


## Appendix D: Flood risk investment game

**What would you do?**



We will now present you a situation in which you own the home you will be living in for the coming 25 years. In addition to your home, you have a savings balance of 65,000 ECU (comparable to Euros) that you can use to pay for investments.

In the following scenario, try to imagine what you would do given that your home is prone to flooding.

For this part of the research, a large reward is available. **One of the participants will be randomly selected** to receive this reward. The game will be played by 500 participants at most, which means that your chances of being selected for the large reward are at least 1:500. The size of the reward depends on the final balance of your savings account, which depends on your decisions in this scenario and whether a flood occurs.

You can earn up to **€650**. (The conversion rate is 100 ECU = €1.)  
**Therefore it is important to read the information carefully.**

**There are no right or wrong answers in this scenario.**  
 We would like to know what you would do.

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### 1. Instructions (1)

First page of instructions, including information about payoffs and the random selection mechanism. Green panel emphasizes that there are no right or wrong answers.


**Information about the scenario**

Imagine that you own a home you will be living in for **the next 25 years**. Furthermore, you own a savings account with a balance of 65,000 ECU (comparable to Euros).

The probability of a flood is **1 percent per year**. The probability that your house is flooded at least once in the coming 25 years is approximately **22 percent**.



The computer selects each year at random which house gets flooded. The probability that the blue house is flooded, is 1 percent.



You can invest in **damage reducing measures** to protect your home from flooding. These measures will not change the probability of a flood, but they can **reduce damage** in case of a flood.

An example of such a damage reducing measure is moving your electric appliances to a higher floor.

You can decide for yourself how much you want to invest. The more you invest, the lower the expected damage.

We will start with a test scenario to get familiar with the game.

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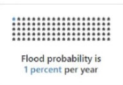
### 2. Instructions (2)

Second page of instructions, including information about the flood risk and an example of damage-reducing measures.


**Test scenario**

[open the instructions](#) [test scenario](#)


You own your house and you have **65,000 ECU** on your savings account.




Flood probability is 1 percent per year



25 year scenario



Damage 50,000 ECU in case of flooding



No insurance  
In case of a flood you pay the full damage.

**Caution!** You can use this test scenario to get familiar with the possibilities. The results will not be used to calculate your final payoff. Start by clicking the button below.

[Start the test scenario](#)

### 3. Test scenario

Start of the test scenario. Yellow panel emphasizes that this test scenario does not count towards the final payoff.

After this page, participants go through all pages of the test scenario (Invest / Floods / Overview of results).

## Appendix for [After the virtual flood](#)

### Understanding questions

[open instructions](#) [test scenario](#)

To ensure you understand the rules of the game correctly, we will ask you a few understanding questions. As soon as you have answered all questions correctly, you will be able to start the final scenario.

The instructions will be always available during the scenario (top right corner of the screen, button 'open instructions').

- What was the flood risk in this scenario?  
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- What will happen if your home is flooded and you have not invested in damage-reducing measures?  
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#### 4. Understanding questions

Participants can only proceed after answering both questions correctly. Software counts the number of attempts. Questions:

- What was the flood risk in this scenario  
(Answer: 1% per year)
- What will happen if your home is flooded and you have not invested in damage reducing measures?  
(Answer: I have to pay the full damage of 50.000 ECU)

### Final scenario

[open the instructions](#) [final scenario](#)

You own your house and you have **65,000 ECU** on your savings account

Flood probability is 1 percent per year

25 year scenario

Damage 50,000 ECU in case of flooding

No insurance  
In case of a flood you pay the full damage

**Caution!** Please take your time to read the information on the following pages very carefully. It is important for your final payoff. The final scenario starts by clicking the button below.

[Start the final scenario](#)

#### 5. Start final scenario

Start of the final scenario. Yellow panel emphasizes that the game starts now, and that the following pages are important for the payoff.

### Investment

[open the instructions](#) [final scenario](#)

You own your house and you have **65,000 ECU** on your savings account

Flood probability is 1 percent per year

25 year scenario

Damage 50,000 ECU in case of flooding

No insurance  
In case of a flood you pay the full damage

How much do you want to invest to reduce flood damage?

<a href="#">0 ECU</a> do not invest, accept 50,000 ECU damage	<a href="#">1,000 ECU</a> reduce damage to 45,242 ECU	<a href="#">5,000 ECU</a> reduce damage to 30,327 ECU	<a href="#">10,000 ECU</a> reduce damage to 18,394 ECU	<a href="#">15,000 ECU</a> reduce damage to 11,157 ECU
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#### 6. Investment

Investment page in the final scenario. Question in the grey panel ("How much do you want to invest to reduce flood damage?"). Answer options in blue buttons (0 ECU; 1,000 ECU; 5,000 ECU; 10,000 ECU; 15,000 ECU) with accompanying damage reduction.

### Floods

[open the instructions](#) [final scenario](#)

## 25 years later...

The computer has randomly selected one home per year to be flooded. You can now check what has happened.

[Close this window to show which homes were flooded](#)

#### 7. Floods I


Large warning page indicating that the participant will see the results of 25 years of flood risk.

## Appendix for [After the virtual flood](#)

**Floods** open the instructions final scenario

You own your house and you have **64,000 ECU** on your savings account

Your home has been flooded at least once.



100 homes are depicted above. All homes that have been flooded at least once in the past 25 years, are indicated in blue. You were not insured and your home has been flooded. You need to pay to recover the **reduced** damage.

**Pay 45,242 ECU damage**

### 8. Floods II: Flooded

Results of 25 years of flood risk. Home of the participant is indicated with dotted lines. Grid shows 100 homes and homes that have been flooded at least once are indicated in blue.

In this case the home of the participant has been flooded. Red banner indicates this. By proceeding to the next page, the participant will pay the reduced damage (this participant chose to invest 1,000 ECU, which reduced the damage to 45,242 ECU)

OR:

**Floods** open the instructions final scenario

You own your house and you have **64,000 ECU** on your savings account

Your home was not flooded.



100 homes are depicted above. All homes that have been flooded at least once in the past 25 years, are indicated in blue. Because your home was not flooded, you do not need to pay to recover the damage.

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### 8. Floods II: Not flooded

Results of 25 years of flood risk. Home of the participant is indicated with dotted lines. Grid shows 100 homes and homes that have been flooded at least once are indicated in blue.

Participant will either see this screen shot, or the previous one. In this case the home of the participant has not been flooded. Green banner indicates this. Participant does not need to pay.

**Overview of the past 25 years**

Here is an overview of your savings account of the past 25 years in the game:

Endowment	65,000 ECU
Investment damage reducing measures	- 1,000 ECU
Flood damage	- 45,242 ECU
<b>Total</b>	<b>18,758 ECU</b>

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### 9. Overview

Overview of payments of the 25 years in the game:

- endowment = 65.000 ECU
- - investment in damage reducing measures
- - flood damage
- = total payoff

**Results**

Your final savings balance was **18,758 ECU**. In case you are selected for the large reward, you will get **€188**.  
(The conversion rate is 100 ECU = €1)

Every respondent is equally likely to be selected for the large reward. The computer will randomly select someone after all respondents have finished the survey.

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### 10. Results

Summary of results and conversion to euros. Recap of the random selection mechanism.