Farm management practices & agri-environmental public goods

AGRICULTURAL CATCHMENTS PROGRAMME

Teagasc
Agriculture and Food Development Authority

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

Public goods through Agri – Environmental channels

- Farmland biodiversity
- Water quality and availability
- Soil quality and functionality
- Climate stability – carbon storage and reducing GHG emissions
- Rural vitality
- Food security
- Landscapes

Farmer willingness to adopt Mitigation measures for water quality improvements

- How important are farmer objectives in decision making?
- How do we measure farmer objectives?
- What mitigations were farmers **most** in favour of adopting
- What mitigation measures were farmers **least** in favour of adopting
- Future socioeconomic research within the Agricultural catchments Programme (ACP)

How do we measure Farmer Objectives

We use survey to ask farmers to rank a number of statements in terms of importance

These 23 different statements capture different farming objectives

Example:
on a scale of 1 to 5 rate the importance of each statement to you as a farmer:

- Maximizing Production
- Avoiding risky options
- Preventing pollution from agricultural production

We then use mathematical techniques to group farmers' responses into those that are similar and reduce the full set of statements to two:

Environmental Objectives
Economic Objectives

Economic Objectives

- Maximizing production levels
- Being innovative by adapting new technologies & practices
- Maximizing farm profits
- Preventing pollution from agricultural production.
- Achieving the highest yields possible
- Maximizing and making best use of my farm resources.
- Paying attention to market prices
- Expanding the farm business
- Meeting challenges
- Reinvesting in the farm
- Having up to date machinery and equipment
- Producing high quality products

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Environmental Objective

- Operating my farm in an environmentally friendly way.
- Avoiding risky options
- Avoiding a cross compliance violation
- Handing on the farm to a member of the family.
- Encouraging wildlife and protecting water quality
- Preventing pollution from agricultural production.
- Keeping farm debt as low as possible
- Leaving the land in as good a shape or better than, I received it.
- Expanding the farm business
- Spending time with the family

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Mitigation Measures

- 4 Nutrient Application Measures, When Where How & How Much

Not applying fertilizer to areas of high risk of nutrient loss

"WHERE"

Not applying P fertilizer to soils already high in P

"HOW MUCH"

Not applying fertilizer at high risk times

"WHEN"

"HOW"

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Mitigation Measures

- 4 Land management Measures

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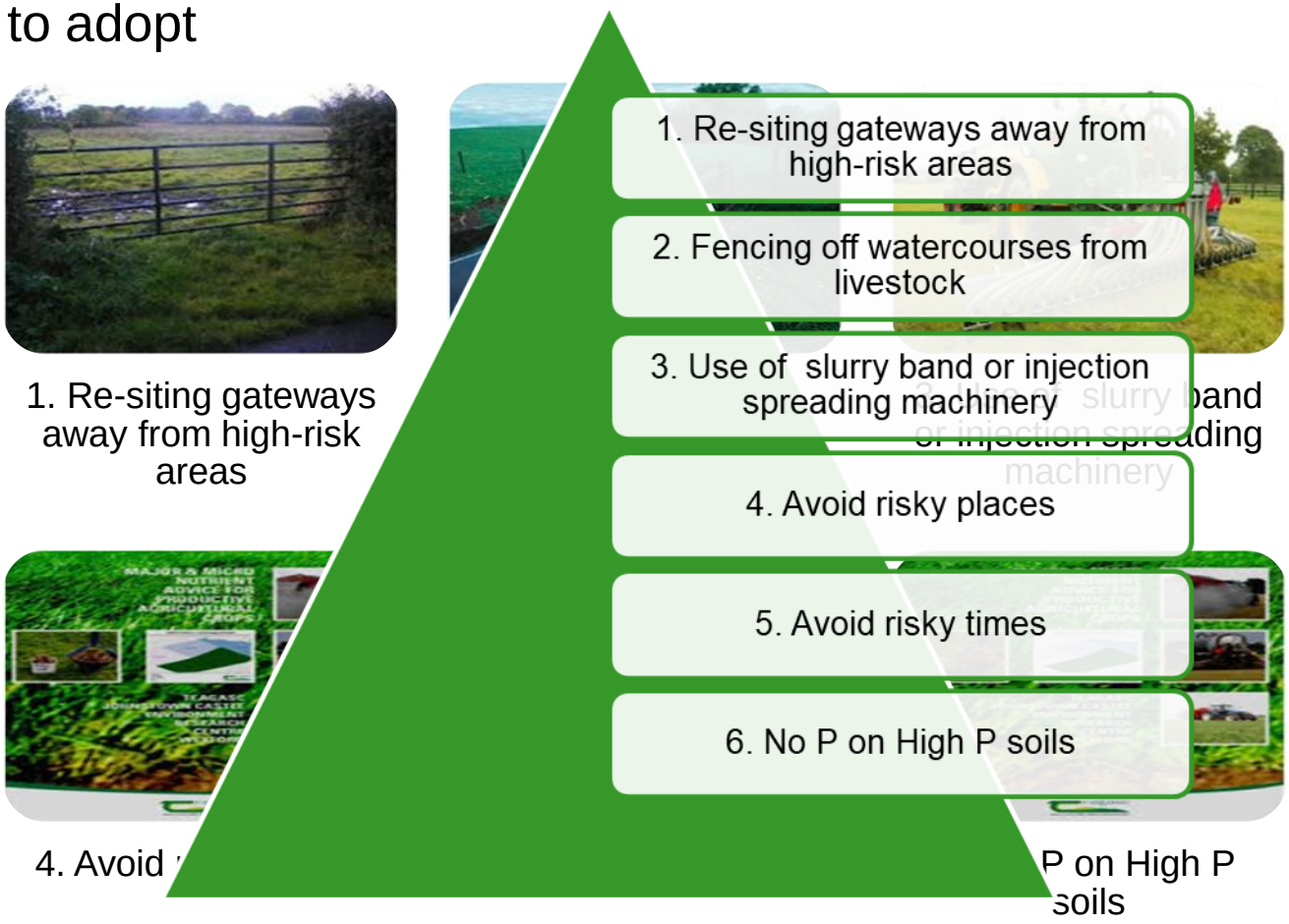
Results

