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# Do farmers normalise land tenure insecurity? Evidence from a choice experiment in Uzbekistan

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## Electronic supplementary material (ESM)

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**A. MEASUREMENT OF PERCEIVED LAND TENURE SECURITY**

In essence, perceptions reflect the certainty of land tenure security in the foreseeable future. To capture these perceptions, we asked respondents two questions with response options ranging from positive to negative perceptions (Table S1).

Table S1. Survey questions on perceived land tenure security

Question	Response options	Interpretation
1. In the next 5 years, how likely is it that your land contract will be terminated against your will?	1. very unlikely 2. unlikely 3. somewhat likely 4. very likely 0. not applicable	options 1 and 2 interpreted and coded as 'unlikely'  options 3 and 4 interpreted and coded as 'likely'
2. How worried are you that your land contract will be terminated against your will in the next 5 years?	1. not worried at all 2. mostly not worried 3. mostly worried 4. very worried 0. not applicable	options 1 and 2 interpreted and coded as 'low or no worry'.  options 3 and 4 interpreted and coded as 'worried'.

Source: Authors' own elaboration

Thus, once we record the perceived likelihood of losing land ('likely') coupled with a lack of concern ('low or no worry') about this prospect, we can observe potential normalisation of tenure insecurity on the part of respondents.

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## B. STORYLINE AND EXAMPLE OF A CHOICE TASK

The following descriptive text was presented and explained to farmers before a discrete choice experiment to frame the choice situation in a local institutional context and reduce hypothetical bias.

### *Storyline*

'We want to understand what types of land contracts you would prefer. Please think about a situation where the local administration offers you different types of contracts for one type of specific land, and you can choose only one of the contracts. The land is good in terms of soil quality, irrigation, and slope, which is the same for all contract options. The size of the land is 10 ha. You can grow any crop subject to possible restrictions specified in a contract. The contract can be inherited by your heir(s). We ask you to compare two different types of contracts for specific land. You will make 12 choices, but you should see each choice as separate from the others. We would like to know which of the two contracts you would choose. There is no right or wrong answer; we are only interested in the choices you make.'

Table S2. Example of a choice task, presented to farmers

Which of the following contracts would you choose?

	Contract 1	Contract 2
Land contract duration	30 years	10 years
Crop choice rights	You are free to decide which crops to grow.	You are obliged to grow mandatory crops on 50% of your cropland.
Land contract security	Your land is protected from eventual land optimisation and expropriation before the expiration of the contract.	Your land is not protected from eventual land optimization and expropriation before the expiration of the contract.
Annual rental payment for the contract land (UZS)	3 M per ha, total for 10 ha = 30 M	1 M per ha, total for 10 ha = 10 M

UZS – Uzbek soums, the official exchange rate of Central Bank of Uzbekistan as of Dec 1, 2020 was 1 USD = 10 427 UZS

Source: Authors' own elaboration

**C. MODEL ANALYSIS**

Outputs of the estimated models (S3–S5),  $n = 153$ .

Table S3. Multinomial logit model estimation (ML model 1)

Variable	Coefficient	SE	$z$	$P >  z $	95% Confidence interval
<i>ASC</i>	0.030 62	0.059 06	0.52	0.604 1	[-0.085 12, 0.146 37]
Duration ( <i>PER</i> )	0.004 89**	0.002 06	2.37	0.017 7	[0.000 85, 0.008 93]
Secure contract ( <i>SEC</i> )	1.246 12***	0.062 75	19.86	0	[1.123 14, 1.369 11]
Free crop choice ( <i>CROPF</i> )	1.039 35***	0.087 16	11.92	0	[0.868 52, 1.210 18]
Half-free crop choice ( <i>CROPH</i> )	0.654 28***	0.082 95	7.89	0	[0.491 70, 0.816 85]
Price ( <i>PR</i> )	-1.349 3 10 <sup>-07</sup> ***	1.66E-08	-8.13	0	[-1.674 710-07, -1.023 8 10-07]
Log-likelihood	-928.24				
Restricted log-likelihood	-1 272.51				
Pseudo $R^2$	0.27				

\*\*\*, \*\*, \* – statistical significance at 1%, 5% and 10% level

*ASC* – alternative-specific constant

Source: Authors' own elaboration

Table S4. Random parameters logit model estimation (RPL model 2)

Variable	Coefficient	SE	$z$	$P >  z $	95% Confidence interval
<b>Random parameters</b>					
Duration ( <i>PER</i> )	0.004 89**	0.002 06	2.37	0.017 8	[0.000 85, 0.008 94]
Secure contract ( <i>SEC</i> )	1.246 12***	0.066 56	18.72	0	[1.115 66, 1.376 59]
Free crop choice ( <i>CROPF</i> )	1.039 35***	0.092 97	11.18	0	[0.857 13, 1.221 57]
Half-free crop choice ( <i>CROPH</i> )	0.654 28***	0.084 52	7.74	0	[0.488 63, 0.819 93]
<b>Nonrandom parameters</b>					
<i>ASC</i>	0.030 62	0.058 71	0.52	0.602	[-0.084 45, 0.145 70]
Price ( <i>PR</i> )	-1.349 3 10 <sup>-07</sup> ***	1.73E-08	-7.81	0	[-1.687 8 10-07, -1.010 7 10-07]
<b>SD of random parameters</b>					
<i>PER</i>	8.68 10 <sup>-07</sup>	0.143 88	0	1	[-0.282 00, 0.282 00]
<i>SEC</i>	0	3.162 79	0	1	[-6.199 0, 6.199 0]
<i>CROPF</i>	0	4.704 82	0	1	[-9.221 3, 9.221 3]
<i>CROPH</i>	0	2.585 08	0	1	[-5.066 7, 5.066 7]
Log-likelihood	-928.24				
Restricted log-likelihood	-1 272.51				
Pseudo $R^2$	0.27				

