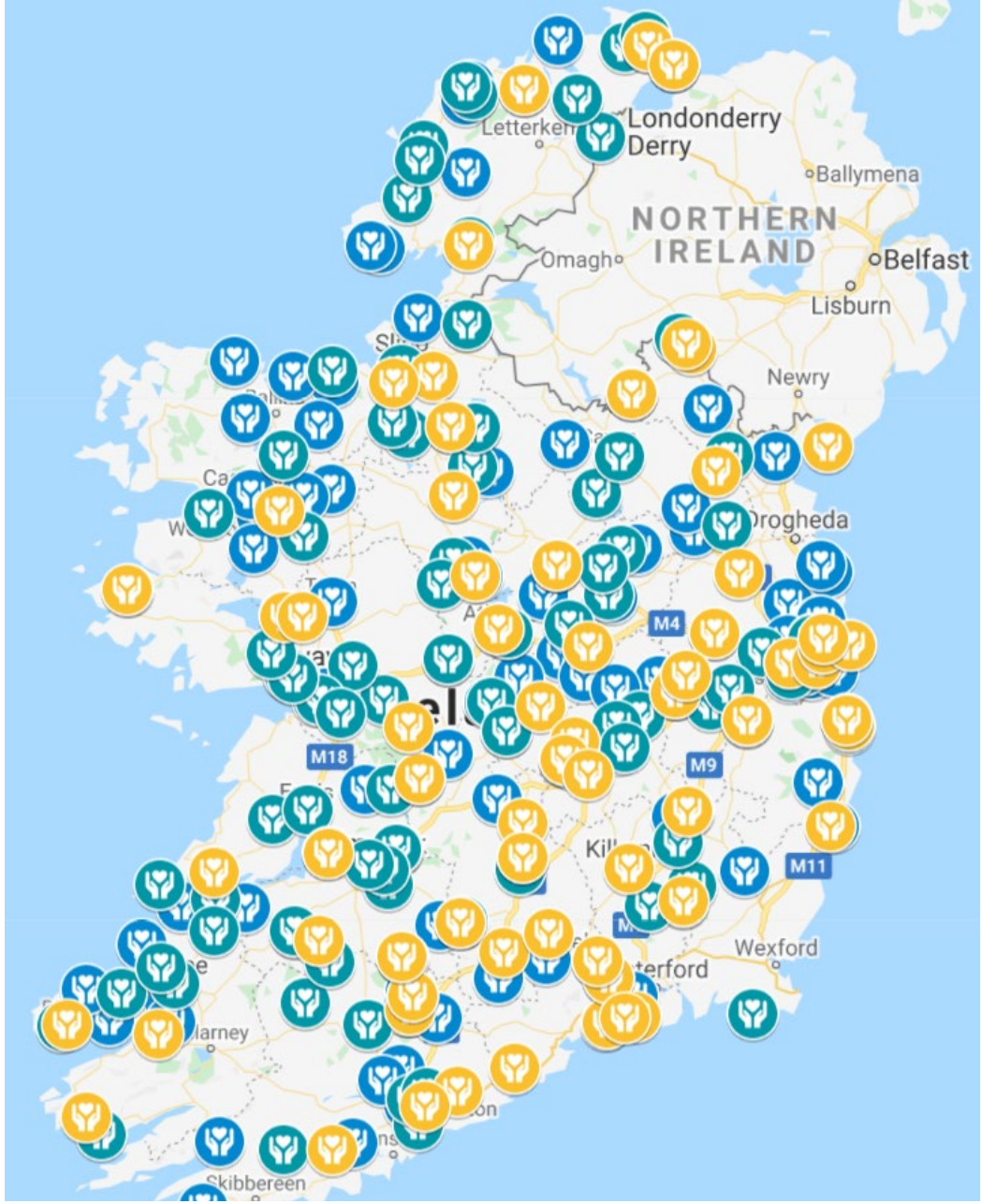
• ENERGY • WATER • WASTE
• BIODIVERSITY • TRANSPORT

Green Clubs

Communities & Projects

350+ engaged with programme
446 CWDF grant awards to date
Projects of an increasing technical nature





What are we trying to action?

