Appendix A: Procedure of the Experiment

Introduction

At the beginning of the experiments the participants were welcomed and the research team introduced themselves. A short description of the experiment was given—two games and a questionnaire—but no details were provided about the content or the purpose. The participants were told that the games are common in this research sector and are played in a similar manner in different countries across the world. They were also informed that they would play with money provided by the University of Dresden for research purposes. Anyone was free to leave at any point before or during the experiment.

The participants were instructed that they were not allowed to talk about the games at any point during the experiment, otherwise they would have to be disqualified. They were free to talk about other topics and one research assistant remained with the participants at all times, ensuring that this rule was followed. We also assured all participants that the result of the study would be used for research purposes only and that any personal information would be kept strictly confidential.

Everyone drew a number out of a bag, which allowed for a random order of participants in the games. At the end of the introduction, the 'show-up' fee of 4000 Cambodian Riel (USD1) was distributed to each participant.

Risk Game

The first game began with a description of rules. To address issues of low literacy, the procedures were explained to all participants with the use of graphs. Additionally, the local members of the research team enacted various game situations in front of the participants. The examples were defined and oriented towards the examples provided by Schechter (2007). The players were informed that questions

O. Fiala, *Natural Disasters and Individual Behaviour in Developing Countries*,
Contributions to Economics, DOI 10.1007/978-3-319-53904-1

were not allowed in the group setting, but could be asked of the researchers in private. At the beginning of the game, every player was asked if she understood the game. If they did not, the research team would explain the rules again in private and answer any questions. The participants were called by the number they had drawn from the bag. To decrease the length of time needed for the game, it was necessary to play it simultaneously at two different stations. Both stations were occupied by two research assistants at all times. As in many experiments in rural areas, to ensure that participants understood the games, neither the risk nor the trust game was double blind (Barr 2003; Karlan 2005; Schechter 2007).

The participants were told that everyone would receive 6000 Riel (USD1.50) in yellow-coloured play money. These looked similar to the real notes, so that the participants could make the connection to the actual money. They were told that the play money would be exchanged at the end of the experiment, one-to-one, into real money. Each player received six 1000 Riel notes for use in the game.

The players were told that they had the opportunity to bet any share of this money, which included the choice not to bet at all. After the player decided the amount they wanted to bet, they rolled an unbiased six-sided die. The following distribution of possible outcomes was given, which is based on previous studies by Schechter (2007) and Ahsan (2014). If the die landed on one, the player would lose the money she bet. If the die landed on two, the player would lose half of the money. If the die showed three, the player would keep the amount she bet. If the die landed on 4/5/6, the player would receive 1.5/2.0/2.5 times her bet, respectively. Thus, a roll of one or two would have a negative result, a roll of three would have a neutral result, and rolls of four, five or six would have positive results. Participants were reminded that they could finish the game with more or less than the original amount of 6000 Riel.

After one round, the game was over. The game was played only once with each participant. Each participant could take away the share she did not bet, plus the money she won through rolling the die (if any). The total money from the game was paid out in play money at the end of the round.

Figure A.1 summarises the procedure of the game. A translated version of this figure was also used by the research team to explain the game.

Trust Game

After the risk game the participants were gathered as one large group again for an explanation of the second game. The success of the trust game largely depends on the participants' understanding of the rules (Ahsan 2014). As in the first game, the procedures were explained aloud in front of all participants, with the support of graphs. As before, the local members of the research team enacted various (previously defined) situations and demonstrated the procedures of the game. The participants were not allowed to discuss the game amongst themselves, but they were told that any questions could be asked to the researchers in private. The explanation of the trust game was more time-consuming than that of the risk game.

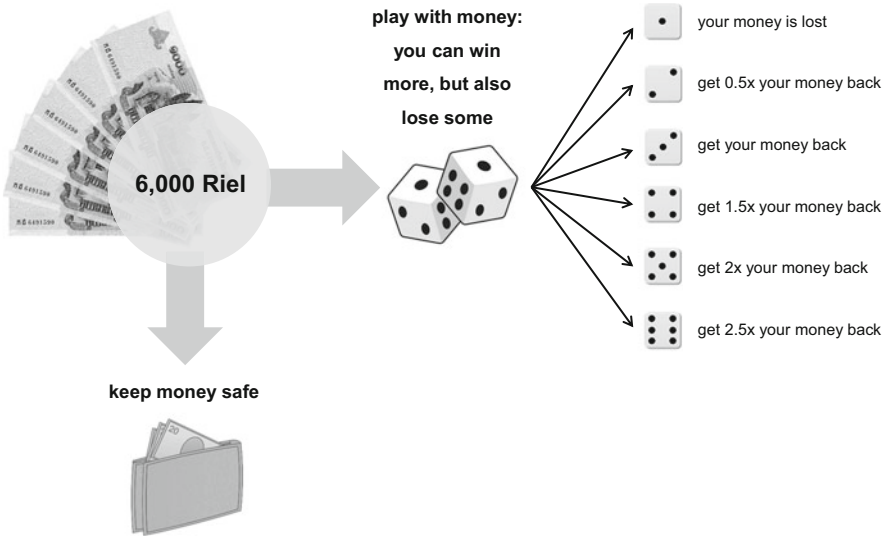

Fig. A.1 Procedure of risk game

The game is played by pairs of individuals: player 1 and player 2. Each participant played the role of player 1 in the first round and the role of player 2 in the second round. The players were told that they would always play with other people from their village, but each time with a different person. Participants were notified that nobody would know exactly with whom they were playing.

The participants were called again by their number. As in the risk game, the game was played at two different stations simultaneously, and both stations were occupied by two research assistants each.

In the first round of the game, each participant was given 6000 Riel (USD1.50) in red play money, in the form of six 1000 Riel notes. This different colour was used to prevent confusion and crossover of play money between the two games.

Player 1 then had the opportunity to send a share of their 6000 Riel to an anonymous player 2. Whatever amount player 1 sent was tripled by the researcher before it was put in an envelope in front of the participants. Each envelope was marked with a different letter combination. If no money was sent by player 1, the envelope remained empty. After every participant played their role as player 1, the envelopes were shuffled in front of the whole group.

In the next phase, all participants were called again by their number to play their role as player 2. On the way to the station they took an envelope from the top of the stack. The players were told that they should not receive their own envelope. If they had drawn their own, they should return it and pick the next one. The participants opened the envelopes in front of the research assistants and saw how much (if any) money was sent from player 1. Then they decided how much money they wanted to keep and how much they wanted to return to player 1.