\*\*\*, \*\*, \* – statistical significance at 1%, 5% and 10% level

*ASC* – alternative-specific constant

Source: Authors' own elaboration

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Table S5. Multinomial logit model with interaction terms (ML model 3)

Variable	Coefficient	SE	z	$P >  z $	95% Confidence interval
<b>Main effects</b>					
ASC	0.034 54	0.059 43	0.58	0.561 1	[-0.081 95, 0.151 03]
Duration ( <i>PER</i> )	0.004 73**	0.002 08	2.28	0.022 8	[0.000 66, 0.008 81]
Secure contract ( <i>SEC</i> )	1.715 36***	0.181 57	9.45	0	[1.359 50, 2.071 23]
Free crop choice ( <i>CROPF</i> )	1.621 72***	0.252 12	6.43	0	[1.127 58, 2.115 86]
Half-free crop choice ( <i>CROPH</i> )	0.898 68***	0.226 6	3.97	0.000 1	[0.454 55, 1.342 81]
Price ( <i>PR</i> )	-1.359 2 10 <sup>-07</sup> ***	1.67E-08	-8.14	0	[-1.686 6 10 <sup>-07</sup> , -1.031 8 10 <sup>-07</sup> ]
<b>Interactions with location (<i>LOC</i>)</b>					
<i>LOC</i> × <i>SEC</i>	-0.566 22***	0.181 13	-3.13	0.001 8	[-0.921 23, -0.211 22]
<i>LOC</i> × <i>CROPF</i>	-0.805 51***	0.252 43	-3.19	0.001 4	[-1.300 27, -0.310 75]
<i>LOC</i> × <i>CROPH</i>	-0.404 68*	0.227 81	-1.78	0.075 7	[-0.851 18, 0.041 82]
<b>Education (<i>EDU</i>)</b>					
<i>EDU</i> × <i>SEC</i>	0.016 26	0.137 94	0.12	0.906 1	[-0.25409, 0.286 62]
<i>EDU</i> × <i>CROPF</i>	0.265 19	0.194 21	1.37	0.172 1	[-0.115 46, 0.645 84]
<i>EDU</i> × <i>CROPH</i>	0.287 66	0.186 17	1.55	0.122 3	[-0.077 22, 0.652 54]
Log-likelihood	-917.22				
Restricted log-likelihood	-1 272.51				
Pseudo $R^2$	0.28				

\*\*\*, \*\*, \* – statistical significance at 1%, 5% and 10% level

ASC – alternative-specific constant

Source: Authors' own elaboration

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To account for the differences in sample sizes for Bulungur ( $n = 117$ ) and Qibray ( $n = 36$ ), we have normalized the sample sizes by resampling Bulungur data into three random equal subsets ( $n = 39$ ). Model results for all sub-samples (Tables S6–S8) corroborate pooled sample results (Table 4, the main text) with main coefficients preserving their sign, order, and significance.

Table S6-1. Multinomial logit (ML) model results for subsample 1 (Bulungur,  $n = 39$ ; Qibray,  $n = 36$ )

Variables	Coefficient	SE	z	$P >  z $	95% Confidence interval
ASC	-0.059 61	0.086 73	-0.69	0.491 9	[-0.229 59, 0.110 38]
Duration ( <i>PER</i> )	0.007 47**	0.003 05	2.45	0.014 2	[0.001 50, 0.013 44]
Secure contract ( <i>SEC</i> )	1.375 35***	0.095 46	14.41	0	[1.188 25, 1.562 44]
Free crop choice ( <i>CROPF</i> )	1.210 82***	0.131 92	9.18	0	[0.952 26, 1.469 39]
Half-free crop choice ( <i>CROPH</i> )	0.711 15***	0.122 5	5.81	0	[0.471 06, 0.951 25]
Price ( <i>PR</i> )	$-1.251 3 \times 10^{-7}$ ***	$2.441 \times 10^{-8}$	-5.13	0	[-1.729 7 10 <sup>-07</sup> , -7.728 9E-08]
Log-likelihood	-432.5				
Restricted log-likelihood	-622.9				
Pseudo $R^2$	0.31				
No. of observations	900				
No. of respondents	75				
No. of parameters	6				

\*\*\* and \*\*significance levels at 1% and 5%, respectively

ASC – alternative-specific constant

Source: Authors' own elaboration

Table S6-2. Multinomial logit (ML) model results with interaction terms for subsample 1

