WaterMARKE

Mitigating Agricultural Impacts through Research and Knowledge Exchange

Improving Water Quality on Farms
A Socio-Economic & Behavioural Perspective

EU-FarmBook Targeted Workshop

Farmers as guardians of water resources

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Professor Mary Ryan

Rural Economy Development Programme, Teagasc

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Agriculture and Food Development Authority

Ollscoil na Gaillimhe
University of Galway

Teagasc

Agriculture and Food Development Authority

- research
- knowledge transfer
- education

Chog-ask - Gaelic word: knowledge, learning, teaching

Rural Economy Development Programme Athenry, Co. Galway

National Farm Survey (FSDN), Sheep Research farm, BIA (food innovator hub)

Crops, Environment & Land Use Programme

Johnstown Castle, Co. Wexford

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AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

. . . Failing to meet WFD targets

Ag = significant pressure….

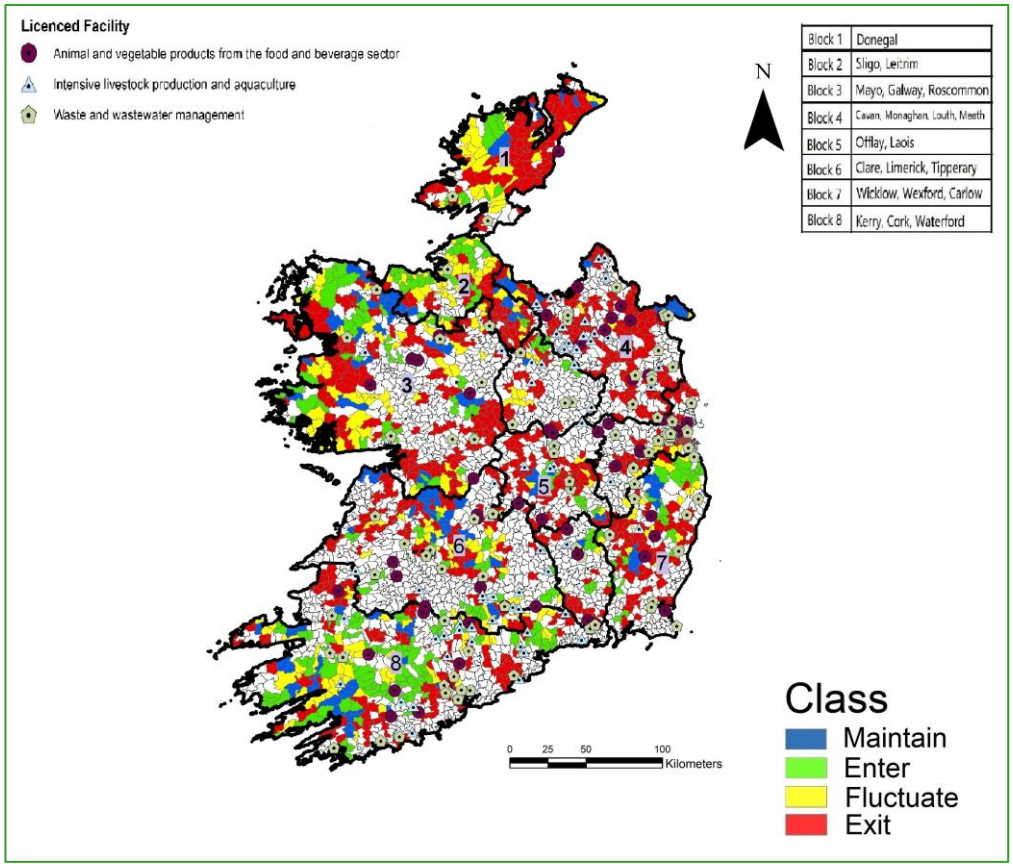
Variations in location of waterbodies exiting and entering High Status