Therefore, the participants finished the game with whatever they kept as player 1 (from the original 6000 Riel), plus whatever they kept from the tripled amount in

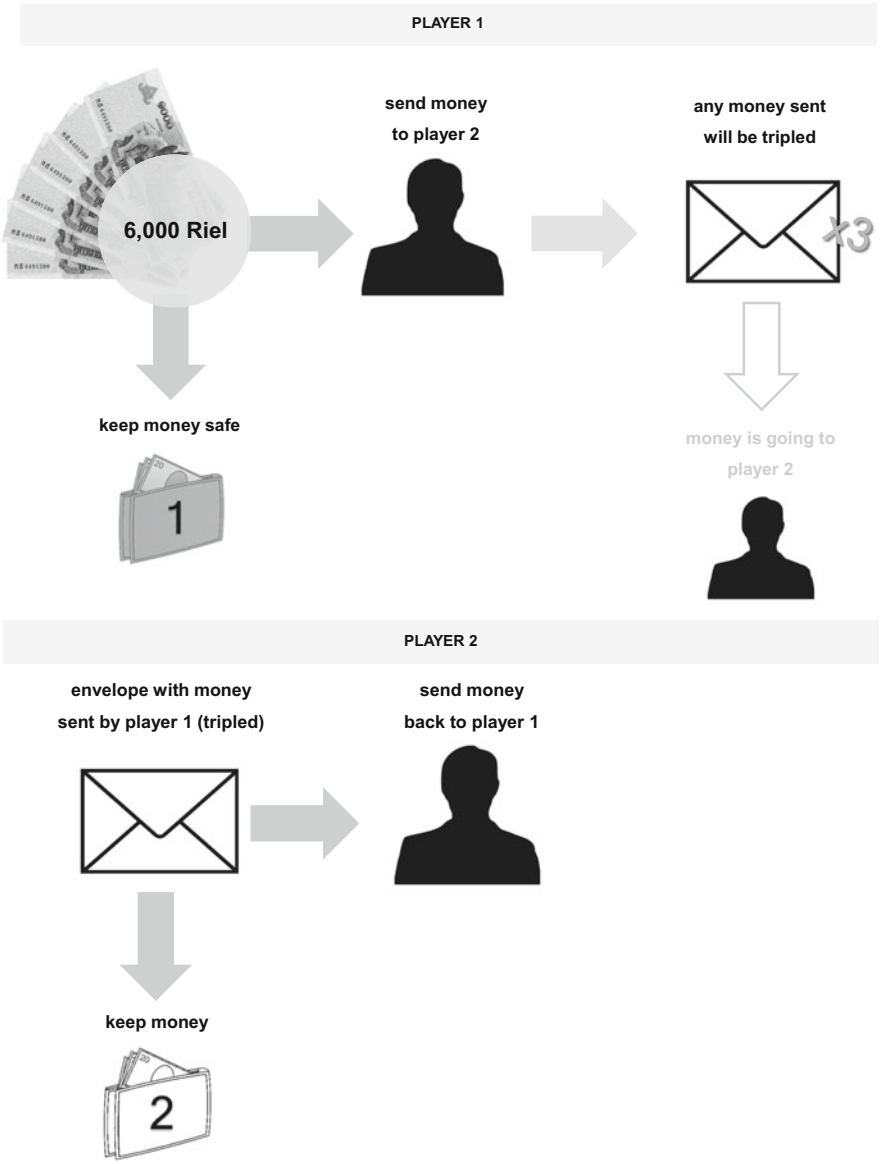

Fig. A.2 Procedure of trust game for player 1 and 2

their role as player 2, plus whatever they found in their original envelope as player 1 (which was returned by another player 2). Each player was informed that they could finish with more or <6000 Riel as a result of the game.

Figure A.2 summarises the procedure of the game. A translated version of this figure was also used by the research team to explain the game.

Questionnaire

After both games the participants were called by their number to one of the six research assistants, and were asked the questions from the set questionnaire. The research team asked all questions in person and no questionnaires were distributed to the participants. The questionnaire took place at the end of the experiment, so that questions had no influence on the behaviour during the games. They also received their original envelope from the trust game (as player 1), with the money (if any) sent back by player 2. After the questionnaires, the participants approached the author to immediately exchange their play money for real money. The questionnaire contained the sections household information, experiences with natural disasters, disaster risk management activities, prevention and preparedness, and demand for insurance.

Discrete Choice Experiment

The discrete choice experiment comprises 48 alternatives, presented in 24 choice sets, each consisting of three alternatives (flood insurance A, flood insurance B, no insurance). A sample of one choice set in English is presented in Fig. A.3.

	Insurance A	Insurance B	No Insurance
Cover for loss	1,000,000 Riel	500,000 Riel	–
Weekly premium	2,000 Riel	2,000 Riel	–
Condition for pay-out	Pay-out after a visit of insurance employee	Pay-out if measuring station has shown flood	–
Credit	without loan	without loan	–
Prevention	No prevention	Prevention effort	–
Provider	Village	National government	–

Fig. A.3 Sample of choice set

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Appendix B: Descriptive Statistics: Livelihoods and Coping with Natural Disasters in Rural Cambodia

Household Information

Table B.1 summarises the most significant results of the individual statistics. In total, 209 persons from 5 villages participated.[1]

37.5% of the participants were male, 62.5% were female (n = 208). Whilst the average age was 50.9, the youngest participant was 19 and the oldest was 95. 97.6% of the participants were married (n = 207) and Buddhism was the dominant religion (96.2%); the rest were Christians (n = 209). Two thirds of the respondents were female.

Figure B.1 shows the level of education of the participants (n = 209). While 37.8% of the participants had no formal education at all, only 57.9% had completed primary or secondary school, although strong differences between the male and female participants can be observed.

59.6% of participants described themselves as literate (n = 203). The results also differ significantly between genders (Fig. B.2). While 83.3% of the men described themselves as literate, only 44.4% of women did so. To measure financial literacy, Clarke and Kalani (2012) asked their participants short mathematical questions and used the number of correct answers as a proxy for financial literacy. For this analysis, the same method with the given questions was used.[2] 22.4% gave no correct answers, another 22.4% gave one correct answer, 24.9% two correct answers, 21.5% three correct answers and 8.8% were able to answer all questions correctly (n = 205).

[1]Three participants, who were under the age of 18 and did not disclose this fact at the beginning, were deleted from the sample. Another five participants in one village came to participate, but finished the experiment too early or did not start at all. They were also deleted from the sample.

The number of answers for each question varies; therefore the actual number of observations is provided for each question.

[2]The mathematical questions were the following: 5 + 3 = ?, 3 × 7 =?, 1/10th of 300 = ?, 5% of 200 = ?