Variables	Coefficient	SE	z	$P >  z $	95% Confidence interval
ASC	-0.059 13	0.087 35	-0.68	0.498 4	[-0.230 34, 0.112 07]
Duration ( <i>PER</i> )	0.007 26**	0.003 08	2.35	0.018 5	[0.001 22, 0.013 30]
Secure contract ( <i>SEC</i> )	1.787 90***	0.207 43	8.62	0	[1.381 34, 2.194 46]
Free crop choice ( <i>CROPF</i> )	1.811 82***	0.286 71	6.32	0	[1.249 89, 2.373 76]
Half-free crop choice ( <i>CROPH</i> )	0.920 63***	0.256 51	3.59	0.000 3	[0.417 89, 1.423 37]
Price ( <i>PR</i> )	$-1.264 5 \times 10^{-7}$ ***	$2.461 \times 10^{-8}$	-5.14	0	[-1.746 8 10 <sup>-07</sup> , -7.822 6E-08]
<i>Location</i> × <i>secure contract</i>	-0.573 37***	0.213 11	-2.69	0.007 1	[-0.991 05, -0.155 69]
<i>Location</i> × <i>free crop choice</i>	-0.930 04***	0.296 31	-3.14	0.001 7	[-1.510 80, -0.349 27]
<i>Location</i> × <i>half free crop choice</i>	-0.463 52*	0.272 29	-1.7	0.088 7	[-0.997 20, 0.070 15]
<i>Education</i> × <i>secure contract</i>	-0.132 33	0.206 46	-0.64	0.521 6	[-0.537 00, 0.272 33]
<i>Education</i> × <i>free crop choice</i>	-0.083 92	0.287 39	-0.29	0.770 3	[-0.647 19, 0.479 35]
<i>Education</i> × <i>half free crop choice</i>	0.192 39	0.272 46	0.71	0.480 1	[-0.341 61, 0.726 40]
Log-likelihood	-425.2				
Restricted log-likelihood	-622.9				
Pseudo $R^2$	0.32				
No. of observations	900				
No. of respondents	75				
No. of parameters	12				

\*\*\*, \*\* and \*significance levels at 1%, 5% and 10%, respectively

ASC – alternative-specific constant

Source: Authors' own elaboration

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Table S7-1. Multinomial logit (ML) model results for subsample 2 (Bulungur,  $n = 39$ ; Qibray,  $n = 36$ )

Variables	Coefficient	Standard Error	z	P >  z	95% Confidence Interval
ASC	-0.075 89	0.088 95	-0.85	0.393 5	[-0.250 23, 0.098 45]
Duration ( <i>PER</i> )	-0.001 02	0.003 16	-0.32	0.748 3	[-0.007 22, 0.005 19]
Secure contract ( <i>SEC</i> )	1.444 22***	0.097 81	14.77	0	[1.252 51, 1.635 92]
Free crop choice ( <i>CROPF</i> )	1.293 42***	0.138 22	9.36	0	[1.022 52, 1.564 32]
Half-free crop choice ( <i>CROPH</i> )	0.740 40***	0.127 91	5.79	0	[0.489 70, 0.991 11]
Price ( <i>PR</i> )	$-1.329 1 \times 10^{-7}$ ***	$2.550 \times 10^{-8}$	-5.21	0	[-1.828 9 10-07, -8.293 7E-08]
Log-likelihood	-418.7				
Restricted log-likelihood	-623.5				
Pseudo $R^2$	0.33				
No. of observations	900				
No. of respondents	75				
No. of parameters	6				

\*\*\*, \*\*, \* – statistical significance at 1%, 5% and 10% level

ASC – alternative-specific constant

Source: Authors’ own elaboration

Table S7-2. Multinomial logit (ML) model results with interaction terms for subsample 2

Variables	Coefficient	SE	z	P >  z	95% Confidence interval
ASC	-0.084 38	0.090 19	-0.94	0.349 4	[-0.261 15, 0.092 38]
Duration ( <i>PER</i> )	-0.001 34	0.003 21	-0.42	0.676 3	[-0.007 62, 0.004 95]
Secure contract ( <i>SEC</i> )	1.706 46***	0.199 34	8.56	0	[1.315 75, 2.097 17]
Free crop choice ( <i>CROPF</i> )	1.585 72***	0.278 28	5.7	0	[1.040 30, 2.131 14]
Half-free crop choice ( <i>CROPH</i> )	0.802 75***	0.251 37	3.19	0.001 4	[0.310 08, 1.295 42]
Price ( <i>PR</i> )	$-1.365 9 \times 10^{-7}$ ***	$2.584 \times 10^{-8}$	-5.29	0	[-1.872 3 10-07, -8.594 5E-08]
<i>Location</i> × <i>secure contract</i>	-0.425 32**	0.208 52	-2.04	0.041 4	[-0.834 02, -0.016 62]
<i>Location</i> × <i>free crop choice</i>	-0.826 15***	0.292 93	-2.82	0.004 8	[-1.400 27, -0.252 02]
<i>Location</i> × <i>half free crop choice</i>	-0.503 43*	0.268 8	-1.87	0.061 1	[-1.030 26, 0.023 40]
<i>Education</i> × <i>secure contract</i>	0.063 19	0.200 75	0.31	0.753	[-0.330 28, 0.456 66]
<i>Education</i> × <i>free crop choice</i>	0.476 26*	0.282 54	1.69	0.091 9	[-0.077 52, 1.030 03]
<i>Education</i> × <i>half free crop choice</i>	0.543 13**	0.265 28	2.05	0.040 6	[0.023 20, 1.063 06]
Log-likelihood	-410.1				
Restricted log-likelihood	-623.5				
Pseudo $R^2$	0.34				
No. of observations	900				
No. of respondents	75				
No. of parameters	12				