The WFD Article 14 mentions **Consultation**, I**nformation** and **Involvement**

- Give communities a voice….
- Local RBMP consultations & facilitating submissions
- Promote active involvement… events, projects, building capacity, building environmental knowledge, relationships with public bodies and other groups

Additional benefits

- Communities involved with county Public Participation Networks (PPN) and Strategic Policy Committees SPC
- Capacity to inform local plan & projects

A work in progress

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Farming engagement case study - experience from a regulatory approach

Catchment surveys (Monaghan case study)

Water supply source catchment, Consultant led, from 2006,

- 342 preannounced farm surveys
- 53% satisfactory
- 22% had minor issues
- **24%** had GAP/poaching noncompliance issues posing risks to waters
- Average slurry storage capacity 28 weeks
- Common issues: inadequate separation of clean & soiled waters, heavily soiled yards and poaching (management issues)

- 77% of those with non compliances resolved issues with ‘low level’ follow up by local authority (advisory & visit)
- < 4% farms - enforcement actions: legal notice, cross report (DAFM)

Learnings from Monaghan case study

- IFA involved, Consultant led, excellent participation,
- Pre-announced surveys, yet still significant levels of poor practices posing risk to waters
- 10% REPS farms unsatisfactory

- Potential for quick wins - improved farmyard management
- A general willingness to do what's right

Lack of awareness, willingness but insufficient understanding of impact of practices

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Some of the aspects of catchment management where the farming community's environmental knowledge (water literacy) could be strengthened…

Small streams matter

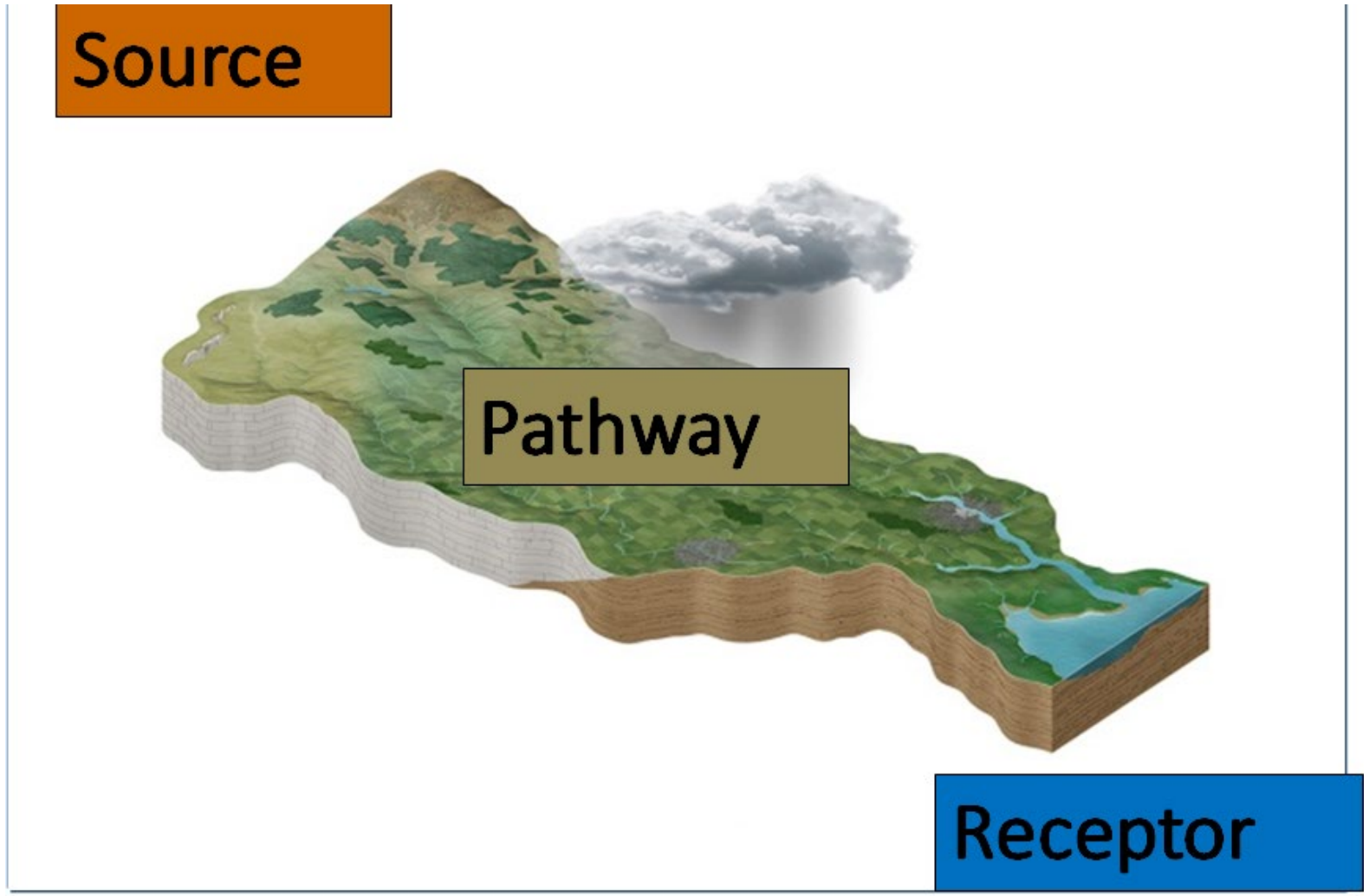
Small Streams represent 77% of the length of the Irish river network