O. Fiala, *Natural Disasters and Individual Behaviour in Developing Countries*, Contributions to Economics, DOI 10.1007/978-3-319-53904-1

Table B.1 Individual statistics summary

Characteristics	Mean	Min	Max
Male (%)	37.5%		
Age	50.9	19	95
Married (%)	97.6%		
Buddhist (%)	96.2%		
No education (%)	37.8%		
Literate (%)	59.6%		
Financially literate	1.7	0	4
Household size	5.6	1	17
Head of household (%)	67.9%		
Living in village <15 years (%)	9.7%		
Households with credit (%)	48.1%		
Land owned (%)	59.3%		
Land owned (ha)	2.87	0.08	15
Growing rice (%)	55.8%		
Households with livestock (%)	23.9%		
Total livestock units, usual year (2012)	0.24	0	6.5
Total livestock units, last year (2013)	0.34	0	6.5
Per-capita income, usual year (US Dollars)	379	0	16,676
Per-capita income, last year (US Dollars)	257	0	5000
No. of observations	209		

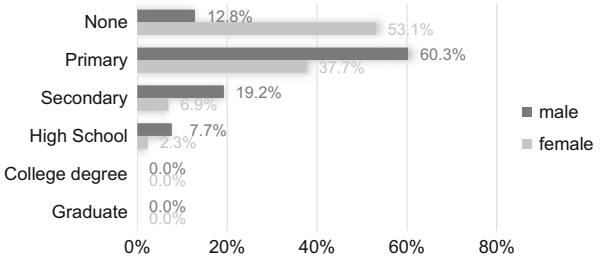

Fig. B.1 Level of education completed

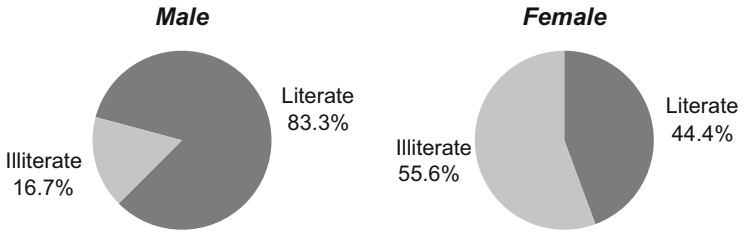

Fig. B.2 Literacy

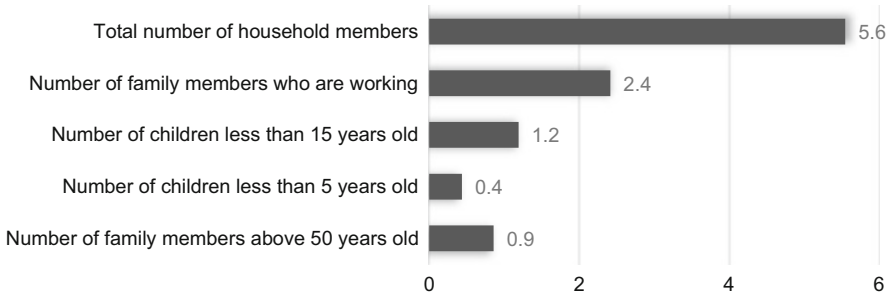

Fig. B.3 Number of household members

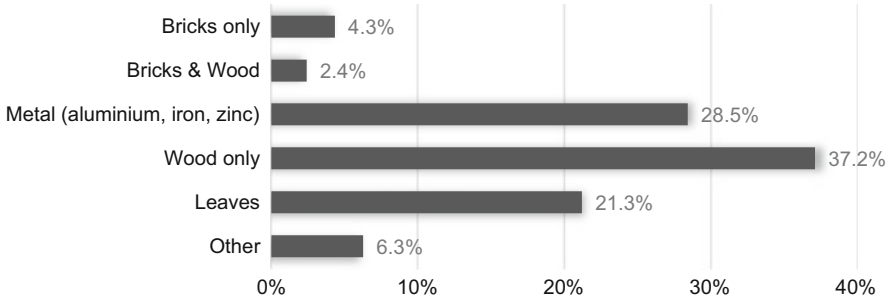

Fig. B.4 Materials used to construct house walls

67.9% of participants answered that they are the head of their households (n = 209). Figure B.3 shows the average number of household members. The average size of the total number of household members was 5.6, whilst the smallest household was formed of 1, and the largest made up of 17 persons (n = 209).

Almost two thirds of the participants had lived in their village for their entire lives (61.5%). 80 participants moved to their villages later in life, on average 23.9 years ago (min 1, max 40 years). Only 9.6% of the participants had lived in their village for <15 years (n = 207).

The next questions reveal the living conditions of the participants. Figure B.4 shows the material used to build the walls of participants' houses. While 28.5% used different kind of metals, 58.5% had walls of wood or leaves (n = 207). The majority of the participants (95.2%) used a different kind of metal for their roofs (n = 208).

Figure B.5 shows the participants' sources of water for daily use. 62.2% of the sample obtained their water from river and ponds, followed by 30.1% who had a well or hand pump. 'Other' (7.7%) includes those who purchased water for daily use (n = 209). 86.1% of participants had access to electricity (n = 208).

Figure B.6 shows the proportion of participants who had applied for various types of credit. 51.9% had not borrowed any money. Of those who had borrowed money, the majority received it from informal sources: family, friends or

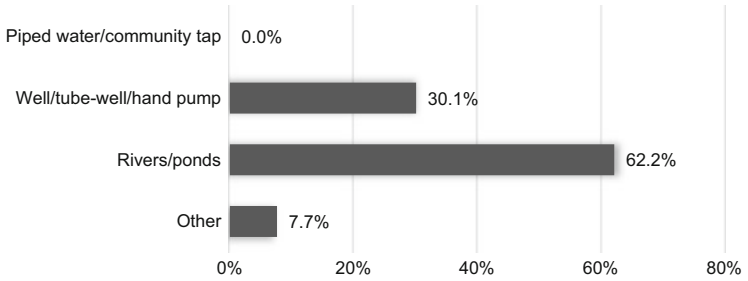

Fig. B.5 Source of water for daily use

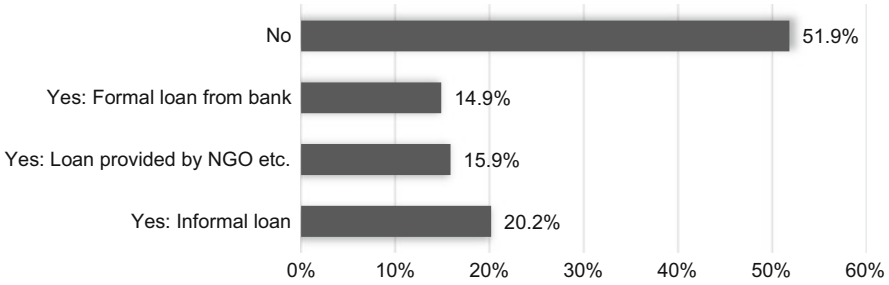

Fig. B.6 Households with credit/loans

neighbours (20.2%). Less common were formal loans from banks (14.9%) or NGOs (15.9%). Only 7.2% had deposited money in an account and therefore had contact with formal banks (multiple answers were possible; n = 208).