\*\*\*, \*\* and \*significance levels at 1%, 5% and 10%, respectively

ASC – alternative-specific constant

Source: Authors’ own elaboration

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Table S8-1. Multinomial logit (ML) model results for subsample 3 (Bulungur,  $n = 39$ ; Qibray,  $n = 36$ )

Variables	Coefficient	SE	z	$P >  z $	95% Confidence interval
ASC	-0.058 46	0.084 73	-0.69	0.490 2	[-0.224 53, 0.107 61]
Duration ( <i>PER</i> )	0.004 98*	0.002 96	1.68	0.092 3	[-0.000 82, 0.010 77]
Secure contract ( <i>SEC</i> )	1.233 99***	0.090 74	13.6	0	[1.056 14, 1.411 83]
Free crop choice ( <i>CROPF</i> )	1.207 76***	0.127 99	9.44	0	[0.956 91, 1.458 60]
Half-free crop choice ( <i>CROPH</i> )	0.800 09***	0.119 82	6.68	0	[0.565 25, 1.034 94]
Price ( <i>PR</i> )	$-1.024 7 \times 10^{-7}$ ***	$2.317 \times 10^{-8}$	-4.42	0	[-1.478 8 10 <sup>-07</sup> , -5.705 8E-08]
Log-likelihood	-455.0				
Restricted log-likelihood	-623.0				
Pseudo $R^2$	0.27				
No. of observations	900				
No. of respondents	75				
No. of parameters	6				

\*\*\*, \*\*, \* – statistical significance at 1%, 5% and 10% level

ASC – alternative-specific constant

Source: Authors' own elaboration

Table S8-2. Multinomial logit (ML) model results with interaction terms for subsample 3

Variables	Coefficient	SE	z	$P >  z $	95% Confidence interval
ASC	-0.052 5	0.085 59	-0.61	0.539 6	[-0.220 25, 0.115 25]
Duration ( <i>PER</i> )	0.004 77	0.003	1.59	0.111 8	[-0.001 11, 0.010 66]
Secure contract ( <i>SEC</i> )	1.658 65***	0.200 81	8.26	0	[1.265 08, 2.052 22]
Free crop choice ( <i>CROPF</i> )	1.599 48***	0.280 16	5.71	0	[1.050 38, 2.148 59]
Half-free crop choice ( <i>CROPH</i> )	0.930 69***	0.254 63	3.66	0.000 3	[0.431 62, 1.429 76]
Price ( <i>PR</i> )	$-1.024 3 \times 10^{-7}$ ***	$2.341 \times 10^{-8}$	-4.37	0	[-1.483 2 10 <sup>-07</sup> , -5.653 6E-08]
<i>Location</i> × <i>secure contract</i>	-0.707 72***	0.210 62	-3.36	0.000 8	[-1.120 53, -0.294 92]
<i>Location</i> × <i>free crop choice</i>	-0.760 13***	0.294 68	-2.58	0.009 9	[-1.337 68, -0.182 57]
<i>Location</i> × <i>half free crop choice</i>	-0.298 8	0.272 15	-1.1	0.272 2	[-0.832 20, 0.234 60]
<i>Education</i> × <i>secure contract</i>	0.042 31	0.210 11	0.2	0.840 4	[-0.369 49, 0.454 11]
<i>Education</i> × <i>free crop choice</i>	0.269 6	0.295 9	0.91	0.362 2	[-0.310 36, 0.849 56]
<i>Education</i> × <i>half free crop choice</i>	0.193 89	0.278 02	0.7	0.485 5	[-0.351 01, 0.738 80]
Log-likelihood	-445.4				
Restricted log-likelihood	-623.0				
Pseudo $R^2$	0.29				
No. of observations	900				
No. of respondents	75				
No. of parameters	12				

\*\*\*, \*\*, \* – statistical significance at 1%, 5% and 10% level

ASC – alternative-specific constant

Source: Authors' own elaboration

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#### D. FARMERS' PERCEPTIONS OF THE LIKELIHOOD AND CONCERN OF LOSING LAND

Table S9. Perceptions of farmers, grouped by experience with land reallocation (% share of the farmers in the respective samples)

<b>Farmers with one (1) land reallocation, <math>n = 62</math></b>			
	likely	unlikely	total
Worry	13	16	29
No worry	14	57	71
Total	27	73	100
<b>Farmers with two (2) land reallocations, <math>n = 34</math></b>			
	likely	unlikely	total
Worry	24	29	53
No worry	6	41	47
Total	30	70	100
<b>Farmers with three (3) or more land reallocation, <math>n = 47</math></b>			
	likely	unlikely	total
Worry	28	17	45
No worry	11	44	55
Total	39	61	100

Source: Authors' own elaboration

#### E. MODEL ESTIMATES FOR SUBGROUPS, BASED ON PERCEPTIONS

The mean willingness-to-pay (*WTP*) and 95% confidence intervals were estimated for each attribute. To calculate the confidence intervals, which account for the uncertainty of the ratio of two coefficients, we employed the Krinsky and Robb (1986) simulation approach. This involved taking 5 000 random draws from the multivariate normal distribution defined by the model's estimated coefficients and its variance-covariance matrix.

