Appendix 1. Supplementary materials.

**Fig. A1.1.** Share of Tanzanians who perceive flooding to be a serious problem to their households or communities<sup>1</sup>.



**Fig. A1.2.** Share of population who reported flooding to be a serious problem based on whether they had advance knowledge of recent flood.



<sup>&</sup>lt;sup>1</sup> Note that highlighted numbers may not add to 100 owing to rounding

	Likely to prepare	Likely to recover	Likely to change
Likely to prepare		53%	58%
Unlikely to prepare		10%	30%
Likely to recover	74%		62%
Unlikely to recover	21%		32%
Likely to change	51%	39%	
Unlikely to change	24%	16%	

**Fig. A1.3.** Cross tabulations of the dichotomized dimensions of resilience-related capacities.

Fig. A1.4. Spearman correlations between key measures of subjective resilience.

	prepare	recover	change
prepare	1		
recover	0.4519*	1	
change	0.3173*	0.2514*	1

\*Statistically significant at .05 level

Fig. A1.5. Results of principal components analysis.

a) Factor analysis

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	1.72815	0.96219	0.576	0.576
Factor2	0.76595	0.26006	0.2553	0.8314
Factor3	0.5059		0.1686	1

LR test: independent vs. saturated: chi2(3) = 534.60 Prob>chi2 = 0.0000

Variable	Factor 1	Uniqueness
prepare	0.8212	0.3256
recover	0.7914	0.3736
change	0.6537	0.5726

b) Factor loadings and unique variances (unrotated)

	Ν	No flood	Flood in		Of which,	Of which,
		in	previous		no early	early
		previous	2 years		warning	warning
		2 years		N		
Total	1294	67.1	32.9		76.1	23.9
				426		
Gender of respondent						
Female	513	67.1	32.9	161	76.9	23.1
Male	781	67.1	32.9	257	75.5	24.5
Wilcoxon-Mann		n	.S.		n.	<i>S.</i>
Whitney						
Occupation						
Not farming	442	65.4	34.6	153	72.5	27.5
Farming	852	68.0	32.0	273	78.0	22.0
Wilcoxon-Mann		n	. <i>S.</i>		n.	<i>S.</i>
Whitney						
Place of residence						
Rural	868	67.4	32.6	283	77.7	22.3
Urban	426	66.4	33.6	43	72.7	27.3
Wilcoxon-Mann		n	.S.		n.s.	
Whitney						
Education level						
No school	98	72.5	27.5	27	92.6	7.4
Some primary	152	67.8	32.2	49	79.6	20.4
Complete primary	822	65.6	34.4		76.3	23.7
				283		
Some secondary	35	57.1	42.9		40.0	60.0
				15		
Complete	129	68.2	31.8		68.3	31.7
secondary				41		
Higher / technical	51	82.5	17.5		88.9	11.1
				9		
Kruskal-Wallis H		$\chi 2(5) = 6.1, p = 0.102$			χ2(5) = 17.2	2, p = 0.004
test						
Asset quintile						
Poorest	209	65.5	34.5	72	79.2	20.8
2	239	69.0	31.0	74	79.7	20.3
3	275	68.4	31.6	87	73.6	26.4
4	296	69.3	30.7	91	79.1	20.9
Richest	275	62.9	37.1	102	70.6	29.4

**Table A1.1.** Respondents' experience of flood in previous two years and whether they knew of it in advance.

Kruskal-Wallis H		n.s.			n.s.	
test						
Perceived household						
severity						
Serious	1103	76.5	23.5	259	82.2	17.8
Not serious	177	12.4	87.6	155	69.9	30.0
Wilcoxon-Mann	z=-16.9, p=.000				z=-3.9, p=.0001	
Whitney						
Perceived community						
severity						
Serious	930	78.3	21.7	202	82.2	17.8
Not serious	348	38.8	61.2	213	69.9	30.0
Wilcoxon-Mann Whitney	z=-13.4, p=.000				z=-2.9, p=.0	004