59.3% of households owned agricultural land. The average size of the land was 2.87 ha (min 0.08, max 15 ha). The questionnaire also asked about household livestock ownership. In the literature, a method of 'tropical livestock units' (TLU) is described, which allows the calculation of wealth based on the ownership of livestock and allows for comparison between households (Dercon 2004; Chilonda and Otte 2006; Clarke and Kalani 2012). The following calculation is based on the livestock unit coefficients for East and Southeast Asia of Chilonda and Otte (2006).[3] 23.9% of the households owned livestock, the average TLU account for 0.24 in a usual/average year and 0.34 in the last/extreme year.[4,5]

[3]Cattle 0.65, pigs 0.25, chicken 0.01. Due to a lack of a coefficient for ducks, in comparison with Njuki et al. (2011), the coefficient 0.03 was assumed.

[4]The questionnaire distinguished between a 'usual year' (without extreme floods), whereby the interviewers asked for information about the year 2012, and 'last year' (2013) when extreme flooding occurred in October.

[5]Number of animals is based on answers of participants. If only one amount was provided, it was assumed that this amount referred to last year (2013). In cases such as these, the figure for a usual year was calculated based on the quantification of damages, otherwise it was recorded as a missing value.

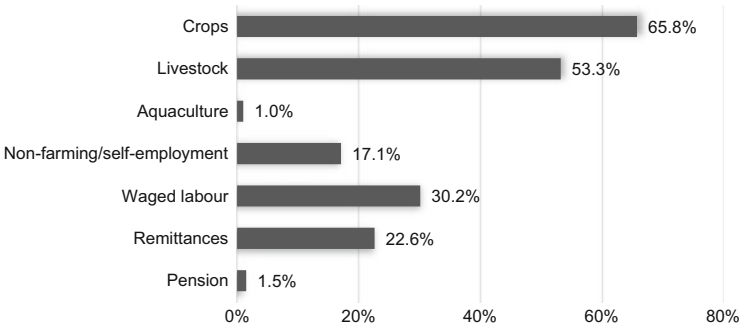

Fig. B.7 Percentage of participants earning from various sources of income

The questionnaire asked about different sources of income,[6] including income from:

- Growing crops[7]
- Raising livestock
- Aquaculture[8]
- Non-farming/self-employment
- Waged labour
- Remittances
- Pension

Figure B.7 shows the proportion of the various income sources per household. 65.8% of all participants gained income from growing crops, followed by raising livestock (53.3%) and waged labour (30.2%). Another important source of income was remittances (22.6%) and income from self-employment (17.1%). Aquaculture and pensions can be neglected (n = 199).

Table B.2 shows the income from various sources from 199 participants in a usual year (2012) and last year (2013).[9] In 2012 the average income per capita was

[6]The questionnaire asked for annual income. However, many participants are not aware of their income per year but were able to provide information per month or per day. In the latter case, an average of 27 working days per month was assumed. The relevant exchange rates are 32.33 Thai Baht for USD1 and 4000 Cambodian Riel for USD1.

[7]If no income information was provided, the annual household income was calculated on the basis of the amount of crops produced. If the sales price for 1 t of rice was given in the interview, this was used for the income calculation. Otherwise the average sales price was calculated and assumed for the other households in the same village. Because of different types of rice crops and different sales markets, a generally accessible price cannot be assumed. When crops were mentioned 'for consumption' no amount was attributed and no income was calculated. One household produced cassava—based on Reuy (2013), 1 t of cassava has the value of USD160.

[8]One household mentioned only the amount of fish sold, but not income. Based on information from Yady et al. (2012), 1 kg of fish has the value of USD0.44.

[9]All income information was originally recorded per household and transferred to per-capita based on household sizes. For the various sources of income (except the total income), the conditional average income was calculated (based on the number of participants who earned money from the various sources).

Table B.2 Average income per capita from various sources, in US Dollars

	Crops	Live-stock	Aqua-culture	Self-employment	Waged labour	Remittances	Pensions	Total
Income usual year (2012)	272	6	8	133	169	122	39	369
Income last year (2013)	113	7	88	176	171	224	56	247
Percentage change	−58.7%	17.1%	1027%	32.0%	1.2%	82.6%	44.2%	−33.1%
Number of observations (2013)	131	106	2	34	60	45	3	199

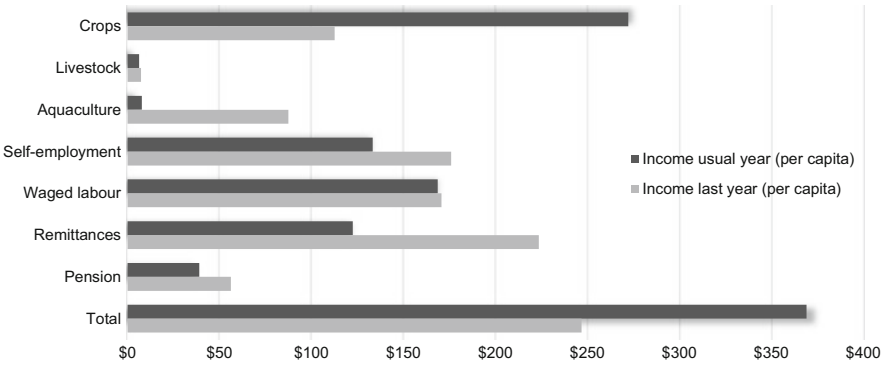

Fig. B.8 Average income from various sources and total average income per capita

Table B.3 Summary of participants' experiences with natural disasters

Characteristics	Mean (%)
Experienced flooding in the last 5 years	68.4
Observed flooding	97.9
Strong fear of danger of damages through floods	67.7
Faced severe consequences of flooding	73.0
Believes that extreme floods are becoming more frequent	74.6
Damage to household property due to extreme flood in 2013	26.4
Damage to household production due to extreme flood in 2013	88.7

USD369, which shrank by 33.1% to USD247 in 2013. The average income from growing crops per capita, livestock income and pensions also decreased. In contrast, the average income from other sources increased, particularly average remittances.

Figure B.8 presents the numbers from the table above and highlights the differences of the income sources over the 2 years (2012 and 2013). In 2012, growing crops was the dominant source of income, followed by waged labour, self-employment and remittances; this picture changed in 2013.

Experiences with Natural Disasters

Part II of the questionnaire was intended to investigate participants' experiences with natural disasters. Different questions about experiences, assessments of flood risks and actual damages were asked. Table B.3 provides a short summary of the key results.