Drivers of these fluctuations also **vary by region**

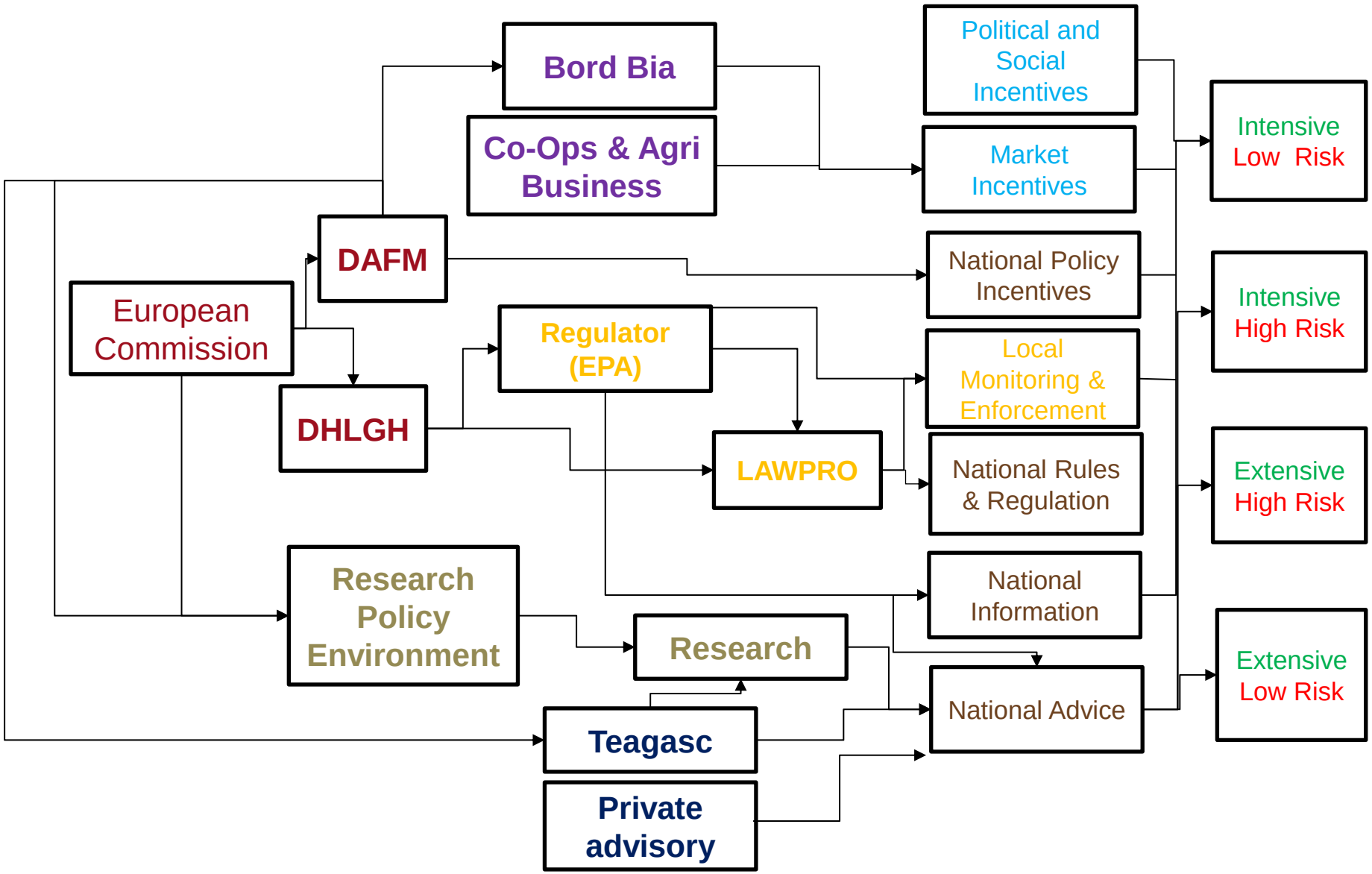
Also **variation across regions**

Local situation very **important**

Farmers also very important!



Actors (influencers) in the wider Innovation System



Policy and Legal Framework; Innovation System Governance

Irish institutional approach

- Environment (DHLGH) + Agriculture (DAFM)
- River Basin Management Plans
  - Catchment Science (Environment Protection Agency - EPA)
  - + community engagement
  - -> 190 Priority Areas for Action
- catchment scientists locate issues (LAWPRO)
- specialised water quality advisers (ASSAP) (carrot)
- local agricultural inspectors (NAIP) (stick)

ASSAP:
Agricultural Sustainability Support Advisory Programme

- Referrals from LAWPRO
- Specialist water quality advisers
  - » Teagasc and Dairy Co-Ops
- Localised advice (EPA Critical Source Analysis maps)
- One-to-one farm assessment + mitigation plans
- High level of voluntary engagement
- **Rich data source**

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ASSAP technical measure characterisation

- ASSAP advisors recommend measures to address 44 different issues
- 90 different actions resulting in approx. 300 measure/issue combinations
- Issues classified by type:
  - Farmyard
  - Land Management
  - Nutrient Management

