

Report: review of pilot questionnaire results

Research programme	Climate <i>changes</i> spatial planning
Theme	Integration
Project (IC5)	Cost-benefit analysis of adaptation and mitigation strategies
Sub-project 3	Stated preference approaches to the valuation of flood risks: VOSL and other indicators
Authors	M.Bockarjova, P.Rietveld, E.Verhoef (VU Amsterdam / FEWEB)
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1. THE SURVEY

We use a stated preference method to elicit flood risk preferences within a sample of Dutch population living in flood prone areas. The use of this method ensures that, while some biases remain, as objective as possible valuation of risk is obtained. Three choice experiments are offered to the respondents to obtain the VOSL valuation, as well as valuation of immaterial damage related to injury and evacuation inconvenience.

The questions in this questionnaire are divided into a number of blocks. The first block starts with some opening questions about the choice of location and flood risk perception, as well as some questions about the current state of flood safety in the Netherlands. These questions are perception-based and should serve as a prelude to SP experiments, making respondents getting used to thinking about the issue of flood, that is not a common daily topic of conversations (supported by the observations during the pilot). We provide some pictures and maps as well as some factual information to the respondents so that they get some background information on the topic while providing their answers. We further proceed with the explanation of flood probability and the probability to die in a flood in the place of residence of a respondent (this information differs through dike rings). We use color grid paper, risk ladder, throwing dice example, and a comparison to a city with a number of expected flood victims for these purposes. The pilot should provide us the roadmap to which explanation type(s) is most effective and appealing to the respondents that will further be used in the final questionnaire.

Block two follows with choice experiment questions, where each respondent fills out two out of three choice experiments. Color cards with symbolic drawings accompany the explanation of attributes that vary from 3 to 5 through an experiment. Attributes that are included are the probability of a flood, of being a deadly victim of a flood, of getting an injury in a flood, of getting evacuated, commuting time, and a monetary attribute. Each attribute had 4 levels of variation, and each respondent had to answer 3 choice cards (and a sample card). The pilot reveals that while the setting of choice experiments is sometimes perceived as unnatural or unrealistic, respondents are mostly capable of making good choices. Choice experiments are followed by a WTP or a WTA question to obtain a direct valuation of flood mortality risk. We should notice already that respondents are rather willing to pay for extra safety (in terms of expected number of flood victims) than to accept the reduction in payment in exchange for an increase in the number of deaths.

Two subsequent blocks deal with questions related to (near) flood and evacuation experience, and hypothetical questions about possible evacuation in the future (differentiated for the residents of riverine and coastal areas). The questionnaire closes with some questions around climate change and some personal questions.

2. THE SAMPLE

The pilot was tested among a small group of respondents (25). The respondents are more or less equally divided in terms of gender (13 males and 12 females) and have an average age of 44,8. Average size of the household is 2,92 which is relatively high as married/cohabiting respondents were overrepresented (23 out of 25). Our sample was also biased in terms of level of education: 10 respondents had higher education (college – hogeschool - or university degree), while the rest were: basic school – 3, secondary school – 2, high school – 10. Most of the respondents were born in the Netherlands (23/25), 18 had a paid job (with 7 respondents working fulltime). Average working hours for the whole sample – 22,86h per week; for the working respondents – 31,75h per week. All of the respondents have positively estimated their health condition with an average of 80 on a 100-point scale. In approaching test respondents, we have also attempted to have people residing in dyke rings with various levels of flood safety. We have the following distribution with regard to flood safety: dyke rings with flood probability of 1/1.250 per year - 9 respondents; dyke rings with flood probability of 1/2.000 per year - 4 respondents; dyke rings with flood probability of 1/4.000 per year - 4 respondents; and dyke rings with flood probability of 1/10.000 per year - 6 respondents. However, it is important to notice that we have not covered the entire geographical spread in dyke rings in the country; for example we haven't had respondents from some areas, such as Betuwe or Zeeland.

