

Original Questionnaire for the ‘SCALAR’ household surveys on private climate change adaptation Wave 4



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This panel survey contains data from households located in large, coastal urban centers in the United States (Houston, New Orleans and Miami greater areas), the Netherlands (Rotterdam greater area and the province of Zeeland), China (Shanghai greater area), and Indonesia (Jakarta greater area, other cities in Java). In each location we used the identical, translated questions in the respective languages of each country. These panel surveys conducted in five waves between 2020-2023 are focused on soliciting information on households' socio-economic background, perceptions, adaptive capacities, self-assessed resilience, place attachment, social influence, policy and other factors influencing individual climate change adaptation behavior surrounding private adaptation to climate change (here contextualized to floods). The surveys were conducted online with the help of YouGov, <https://yougov.co.uk/>. The fourth survey was conducted in November 2021.

Developing, distributing and analyzing these household surveys on private climate change adaptation was possible thanks to the funding from the **European Research Council project ‘SCALAR: Scaling up behavior and autonomous adaptation for macro models of climate change damage assessment’** (grant agreement no. 758014) under the European Union's Horizon 2020 Research and Innovation Program. Our ERC ‘SCALAR’ Team has been based at the University of Twente in 2018-2021; and from 2021 – at the Delft University of Technology, The Netherlands. This 4th survey wave was conducted from the Delft University of Technology.

Related publications:

PhD Thesis of Dr. Brayton Noll (2023): <https://repository.tudelft.nl/islandora/object/uuid%3A0d49cb3e-6dd8-4a9e-abc6-b847de938aea?collection=research>

Noll, B., Filatova, T., Need, A., de Vries, P. (2023) ‘Uncertainty in individual risk judgments associates with vulnerability and curtailed climate adaptation’, *Journal of Environmental Management*, 325, 116462, <https://pubmed.ncbi.nlm.nih.gov/36272292/>

Noll, B., T.Filatova, A.Need (2022) ‘One and done? Exploring linkages between households’ intended adaptations to climate-induced floods’, *Risk Analysis*, 1-19, <https://doi.org/10.1111/risa.13897>

Noll B., Filatova, T., Need, A. & Taberna, A. (2021) ‘Contextualizing cross-national patterns in household climate change adaptation’, *Nature Climate Change* <https://doi.org/10.1038/s41558-021-01222-3>

Note: Below the green color codes the name of the corresponding variable in the dataset. The yellow color denotes the internal comments guiding the conditional questions order.

Dear Participants,

Thank you very much for your participation in our previous Survey back in April-May 2021 on flood risks and possible adaptation options. We know the past six months have continued to be challenging and we sincerely appreciate your responses. Your participation is helping to understand how people react to flooding and what one can do to reduce their devastating impacts. This time the survey is shorter than the previous one. We estimate it will take less than ten minutes of your time and you will receive XXX points for taking part.

This survey has four short sections containing:

- 1) Follow up questions on individual flood adaptations
- 2) Follow up questions on beliefs and perceptions
- 3) A few follow up questions on your household's economic comfort
- 4) Finally, we have a few questions about insurance

Each of these sections is designed to better understand what affects human perceptions of risks and decision over time. Thus, your participation in this survey and the subsequent next year is VERY important and meaningful.

We sincerely thank you for your continued participation and help!

Follow Up Questions on Adaptations

This section contains some follow up questions from the previous survey regarding a few different flood protection actions and your attitudes towards flooding.

1. **[R2_implementation_yes]****[Note: only if applicable]** In a previous survey, you indicated that, at some point in the future, you intend to complete the following items. There are no 'correct' or 'incorrect' answers here; we just would like to better understand your decisions over time. Please select the option that most accurately portrays their status and your current intentions:

Possible flood protection and damage mitigation measures	I have implemented the measure	I still intend to implement the measure	I no longer intend to implement the measure
[Input measures selected on past survey that they intended to complete]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
[Input measures selected on past survey that they intended to complete]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
[Input measures selected on past survey that they intended to complete]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
etc	etc	etc	etc

2. **[Q2_other_adaptation]** Are there any other flood protection measures that you have implemented since March 2020 that we have not asked you about in our surveys?

[Q2_other_adaptation_open] Yes, please specify _____ (open ended)

No

I don't know

Beliefs and Perceptions

In this section we are following up on some questions we previously asked to understand if there have been any changes in your situation in the past months.