ASSAP Data Analysis: Measure Uptake + Risk

Highest levels of engagement on dairy farms

High/medium risk farms less likely to have started than low risk

Farmers in catchments with **diffuse** P, N and sediment **losses** less likely to have engaged

Farmers in catchments with **point source losses more likely to have agreed, started and completed measures**

ASSAP behavioural measure characterisation

- **Knowledge**
  - Know-how, capacity, skill
- **Costs**
  - Upfront, ongoing, labour, lost area, lost productivity, farmer transaction costs (hassle, time), system transaction costs
- **Social (farmer & advisor) norms**
  - Other farmers' perceptions of measures
- **Impact**
  - Scale of impact, adviser classification

ASSAP Analysis: Behaviour + Uptake of measures

COM-B attributes	Agreed to undertake measure	Has started measure	Completed
N	8606	7797	7435
Pseudo R^2	0.1062	0.1271	0.1685
Understand impact			
Have the Skills	-***		
Have Experience	+***	+***	+***
Want to improve water quality	+***		-**
Think that Most Farmers Support measures	-*	-***	-**
Have the Time, Money and Resources	+***		+***

Farmers more likely to agree if they have

- Skills
- Experience of measures
- Have resources to adopt

+ve attitude/motivation => more likely to have agreed but less likely to have finished

Norms: If farmers don't think that other farmers support a measure they are less likely to have engaged (at any level)

ASSAP measure characterisation allows for…

Goal

- Identify measures that fit norms and have relatively low costs (or savings) compared to environmental impact
- Clustering of measures

Benefits:

- Measure priority, simplification, impact estimation

Opportunity to mainstream

- Prioritise advisor training and farmer education

Teagasc - Better Farming for Water

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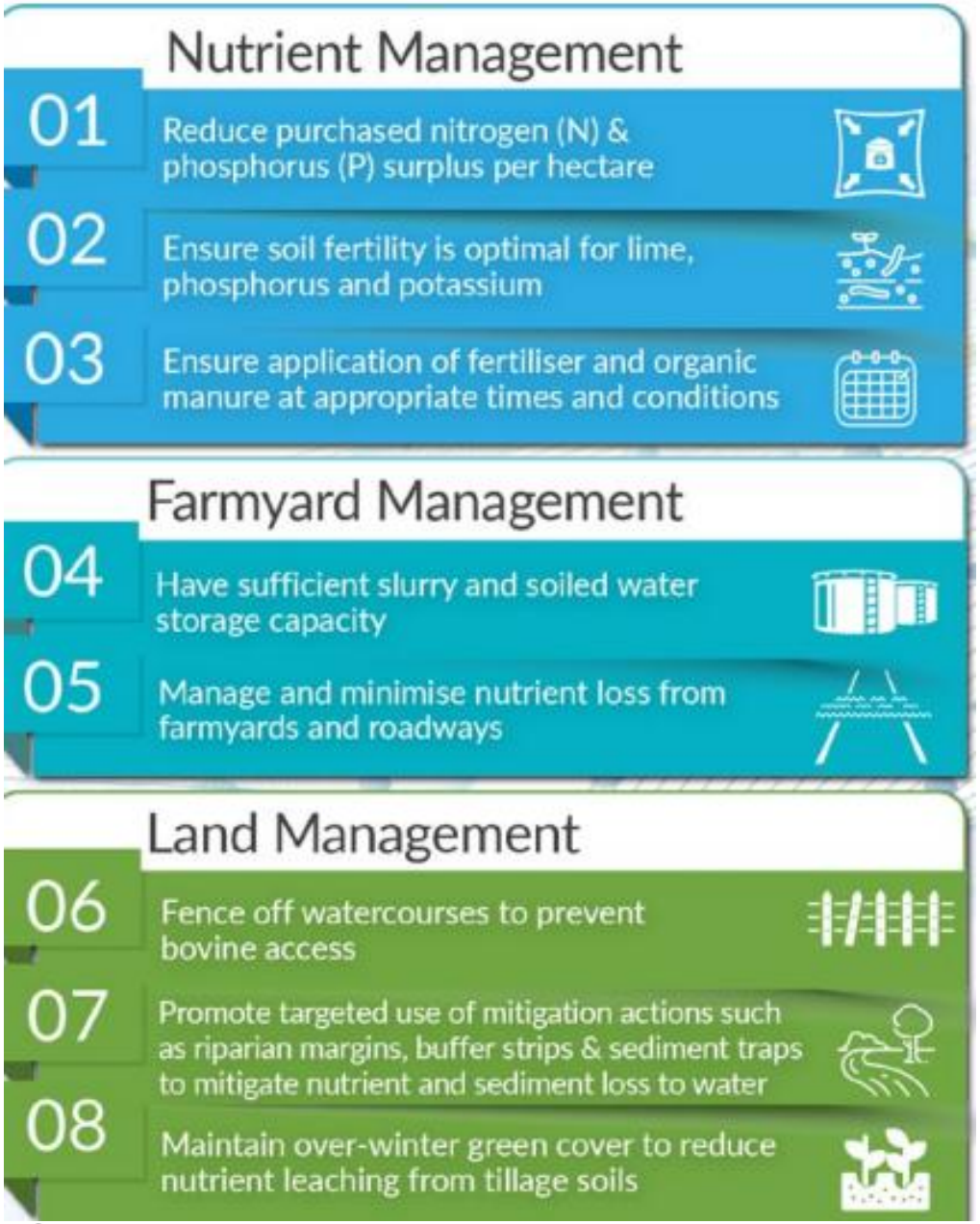
Better Farming for Water National Campaign

