Supporting information

S1 Appendix: Additional statistical analysis and discussions

Table A. The summary of methods used to analyze the data

	Analysis used	Models	R Package
The effect of EVD on the livelihood outcome (part I)			
Total household income	Both descriptive statistics and regression analysis	Spatial-lagged models and spatial-error models	spdep
Agricultural production	Both descriptive statistics and regression analysis	Spatial stochastic production frontier model	ssfa
The effect of EVD on Resource base (part II)			
Financial capital	Descriptive statistics		
Physical capital	Descriptive statistics		
Natural capital	Descriptive statistics		
Social capital	Both descriptive statistics and regression analysis	Spatial-lagged models and	spdep

		spatial-error models	

Table B: Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
Incidence of EVD in the community: Yes	0.311	0.463	0	1
Age of the respondent	42.29	12.416	18	85
Household size	8.424	3.993	1	18
Farm size (hectares)	1.532	1.946	0	25
Urban	0.42	0.491	0	1
Gender	0.902	0.297	0	1
Education level	6.184	5.255	0	18

Table C: Conversion factors for different categories of livestock

Camels	1.00
Cattle	0.70
Sheep	0.10
Goats	0.10
Horses	0.80
Mules	0.70
Asses	0.50
Pigs	0.20
Chicken	0.01

Source: Jahnke (1982)

Table D: Significance test for spatial correlation of the residuals obtained from Mixed-effect models

Dependent variable	Moran's I	SD	p-value
Community trust (Table 1)	0.1771	4.8965	0.000
Institutional trust (Table 1)	0.1297	3.5986	0.00016
Total Income (Table 2)	0.087	2.4506	0.00713

Table E: EVD and Social capital: Alternative models

	Community Trust			**Institutional Trust**		
	Model (1) Linear mixed-effects	Model (2) Linear model with Gaussian spatial correlation	Model (3) Spatial error Model	Model (4) Linear mixed-effects	Model (5) Linear model with Gaussian spatial correlation	Model (6) Spatial error Model
Incidence of Ebla in the community: Yes	0.0638	0.0401	0.0966	-0.1989*	-0.3646***	-0.2781***
	0.1142)	(0.1114)	(0.1121)	(0.1152)	(0.1084)	(0.1029)
Residence: Urban	0.2880	-0.1413	-0.1778*	-0.4709***	-0.6268***	-0.6158***
	(0.3606)	(0.1069)	(0.1061)	(0.1332)	(0.1038)	(0.0945)
Religion: Muslim	0.0019	0.0125	0.0220	-0.1081	-0.1412	-0.0888
	(0.1667)	(0.1601)	(0.1614)	(0.1625)	(0.1546)	(0.1482)
Religion: Other	0.0175	0.0446	-0.0368	0.1179	0.0302	0.1335

	(0.2893)	(0.2893)	(0.2960)	(0.2925)	(0.2792)	(0.2811)
Religion: Christian (reference)						
Ln (Total Income)	0.0064	0.0258	0.0215	0.0039	0.0030	0.0215
	(0.0196)	(0.0193)	(0.0194)	(0.0197)	(0.0186)	(0.0178)
Gender: Male	0.5087**	0.4386***	0.4434***	0.0580	0.2507*	0.2128
	(0.2427)	(0.1351)	(0.1381)	(0.1767)	(0.1309)	(0.1306)
Education level (years)	0.0127	0.0042	0.0046	-0.0245***	-0.0282***	-0.0308***
	(0.0079)	(0.0078)	(0.0081)	(0.0080)	(0.0076)	(0.0078)
Age	0.0031	0.0003	-0.0001	0.0032	0.0066**	0.0061**
	(0.0032)	(0.0032)	(0.0033)	(0.0032)	(0.0031)	(0.0031)
ac.term		-1.9025***			-1.6651***	
		(0.2071)			(0.1874)	
Constant	-1.0808**	-0.4444	-0.4217	0.1764	-0.1147	-0.2683
	(0.4821)	(0.3030)	(0.2996)	(0.4192)	(0.2926)	(0.2678)
N	553	553	553	553	553	553
R2		0.3272			0.3982	
Adjusted R2		0.2359			0.3165	

Log Likelihood	-712.3715		-704.0825	-708.3407		-671.7219
Akaike Inf. Crit.	1,570.7430		1,544.1650	1,562.6810		1,479.4440
Bayesian Inf. Crit.	1,885.7640			1,877.7030		
Residual Std. Error (df = 486)		0.8535			0.8241	
F Statistic (df = 66; 486)		3.5815***			4.8731***	
Wald Test (df = 1)			3.9353**			33.3193***
LR Test (df = 1)			3.0557*			23.8147***

Note: *p<0.1; **p<0.05; ***p<0.01

Table F: EVD and Institutional trust: Additive index

	Dependent variable: Institutional trust		
	Model (1) Complete sample	Model (2) Rural subsample	Model (3) Urban subsample
Incidence of EVD in the community:	-0.0389**	-0.0073	-0.0705***
Yes			
	(0.0187)	(0.0317)	(0.0233)
Residence: Urban	-0.1090***		
	(0.0180)		