Small streams as living systems not just channels to convey water - protection is important for water quality, biodiversity & climate

Our wetlands have value for climate resilience, biodiversity & water quality

Important features - act as sponges in the landscape storing storm water

- **In the last 200 years Ireland has lost 77% of its wetlands**



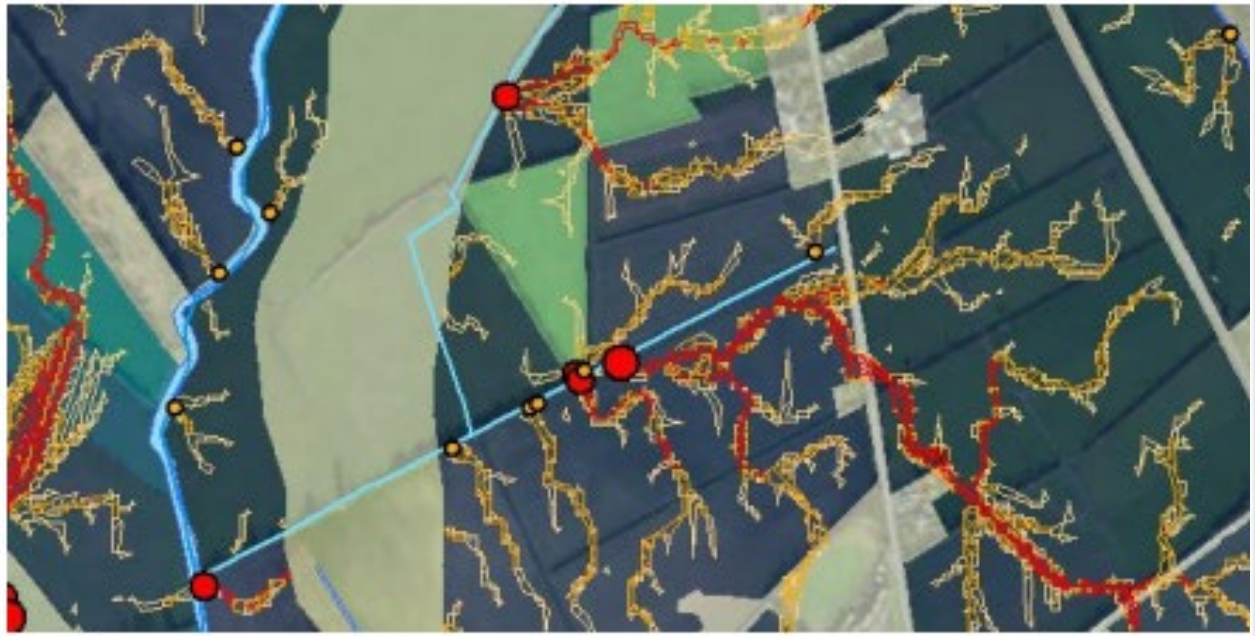
Understanding the connectivity to waters