8 Actions for Change



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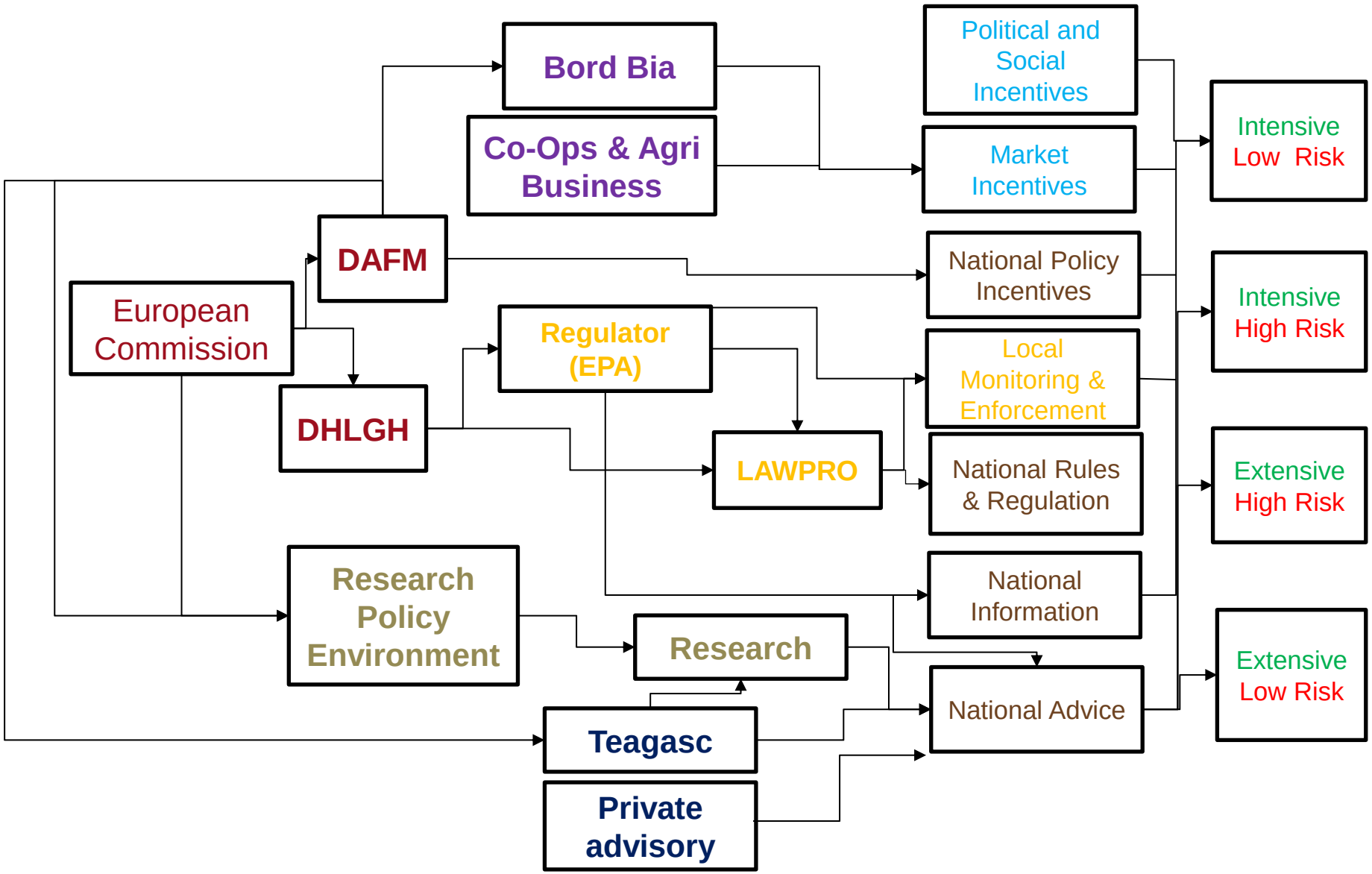