3. [R02a_perc_prob_change] In the last survey in April/May 2021, we asked you about how likely you thought it is that you would experience a flood. You responded with ____ / ____ % / I don't know. Is this still the case?

Yes
No**

- a. **[IF answer No]

[R02_perc_prob] How often do you think a flood occurs on the property on which you live (e.g. due to rivers or heavy rain, storms and cyclones)? Which category is the most appropriate?

My house is completely safe
Less often than 1 in 500 years
Once in 500 years or a 0.2% chance annually
Once in 200 years or a .5% chance annually
Once in 100 years or 1% chance annually
Once in 50 years or a 2% chance annually
Once in 10 years or 10% chance annually
Annually
More frequent than once per year
Don't know

[R02_perc_prob_other] Other: Once in ____ Years

4. [R03a_perc_damage_change] In the last survey, we asked you how severe the physical damage you thought a flood on a similar scale to [Name of flood depending on country**] would affect your home. On a scale of 1: not at all severe – 5: Very severe, you responded with ____ / I don't know

Is this still the case?

Yes
No**

- a. **[IF answer No]

[R03_perc_damage] In the event of a future major flood in your area on a similar scale to [Name of flood depending on country**] how severe (or not) do you think the physical damage to your house would be?

1= Not at all severe
2
3
4
5= Very severe
Don't know / Prefer not to say

[** Indonesia: "the 2020 Jakarta Floods"]

China: "the 2017 China Floods in Hunan"

USA: "the flooding from Hurricane Harvey in Houston in 2017"

Netherlands: "the North Sea Flood of 1953"]

5. **[R04a_perc_health_change]** In the last survey, we asked you to rate how likely you or another member of your household would suffer health consequences in the event of a flood in your area? You responded with
Is this still the case?
Yes
No**
- a. ****[IF answer No]**
[R04_perc_health] In the event of a flood in your area, how likely or unlikely do you think it is that you or another member of your household would suffer health consequences?
1= not at all likely
2= hardly likely
3= somewhat likely
4= quite likely
5= almost certain
I don't know
6. **[R05a_worry_change]** In the last survey, we asked how worried you were about flooding. You responded with / I don't Know
Is this still the case?
Yes
No**
- a. ****[IF answer No]**
[R05_worry] Please indicate How worried or not are you about the potential impact of flooding on your home?
1= not at all worried
2= A little worried
3= somewhat worried
4= quite worried
5= very worried
I don't know
7. **[R013_recent_flood_exp]** between the last survey in April/May 2021 and now, have you experienced a flood from heavy rain fall, rivers overflowing, a storm surge, etc.?
Yes**
No
- a. **[If Yes, **]**
[R013a_recent_flood_damage] How severe was the damage caused by the flood?
1= Not at all severe
2

3
4
5= Very severe

b. [If Yes, **]

[R013b_recent_flood_health] How severe was the damage caused by this flood to your personal health?

1= Not at all severe
2
3
4
5= Very severe

c. [If Yes, **]

[R013c_recent_flood_cost] Please provide an estimate of the total costs to your property that this flood caused AND if any medical expenses resulted from this flood, please include them in the estimate as well.

_____ [insert currency]

8. [Q8_relocation] Since March 2020 have you moved/changed homes?

Yes****

No*

a. [****If select YES]

[Q8a_relocation_reasons] What were the principle factors that influenced your decision in selecting a home? Please select all that apply.

Improving living conditions
Social network of friends and family
Family-related reasons (e.g. moving in with or separating from a partner, children born or leaving the household, etc.)
Feeling of attachment to the city/ area
Job related reasons
Location
Natural hazards at a former place of residence
Other reasons

b. [If select NO]

[Q8b_relocation_consider] Since March 2020 have you considered moving/ changing homes?

Yes****

No

I don't know

i. ****[If select YES] [Q8bi_relocation_consider_reasons] What were the principal factors you were/ are considering when deciding whether to move? Please select all that apply.