While our questionnaire is a relatively long one (average time necessary to fill it out is 47 minutes, ranging from 22 to 70 minutes); yet, most respondents found it not a problem: 18 of 25 respondents indicated that the questionnaire was either just good, or even could have been longer. Moreover, 4 more respondents indicated that the questionnaire was somewhat long, but they could give good answers; while 3 said that because of the length of the survey, they became less accurate in answering as they progressed. Basically, the pilot version of the questionnaire included a number of evaluative questions (for example, for the choice of visualised probability explanation – 2 questions, evaluation of each choice experiment – 5 questions and evaluation of WTP and WTA questions – 2 questions) some of which will not appear in the final survey. Furthermore, we might consider omitting a number of questions that are not of primary importance for this research, to keep the survey shorter and doable for the respondents.

As a general evaluation, we can summarise that the pilot was well taken. During oral evaluation with respondents after they have filled out the questionnaire, we have received the following reactions: while the topic of the survey may be considered not of daily concern or even boring, respondents found the questionnaire itself quite instructive and not at all dull, that was supported by provided additional information about flood risks in the Netherlands, accompanied colour pictures and variation in the types of questions. These reactions support our assumption that visual aids and the assumed

structure of the questionnaire should contribute to its acceptance. Some respondents, however, found the questionnaire difficult or unclear (which however was not necessarily related to the education level of the respondent). This was in some cases reasoned by somewhat unrealistic or artificial situations that were offered, or complicated formulations of the questions. We hope to improve that based on the expressed comments of the respondents. Following the feedback that we got from the test group, we do not expect major changes to come before the questionnaire is distributed among the final sample. Minor improvements are indeed necessary, and will include some rephrasing of questions (for example, a simpler and shorter formulation of the WTA question that should prevent arising confusion; more precise formulation of one of the choice experiments; exhaustive response options, and the like - we shall return to these issues in more detail later as we proceed with question by question analysis), some spelling and editing faults. Next, while interpretation and comparison of low probabilities (of flood and dying in a flood) remain an issue, this is substantially eased by the presence of visual aids. It will even further be enhanced in the final survey (which will be carried out as internet-based in combination with computer aided personal interviews, CAPI), where technical solutions make possible the use of these aids continuously during the choice experiment. Current pen-and-paper version of the pilot presented in this respect a limitation that we expect to overcome in our final survey.

3. ANALYSIS OF RESPONSE

We shall now proceed with a question-by-question analysis (see Attachment for a pilot questionnaire). **Part I.**

1. the average number of years that respondents live at their current address is 15,7.
2. the most important reason to live at current location was indicated work (8 respondents), moving to a bigger/smaller house (6), nice neighbourhood and place of birth (4 for each); family (1). Two more reasons were mentioned – moving from a rent house to a private house and moving closer to friends / social circles. We adjust: the option family/friends, and an extra option of moving from a rent to own (bought) house.
3. only 1 respondent against 24 has thought of flood risk when choosing current location.
4. more than a half of the respondents (14) could not say how high their house is situated with respect to NAP, one indicated he did know what NAP is, and the rest provided some approximate estimate. This question was mostly meant to make respondents think of their awareness of flood risk, which was also reached.
5. the question asking for opinion with respect to the personal level of flood risk provided a nice distribution of answers, leaving much above/much below the average in

my place of residence with 1 respondent each, somewhat below the average collecting the highest score of 10, and somewhat above average and average in my place of residence with respectively 6 and 7 respondents. A suggestion was expressed by one respondent to provide absolute instead of relative risk scale, ranging high-low instead of relating it to the average in the place of residence. However, this relative representation is often used in the literature and makes more sense in the context of flooding in the Netherlands where probabilities are very low.

6. the reasons that respondents indicated for their estimate of personal vulnerability to flood risk were (multiple options were allowed): house situated on a higher ground (9), floods will not reach my house (4), house situated on a lower ground (4), no particular reason (3). 6 respondents opted for “another reason”, and none has selected the option of living near a weak spot in the dyke.