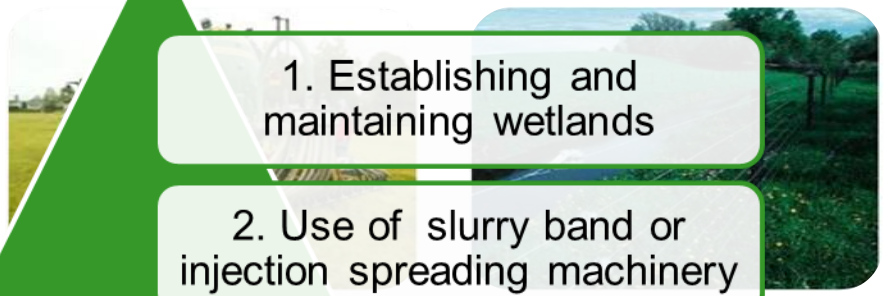
- Mitigation measures farmers with an Economic Objective are most likely to adopt

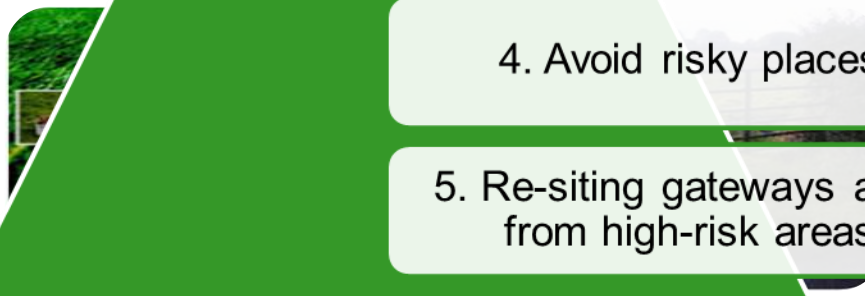


Results

- Mitigation measures farmers with an Environmental Objective are most likely to adopt

1. Establishing and maintaining wetlands





high-risk areas

1. Establishing and maintaining wetlands
2. Use of slurry band or injection spreading machinery
3. Fencing off watercourses from livestock
4. Avoid risky places
5. Re-siting gateways away from high-risk areas

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Results

- Mitigation Measures both “Economically” and “Environmentally” motivated farmers are most willing to adopt

Use of band or injection spreading machinery

Fencing off watercourses

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Results

- Mitigation Measures both economically motivated and environmentally motivated farmers are least willing to adopt

Riparian Buffer Strip

Conclusions

- Our survey shows clear preference amongst both farmers who can be described as motivated by economic concerns and those who can be described as motivated by environmental concerns for two measures
  - Use of band or injection spreading machinery
  - Fencing off watercourses
  - Policy to encourage these should provide "easy wins" in terms of policy support
- Our survey also shows no willingness to adopt Riparian buffer strips, but…
- If Riparian buffer strips are important in terms of reduced nutrient losses to water (scientific evidence) then how do we change farmer aversion to this measure
  - Role for research in developing a deeper understanding of the drivers of adoption
  - Identify the problem/roadblock
  - Do we need policy incentives or more KT?
- Because there measures that farmers are more likely to adopt we need a more tailored approach or offer farmers a menu of mitigation options, matched to area specific requirements (CSA's)
- Tailored mitigation measures and Results based support

Future Economic Research within ACP

- Two new data recorders to collect microeconomic (NFS) data from ACP farms
- Will place the ACP in a unique position
  - Create integrated farm level biophysical and socioeconomic dataset
  - Allows us to investigate the socioeconomic drivers of farm level environmental, economic, innovation & social sustainability
  - Provide information to develop and improve Ireland agri-environmental policy and farm level performance
- Allows the calculation of farm level sustainability indicators for ACP farms equivalent to those published in Teagasc's Annual Sustainability Report

Thank you!

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