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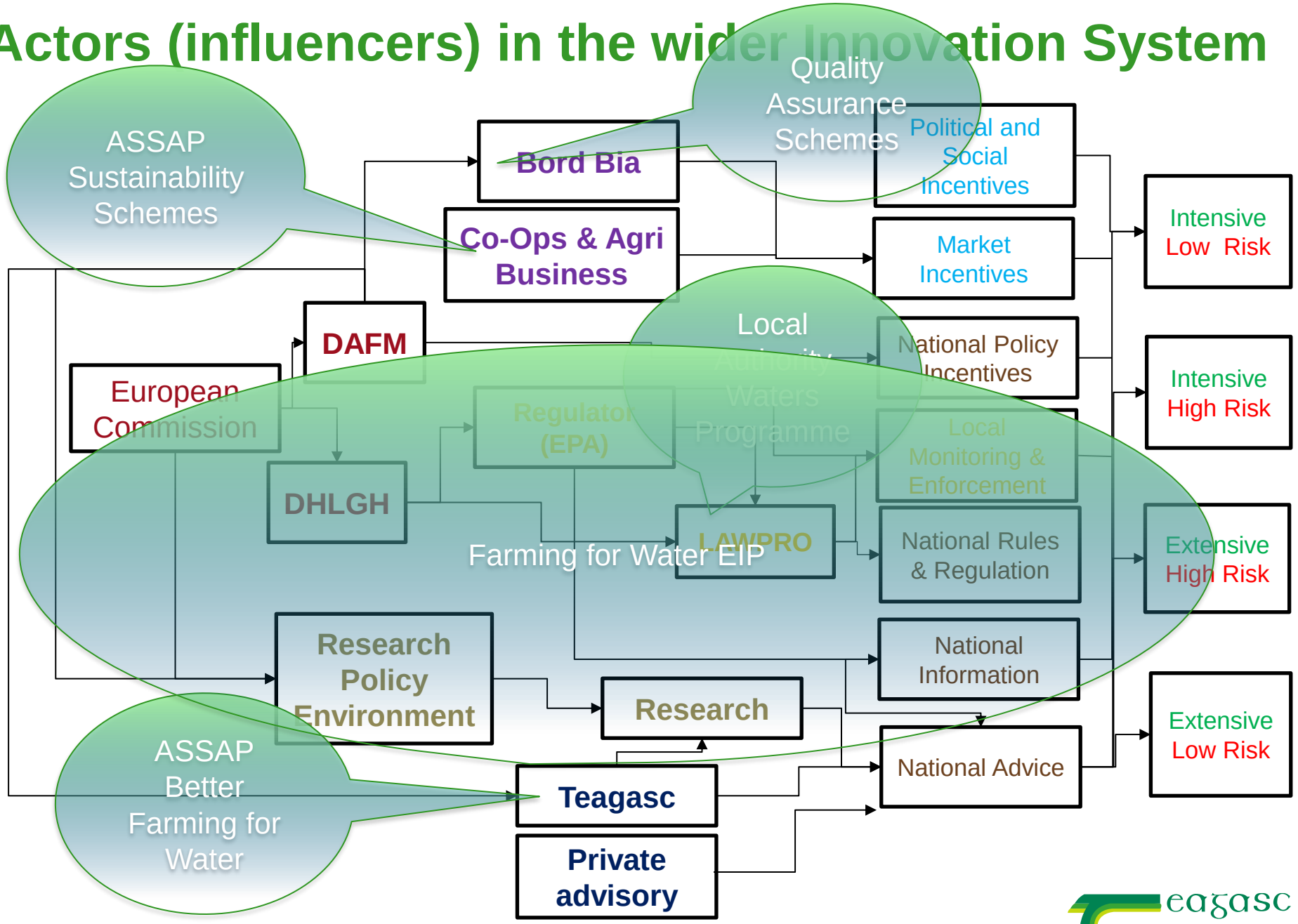