7. some of the respondents got confused by the negation in this question asking for opinion about the risk that a respondent will not survive a flood. At least three of the respondents according to the interviewer have chosen an option much or somewhat higher than the average in the region which then was followed in the next question by an explanation suggesting lower personal risk. The formulation of the question will be adjusted by omitting the negation (either “chance that you survive a flood” or “chance that you die in a flood”) Also, one respondent pointed out at the inconsistency in formulation of risk between question 5 (relating personal risk to the average in the place of residence) and question 7 (where personal risk is related to the average in the region). The formulation will be changed to “relative to your place of residence”. The valid answers were: somewhat above the average in the region (2), average (7), somewhat below average (8) and much below the average in the region (4).

8. the reasons for providing a particular level of personal risk to die in a flood were as follows (multiple options were allowed): house is situated on a higher ground (10), floods will not reach my house (10), being in a good health condition (4), ability to swim (8), house situated on a lower ground (2), no specific reason (1), and other reasons (5), where among others the possibility to flee to the upper stories or evacuate were mentioned. The option of evacuation is also considered to be explicitly included as response option in the final survey.

110. the answers to this question has provided an interesting picture about how respondents look at the risk of flooding in the central part of the Netherlands, the Randstad. 5 have indicated that it is a real danger; 16 said that it in principle can happen; 4 - that it was almost impossible, but none that it could never happen or had any opinion on this issue.

111. when asked to provide a guess about the probability of a flood in the Randstad as a number, 6 respondents chose the option of 1 in 100 years, 11 – 1 in 1.000 years, 5 – 1 in 10.000 years, one – 1 in 100.000 years, one could not pinpoint a number provided the

changing environment and changing risks due to the sea level rise, and one more respondent could not give the answer (do not know).

112. in the evaluation of the following situation that we offered to the respondents, one respondent noted that there are two outcomes described (with and without evacuation), yet only one question is asked (suggestion: ask only about the expected number of victims). The other respondents have answered as follows: the estimation coincides with my expectations (5), partially corresponds to my expectations (13, in particular out of which 6 and 1 respectively chose that the number of victims or evacuated was higher than they'd think, and 5 and 4 respectively chose that the number of expected victims or evacuated was lower than they'd think), does not correspond to the expectations (4 – all said that the expected number of victims was much higher than they would expect), and do not know (3).

113-116. these questions were asked to keep the respondents reading the explanations of probability of flooding in the place of their residence (which was dyke-ring specific) and the probability of dying in a flood. In these questions, option “relatively small” should be replaced with “rather small” to avoid misunderstandings connected to the relativity of this option.

117. after the respondents were presented with various explanations of probability of dying in a flood, we asked them to evaluate this yearly probability. Only 2 chose ‘the probability is bigger than I thought’, 7 chose the option ‘the probability is small but it might be possible that I die in a flooding’ and the other 16 chose the option ‘probability is so small that I would not think I would die from flooding’.

118 – 119. Part I was closed with the two questions where we asked for respondents’ preference towards one (or more) most clear and least clear explanation of probabilities. What we may observe is that the opinions are divided and no clear picture of the most preferred method has emerged. The most preferred explanations became rated as follows: colour grid and risk ladder each received 9 votes, and throwing a dice – 8 votes, they were followed by probability as a single number (5) and the number of people relative to the size of a city/province (3).

Among the least preferred explanations, throwing the dice is leading (8) followed by the probability as a single number and colour grid (each – 6). The number of people relative to a city or province received 4 votes, and the risk ladder – 3. Such distribution of preferences provides us with little conclusive results, thus we need to be guided by the literature, where colour grid (to be used for flood probability) and risk ladder (to be used for probability to become a deadly victim due to flooding) are most often used aids for explaining probabilities in SP setting.

