Evidence on the cost of floods in England and Wales.

Questionnaire: Flood impacts on agriculture

Thank you for agreeing to take part in our survey. The questions seek information about the impact of flooding on your farm business. It is part of a larger study of flood impacts for the Environment Agency¹ to help inform decisions about investment in Flood Risk Management. Your answers will be treated in confidence and not attributed to you as an individual person or business, and will be used only for the purpose of this enquiry. Using this pdf version, please print out the questionnaire in order to complete it by hand. Please could you send this back to me in second class post, or alternatively send it as a digital copy by email, to: Prof Joe Morris. Postal Address: 3, Station Road Ampthill, Bedfordshire. MK45 2QP. Email: <u>i.morris@m-res.co.uk</u>. If you need further information on the questionnaire and the study, please contact me. Tel: 01525 404890.

Q1. Please describe, in order of greatest impact, the main flood incidents that you have experienced in the last 4 years (2016-2019) on your farm.

| Month | Source of | Were | Average | Number of | Total area of | Typical period | Estimated | What % of the |
|---------|-----------------|----------------|----------|------------|---------------|----------------|-------------|---------------|
| and | Flooding | floodwaters | depth | weeks that | land that | (days) that | total £ | estimated |
| Year of | Indicate | contaminated | of | floodwater | was flooded | fields | cost of | costs of the |
| Flood | whether River/ | eg salt water, | flooding | remained | on your | remained wet | this event, | flood events |
| Event | Tidal/Overland/ | pollutants, | (m) | on farm | farm (ha) | after flood | if | has |
| | Groundwater | debris | and | | | waters | available | compensation |
| | /Other | | range | | | receded. | | by insurance? |
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¹ Evidence on the cost of floods in England and Wales. Research code: FRS18208. The project is led by Risk and Policy Analysts Ltd, https://www.rpaltd.co.uk/

Sketch and Photos of Flood Area

It would be really helpful if you can provide here a <u>rough</u> sketch (don't worry about precision and scale) showing, for the main flood event in Q1, the flooded areas on your farm and the source of flooding. Can you also show the locations of main water courses, main outfalls for field drainage, flood infrastructure such as embankments, and any main buildings and property affected. Please show how this flood area fits with the rest of the farm. This sketch can electronically copied or photographed. Copies of some digital photographs of flooding would be good also.

Q2: Overall, what are the biggest negative financial impacts of flooding on your farm business? Please tick three

| Damage to crops and grass | Loss of income /extra costs for livestock | Damage and repairs to property | Clean up and land restoration | Loss of income from other farm based activities | Damage to equipment and stores | Reduction in land and asset value | Knock on effects in following years | Other Please specify eg financing costs, staff time |
|---------------------------|---|--------------------------------|-------------------------------------|---|--------------------------------|--|--|---|
|---------------------------|---|--------------------------------|-------------------------------------|---|--------------------------------|--|--|---|

<u>Please answer the following Questions with respect to most important event listed in Q1</u> (for floods occurring in 2019 please indicate likely impacts and outcomes where these are not known at the time of writing)

Q3. (For the most important flood listed in Q1) Please indicate the type and areas of the main arable crops affected by flooding

| Crop type, eg wheat, oil seed rape, potatoes | Area of crop flooded (ha) | Duration of flood on crop (days) | Yield Loss (% of normal yield lost due to flood) (100% equals complete loss) | If completely lost ,was the crop (A) reseeded , (B) replaced by another crop, or (C) land left empty for the season. | If the crop was not completely lost, what extra crop costs were incurred? please indicate type and approx. £ cost | Required land restoration, eg extra, cultivations, gypsum treatment please specify and £ cost | Estimated total £ losses incurred due to lost yield and extra costs on this crop, if available |
|---|------------------------------|--|--|--|---|---|--|
| | | | | | | | |

| Q4: Have you experienced or do you anticipate 'knock-on' effects of the floods on arable cropping in following years? Please comment (eg on changes to rotations, remedial soil treatment, loss of yields) | | | | | |
|--|--|--|--|--|--|
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Q5: (For the most important flood listed in Q1) What has been the effect of flooding on grassland and its management ?