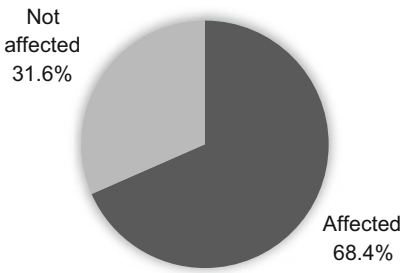

Fig. B.9 Households affected by floods within the last 5 years

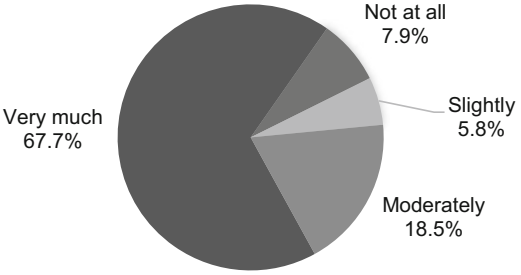

Fig. B.10 Fear of danger of flood damage

As illustrated in Fig. B.9, 68.4% of households answered that their house was flooded in the last 5 years, while 31.6% had no such experience (n = 209).[10] However, almost everyone (97.9%) had observed the effects of floods, e.g. on relatives, neighbours or friends (n = 189).

Two thirds of the participants had a fear of flood damage, another 18.5% were moderately fearful and 5.8% slightly fearful of flood damage (Fig. B.10). Only 7.9% answered that they do not fear flood damage at all (n = 189).

The participants were asked to compare their own vulnerability to other households within the same village. Relatively similar proportions assessed their own vulnerability as less than (36.0%), equal to (32.8%) and more than (31.2%) other households (n = 189).

Figure B.11 shows the expected severity of consequences if participants' houses were flooded. 73.0% of the households expected severe or extremely severe consequences, in contrast to 19.0% who expected small consequences or no consequences at all (n = 189).

Almost three quarters (74.6%) of participants believed that the frequency of extreme floods (of similar severity to October 2013 flood) had increased. 19.0% said the frequency had decreased and 5.8% answered that extreme flooding had 'stayed the same'. One participant stated that they did not know (n = 189).

[10]Six households answered that their houses were not flooded but reported, in a latter part of the interview, damages and knee-high water in the house, etc. These households were therefore valued as affected.

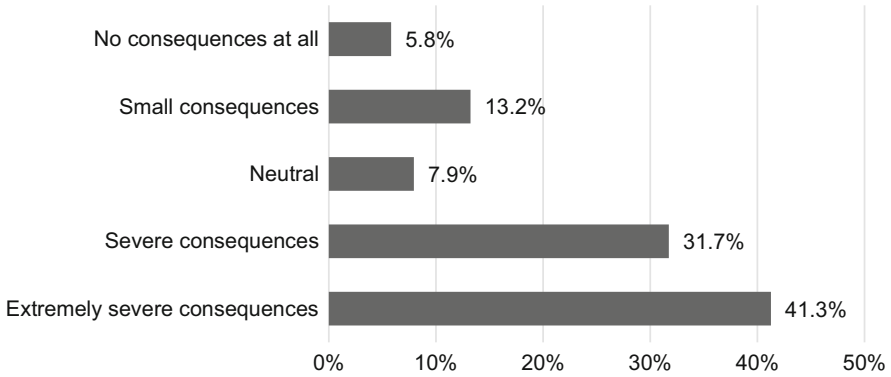

Fig. B.11 Participants' expectation of severity of consequences if house floods

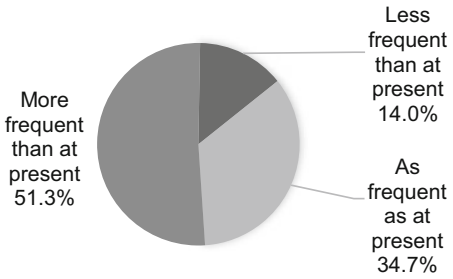

Fig. B.12 Participants' belief in the frequency of future household flooding

Looking to the future, 51.3% of participants believed that their house would be flooded more frequently than at present (Fig. B.12). 34.7% believed it would flood the same amount as at present and 14.0% believed it would happen less frequently (n = 150).[11]

52% of flood-affected households are flooded, to some extent, during the rainy season every year (n = 150). Figure B.13 shows the maximum height of floodwater reached during annual floods compared to the height of water during the extreme floods of 2013. The figure shows the height of water during the annual floods and the October 2013 flood (n = 91 for annual floods, n = 149 for flood in 2013).

For 2.7% of participants, during the flood in October 2013, the area in and around the house was flooded for 1 week only, for 17.8% the floodwater remained for 1 to 2 weeks, for 21.9% between 2 and 4 weeks and for the majority (48.6%), it took between 1 and 2 months for the floodwater to subside. For 8.9% the flood lasted for more than 2 months (n = 146).

The last question in part II of the questionnaire focused on the experienced damages of the 2013 flood. Figure B.14 shows the share of households who suffered

[11]This and the following questions in this section of the questionnaire were asked only to those who were flood-affected. Therefore, the number of observations is smaller.

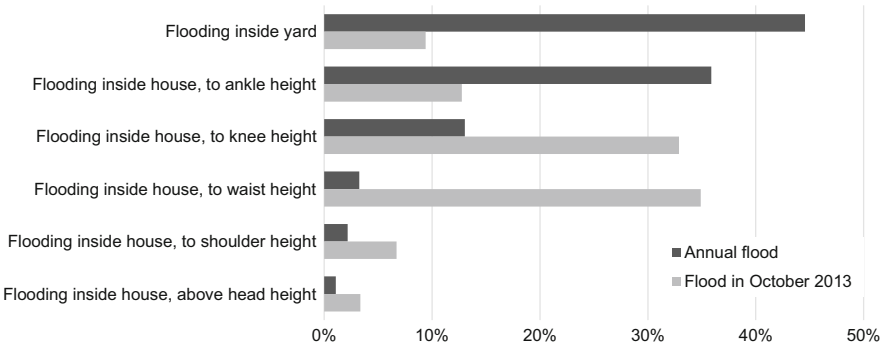

Fig. B.13 Maximum height of water during annual floods and the extreme flood in 2013

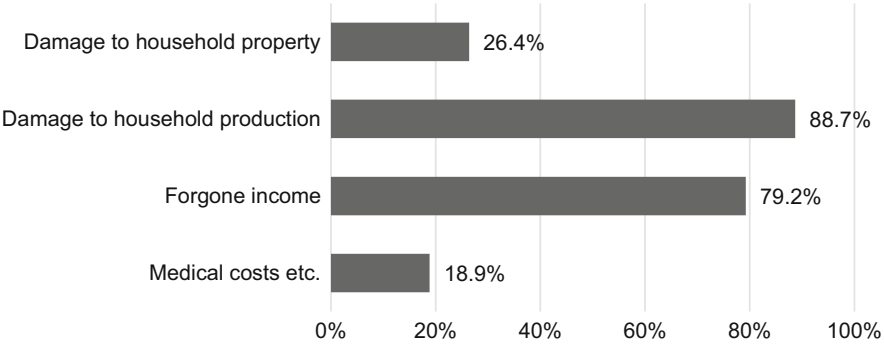

Fig. B.14 Household damage by extreme flooding in October 2013

from this disaster. 106 households reported damages, 88.7% of these to household production, e.g. their crops or livestock, 26.4% to household property. 12.3% reported forgone income (opportunity costs), an average of USD73.[12] Another 18.9% mentioned medical costs as an additional loss of income due to the flood (the average cost for medical care was USD179).