A general comment of 2 respondents to various risk explanation methods that we have offered was that they were getting a slightly different feeling/impression with respect to the magnitude of risk depending on the method presented.

Part II.

This part contained 3 choice experiments, a willingness-to-pay (WTP) and a willingness-to-accept (WTA) question. As a rule, each respondent was presented with 2 CE's and a WTP or a WTA question. There are a number of findings that are worth reporting from our testing phase. The three choice experiments (CE's) that lie at the heart of our analysis are taken quite differently by the respondents. Contrary to our expectation, the CE#1 experiment (question 200) with the least number of attributes (3) is seen as the most difficult. There may be two reasons for that: on the one hand, provided by the respondents themselves – why CE#1 is seen as more difficult is the setting of the question that concerns the choice between two plans of the Water Boards for flood safety in the place of residence of the respondent. It appears that respondents are not that familiar with Water Boards and their activities and therefore 'do not feel at home' in such an artificial choice position. Two other CE's, on the contrary, appear to put respondents in a more familiar situation, and thus are perceived as more realistic, when they are asked to make a choice between two locations of residence. So, the new formulation of a CE#1 question presents two options with regard to dyke maintenance (without an explicit reference to the Water Boards). Another reason – this CE is always shown first to the respondents, and they might need time to get used to the particular format of the question and the cards, comparing the alternatives. Learning effect, as we suspect, makes filling out of the CE that follows (with 4 or 5 attributes) easier for the respondents. These findings point at the need to reconsider the setting of the CE#1, or possibly place it after a simpler CE in the questionnaire, when respondents have learnt to get around in the experimental setting.

200.A. ability to come up with a choice: yes (19) / no (5). This experiment had the highest relative number of 'no' answers.

200.B. ability to deal with the probabilities presented in the choice experiment: yes (16) / no (8). This experiment had the highest relative number of 'no' answers.

200.C. whether the choice situation was realistic: yes (17) / no (5).

200.D. the manner in which choices were made: based on all information provided (10); based on the part of attributes provided (14) – out of which: flood probability (7), probability of dying in a flood (6), costs (7).

In order to improve the quality of choices made by the respondents, include an extra sentence at the end of the description of CE#1 that should again encourage considering

all provided choice characteristics (“*Probeert u, bij uw keuze, alle getoonde kenmerken meet e nemen.*”).

It is important to notice here that only the answers of those respondents who considered one single attribute in this choice experiment could be seen as lexographic. The reason for that is that effectively, this choice experiment is built on 2 attributes – the probability of dying in a flood and tax; probability of flood was included as additional information to the respondent, also considering it’s magnitude is somewhat bigger than that of the probability of dying in a flood, which might easily be ignored. For more clarity and easier identification of lexographic answers, we suggest to rephrase answer options as “considered all provided characteristics” (“*gelet op alle getoonde kenmerken*”) instead of “choice based on all characteristics” (“*afweging op basis van alle kenmerken*”). Finally, answer options 3 and 4 should be deleted as they only bring in confusion to the respondents, and for the analysis do not have additional value in terms of information gained.

200.E. the option with the highest tax offered... ‘the improvement of dykes in my place of residence’ (8), ‘the improvement of my personal safety’ (4), ‘the improvement of the safety of my family’ (3), ‘the improvement of the safety in the place of my residence’ (8). These results point at the fact that flood safety, while formulated in terms of personal risk, remains a public good, and the payment is made for the improvement of a group’s safety.

The important issue to bear in mind to this instance is how reliable the answers are, and thus what is the value of risk valuation that would be obtained based on the choice experiments. The pilot shows that in most cases, respondents do take most of the attributes into consideration while making a trade-off, and also manage not to think of their previous choices when making a following one. We suggest that provided the difficulty that respondents experience with the artificial experimental setting, and in order to warrant the quality of our data for analysis, evaluative questions (types A and D) as for the way respondents made choices should still be included in the final survey.