Household	N	Most serious problem	Serious problem among many	Minor problem	Not a problem
Total	128	10.8	3.0	17.9	68.3
	0				
Gender of respondent	= 4 0		0.4	1.5.5	(0.4
Female	512	11.1	3.1	16.6	69.1
Male	768	10.5	3.0	18.7	67.7
Wilcoxon-Mann			n.s.		
Whitney					
Occupation		10 5	0 <b>F</b>	10.0	
Not farming	440	10.7	2.5	18.9	67.9
Farming	840	10.8	3.3	17.4	68.4
Wilcoxon-Mann			n.s.		
Whitney					
Place of residence		10.0	2.0	. – .	
Rural	859	10.9	2.9	17.1	69.0
Urban	421	10.4	3.3	19.5	66.7
Wilcoxon-Mann			n.s.		
Whitney					
Education level		10.0		<b>2</b> 2	
No school	98	13.3	1.0	20.4	65.3
Some primary	149	12.7	1.3	14.1	71.8
Complete primary	811	10.1	3.9	17.8	68.2
Some secondary	35	11.4	0	25.7	62.9
Complete secondary	129	12.4	2.3	20.2	65.1
Higher / technical	51	5.9	2.0	15.7	76.5
Kruskal-Wallis H test			n.s.		
Asset quintile					
Poorest	207	14.5	2.4	17.8	65.2
2	235	10.2	4.3	18.3	67.2
3	271	10.0	4.1	18.8	67.2
4	292	8.2	1.4	16.1	74.3
Richest	275	12.0	3.3	18.5	66.2
Kruskal-Wallis H test			n.s.		
Flood experience					
No flood in last 2	866	1.8	.69	12.0	85.4
years Flood in last two years	414	29.5	8.0	30.2	32.4

**Table A1.2.** Respondents' perceptions of flood severity among their households.

Wilcoxon-Mann			z=20.1, p=.	000	
Whitney			-		
Early warning of flood	l (among fl	ood-			
exposed)					
No early warning	314	25.2	7.0	30.2	37.6
Early warning	100	43.0	11.0	30.0	16.0
Wilcoxon-Mann			z=4.5, p=.0	000	
Whitnev					

Community	N	Most serious	Serious problem	Minor	Not a
	N	problem	among many	problem	problem
lotal	1278	19.9	7.4	16.9	55.9
Female	511	20.5	8.4	16.4	54.6
Male	767	19.4	6.6	17.2	56.7
Wilcoxon-Mann			n.s.		
Whitney					
Occupation					
Not farming	439	20.3	7.5	17.5	54.7
Farming	839	19.7	7.3	16.6	56.5
Wilcoxon-Mann			n.s.		
Whitney					
Place of residence					
Rural	857	19.4	7.0	17.0	56.6
Urban	421	20.9	8.1	16.6	54.4
Wilcoxon-Mann			n.s.		
Whitney					
Education level					
No school	98	22.4	13.3	14.3	50.0
Some primary	147	22.4	4.1	17.7	55.8
Complete primary	812	20.1	7.3	16.6	56.0
Some secondary	35	17.1	5.7	22.9	54.3
Complete secondary	129	19.4	5.4	21.7	53.5
Higher / technical	50	8.0	10.0	10.0	72.0
Kruskal-Wallis H test			n.s.		
Asset quintile					
Poorest	206	24.3	8.2	19.9	47.6
2	235	23.0	8.5	14.0	54.5
3	271	19.9	6.6	16.6	56.8
4	292	14.7	4.1	17.5	63.7
Richest	274	19.3	9.3	16.8	54.0
Kruskal-Wallis H test			$\chi^2(4) = 15.6, p = 0$	0.004	
Flood experience					
No flood in last 2	863	10.9	4.7	11.4	73.0
Flood in last two	415	38.5	12.8	28.4	20.2
years Wilcoxon-Mann			7 - 175 n - 000	n	
Whitney			2–17.3, p=.000		
Early warning of flood (	among	flood-exposed)			
No early warning	315	33.3	14.0	28.2	24.4

**Table A1.3.** Respondents' perceptions of flood severity for their communities.

Early warning	100	55.0	9.0	29.0	7.0
Wilcoxon-Mann			z=4.2, p=.000		
Whitnev			-		

		Extremely	Very	Not very	Not at all
		likely	likely	likely	likely
Total	129	17.0	16.2	34.7	32.2
	4				
Gender of respondent					
Female	513	16.4	16.8	35.5	31.4
Male	781	17.4	15.8	34.2	32.7
Wilcoxon-Mann Whitne	у		n.s.		
Occupation					
Not farming	442	16.1	18.6	34.8	30.5
Farming	852	17.5	14.9	34.6	33.0
Wilcoxon-Mann Whitne	У		n.s.		
Place of residence					
Rural	868	16.8	15.3	36.8	31.1
Urban	426	17.4	17.8	30.5	34.3
Wilcoxon-Mann Whitne	y		n.s.		
Education level					
No school	98	14.3	10.2	41.8	33.7
Some primary	152	14.5	15.1	36.8	33.6
Complete primary	822	17.5	17.3	32.9	32.4
Some secondary	35	8.6	22.9	31.4	37.1
Complete secondary	129	17.8	15.5	34.1	32.6
school					
Higher / technical	51	25.5	11.8	47.1	15.7
Kruskal-Wallis H test			n.s.		
Asset quintile					
Poorest	209	13.4	13.4	35.9	37.3
2.0	239	21.3	12.6	33.5	32.6
3.0	275	15.6	19.3	32.7	32.4
4.0	296	16.2	16.6	37.5	29.7
Richest	275	18.2	17.8	33.8	30.2
Kruskal-Wallis H test			n.s.		
Flood experience					
No flood in last 2	868	16.9	15.7	32.1	35.3
years					
Flood in last two	426	17.1	17.1	39.9	25.8
years					
Wilcoxon-Mann Whitne	У		z=2.2, p	=.027	
Early warning of flood (	among	tlood-			
exposed)	224		14.0	40.0	07.0
No early warning	324	15.4	14.8	42.6	27.2