| Grass type | Area of | Duration | Main type | Typical chemical | If grazed, | If conserved, | Extra | Estimated |
|------------|-----------|----------|-----------|------------------|---------------|----------------|-------------|-------------|
| | grassland | of flood | of | N fertiliser | Loss of | % loss of dry | costs | total £ |
| | flooded | (days) | livestock | application, | grazing days | matter | incurred, | losses |
| | (ha) | | using | Please specify | (days) due to | tonnage and | eg | incurred |
| | | | grass, | type and | flooding and | quality of | fertiliser, | due to lost |
| | | | Beef, | quantities, or | subsequent | silage/hay | reseeding. | yield and |
| | | | Sheep, | KgN/ha if known | waterlogging | (100% equals | Indicate | extra costs |
| | | | Dairy, | | | complete loss) | type and | on this |
| | | | Other | | | | approx. £ | grass, if |
| | | | | | | | cost. | available |
| Improved | | | | | | | | |
| Unimproved | | | | | | | | |
| Ommproved | | | | | | | | |
| Other | | | | | | | | |
| grassland | | | | | | | | |

Q6: What the main soils types in the flooded areas and does the area have piped field drains

| | Main soil type: please indicate whether sands, silts, clays, peats or loams (specify main mix) | Approx % of flooded areas with piped underground field drains |
|---------------------------|--|---|
| Arable Areas (flooded) | | |
| Grassland Areas (flooded) | | |

Q7: (For the most important flood listed in Q1) What has been the impact of flooding on livestock production?

| Type of | Deaths | Loss of | Extra | Extra | Stock | Additional | Additional | Reduced | Other |
|------------|------------|------------|---------|-------------|------------|------------|------------|-------------|------------|
| livestock, | and culls: | output : | housing | bought | relocation | labour: | veterinary | livestock | livestock |
| Dairy, | type, | % loss of | need | feed: type, | costs : eg | Hours | and other | numbers | costs, |
| Suckler | numbers, | normal | (days) | tonnage, | labour | /day and | costs £ | due to (A) | please |
| Cows, | £ total | yields of | | total £ | hours and | no. of | | forced sale | specify |
| Beef | | milk | | (and if | transport | days for | | of stock or | and £ cost |
| Cattle, | | and/or | | known | costs , | ongoing | | (B) | |
| Sheep, | | liveweight | | £/hd/day) | Extra | livestock | | delayed | |
| Pigs | | gain | | | rented | Manage- | | purchases. | |
| | | | | | keep £ | ment | | Please | |
| | | | | | | | | specify nrs | |
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Q8: Have the floods affected Agri-environment obligations or voluntary arrangements on your farm, such as Options under the Countryside Stewardship (CS) Programme?

| Agri-Environment Arrangements | CS Areas subject to flooding (ha) | Main Management Options ? eg priority habitats, landscape features , or CS Code | Are there any flood related options on the flooded land eg Flood mitigation or storage measures? | Extra costs incurred due to flood impacts: restoration, repairs, damage to capital items (not covered in Q? below) | Comments |
|--|-----------------------------------|---|--|--|----------|
| CS Mid Tier | | | | | |
| CS Higher Tier | | | | | |
| Other (please specify) Including woodlands | | | | | |

Q9: What has been the impact of flooding on Farm Buildings and Structures?

Was your farm yard flooded? Yes/No. Were your buildings flooded? Yes/No

If Yes to either of these, please complete the following for the main impacts, A - D, on your farm

| | A (eg grain store) | В | С | D |
|-----------------------|--------------------|---|---|---|
| Type of Building or | | | | |
| structure affected eg | | | | |
| yard, barn, silo | | | | |
| Was there structural | | | | |
| damage , indicate | | | | |
| Yes/No and if Yes, £ | | | | |
| cost if known | | | | |
| Were contents lost or | | | | |
| damaged, please | | | | |
| indicate whether | | | | |
| [1] none | | | | |
| [2] fertilisers | | | | |
| [3] crop | | | | |
| [4] machinery | | | | |
| [5] livestock | | | | |
| If other, specify | | | | |
| Estimated cost damage | | | | |
| /loss of contents £ | | | | |

Q10: Did the flooding result in machinery damage or loss?