Disaster Risk Management Activities

Part III of the questionnaire focused on existing disaster risk management activities. To assess the degree of organisation of the participants, the initial questions asked about membership in local organisations and groups. Only 7.2% were members of a local organisation, only 8.2% were part of a local savings group and 11.1%

[12]If amount of forgone income was not provided, the amount was calculated by multiplying the level of flood duration by regular income (only wages/self-employment were considered).

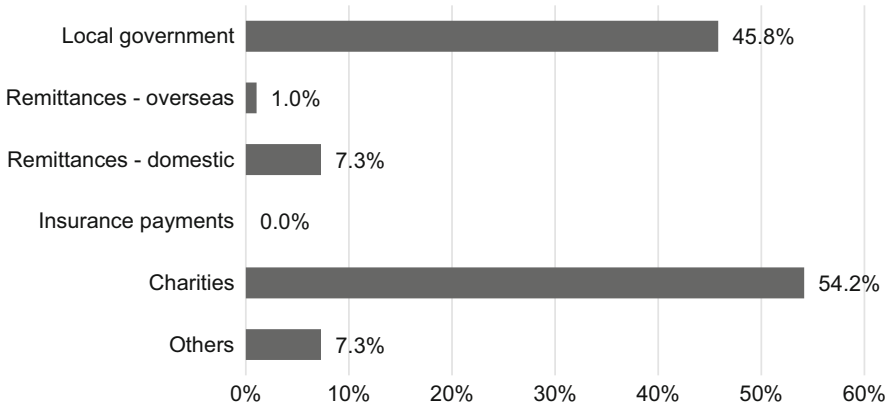

Fig. B.15 Households who received aid from various sources

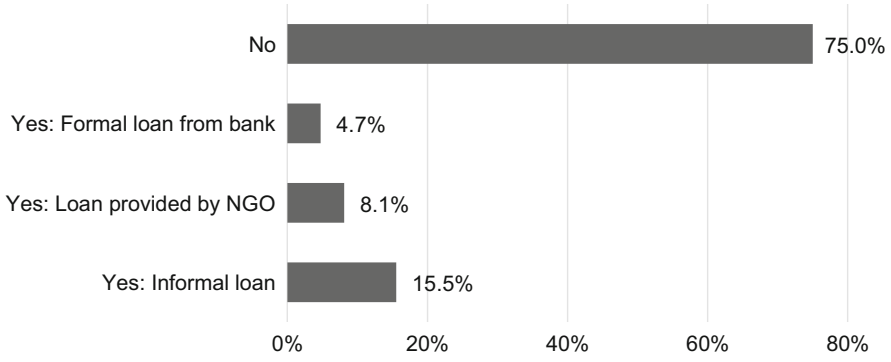

Fig. B.16 Households borrowing money after flood damage

belonged to an agricultural community (n = 207). Flood information was exchanged regularly between neighbours by 86.9% of the participants.

96 participants (45.9% of the sample) reported that they received money or goods from various sources as one-off support after the flood of 2013. Figure B.15 shows the different sources of this aid. The two biggest donors were the government and charity organisations.[13] 45.8% of households who received support, received this from the local government; 54.2% received help from charities.

The majority of the households did not borrow money to aid recovery from regular or extreme floods (Fig. B.16). If households borrowed money, this was

[13]A common misunderstanding when answering the questionnaire was that the help of charity organisations (rice, food etc.) was often noted under 'overseas remittances from friends/neighbours'. This was clarified with the local research team and the packages of rice, food, etc. were ascribed to charities.

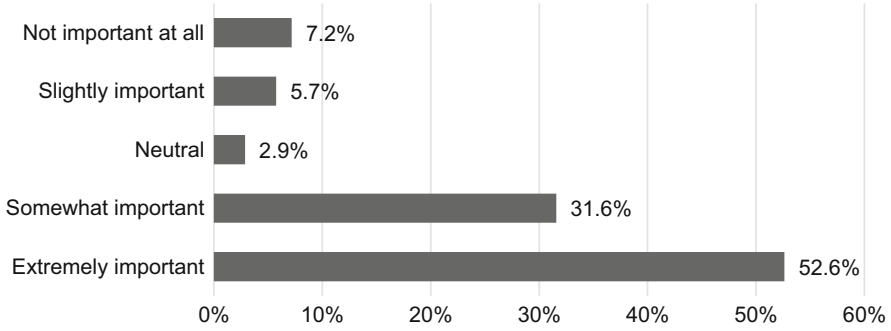

Fig. B.17 Participants' belief in the importance of prevention/reduction of negative consequences of floods

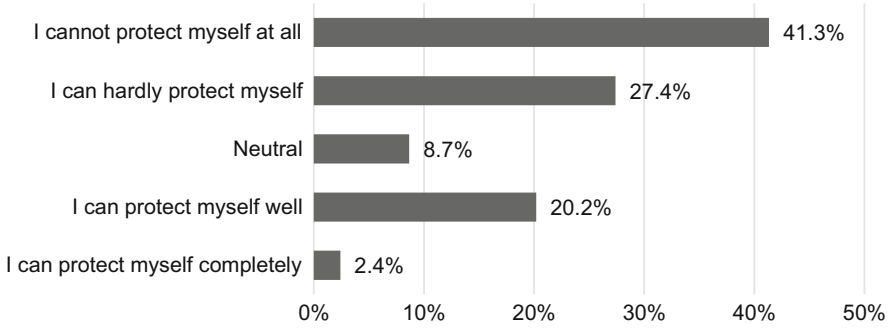

Fig. B.18 Participants' judgement of own ability to protect themselves

mostly done on an informal basis from relatives, friends or neighbours (multiple answers were possible; n = 161).

The two final questions examined the sale of production assets or valuable items as a source of income after the floods. 10.8% of households sold production assets after the 2013 flood including machines, tools, animals or land; only 3.4% sold valuable items such as jewellery or gold (n = 148).

Prevention and Preparedness

Part IV of the questionnaire focused on household assessments of prevention against flood events. For 84.2% of the participants it was somewhat or extremely important to prevent or reduce the negative consequences of floods (Fig. B.17). 12.9% answered that prevention has only little importance or is not important at all (n = 209).