Religion: Muslim	-0.0128	0.0320	-0.0332
	(0.0269)	(0.0348)	(0.0380)
Religion: Other	-0.0138	0.0472	-0.0184
	(0.0485)	(0.1174)	(0.0557)
Religion: Christian (reference)			
Ln (Total Income)	0.0016	0.0055	-0.0048
	(0.0032)	(0.0042)	(0.0045)
Gender: Male	0.0366	0.0673*	0.0230
	(0.0227)	(0.0344)	(0.0289)
Education level (years)	-0.0041***	-0.0026	-0.0032*
	(0.0013)	(0.0018)	(0.0017)
Age	0.0009*	0.0021***	0.0005
	(0.0005)	(0.0007)	(0.0007)
Constant	0.9701***	0.9627***	1.0154***
	(0.0731)	(0.1046)	(0.0891)
Observations	553	210	343
Log Likelihood	288.3293	168.0857	160.0758
sigma2	0.0205	0.0115	0.0227
Akaike Inf. Crit.	-440.6586	-230.1714	-222.1517
Wald Test (df = 1)	6.1287**	10.7684***	9.1232***
LR Test (df = 1)	6.0281**	10.1279***	8.0619***

Note: *p<0.1; **p<0.05; ***p<0.01

Table G: EVD and total household income: Alternative models

Dependent variable: Logarithm of annual household Income			
	Model 1: Linear mixed-effects	Model 2: Linear model with Gaussian spatial correlation	Model 3: Spatial error
Incidence of Ebola in the community: Yes	0.0658	0.1036	0.0994
	(0.1210)	(0.1136)	(0.1211)
Farm size	0.0601**	0.0402	0.0405
	(0.0297)	(0.0293)	(0.0294)
Residence: Urban	-0.0646	-0.1595	-0.1589
	(0.1224)	(0.1072)	(0.1169)
Household size	0.0045	0.0055	0.0052
	(0.0123)	(0.0124)	(0.0124)
Gender: Male	0.5912***	0.5755***	0.5626***
	(0.1839)	(0.1678)	(0.1674)
Age (years)	-0.0052	-0.0043	-0.0047

	(0.0040)	(0.0041)	(0.0040)
Education level (years)	0.0228**	0.0230**	0.0225**
	(0.0100)	(0.0100)	(0.0099)
Occupation: Farmer	-0.5437***	-0.5492***	-0.5426***
	(0.1731)	(0.1739)	(0.1725)
Occupation: Wage employment	0.3419*	0.3256*	0.3345*
	(0.1916)	(0.1927)	(0.1891)
Occupation: Informal employment	0.1202	0.1113	0.1166
	(0.2503)	(0.2458)	(0.2476)
Occupation: skilled labor	0.0687	0.1324	0.1835
	(0.2701)	(0.2723)	(0.2687)
Occupation: Small business	-0.5139**	-0.4722**	-0.4503**
	(0.2114)	(0.2137)	(0.2118)
Occupation: Others (reference)	NA	NA	NA
ac.term		0.4432***	
		(0.0866)	
Constant	10.9423***	10.9679***	10.9955***
	(0.3135)	(0.2971)	(0.2998)

Observations	528	528	528
R2		0.2104	
Adjusted R2		0.1904	
Log Likelihood	-813.1591		-793.7262
sigma2			1.1688
Akaike Inf. Crit.	1,666.3180		1,617.4520
Bayesian Inf. Crit.	1,751.7000		
Residual Std. Error		1.0910 (df = 514)	
F Statistic		10.5328*** (df = 13; 514)	
Wald Test			17.0610*** (df = 1)
LR Test			14.9260*** (df = 1)
Note:		*p<0.1; **p<0.05; ***p<0.01	

Table H: Determinants of agricultural production (spatial stochastic frontier model vs OLS)

Dependent variable: Ln (Value of crop production at gross margin per hectare)		
	SSFA Model	Ordinary Least squares (OLS) model
Incidence of EVD in the community: Yes	-0.534***	-0.5447***
	(0.188)	(0.1855)
Ln (Farm size)	0.595***	0.3962***
	(0.085)	(0.0857)
Ln (Labor cost)	0.084***	0.0701***
	(0.023)	(0.0236)

Ln (Number of male adult)	0.096	0.1196
	(0.125)	(0.1315)
Ln (Number of female adult)	-0.305**	-0.3495**
	(0.149)	(0.1528)
Ln (Education level of household head)	0.033	0.0450
	(0.066)	(0.0680)
Ln (Age of household head)	0.0199	0.1485
	(0.257)	(0.2748)
Household head gender: Male	0.306	0.3006
	(0.295)	(0.3009)
Constant	9.806***	8.5480***
	(1.111)	(1.0966)
N	311	311
σ_u^2_dmu	0.858	n.a
	(0.841)	
σ_v^2	1.0833***	n.a
	(0.315)	
σ^2	1.228	n.a
λ	0.5334	n.a
Moran I statistic	-0.0613	n.a
Mean efficiency	0.574	n.a
Spatial parameter, ρ	0.008	n.a

LR-Test	7.812; p=0.003	n.a
R2	n.a	0.1534
F Statistic	n.a	6.7948***(df= 8; 300)

Note: Standard errors in parenthesis; *p<0.1; **p<0.05; ***p<0.01.