Table S10. Subgroup 'likely' ( $n = 48$ )

Variable	Mean Coeff.	SE	z-value	P-value	WTP (USD/ha)	
					Mean	95% Confidence interval
ASC	-0.079 3	0.109 7	-0.723 1	0.469 6		
Duration ( <i>PER</i> )	0.001	0.003 9	0.264 9	0.791 1	0.6	[-4.1, 5.4]
Secure contract ( <i>SEC</i> )	1.491 6	0.128 7	11.588 8	< 2.2e-16***	911.0	[639.8, 1 369.1]
Free crop choice ( <i>CROPF</i> )	1.333 6	0.175 1	7.617 8	2.58e-14***	813.9	[523.1, 1 278.6]
Half-free crop choice ( <i>CROPH</i> )	0.863 8	0.160 7	5.374 2	7.69e-08***	528.8	[300.4, 862.1]
Price ( <i>PR</i> )	-1.63 10-07	3.26E-08	-4.994 1	5.91 10-07***		
Log-likelihood	-268.7					
Restricted log-likelihood	-398.1					
Pseudo $R^2$	0.33					

\*\*\*, \*\*, \* – statistical significance at 1%, 5% and 10% level

ASC – alternative-specific constant; WTP – willingness-to-pay

Source: Authors' own elaboration

<https://doi.org/10.17221/62/2025-AGRICECON>Table S11. Subgroup 'unlikely' ( $n = 105$ )

Variable	Mean coeff.	SE	z-value	P-value	WTP (USD/ha)	
					Mean	95% Confidence interval
ASC	0.080 7	0.070 4	1.146 2	0.251 72		
Duration ( <i>PER</i> )	0.006 4	0.002 5	2.604 5	0.009 20**	4.9	[1.1, 9.1]
Secure contract ( <i>SEC</i> )	1.160 7	0.072 6	15.983 4	< 2.2e-16***	900.8	[675.0, 1 240.8]
Free crop choice ( <i>CROPF</i> )	0.938 2	0.101 4	9.254 8	< 2.2e-16***	726.8	[512.0, 1 021.0]
Half-free crop choice ( <i>CROPH</i> )	0.582 5	0.097 9	5.951 9	2.65e-09***	451.6	[282.4, 677.1]
Price ( <i>PR</i> )	-1.26 10-07	1.94E-08	-6.506 1	7.71e-11***		
Log-likelihood	-654.84					
Restricted log-likelihood	-873.3					
Pseudo $R^2$	0.25					

\*\*\*, \*\*, \* – statistical significance at 1%, 5% and 10% level

ASC – alternative-specific constant; WTP – willingness-to-pay

Source: Authors' own elaboration

Table S12. Subgroup 'worry' ( $n = 60$ )

Variable	Mean coeff.	SE	z-value	P-value	WTP (USD/ha)	
					Mean	95% Confidence interval
ASC	-0.030 9	0.097	-0.318 5	0.750 1		
Duration ( <i>PER</i> )	0.004 7	0.003 4	1.377 5	0.168 3	3.4	[-1.4, 8.6]
Secure contract ( <i>SEC</i> )	1.389 8	0.105 2	13.210 4	< 2.2e-16***	1 006.7	[706.1, 1 524.1]
Free crop choice ( <i>CROPF</i> )	1.043 9	0.144 7	7.212 9	5.48e-13***	754.8	[476.3, 1 190.5]
Half-free crop choice ( <i>CROPH</i> )	0.612	0.135 6	4.512 5	6.41e-06***	443.4	[230.8, 761.5]
Price ( <i>PR</i> )	-1.37 10-07	2.72E-08	-5.049	4.44 10-07***		
Log-likelihood	-350.15					
Restricted log-likelihood	-498.5					
Pseudo $R^2$	0.3					

\*\*\*, \*\*, \* – statistical significance at 1%, 5% and 10% level

ASC – alternative-specific constant; WTP – willingness-to-pay

Source: Authors' own elaboration

Table S13. Subgroup 'no worry' ( $n = 93$ )

Variable	Mean coeff.	SE	z-value	P-value	WTP (USD/ha)	
					Mean	95% Confidence interval
ASC	0.068 9	0.074 7	0.922 2	0.356 43		
Duration ( <i>PER</i> )	0.005	0.002 6	1.909 4	0.056 21	3.6	[-0.1, 7.7]
Secure contract ( <i>SEC</i> )	1.159	0.078 4	14.780 7	< 2.2e-16***	847.4	[630.7, 1 174.1]
Free crop choice ( <i>CROPF</i> )	1.044 7	0.109 6	9.533 4	< 2.2e-16***	763.3	[539.3, 1 085.5]
Half-free crop choice ( <i>CROPH</i> )	0.685 9	0.105 2	6.520 1	7.03e-11***	502.0	[321.0, 752.4]
Price ( <i>PR</i> )	-1.34 10-07	2.10E-08	-6.378 1	1.79e-10***		
Log-likelihood	-575.6					
Restricted log-likelihood	-773.5					
Pseudo $R^2$	0.26					

\*\*\*, \*\*, \* – statistical significance at 1%, 5% and 10% level

ASC – alternative-specific constant; WTP – willingness-to-pay

Source: Authors' own elaboration

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Table S14. Subgroup 'likely and no worry' ( $n = 18$ )