Policy and Legal Framework; Innovation System Governance

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Farming for WaterEIP: PROJECT STRUCTURE AT A GLANCE

TARGETING €50M LOCALLY-LED RESULTS BASED PAYMENTS TO UP TO 15,000 FARMERS ACROSS THE AGRI-ENTERPRISE SECTORS FROM RDP & CAP

A targeted innovative tracked measures approach, taking a multiple benefit focus with water at the centre, building on Ireland's River Basin Management Plans learnings and structures at a scale never done before in Ireland

PROJECT COORDINATION

Integrating science, targeting and evaluating measures and administration of payments to farmers

- GIS, Tracking, mapping measures, payments, policy feedback
- Measure alignment with multiple benefits objectives, AA screening, optimization for Natura 2000 objectives, learnings dissemination
- Evaluation of "Rainwater Management Plans" and efficacy of measures and their placement.
- Research Hub – facilitation of research and collaboration with research community (UCD, UCC, ATU, TCD & others)

ALSO SUPPORTED BY: LA, IFI and approved agency referrals

10 Catchment Science Farm Advisors & Admin & Comms

PROJECT TEAM

STRATEGIC OVERSIGHT COMMITTEE
DAFM, DHLGH, LAWPRO, Teagasc, DII, Bord Bia

OPERATIONAL GROUP
LAWPRO, Teagasc, DII, Bord Bia

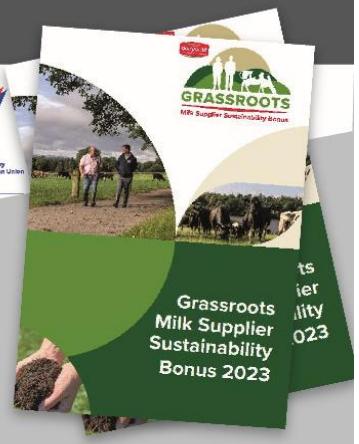
SUBGROUPS
Ag Industry Working Group
Farm Org Consultative Group
Nature-based solutions Working Group
Catchment Partnership Network
Multiple Benefits Working Group
Research Hub

DAIRY INDUSTRY

Targeting Dairy farmers

23 Dairy ASSAP Farm Advisors

- Integrate with Coop Water Sustainability Plans and WQ incentivized payments for milk & link in with sustainability approach
- Provide trees to plant for certain measures



TEAGASC

Targeting Beef, Dairy, Tillage farmers

20 Teagasc ASSAP Farm Advisors

- Agricultural Catchments Programme Support
- SMART Buffers Z, Watermark Projects

COMMUNITY CATCHMENT PARTNERSHIPS

- Community multiple benefit focus bottom up pilot catchment projects
- Leverage community sector initiatives, networks and winning hearts and minds local and national public communications

6 Community Embedded Catchment Focused Farm Advisors

Integrating and Leveraging National Priorities

OPW: FLOOD RISK WWRM FUNDING CLIMATE: Sectoral Climate Plans Water and Biodiversity: WFD Governance and Biodiversity Plans

BEEF INDUSTRY

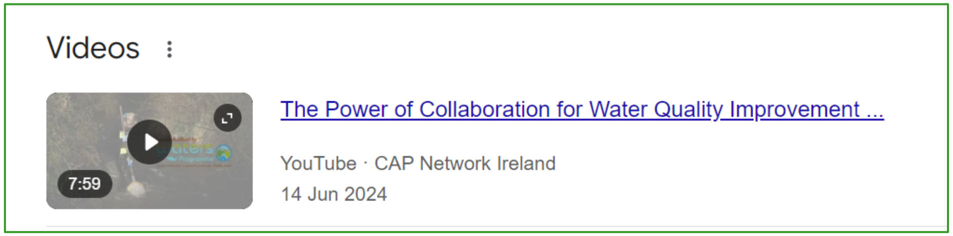
Meat Industry Ireland including ABP Food Group

- Sustainability Support
- Provide Trees

TILLAGE

Early indications of water quality improvement

- Water quality is a localised issue…
  - Localised Solutions
    - » Localised knowledge/advice
- Changing behaviour
  - Use farmers' behavioural drivers
  - Cost is a barrier….
  - Changes required across the Innovation System
- Engagement across Innovation System
  - Collaborative Solutions - carrots and sticks
  - Space for Innovation



https://youtu.be/37WRGRokzhc

https://capnetworkireland.eu/watermarke-the-power-of-collaboration-for-water-quality-improvement/

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