Improving living conditions
Social network of friends and family

Family-related reasons (e.g. moving in with or separating from a partner, children born or leaving the household, etc.)
Feeling of attachment to the city/area
Job related reasons
Location
Natural hazards at a former place of residence
Other reasons

9. In the last six months how frequently have you read information about flooding and other hazards?

[R06a_media_freq] From the **general media**

1= Very infrequently 2, 3, 4, 5= Very frequently

[R06b_social_media_freq] From **Social Media** (i.e.) Facebook, Instagram, WeChat, Weibo, etc.

1= Very infrequently 2, 3, 4, 5= Very frequently

10. **[R010_flood_convo]** Since the last survey in April/May 2021, approximately how many times have you been involved in a conversation or contributed to a discussion (in person or on social media) involving the subject of flooding?

_____ times

11. **[R011_local_flood_convo]** Approximately how many of these conversations took place with someone who lived in your local area?

_____ times

In the following statements we would like to understand the extent to which you disagree or agree.

12. **[Q12_neighborhood_trust]** I believe that residents in my neighborhood can be trusted
Strongly disagree 1 – 5 Strongly agree

13. **[Q13_neighborhood_community]** I feel that I am a member of my neighborhood community.
Strongly disagree 1 – 5 Strongly agree

14. **[Q14_neighborhood_pleasure]** Being in this neighborhood gives me a lot of pleasure.
Strongly disagree 1 – 5 Strongly agree

15. **[Q15_neighborhood_favorite]** My neighborhood is my favorite place to be.
Strongly disagree 1 – 5 Strongly agree

16. **[Q16_neighborhood_identity]** My neighborhood reflects the type of person I am.
Strongly disagree 1 – 5 Strongly agree

17. **[Q17_civic_engagement_ID_NL_US]** **[not for China]** I am involved in civic engagement: either through volunteering, participation in politics, local groups, protests, etc.

[Q17_civic_engagement_CN] [only for China] I am involved in volunteering with local community groups.

Strongly disagree 1 – 5 Strongly agree

18. [Q18_civic_create] I engage with local/civic arts and entertainment either as an observer or as a creator

Strongly disagree 1 – 5 Strongly agree

19. [R013_adaptation_others] On the first survey, we asked you how many family, friends, or neighbors you could think of that had taken some adaptive action to floods. We would like you to again reflect on your family, friends, and neighbors and indicate how many people you know who have taken some adaptation action to floods.

___ people

20. [Q20_communal_protection] In your neighborhood or community, have communal flood protection measures that were aimed to lower the flood risk ever been implemented? (i.e. measures that aimed to lower flood risk for an area larger than your own home)?

Yes*

No****

I don't know

- a. [* IF answer yes]

[Q20a_joint_protection_effect] Do you believe that the neighborhood or community measure(s) reduce your own households' flood risk?

Yes

No

I don't know

- b. [Q20b_joint_protection_involve] Did you or a member of your household participate in the conceptualization, discussion, or implementation of the neighborhood or community measures?

Yes

No

I don't know

- c. [*** IF answer NO]

[Q20c_joint_protection_possible] When you consider your neighborhood and community, do you think that it is possibly for your neighborhood/community to self-organize communal flood protection should the need arise?

Self-organizing flood protection would not be possible for my neighborhood/ community:
0% _____ o _____ 100% I am certain that my neighborhood/ community
could self-organize flood protections measures

21. **[Q21_adaptation_discussion]** You have indicated that you have undertaken some structural measures (S 1-7)

.....
.....
.....

Before, while, or after you implemented these measures did you ever discuss these adaptations with one or more of your neighbors?

Yes**

No

I don't remember

- a. (**If answer Yes)

[Q21a_discussion_topic]

What specifically did you discuss with your neighbours about your flood adaption measures? Please select all that apply

We discussed the measures that were being implemented

We discussed the flood protection benefits of these measures

We discussed our mutual flood risk

We discussed how my implementation of the measure would affect their household

We discussed coordinating efforts to protect both (or several) households

We discussed AND implemented at least one measure jointly (with one or more neighbors)

None of the above

Last time we interviewed you in April/May 2021, we asked you to agree or disagree with six statements regarding your household's ability to respond to challenges. Again, there are no 'correct' or 'incorrect' answers, we want to re-ask to understand if there have been any changes in your situation in the past months.

22. **[R01a_resilience_1_change]** In response to the statement: "My household can bounce back from any challenge that life throws at it" you responded with a on the scale of 1= Strongly Agree, 2, 3, 4, 5= Strongly Disagree.