Variable	Mean coeff.	SE	z-value	P-value	WTP (USD/ha)	
					Mean	95% Confidence interval
ASC	0.127 2	0.177 1	0.718 2	0.472 63		
Duration ( <i>PER</i> )	0.001 4	0.006 2	0.228 2	0.819 53	0.9	[-7.1, 9.5]
Secure contract ( <i>SEC</i> )	1.156 6	0.197 7	5.849 6	4.93e-09***	737.6	[384.4, 1 505.0]
Free crop choice ( <i>CROPF</i> )	1.714 9	0.285 3	6.011 1	1.84e-09***	1 086.9	[577.4, 2 190.6]
Half-free crop choice ( <i>CROPH</i> )	1.174 6	0.262 2	4.480 4	7.45e-06***	744.5	[347.1, 1 553.3]
Price ( <i>PR</i> )	-1.69 10-07	5.15E-08	-3.280 5	0.001 04**		
Log-likelihood	-103.2					
Restricted log-likelihood	-149.5					
Pseudo $R^2$	0.31					

\*\*\*, \*\*, \* – statistical significance at 1%, 5% and 10% level

ASC – alternative-specific constant; WTP – willingness-to-pay

Source: Authors' own elaboration

Table S15. Subgroup 'likely and worry' ( $n = 135$ )

Variable	Mean coeff.	SE	z-value	P-value	WTP (USD/ha)	
					Mean	95% Confidence interval
ASC	0.016 1	0.062 9	0.256 5	0.797 56		
Duration ( <i>PER</i> )	0.005 3	0.002 2	2.391 6	0.016 78 *	3.9	[0.7, 7.3]
Secure contract ( <i>SEC</i> )	1.264 6	0.066 5	19.028 3	< 2.2e-16 ***	932.1	[729.1, 1 220.9]
Free crop choice ( <i>CROPF</i> )	0.957 4	0.092	10.405 6	< 2.2e-16 ***	705.2	[520.0, 956.8]
Half-free crop choice ( <i>CROPH</i> )	0.590 3	0.087 9	6.712 3	1.92e-11 ***	435.5	[287.5, 625.4]
Price ( <i>PR</i> )	-1.32 10-07	1.77E-08	-7.491 8	6.80e-14 ***		
Log-likelihood	-819.0					
Restricted log-likelihood	-1 122.6					
Pseudo $R^2$	0.27					

\*\*\*, \*\*, \* – statistical significance at 1%, 5% and 10% level

ASC – alternative-specific constant; WTP – willingness-to-pay

Source: Authors' own elaboration

**F. MODELS WITH FARMERS CHARACTERISTICS.**

The following tables (S16–23) present the results of ML models estimated to explore preference heterogeneity. We tested the impact of key farmer characteristics (e.g. cooperative membership, age, location, education, etc.) on farmers' preferences for contract attributes. Following a stepwise approach, each characteristic was included as a set of interaction terms in a separate model. While most of these interaction terms were not statistically significant, the full results of each model are presented below for analytical transparency.

Table S16. Multinomial logit (ML) model 1, interaction term – Cooperative membership

Variable	Coefficient	SE	<i>P</i> -value	95% Confidence interval
<b>Main effects</b>				
<i>ASC</i>	0.031 2	0.059 13	0.597 8	[−0.084 70, 0.147 10]
Duration ( <i>PER</i> )	0.004 93	0.002 06	0.016 9	[0.000 88, 0.008 97]
Secure contract ( <i>SEC</i> )	1.152 37	0.116 49	0	[0.924 05, 1.380 70]
Free crop choice ( <i>CROPF</i> )	1.110 32	0.164 08	0	[0.788 73, 1.431 92]
Half-free crop choice ( <i>CROPH</i> )	0.834 84	0.159 33	0	[0.522 55, 1.147 12]
Price ( <i>PR</i> )	$-0.135 40 \times 10^{-6}$	$0.166 3 \times 10^{-7}$	0	[−1.680 10−7, −1.028 10−7]
<b>Interaction terms</b>				
<i>Coop</i> × <i>Secure</i>	0.130 69	0.135 69	0.335 5	[−0.135 26, 0.396 63]
<i>Coop</i> × <i>Free choice</i>	−0.095 34	0.191 6	0.618 8	[−0.470 86, 0.280 18]
<i>Coop</i> × <i>Half choice</i>	−0.247 61	0.185 71	0.182 4	[−0.611 59, 0.116 37]
Log-likelihood	−926.5			
Restricted log-likelihood	−1 272.5			
Pseudo <i>R</i> <sup>2</sup>	0.27			