Figure B.18 shows the judgement of the participants of their own ability to protect themselves from the negative consequences of floods. 68.8% of the

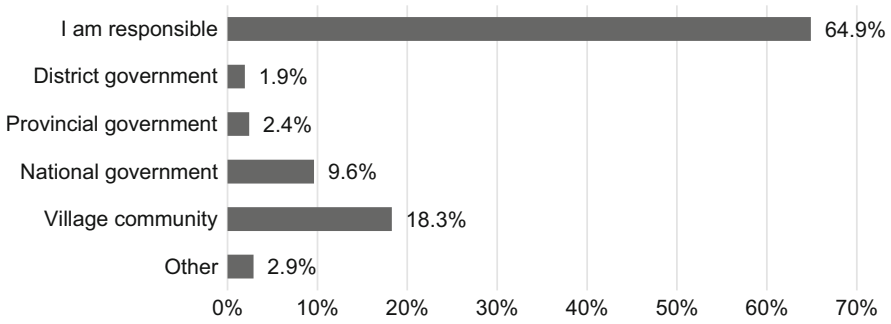

Fig. B.19 Participants' belief in who is responsible to provide flood protection

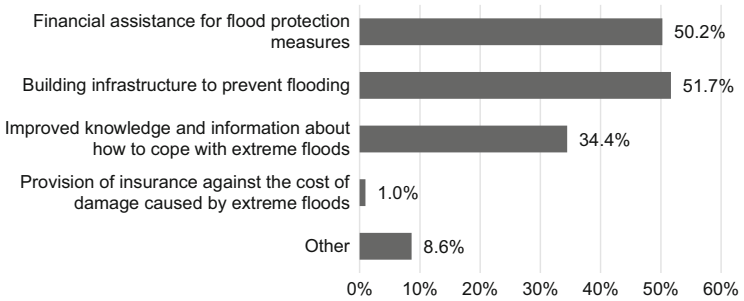

Fig. B.20 Participants' needs for better preparations against extreme floods

households answered that they could not protect themselves at all or could hardly protect themselves. In contrast, 22.6% said they could protect themselves well or completely (n = 208). 43.5% of the households were satisfied with their current level of protection against extreme flood events, while 56.5% answered that they were dissatisfied in this regard (n = 209).

Figure B.19 shows who participants believe was mainly responsible for providing flood protection. 66.8% of the participants stated that it is their own responsibility, followed by the village community (18.8%) and national government (10%) (n = 202).

47.1% of households modified the timing of crop planting so that the harvest would precede the expected arrival of floods (n = 206) and 55.4% of households used chemical fertiliser (n = 204). The last question was focused on the participants' needs for better preparation against extreme flood events like the one in October 2013 (multiple answers were possible)—Fig. B.20 displays the answers. Building infrastructure to prevent floods and financial assistance for flood protection measures were the most popular responses (51.7 and 50.2% of the participants mentioned these respectively). Improved knowledge of and information about coping mechanisms for extreme flooding were emphasised by 34.4%.

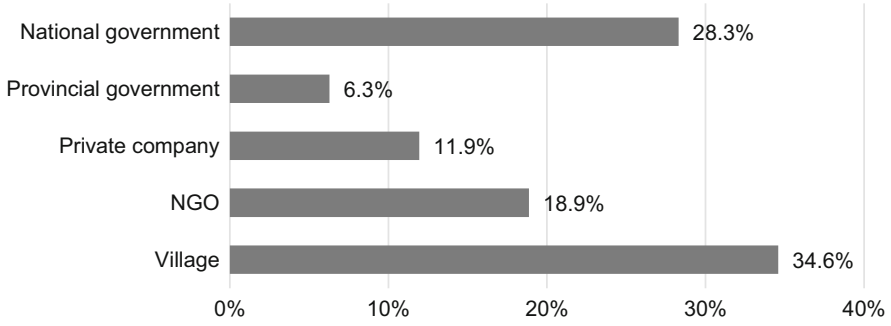

Fig. B.21 Participants' preference for insurance provider

Demand for Insurance

The last part of the questionnaire focused on the individuals' demand for microinsurance. Only 1 person reported that they had insurance (n = 120) and 4.9% knew someone with insurance (n = 163). Following the discrete choice analysis (see Sect. 4.3), several questions were asked to control the results of the estimation. Respondents who had chosen 'no insurance' at least four times (out of six choice sets) were asked for the reason. Hereby, 19 respondents agreed with the statement "I am not interested in buying insurance", while another 19 participants gave missing affordability as reason. The preferred provider was the village community, followed by national government and non-governmental organisations (n=159). The choice of a preferred provider is illustrated in Fig. B.21.

A overwhelming majority of respondents (92.5%) would be more interested in insurance if it was paired with a loan; 91.8% would increase their prevention efforts if the insurance would consequently become cheaper (n = 159). Finally, the individuals were asked if they would increase their production or try new crops with higher returns in the case that they would have insurance against flood damage. Although the truth of the answer cannot be validated in a real world situation, 74.2% of respondents would increase their productive activities (n = 159).

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Appendix C: Robustness Checks

The Impact of Natural Disasters on Individuals' Risk-Taking Propensity in Rural Cambodia

Section 3.4 presents empirical evidence for the impact of natural disasters on individuals' risk-taking propensity. In addition to the regressions (1) to (4) presented in Table 3.7 other control variables have been entered and removed, however no significant impact on the efficiency of the regression model could be found. The tested control variables include: education, religion, observation of floods, income distribution within village (Gini coefficient), mean income in village, amount of time a participant lived in the village, satisfaction with protection, fear of future floods, flood level in rainy season, post-disaster support by government or charity, and flood damages to household property or production assets. Tests for heteroskedasticity and a robust regression also confirmed the results of the presented regression. Finally, repeating the regressions without respondents who had not bet anything confirms the main findings, especially regarding disaster experience.

Identifying income as the core variable, which is significantly different between the affected and non-affected group, a propensity score matching of the sample regarding income was conducted. Regression (14) in Table C.1 using this propensity score matching dataset confirmed the direction and scale of the results presented in Sect. 3.4.

O. Fiala, *Natural Disasters and Individual Behaviour in Developing Countries*,
Contributions to Economics, DOI 10.1007/978-3-319-53904-1

Table C.1 Regression for risk game based on propensity score matching sample

	Share bet in risk game
	(14)
(Constant)	0.079 (0.229)
Affected	0.202*** (0.051)
Age	0.018* (0.009)
Age squared	−0.017** (0.008)
Gender	−0.009 (0.050)
Married state	−0.320** (0.124)
Financial literacy	0.078*** (0.023)
Number of people living in the household	−0.033*** (0.011)
Number of children under 15 years in the household	0.047*** (0.017)
Total income per capita in US Dollars (2013)	−0.000 (0.000)
Number of observations	59

Standard errors in parentheses
***p < 0.01, **p < 0.05, *p < 0.10

Table C.2 Including wealth in Poisson regression for interest in insurance

	(9)	(10)
Wealth (TLU) per capita (2014)	−0.070 (0.221)	−0.125 (0.224)
Number of observations	126	126

Each column represents the regressions (9) to (10) for interest in insurance. Control variables included as in 4.7. Standard errors in parentheses

The Interest in Microinsurance: First Results from a Poisson Regression

Section 4.3.1 presents the results from a Poisson regression, investigating the impact of several social-economic variables on the interest in insurance (expressed by the amount a respondent chose any insurance contract). No significant effect of wealth per capita (calculated in 'tropical livestock units') can be found in the regressions (9) and (10), when substituting income per capita by wealth. The effects of other variables used in Table 4.7 stay consistent in direction of effect and significance (Table C.2).