If yes, please specify damage to farm machinery and vehicles and associated costs

| Machinery type and size eg tractor 75hp, plough 4 furrow, irrigation equipment | Impact: Rank [1] minor thru to [5] complete loss | Cost of repair/replacement £ |
|--|--|------------------------------|
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Q11: Did flooding result in damage to the other physical property on the farm? Please specify

| Type of property or asset | Length (m) or number affected | Impact : Rank [1] minor thru to [5] complete loss | Total cost of repair/replacement £ |
|---------------------------|----------------------------------|---|------------------------------------|
| Hedges | | | |
| Fences | | | |
| Gates | | | |
| Farm roads | | | |
| Field drains | | | |
| Water courses | | | |
| Culverts/drains | | | |
| Footpaths | | | |
| Other | | | |

Q12: Did flooding result in debris, rubbish and/or contamination on the farm property? If yes, please specify.

| Type of debris : | Area affected (ha) or quantities of debris/contamination | Corrective action | Estimated cost £ |
|----------------------|---|-------------------|---------------------|
| General debris | | | |
| Silt deposits | | | |
| Other contaminants : | | | |
| specify | | | |

Q13: Did flooding result in disruption to water / electricity or other essential supplies and services? If yes, please specify.

| Туре | Days disruption | Severity of impact [1] little to [5] major | Alternative sources (if any) | Associated costs £ |
|---|--------------------|--|---------------------------------|--------------------|
| Water | | | | |
| Electricity | | | | |
| Other, eg feed delivery, milk collection, please specify | | | | |
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Q14: Did flooding result in additional impacts and/or labour costs not already mentioned, including farm management time? If yes, please specify.

| Other impacts: specify | Farm Labour (hours) and Management time (hours) | Other costs: specify type and value: |
|------------------------|---|--------------------------------------|
| | | |
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Q15: Did the flooding result in extra finance costs? If yes,

| Type of financing eg loan, overdraft, other, please specify | Approx Amount £ | Expected borrowing period (months) |
|---|-----------------|------------------------------------|
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Q16: Did you receive or have you applied for any compensation or insurance settlements? If yes, please specify.

| Insured or compensated items | Amount claimed £ | Source; eg insurance, legal claim, farm flood recovery fund | Received: Yes/No |
|------------------------------|---------------------|---|---------------------|
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Q17: Have other business activities on the farm been affected by the flooding? If yes please indicate type of business, impacts and estimated costs .

| Business type eg Contracting, B&B, Shop, Livery, lettings/ Other Please specify | Impact : indicate which [1] premises flooded [2] no access to premises [3] clients stayed away If other: please specify | Period (weeks) | Estimated loss of revenue and/or extra cost £ |
|---|---|----------------|---|
| | | | |
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Q18: Did you receive any warning message that your farm yard and/or fields might flood?

| Source of warning | How long before flooding? | Message |
|-------------------|---------------------------|---------|
| | h | |
| | min | |
| | h | |
| | min | |

Q19: What actions were you able to take after you became aware that the flood was going to hit?

| Actions | Actually took Tick which apply | Effectiveness [0] no opinion [1] negligible [5] very | Wanted to take Tick which apply | Time needed (hours) to implement |
|------------------|---|--|---------------------------------------|----------------------------------|
| Move machinery | | | | |
| Move livestock | | | | (recorded in Q6 above) |
| Move contents in | | | | |
| farm buildings | | | | |
| Other (specify) | | | | |
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| Q20: Have the floods led, or are likely to lead, to permanent changes in the way you will use |
|---|
| and manage the land in future , with respect to |
| (a) The fields that are subject to flooding? YES / NO |
| If yes, please explain: |
| (b) The entire farm? YES / NO |
| If yes, please explain: |
| Q21: Have the floods had or are likely to have, any other impacts on your farm that have no |
| been covered above? |
| |

Please tick those that apply ☐ Switch to flood tolerant crops and land use ☐ Improve flood defences ☐ Improve on farm drainage ☐ Improve maintenance of rivers and water courses ☐ Control run off from land ☐ Improve preparedness and resilience of farms ☐ Relocate business to area with low flood risk ☐ Improve flood warning ☐ Improve emergency responses during flood ☐ Provide compensation and funds for recovery after flood Q23 Please can you provide some background information on your farm so that flood impacts can be put in context. Farm name Farm location (Post Code) Total Farm Size (ha) (where flood occurred) Type of farm: Cereals, General Cropping, Dairy (mainly or specialist), Livestock, Other (please specify) Q23 Please can you provide your contact details. The information provided is treated in confidence and will not be attributed to you, and used only for the purposes here. **Contact Name** Contact Tel Nr

Q22 What do you think are the three best ways of managing flood risk in this area in future?

Thank you for your help completing this Questionnaire. Should you need further information, my contact details are given on the first page.

Contact Email

Date of completion of Questionnaire

Would you like to receive a report on the overall results of the survey? Yes/No.