*ASC* – alternative-specific constant

Source: Authors' own elaboration

Table S17. Multinomial logit (ML) model 2, interaction term – Age

Variable	Coefficient	SE	<i>P</i> -value	95% Confidence interval
<b>Main Effects</b>				
<i>ASC</i>	0.029 61	0.059 09	0.616 3	[−0.086 20, 0.145 41]
Duration ( <i>PER</i> )	0.004 91	0.002 06	0.017 4	[0.000 86, 0.008 95]
Secure contract ( <i>SEC</i> )	0.972 62	0.290 57	0.000 8	[0.403 10, 1.542 13]
Free crop choice ( <i>CROPF</i> )	1.117 69	0.408 39	0.006 2	[0.317 27, 1.918 11]
Half-free crop choice ( <i>CROPH</i> )	0.730 91	0.394 03	0.063 6	[−0.041 37, 1.503 20]
Price ( <i>PR</i> )	$-0.135 39 \times 10^{-6}$	$0.166 2 \times 10^{-7}$	0	[−1.680 10−7, −1.028 10−7]
<b>Interaction Terms</b>				
<i>Age</i> × <i>Secure</i>	0.005 87	0.006 11	0.336 2	[−0.006 10, 0.017 85]
<i>Age</i> × <i>Free choice</i>	−0.001 67	0.008 57	0.845 4	[−0.018 48, 0.015 13]
<i>Age</i> × <i>Half choice</i>	−0.001 65	0.008 27	0.842 3	[−0.017 86, 0.014 57]
Log-likelihood	−927.6			
Restricted log-likelihood	−1 272.5			
Pseudo <i>R</i> <sup>2</sup>	0.27			

*ASC* – alternative-specific constant

Source: Authors' own elaboration

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Table S18. Multinomial logit (ML) model 3, interaction term – Experience in agriculture

Variable	Coefficient	SE	P-value	95% Confidence interval
<b>Main Effects</b>				
ASC	0.030 48	0.059 08	0.606	[-0.085 32, 0.146 28]
Duration ( <i>PER</i> )	0.004 89	0.002 06	0.017 9	[0.000 84, 0.008 93]
Secure contract ( <i>SEC</i> )	1.128 83	0.147 41	0	[0.839 91, 1.417 75]
Free crop choice ( <i>CROPF</i> )	0.987 72	0.207 33	0	[0.581 37, 1.394 07]
Half-free crop choice ( <i>CROPH</i> )	0.495 15	0.199 26	0.013	[0.104 62, 0.885 69]
Price ( <i>PR</i> )	$-0.134 99 \times 10^{-6}$	$0.1661 \times 10^{-7}$	0	[-1.676 10-7, -1.024 10-7]
<b>Interaction Terms</b>				
<i>Experience</i> × <i>Secure</i>	0.005 25	0.005 98	0.379 9	[-0.006 47, 0.016 98]
<i>Experience</i> × <i>Free choice</i>	0.002 34	0.008 43	0.781 6	[-0.014 18, 0.018 85]
<i>Experience</i> × <i>Half choice</i>	0.007 13	0.008 15	0.381 9	[-0.008 85, 0.023 11]
Log-likelihood	-927.5			
Restricted log-likelihood	-1 272.5			
Pseudo $R^2$	0.27			

ASC – alternative-specific constant

Source: Authors' own elaboration

Table S19. Multinomial logit (ML) model 4, interaction term – Education (university, yes/no)

Variable	Coefficient	SE	P-value	95% Confidence interval
<b>Main Effects</b>				
ASC	0.034 57	0.059 21	0.559 4	[-0.081 49, 0.150 62]
Duration ( <i>PER</i> )	0.004 83	0.002 07	0.019 5	[0.000 78, 0.008 89]
Secure contract ( <i>SEC</i> )	1.207 97	0.074 34	0	[1.062 27, 1.353 67]
Free crop choice ( <i>CROPF</i> )	0.902 3	0.103 73	0	[0.698 99, 1.105 62]
Half-free crop choice ( <i>CROPH</i> )	0.537 45	0.099 59	0	[0.342 26, 0.732 64]
Price ( <i>PR</i> )	$-0.13474 \times 10^{-6}$	$0.1663 \times 10^{-7}$	0	[-1.673 10-7, -1.022 10-7]
<b>Interaction Terms</b>				
<i>University</i> × <i>Secure</i>	0.134 87	0.133 13	0.311	[-0.126 06, 0.395 79]
<i>University</i> × <i>Free choice</i>	0.433 75	0.188 07	0.021 1	[0.065 15, 0.802 36]
<i>University</i> × <i>Half choice</i>	0.368 89	0.178 92	0.039 2	[0.018 21, 0.719 57]
Log-likelihood	-925.0			
Restricted log-likelihood	-1 272.51			
Pseudo $R^2$	0.27			

ASC – alternative-specific constant

Source: Authors' own elaboration

<https://doi.org/10.17221/62/2025-AGRICECON>

Table S20. Multinomial logit (ML) model 5, interaction term – Location (Qibray - baseline)

Variable	Coefficient	SE	P-value	95% Confidence interval
<b>Main Effects</b>				
ASC	0.031 12	0.059 32	0.599 8	[−0.085 14, 0.147 38]
Duration ( <i>PER</i> )	0.004 73	0.002 08	0.022 7	[0.000 66, 0.008 80]
Secure contract ( <i>SEC</i> )	1.722 03	0.163 9	0	[1.400 79, 2.043 27]
Free crop choice ( <i>CROPF</i> )	1.771 57	0.227 56	0	[1.325 56, 2.217 58]
Half-free crop choice ( <i>CROPH</i> )	1.063 16	0.200 72	0	[0.669 76, 1.456 55]
Price ( <i>PR</i> )	$-0.13599 \times 10^{-6}$	$0.167 0 \times 10^{-7}$	0	[−1.687 10−7, −1.033 10−7]
<b>Interaction Terms</b>				
Location × Secure	−0.570 64	0.175 73	0.001 2	[−0.915 06, −0.226 22]
Location × Free choice	−0.886 68	0.245 05	0.000 3	[−1.366 97, −0.406 39]
Location × Half choice	−0.494 96	0.220 08	0.024 5	[−0.926 31, −0.063 60]
Log-likelihood	−918.7			
Restricted log-likelihood	−1 272.5			
Pseudo $R^2$	0.28			