Appendix D: Research Designs of Selected Empirical Studies

Section 4.2 analyses the role of 12 determinants for microinsurance demand, whereof risk aversion, trust and risk exposure are of particular interest for the empirical analysis of microinsurance demand in Cambodia (Sect. 4.3). Table D.1 combines the references regarding microinsurance demand and risk aversion (4.2), trust (4.3) and risk exposure (Table 4.4), and provides a short overview of the various research designs.

Table D.1 Research designs of selected empirical studies

Reference	Relevant determinants[a]	Research design
Akter et al. (2008)	Risk exposure	Household survey in six different districts in Bangladesh facing various levels of exposure to environmental risk. Discrete choice logit regression model investigates demand for hypothetical catastrophe insurance product Households in areas less exposed to environmental risks are less likely to buy catastrophe insurance
Giné et al. (2008)	Risk aversion, Trust	Household survey investigates determinants for demand for rainfall insurance products among smallholder farmers in India. Probit regression is used in order to explain decision for insurance purchase Uncertainty about the product leads to lower demand of risk-averse households and those with less trust in insurance provider
Cai et al. (2009)	Trust	Randomised field experiment in China, investigating take-up of insurance for sows and the impact on farmers' production decisions (OLS regression) Lack of trust in government-subsidised microinsurance is significant barrier for insurance take-up

(continued)

O. Fiala, *Natural Disasters and Individual Behaviour in Developing Countries*, Contributions to Economics, DOI 10.1007/978-3-319-53904-1

Table D.1 (continued)

Reference	Relevant determinants[a]	Research design
Giné and Yang (2009)	Risk aversion	Randomised field experiment in Malawi to investigate if provision of insurance against production risk animates credit demand to adopt new crop technology (OLS regression) Take-up of an uninsured loan is negatively associated with farmers' self-reported risk aversion
Arun and Bendig (2010)	Risk exposure	Household survey data from Sri Lanka, investigating the usage of financial services such as loans, insurance and savings (probit and logit regressions) Households with higher perceptions of risk exposure are more likely to use financial instruments, including insurances
Akotey et al. (2011)	Trust	Randomly sampled data from informal sector workers in Ghana in order to identify the factors influencing demand for microinsurance products against various economic risks (probit regression model) Improvement in the perception of insurers (trust) increases demand for microinsurance
Cai et al. (2011)	Trust	Randomised experiment in rural China, investigating the role of information for insurance take-up, offered both directly through financial education and indirectly through social networks (OLS/instrumental variables regression) Results emphasise the importance of social networks in insurance take-up (peer effects)
Dercon et al. (2011)	Risk aversion, Trust	Randomised and controlled trial of policies affecting demand for health insurance product in Kenya, in order to test theoretical model of demand for indemnity insurance under limited credibility. Combination of data from field experiment with laboratory-type experiments to measure risk preferences and level of trust. Probit model of purchase decision Demand for insurance (under limited trust) is negatively correlated with measures of risk aversion Significant impact of insurers' creditability on purchase decision for insurance
Giesbert et al. (2011)	Risk aversion, risk exposure	Analysis of households' determinants to take up life insurance, based on household survey data and multivariate probit model in Ghana. Risk-averse households are less likely to participate in microinsurance Individuals with higher risk exposure show less interest in life insurance

(continued)

Table D.1 (continued)

Reference	Relevant determinants[a]	Research design
Arun et al. (2012)	Risk exposure	Analysis of determinants for life insurance based on a household survey in Sri Lanka. Probit regressions for insurance take-up and premium Households with higher perception of risk exposure are less likely to purchase life insurance
Reynaud and Nguyen (2012)	Risk aversion, Trust	Calculation of willingness to pay for various flood insurance products in Vietnam, using a discrete choice experiment Risk-averse respondents value high level of insurance cover Trust and confidence in institution plays important role in insurance adoption and increases willingness to pay
Cole et al. (2013)	Risk aversion, trust	Randomised field experiments in rural India to test price and non-price factors as determinants for rainfall insurance products (OLS regression) Measured household risk aversion is negatively correlated with insurance demand Significantly higher demand for insurance if individuals trust insurance educator
Liu et al. (2013)	Trust	Randomised control trial in rural China, offering selected households new payment scheme for livestock insurance (double difference model) Significant insurance take-up if option is given to pay premium at the end of the insurance period
Brata et al. (2014)	Risk exposure	Analysis of how perception of disaster risk impacts hypothetical demand for disaster microinsurance in Java, Indonesia (logit model) Individuals with higher perception of disaster risk have higher probability to participate in insurance programme
Karlan et al. (2014)	Trust	Investigating credit market constraints and incomplete insurance and their effects on investment decisions. Experiments in Ghana with randomly assigned cash grants and opportunities to purchase rainfall index insurance (OLS/instrumental variables regression) Demand for microinsurance increases with observation of pay-out within social network (peer effects)
Turner et al. (2014)	Risk exposure	Analysis of flood experience on insurance demand, using village-level flood propensity scores based on pre-flood survey data and the comparison of affected and non-affected villages in Pakistan (OLS and probit models) Flood-affected households have higher demand for microinsurance in experimental insurance game

(continued)

Table D.1 (continued)

Reference	Relevant determinants[a]	Research design
Grislain-Letrémy (2015)	Trust, Risk exposure	Investigating determinants of demand for insurance coverage, using household-level data on insured and uninsured households in French overseas departments in Latin America and the Caribbean. Estimation of theoretical insurance supply and demand model. Take-up rate in the neighbourhood directly increases the individual probability of purchasing insurance (peer effects) The probability of purchasing insurance decreases with the number of past disasters that have occurred
Liu et al. (2015)	Risk exposure	Analysis of willingness to pay for a hypothetical rainfall index insurance in China (logit and tobit model) Significantly higher demand for rainfall index insurance by flood-affected households
Yeboah and Obeng (2016)	Trust	Analysis of financial literacy and other factors and their effects on willingness to pay for microinsurance among informal business operators in Ghana, using cross-sectional survey data (OLS regression) Negative impact of respondents' confidence in the contract on insurance demand; positive peer effects

[a]Relevant determinants for microinsurance demand; one or more of risk aversion, trust and risk exposure

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