Choice experiment 2 (question 201) was deemed as ‘more interesting’ (compared to CE#1), and as ‘more relevant’, because the choice situation requested a trade-off between two location for a house with varied distance from work and varied flood safety levels. Only full-time commuters (5 days a week) were asked to complete this CE. However, a suggestion was expressed that possibly people who are commuting (working) less days a week should not be excluded, as they might have a high value of time provided they are dividing their time between work and home. Possibly, those who commute 4 and 3 days a week could be included, provided that attribute values of time / amount of tax in the experiment are adjusted accordingly. The evaluation question for CE#1 resulted in such answers:

201.A. ability to come up with a choice: yes (7) / no (1).

201.B. ability to deal with the probabilities presented in the choice experiment: yes (7) / no (0).

201.C. whether the choice situation was realistic: yes (4) / no (3).

201.D. the manner in which choices were made split equally: based on all information provided (4); based on the part of attributes provided (4) – out of which: flood probability (2), probability of dying in a flood (0), travel time (2), costs (3).

In addition, consider rephrasing as suggested in comments to question 200.D.

201.E. the option with the highest tax offered... ‘the improvement of dykes in my place of residence’ (2), ‘the improvement of my personal safety’ (2), ‘the improvement of the safety of my family’ (1), ‘the improvement of the quality of life’ (0), ‘other’ (2). In fact, higher tax in the choices by design corresponded either to lower travel costs or to lower risk of flooding.

Choice experiment 3 (question 202) was designed as an alternative-specific one with 5 attributes. It was considered by respondents as ‘clear’, in particular with regard to the distinction between the two options (with or without a possibility to evacuate), which facilitated dealing with the high number of attributes. More attributes, according to some respondents, also made the picture ‘more complete’ (especially in comparison with CE#1 where only 3 attributes were offered). Introductory text was considered long, but clear. No further suggestions for improvement expressed. The evaluation question for CE#1 resulted in such answers:

202.A. ability to come up with a choice: yes (19) / no (1).

202.B. ability to deal with the probabilities presented in the choice experiment: yes (18) / no (2).

202.C. whether the choice situation was realistic: yes (17) / no (2).

202.D. the manner in which choices were made split equally: based on all information provided (6); based on the part of attributes provided (14) – out of which: flood probability (5), probability of dying in a flood (7), probability of being evacuated (6), probability of getting injured (1), costs (4).

In addition, consider rephrasing as suggested in comments to question 200.D.

202.E. the option with the highest tax offered... ‘the improvement of dykes in my place of residence’ (12), ‘the improvement of my personal safety’ (1), ‘the improvement of the safety of my family’ (5), ‘the improvement of the quality of life’ (0), ‘other’ (4). In fact, higher tax in the choices by design corresponded alternatively to either option with or without evacuation possibility, accompanied by the varying level of flood risk.

203. the WTP question offered a trade-off between the decrease of expected number of deadly victims per flood and the increase in the yearly water board tax, keeping the probability of a flooding unchanged. A total of 11 respondents answered this question. Two repeated questions were asked with regard to a particular sum of money (starting with 10€, and then followed by 15€ by a positive answer, or 5€ by a negative answer). Finally, an open question was asked with respect to the maximum increase of a water board tax. As a result, four 0 WTP answers were obtained and 7 answers with positive WTP, ranging from 15 to 100 euros. Important to note here is that implied WTP was by construction quite high – at the level of 40mln euro at the initial bid. Notwithstanding we have obtained positive WTP, the average value of which is 78,2mln euro. An important point to keep in mind in this respect is that often respondents belonged to one of the two groups: either in principle not willing to pay extra money for the improvement of flood safety (this is the task of the government; we already pay enough taxes) resulting in zero WTP; or being willing to pay a couple of euros extra (5, 10, or 15 euro per year would not make much difference for the budget) to warrant better safety. This implies basically that the WTP values obtained are clustered at the extremes, and therefore in particular for such cases the literature suggests to use median instead of mean as centrality measure. The median WTP thus is 60mln euro, which is lower than the mean, and yet much higher than the usual VOSL estimates from the literature that are found between 1 and 10mln euro. We shall adjust the probability values so that the initial bid corresponds to the implied VOSL value of about 5mln euro.