ASC – alternative-specific constant

Source: Authors' own elaboration

Table S21. Multinomial logit (ML) model 6, interaction term – Cropland (ha)

Variable	Coefficient	SE	P-value	95% Confidence interval
<b>Main Effects</b>				
ASC	0.032 34	0.059 15	0.584 5	[−0.083 59, 0.148 27]
Duration ( <i>PER</i> )	0.004 96	0.002 06	0.016 1	[0.000 92, 0.009 01]
Secure contract ( <i>SEC</i> )	1.369 35	0.153 54	0	[1.068 42, 1.670 28]
Free crop choice ( <i>CROPF</i> )	1.206 21	0.215 84	0	[0.783 17, 1.629 25]
Half-free crop choice ( <i>CROPH</i> )	0.508 49	0.206 21	0.013 7	[0.104 32, 0.912 66]
Price ( <i>PR</i> )	$-0.13565 \times 10^{-6}$	$0.1665 \times 10^{-7}$	0	[−1.683 10−7, −1.030 10−7]
<b>Interaction Terms</b>				
Crop area × Secure	−0.006 33	0.007 3	0.385 4	[−0.020 63, 0.007 97]
Crop area × Free choice	−0.008 68	0.010 3	0.399 3	[−0.028 88, 0.011 51]
Crop area × Half choice	0.007 75	0.01	0.438 5	[−0.011 85, 0.027 35]
Log-likelihood	−926.6			
Restricted log-likelihood	−1 272.5			
Pseudo $R^2$	0.27			

ASC – alternative-specific constant

Source: Authors' own elaboration

<https://doi.org/10.17221/62/2025-AGRICECON>

Table S22. Multinomial logit (ML) model 7, interaction term – Farm income share (%)

Variable	Coefficient	SE	P-value	95% Confidence interval
<b>Main Effects</b>				
ASC	0.031 34	0.059 1	0.595 9	[-0.084 49, 0.147 17]
Duration ( <i>PER</i> )	0.004 86	0.002 06	0.018 5	[0.000 81, 0.008 90]
Secure contract ( <i>SEC</i> )	1.366 39	0.215 03	0	[0.944 93, 1.787 84]
Free crop choice ( <i>CROPF</i> )	1.305 67	0.305 37	0	[0.707 15, 1.904 20]
Half-free crop choice ( <i>CROPH</i> )	0.770 21	0.286 69	0.007 2	[0.208 30, 1.332 12]
Price ( <i>PR</i> )	$-0.13482 \times 10^{-6}$	$0.166 0 \times 10^{-7}$	0	[-1.674 10 <sup>-7</sup> , -1.023 10 <sup>-7</sup> ]
<b>Interaction Terms</b>				
<i>Farm income</i> × <i>Secure</i>	-0.001 65	0.002 82	0.558 4	[-0.007 17, 0.003 87]
<i>Farm income</i> × <i>Free choice</i>	-0.003 66	0.004	0.360 5	[-0.011 50, 0.004 18]
<i>Farm income</i> × <i>Half choice</i>	-0.001 59	0.003 78	0.673 1	[-0.009 00, 0.005 81]
Log-likelihood	-927.8			
Restricted log-likelihood	-1 272.5			
Pseudo $R^2$	0.27			

ASC – alternative-specific constant

Source: Authors' own elaboration

Table S23. Multinomial logit (ML) model 8, interaction term – Contracts concluded (number)

Variable	Coefficient	SE	P-value	95% Confidence interval
<b>Main Effects</b>				
ASC	0.030 11	0.059 11	0.610 4	[-0.085 74, 0.145 97]
Duration ( <i>PER</i> )	0.004 89	0.002 06	0.017 7	[0.000 85, 0.008 93]
Secure contract ( <i>SEC</i> )	1.181 93	0.162 64	0	[0.863 16, 1.500 71]
Free crop choice ( <i>CROPF</i> )	0.870 16	0.229 23	0.000 1	[0.420 88, 1.319 45]
Half-free crop choice ( <i>CROPH</i> )	0.537 06	0.219 83	0.014 6	[0.106 20, 0.967 92]
Price ( <i>PR</i> )	$-0.135 15 \times 10^{-6}$	$0.1661 \times 10^{-7}$	0	[-1.677 10 <sup>-7</sup> , -1.026 10 <sup>-7</sup> ]
<b>Interaction Terms</b>				
<i>Contract total</i> × <i>Secure</i>	0.022 37	0.051 92	0.666 5	[-0.079 39, 0.124 13]
<i>Contract total</i> × <i>Free choice</i>	0.058 15	0.073 22	0.427 1	[-0.085 36, 0.201 65]
<i>Contract total</i> × <i>Half choice</i>	0.040 28	0.070 08	0.565 5	[-0.097 08, 0.177 63]
Log-likelihood	-927.9			
Restricted log-likelihood	-1 272.5			
Pseudo $R^2$	0.27			

ASC – alternative-specific constant

Source: Authors' own elaboration