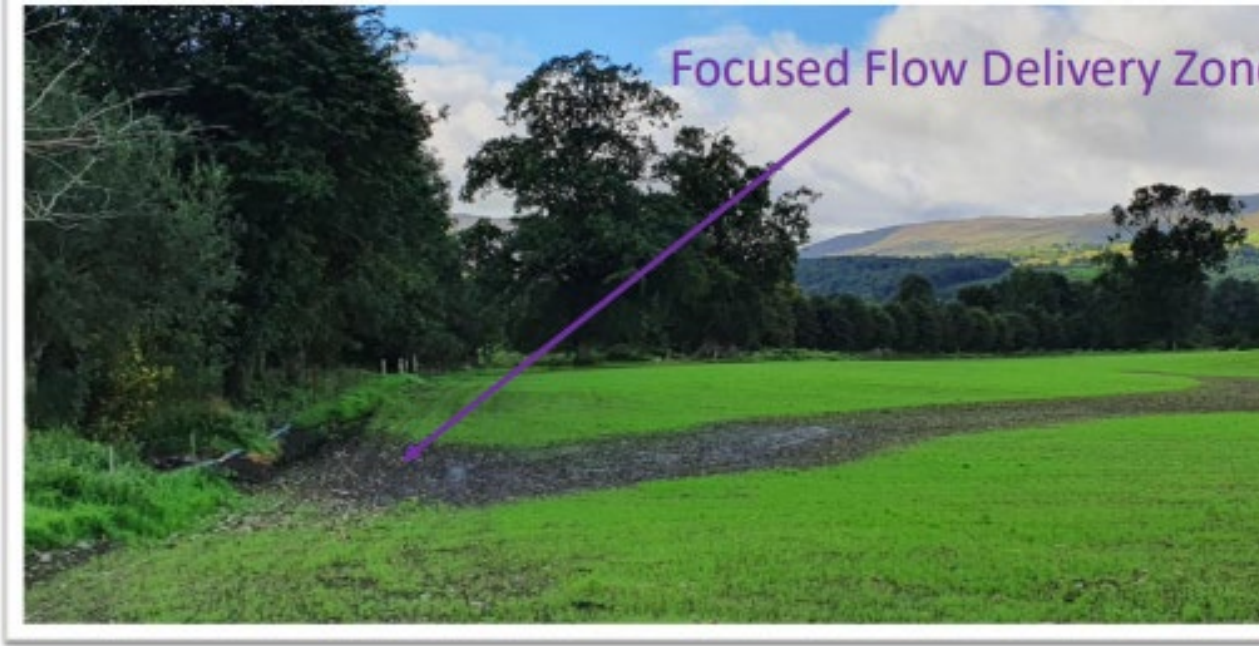
Getting the basics right

Diffuse Pollution: now better understanding of land losses and delivery points to waters (Potential Impact Potential maps)

Targeted measures can break the pathway of P & sediment runoff

Potential to use nature-based solutions (JD prev. presentation)





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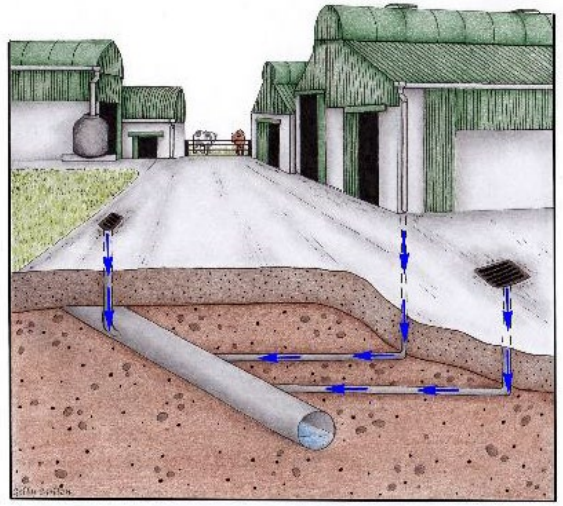
Improving land management practices can reduce the source or break the pathway

Common issues: poor separation of clean & soiled waters, heavily soiled yards (case study)