204. WTA question presented a trade-off between a lower water board tax and an increased number of fatalities per event of flooding, keeping the probability of a flood constant. This was a difficult question for the respondents (14 in total) as this sort of trade-offs do not belong to the scope of usual decision situations. In particular, some respondents were confused when they got a lower bid to accept the decrease of a tax after they have accepted the first one. Further, by the last open-ended question, where they had to indicate the minimum decrease in tax that they were willing to accept in exchange for an increase in the expected number of flood fatalities, those respondents who did not want to accept any decrease in tax trading off more potential victims on the ethical grounds, found that this response option was missing. Even when we introduced this as a separate option during the pilot (as a result of which this issue was resolved), those respondents who had a positive WTA had difficulty with defining the minimum amount of tax decrease; others needed information about the amount of water board tax that they are currently paying. Finally, nine 0 WTA answers were obtained, and 5 positive WTA answers ranging from 20 to 300 euros. Therefore, the implied average VOSL is 114,3mln euro; while the median value is 0. We have improved the formulation of the final open-ended question and hope this should help respondents in

their estimate of the minimal tax reduction. Also, the anchoring of the underlying VOSL values in this question should be adjusted conform to WTP question.

Part III.

This part of the questionnaire dealt with respondents' experience with (near)floods and evacuation, as well as issues connected to that.

300. personal experience with high water, flood or evacuation (multiple answers possible): 17 respondents had no such personal experience, the remaining 8 respondents have experienced the following events: a sea flood as a result of dyke breach (3), a river flood that resulted from high water overtopping the dykes (3), high water as a result of major rain (3), evacuation in anticipation of a flood (2).

The questions 300.0, 300.A. – 300.D. are follow-up questions answered by the respondents who has had some flood-related experience in the past.

300.0. misses the option “not applicable” (n.v.t.).

300.A. preparedness to the flood event (ex-ante): 4 respondents admit they were not at all ready (1 on the 5-point scale), and 3 said they were in principle ready (3 on the 5-point scale).

300.B. none of the respondents (7) (or their family members) have taken any steps to prepare to another flood or protect their property. The reasons were the lack of urgency, low risk, and the lack of knowledge with respect to potential preparatory measures.

300.C. Current preparedness to the flood was evaluated as follows: not at all prepared – 5 respondents (1 on the 5-point scale); somewhat prepared – 1 respondent (2 on the 5-point scale); in principle ready – 1 respondent (3 on the 5-point scale).

300.D. Respondents had to evaluate the severity of 8 types of consequences of their (near)flood experiences, most of which were rated as “not at all serious” to “neutral” (1 to 3 the 5-point scale). Only damage to house and disturbance of daily routine were 3 times rated as “(very) serious” (4 or 5 on the 5-point scale). This question misses the option “not applicable” (n.v.t.).

301. this question mirrors question 300 and asks for the experiences of (near) floods among friends and family members. Here, 14 respondents did not have anyone, and 11 respondents did have someone among their friends or family who has experienced a (near) flood event or evacuation.

Part IV.

Dealt with questions regarding possible future situations with evacuation. Somewhat different versions were presented to the respondents residing in a flood-prone areas along the rivers, and in the dyke rings at the sea. The former consisted of maximum 3 questions (depending on the stage at which respondents would evacuate from the area), and the latter had 1 question due to limited evacuation possibilities from the coastal dyke rings. Here (question 410), one respondent has indicated it won't be possible to evacuate within 24h (due to panic), while other 8 said they would evacuate (most of which would also warn their family, friend and/or colleagues – 7; and would look for evacuation routes – 6). 4 respondents would leave the area by means of public transport, the others – on their own. 7 would stay with their family or friends, 2 – in special organised evacuee centres, and 2 would not know yet.