Is this still the case?

Yes

No**

- a. ****[IF answer NO]**

[R01_resilience_1]

Please indicate what you currently think about the statement:
My household can bounce back from any challenge that life throws at it

1= Strongly Agree, 2, 3, 4, 5= Strongly Disagree.

23. **[R01a_resilience_2_change]** In response to the statement: "During times of hardship, my household can change its primary income or source of livelihood if needed" you responded with a on the scale of 1= Strongly Agree, 2, 3, 4, 5= Strongly Disagree.

Is this still the case?

Yes

No**

a. **[IF answer NO]

[R01_resilience_2] Please indicate what you currently think about the statement:
During times of hardship, my household can change its primary income or source
of livelihood if needed

1= Strongly Agree, 2, 3, 4, 5= Strongly Disagree

24. [R01a_resilience_3_change] In response to the statement: "If hardships or natural disasters became more frequent and intense, my household would still find a way to get by" you responded with a [] on the scale of 1= Strongly Agree, 2, 3, 4, 5= Strongly Disagree.

Is this still the case?

Yes

No**

a. **[IF answer NO]

[R01_resilience_3] Please indicate what you currently think about the statement:
If hardships or natural disasters became more frequent and intense, my
household would still find a way to get by

1= Strongly Agree, 2, 3, 4, 5= Strongly Disagree

25. [R01a_resilience_4_change] In response to the statement: "During times of hardship, my household can access the financial support I need (e.g. such as access to credit at a bank)" you responded with a [] on the scale of 1= Strongly Agree, 2, 3, 4, 5= Strongly Disagree.

Is this still the case?

Yes

No**

a. **[IF answer NO]

[R01_resilience_4] Please indicate what you currently think about the statement:
During times of hardship, my household can access the financial support I need
(e.g. such as access to credit at a bank)

1= Strongly Agree, 2, 3, 4, 5= Strongly Disagree

26. [R01a_resilience_5_change] In response to the statement: "My household can rely on the support of family and friends when I need help." you responded with a [] on the scale of 1= Strongly Agree, 2, 3, 4, 5= Strongly Disagree.

Is this still the case?

Yes

No**

a. **[IF answer NO]

[R01_resilience_5] Please indicate what you currently think about the statement:
My household can rely on the support of family and friends when I need help

1= Strongly Agree, 2, 3, 4, 5= Strongly Disagree

27. [R01a_resilience_6_change] In response to the statement: "My household can rely on the support from my government when I need help (e.g. receiving funding or support in the event of a natural disaster)" you responded with a [] on the scale of 1= Strongly Agree, 2, 3, 4, 5= Strongly Disagree.

Is this still the case?

Yes

No**

- a. **[IF answer NO]

[R01_resilience_6] Please indicate what you currently think about the statement:
My household can rely on the support from my government when I need help
(e.g. receiving funding or support in the event of a natural disaster)
1= Strongly Agree, 2, 3, 4, 5= Strongly Disagree

Economic Comfort

28. [R09a_savings_change] Since the last survey, in April/May 2021, how has your total household finances/ savings changed.

Increased**

Decreased**

Stayed the Same

- a. **[If answer is Increased or Decreased]

[R09_savings_change_frac] by what percentage has your household finances/savings increased/decreased
____%

29. [R08a_economic_comfort_change] In the last survey in April/May 2021, we asked you to indicate your level of economic comfort. Your response was ____

Is this still the case?

Yes

No**

- a. **[IF answer No]

[R08_economic_comfort] When considering your salary along with your expenses, how would you describe your level of "economic comfort"?

1= Very difficult to live

2= Difficult to live

3= Coping

4= Living comfortably

5= Living very comfortably

98= Don't know/Prefer not to say

30. [R012_lost_job] In the last 6 months or since the last survey in April/May 2021, have you or another financially contributing member of your household lost their job?

Yes*

No

a. ****[IF answer Yes]**

[R012a_lost_job_impact]

How much has this job loss impacted you financially
1: Very little, 2, 3, 4, 5: A considerable amount

Insurance

31. **[Q31_ins_aware_US]** Do you live in a National Flood Insurance Program (NFIP) community

Yes

No

I don't know if I live in NFIP

I do not know what NFIP is

32. **[Q32_ins_claimed_CN_ID_US]** Have you ever filed an insurance claim for flood damages to your property?