**Table A1.4.** Perceived capacity to be prepared for an extreme flood by respondent characteristics.

Early warning	102	22.6	24.5	31.4	21.6
Wilcoxon-Mann Wh	itney		z=-2.5, p=.	012	
Perceived severity o	f flooding to h	ousehold			
Not serious	110	16.4	16.0	35.2	32.5
	3				
Serious	177	19.8	16.4	34.5	29.4
Wilcoxon-Mann Wh	itney		n.s.		
Perceived severity o	f flooding to				
community					
Not serious	930	14.4	17.1	35.6	32.9
Serious	348	23.6	12.6	33.6	30.2
Wilcoxon-Mann Wh	itney		z=2.1, p=.	037	

	Ν	Extremely	Very	Not very	Not at all	
		likely	likely	likely	likely	
Total	129	9.7	14.0	43.1	33.2	
	4					
Gender of						
respondent						
Female	513	9.2	13.7	43.5	33.7	
Male	781	10.0	14.2	42.9	32.9	
Wilcoxon-Mann Whi	tney		n.s			
Occupation						
Not farming	442	14.0	14.0	43.2	28.7	
Farming	852	7.4	14.0	43.1	35.6	
Wilcoxon-Mann Whi	tney		z=-3.3, p	<i>=.001</i>		
Place of residence						
Rural	868	7.3	13.0	44.9	34.8	
Urban	426	14.6	16.0	39.4	30.1	
Wilcoxon-Mann Whi	tney		z=3.5, p	=.000		
<b>Education level</b>						
No school	98	4.1	12.2	50.0	33.7	
Some primary	152	11.2	13.2	50.0	25.7	
Complete primary	822	9.1	13.9	39.9	37.1	
Some secondary	35	5.7	17.1	37.1	40.0	
Complete	129	15.5	12.4	48.1	24.0	
secondary						
Higher / technical	51	11.8	21.6	54.9	11.8	
Kruskal-Wallis H tes		$\chi 2(5) = 18.6, p = 0.001$				
Asset quintile						
Poorest	209	6.7	14.8	45.0	33.5	
2	239	8.0	12.6	46.4	33.1	
3	275	5.8	13.8	42.9	37.5	
4	296	11.2	13.9	41.2	33.8	
Richest	275	15.6	14.9	41.1	28.4	
Kruskal-Wallis H tes	t		$\chi^2(4) = 12.3$	, p = 0.015		
Flood experience				-		
No flood in last 2	868	10.0	13.6	39.5	36.9	
years						
Flood in last two	426	8.9	14.8	50.5	25.8	
years						
Wilcoxon-Mann Whi	tney		z=2.6, p	=.010		
Early warning of floo	od (amor	ıg flood-				
exposed)						

**Table A1.5.** Perceived capacity to be recover fully from an extreme flood by respondent characteristics.

No early warning	324	6.8	13.6	51.5	28.1
Early warning	102	15.7	18.6	47.1	18.6
Wilcoxon-Mann Wh		z=3.0, p=.	002		
Perceived severity	of flooding to				
household					
Not serious	110	9.5	13.9	42.1	34.5
	3				
Serious	177	9.6	13.6	50.9	26.0
Wilcoxon-Mann Wh		n.s.			
Perceived severity	of flooding to				
community					
Not serious	930	10.1	12.9	41.7	35.3
Serious	348	7.8	16.1	47.7	28.5
Wilcoxon-Mann Wh		n.s.			