400-402. most respondents from the riverside areas would not evacuate during the first stage – warning (only 1 out of 17 respondents), but rather prepare for a potential evacuation – protect property (12); warn neighbours, family and friends (9); look for evacuation routes (11); warn family or friends that they might need shelter in case evacuation order is issued (13). Most of these actions would be repeated at the second stage – the issue of evacuation order, when all the remaining respondents (16) would follow the order, and leave the area on their own (13) or public transport (2), and stay with family or friends. No respondent would wait for evacuation until the final ultimatum stage.

Part V.

Here we asked 3 questions regarding climate change.

500. most of the respondents (17) believe in climate change, and 2 – did not take this argument seriously (too much uncertainty yet and too much of speculative media attention). 3 respondents found it difficult to make up their minds with respect to the climate change issue; 1 did not have a particular opinion. The question appears to miss an option that would suggest that climate changes, yet which is a natural process (rather than caused by anthropogenic change).

501. 11 respondents believe that the Netherlands would see serious changes as a result of climate change in the coming 50 to 100 years; 9 respondents believe that that would be some to relatively little change. None think there will be no change, and 4 respondents did not know. The wording of this question should be adjusted, as well as options “some” and “little change” should be separated.

502. 16 respondents believe that climate change would negatively influence water-related issues in the Netherlands; 2 believed that not, and 5 were yet indecisive. This question will be reformulated to ask directly whether climate would have an impact on flood risk in the Netherlands with a range of answers from positive to negative.

Part VI closed with personal questions (601-612), which we have already covered in the description of the test sample.

4. SUMMARY AND EXPECTED RESULTS

The analysis of pilot responses provides us with important information with regard to the main task of flood risk valuation. The pilot reveals consistently that respondents admit that a major flood disaster may in principle take place in the Netherlands, however are inclined to add “not in my lifetime”. Second, flood risk remains a public good (or, rather, a ‘public bad’) where pure individual risk component can hardly be separated. This appeared from the responses on evaluation questions after the choice experiments where only a few of our respondents in the selected sample have attributed payments for the improvement of flood protection to the improvement of their *personal safety*, while most of the respondents attributed payments rather to the improvement of the safety for their family or the neighbourhood. This is despite the setting of the choice questions formulated explicitly in terms of individual (annual) risk. Both findings are, however, in line with our expectations with regard to flood risk perception in the Netherlands that has crystallised during the past couple of decades. It can be characterised by a high degree of reliance on and trust in government that is believed to safeguard flood protection in the country (see also the KvR IC5 Review Report on Flood perceptions in the Netherlands, Bockarjova et al. 2008).

Presumably, persistent flood risk perceptions were influencing the answers to the SP experiments (partially resulting in so-called lexicographic answers, where respondents looked only at a single choice attribute, like flood probability). In fact, it seems, respondents mean to pay for collective rather than individual protection, which may point in the direction of what can be referred to as ‘value-of-collective-life’. To this end, we may draw on the interpretation in the spirit of ‘homo politicus’ as opposed to ‘homo economicus’ (extended literature is devoted to this subject), when individuals act not only considering personal gains and losses, but rather take account of public or collective costs and benefits in their decision-making. The important implication of these differing interpretations lies in the use of VOSL in cost-benefit analyses. Ultimately, it is important to provide a policy-maker with a proper indicator, so that is it duly used in decision-making processes.

We hold some expectations with regard to our final survey, namely on relationships affecting the magnitude of VOSL that are supported by numerous studies in the literature. We would expect that also in our case, valuation of risk is directly related to income, but inversely to age; that valuation of risk is positively related to previous flood or near-flood experiences, and is higher for females compared to males.