Yes

No

I don't know

Questions 33-36 are if the respondent reports **having** insurance from either wave 1,2,3,4 or from wave 1 q. 41 marked "Yes – I have insurance but I'm not certain that it covers flooding"

If the respondent has indicated in wave 1,2 that they intend to undertake insurance, but do not yet report having it: Questions 37-40

IF the respondent doesn't not report having insurance, send to question 41

33. **[Q33_ins_compens_CN_ID_US]** How likely do you believe it is that you will be compensated what you would deserve according to your flood insurance policy from your flood insurance company in the event of a flood?

0% _____ o _____ 100% likely

34. **[Q34_ins_time_CN_ID_US]** Following a flood, how quickly do you believe you would be compensated for the damage to your property?

1= It would take a lot of time to receive the money I deserve based on my policy

2

3

4

5= I would be granted the money I deserve in a timely manner

35. **[Q35_ins_advice_CN_ID_US]** Some flood insurance companies can assess your home and offer you advice on which flood protection measures would be most effective to reduce your flood risk. Have you received this service from your flood insurance company?

Yes

No, but it was offered to me

No, I have not been offered this service
Don't know

a. **[**If Yes]**

[Q35a_advice_infl_real_CN_ID_US]

How influential was this advice from your flood insurance company in your decision to undertake flood damage prevention measures in your home?

Not at all influential | Extremely influential
(0 to 100 scale)

b. **[**If No]**

[Q35b_advice_infl_perc_CN_ID_US]

How influential would advice from your flood insurance company be in your decision to undertake flood damage prevention measures in your home?

Not at all influential | Extremely influential
(0 to 100 scale)

36. **[Q36_ins_discount_CN_ID_US]**

Some flood insurance companies also offer an insurance premium discount if you take specific flood damage prevention measures to reduce your risk of floods. How influential would such a discount be in your decision to undertake flood damage prevention measure in your home?

Not at all influential | Extremely influential
(0 to 100 scale)

37. **[Q37_ins_intention_CN_ID_US]**

Do you intend to purchase flood insurance in the next 12 months?

Yes
No

IF respondent does not report having insurance, but INTENDS to have it :

38. **[Q38_ins_exp_compens_CN_ID_US]** If/ when you end up purchasing flood insurance, how likely do you believe it is that you will be compensated what you would deserve according to your flood insurance policy from your flood insurance company in the event of a flood?

0% _____ o _____ 100% likely

39. **[Q39_ins_exp_time_CN_ID_US]** If/ when you end up purchasing flood insurance, following a flood, how quickly do you believe you would be compensated for the damage to your property?

1= It would take a lot of time to receive the money I deserve based on my policy
2
3
4
5= would be granted the money I deserve in a timely manner

40. [Q40_ins_exp_advice_CN_ID_US] If/ when you end up purchasing flood insurance, your flood insurance company studies your home and offers your household tailored advice on which flood damage prevention measures would **be most effective** in reducing your flood risk. Assuming these measures are within your household budget, how influential would this information be in your decision-making process?

I would be no more likely to consider implementing these measures than I am now
0% _____ o _____ 100% I would be much more likely/ almost certain to implement these measures

41. [Q41_ins_exp_discount_CN_ID_US] If/ when you end up purchasing flood insurance, after studying your home, your flood insurance company offered you **an insurance premium discount** for taking specific flood damage prevention measures that would be effective in reducing your flood risk, how influential would this information be in your decision-making process?

I would be no more likely to consider implementing these measures than I am now
0% _____ o _____ 100% I would be much more likely/ almost certain to implement these measures

IF respondent does not report having insurance, and does not intend to have it :

42. [Q42_no_ins_reasons] Please select all reasons that best illustrate why you do not have flood insurance: *(multiple answers possible)*
- Insurance is not available for my home
 - I cannot afford flood insurance
 - I believe that my flood risk is so low that insurance would not be financially worth it
 - I do not know where or how to purchase flood insurance
 - I do not trust insurance companies
 - I do not believe in insurance (for moral, religious, etc. reasons)
 - If a flood damages my home or property someone else (the government, an NGO, etc.) will financially support me
 - Other _____

Thank you very much for your continued participation in this survey. We sincerely appreciate your effort and look forward to hearing from you again in about 6 months.