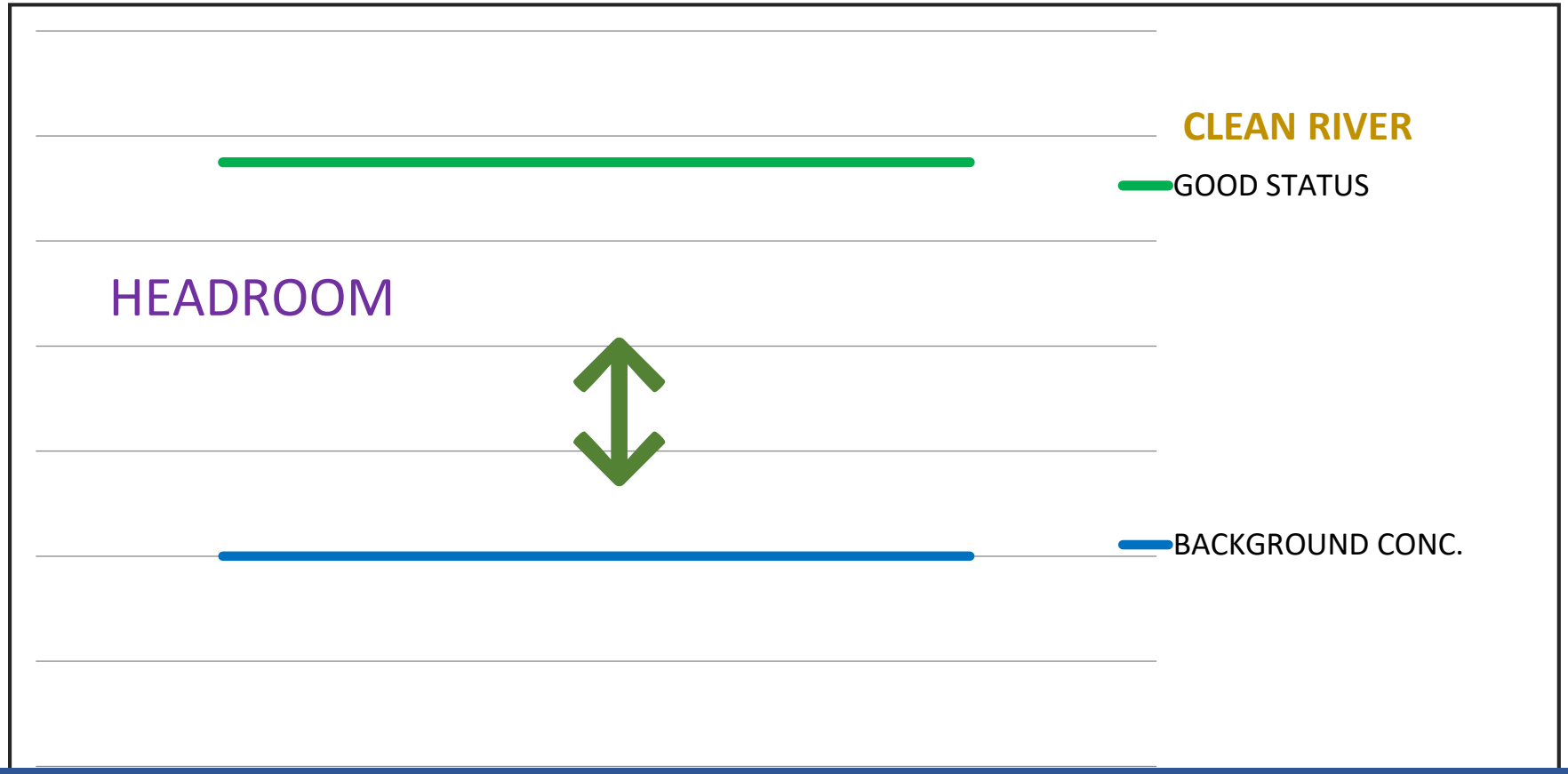
So, an opportunity to address leaky farmyards

Reduce the Source and/or break the pathway



Working with Nature: assimilative capacity

(River water quality EQS and 'Headroom')



Maintain HEADROOM for economic development, sustainable agriculture & necessary wastewater infrastructure - don't waste on poor practices

Concluding remarks

- Working with **communities** is really rewarding
- Water management is **complex** & needs varied engagement tools
- Discussion groups, riverside **workshops**, projects, experiential learning
- Strengthening **environmental knowledge** necessary for decision making
- The **decline in water quality** needs to be address urgently
- Need the right combination of regulation, advice, landuse measures, incentives and voluntary action
- Building a better understanding of rivers & water quality is fundamental across society to bring about change

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I'd like to acknowledge and thank my LAWPRO colleagues

[Local Authority Waters Programme - (watersandcommunities.ie)]