	Ν	Extremely likely	Very likely	Not very likely	Not at all likely
Total	129	9.7	14.0	43.1	33.2
	4				
Gender of					
respondent					
Female	513	9.2	13.7	43.5	33.7
Male	781	10.0	14.2	42.9	32.9
Wilcoxon-Mann Wh	itney		n.s		
Occupation					
Not farming	442	14.0	14.0	43.2	28.7
Farming	852	7.4	14.0	43.1	35.6
Wilcoxon-Mann Wh	itney		n.s		
Place of residence					
Rural	868	7.3	13.0	44.9	34.8
Urban	426	14.6	16.0	39.4	30.1
Wilcoxon-Mann Wh	itney		n.s		
Education level	2				
No school	98	4.1	12.2	50.0	33.7
Some primary	152	11.2	13.2	50.0	25.7
Complete primary	822	9.1	13.9	39.9	37.1
Some secondary	35	5.7	17.1	37.1	40.0
Complete	129	15.5	12.4	48.1	24.0
secondary					
Higher / technical	51	11.8	21.6	54.9	11.8
Kruskal-Wallis H te	st		n.s		
Asset quintile					
Poorest	209	6.7	14.8	45.0	33.5
	2 239	8.0	12.6	46.4	33.1
	3 275	5.8	13.8	42.9	37.5
2	4 296	11.2	13.9	41.2	33.8
Richest	275	15.6	14.9	41.1	28.4
Kruskal-Wallis H te	st		$\gamma^{2}(4) = 14.3$	p = 0.006	
Flood experience			χ-(-) - το,	,p one of	
No flood in last 2	868	10.0	13.6	39.5	36.9
Flood in last two	426	8.9	14.8	50.5	25.8
years Wilcoxon-Mann Wh	iitney		z=2.0, p	=.041	
Early warning of flo	od (amon	g flood-			
exposed)					
No early warning	324	6.8	13.6	51.5	28.1

**Table A1.6.** Perceived capacity to change livelihood strategy by respondent characteristic.

Early warning	102	15.7	18.6	47.1	18.6	
Wilcoxon-Mann Whitney			z=3.7, p=.000			
Perceived severity	of flooding to					
household						
Not serious	110	9.5	13.9	42.1	34.5	
	3					
Serious	177	9.6	13.6	50.9	26.0	
Wilcoxon-Mann Whitney			z=1.9, p=.0	954		
Perceived severity	of flooding to					
community	-					
Not serious	930	10.1	12.9	41.7	35.3	
Serious	348	7.8	16.1	47.7	28.5	
Wilcoxon-Mann Whitnev			z=4.9, p=.000			

	Prepare			Recover			Change			
	coeff.	s.e.		coeff.	s.e.		coeff.	s.e.		
Age	-0.042	0.023	*	0.008	0.029		0.023	0.023		
Age*Age	0.001	0.000	**	0.000	0.000		0.000	0.000		
HH size	-0.022	0.030		0.057	0.030	*	-0.011	0.026		
Gender of re	spondent ((	)=Female)								
Male	-0.213	0.137		-0.089	0.139		0.031	0.117		
Education (0	=No school	ing)								
Some		1116)								
primary	-0.101	0.255		0.325	0.252		-0.011	0.268		
Complete	0 284	0 209		0.068	0 2 2 0		0 1 7 3	0 223		
primary	0.201	0.207		0.000	0.220		0.175	0.225		
some secondarv	-0.217	0.365		-0.209	0.435		-0.289	0.400		
Complete	0 1 0 0	0 200		0.446	0 21 1		0 212	0.204		
secondary	0.190	0.298		0.440	0.311		0.313	0.294		
Higher /	0.619	0.323	*	0.790	0.330	**	-0.221	0.385		
tecnnical										
Occupation (	(0=not farm	er)								
Farmer	0.015	0.160		-0.196	0.159		0.023	0.164		
Residence (0	)=rural)									
Urban	-0.149	0.178		0.233	0.194		-0.012	0.154		
Accot quintil	e (O-noore	ct)								
Asset quintin 2	0 275	0 1 97		-0.008	0 192		0318	0 1 7 1	*	
- 3	0.275	0.197		-0.000	0.172		0.310	0.171	**	
4	0.260	0.200		-0.003	0.200		0.472	0.204	**	
5	0.236	0.273		-0.141	0.281		0.623	0.237	***	
Early warning of last flood (0=no flood experience)										
No	0.089	0.141		0.175	0.127		-0.174	0.131		
Yes	0.878	0.255	***	1.098	0.251	***	0.610	0.219	***	
Belleves floo	aing seriou	is problem	for c	community	$(\mathbf{U}=\mathbf{not})$	probl	ematic	0.4.40	***	
Serious	0.069	0.161		-0.050	0.143		0.508	0.142	ጥጥጥ	
N					1271					
Prob>F	C	0.030		(	0.001			0.000		

 Table A1.7. Seemingly unrelated ordinal logit regressions on resilience-related capacities.