## Regressions with Cluster average Food Security

March 26, 2018

Table 1: Cluster level average of logFCS measure: IPC zone covariates

	(1) clust_logFCS	(2) clust_logFCS	(3) clust_logFCS
ipc_lag1	0.015 (0.027)	0.002 $(0.025)$	-0.022 $(0.025)$
ipc_lag12	-0.163*** $(0.059)$	-0.077 $(0.055)$	-0.020 (0.066)
ipczone_L12raincytot	-0.070 (0.081)	-0.034 (0.076)	-0.023 (0.078)
ipczone_L12day1rain	-0.165** (0.075)	0.081 $(0.075)$	-0.069 (0.081)
ipczone_L12maxdays	-0.220 (0.223)	-0.156 $(0.206)$	-0.044 (0.208)
$ipczone\_floodmax$	-0.348 $(0.473)$	-0.204 (0.436)	0.165 $(0.443)$
ipczone_price	-0.142*** $(0.036)$	-0.184*** $(0.035)$	-0.180*** $(0.035)$
$ipczone\_thinn$	$0.005 \\ (0.034)$	-0.011 (0.031)	-0.009 $(0.031)$
ipczone_percent_ag	-0.118 $(0.075)$	0.126 $(0.080)$	0.020 $(0.083)$
$ipczone\_elevation$	-0.070* $(0.040)$	-0.079** (0.038)	-0.118*** $(0.040)$
$ipczone\_nutri\_reten\_constrained$	-0.026 $(0.036)$	-0.025 $(0.037)$	-0.023 (0.037)
$ipczone\_dist\_road$	-0.009*** $(0.001)$	-0.003** (0.001)	$-0.003** \\ (0.001)$
$ipczone\_dist\_admarc$	0.009*** $(0.003)$	0.010*** (0.003)	0.008*** $(0.003)$
ipczone_roof		0.169 $(0.114)$	0.181 $(0.121)$
ipczone_cells_own		0.203*** (0.063)	0.028 $(0.073)$
ipczone_hhsize			0.002 $(0.036)$
ipczone_hh_age			-0.015** $(0.007)$
ipczone_hh_gender			-0.188 $(0.199)$
ipczone_asset			0.334*** (0.073)
Observations $R^2$	553 0.158	553 0.294	553 0.329

Table 2: Cluster level average of logFCS measure: TA level covariates

	(1) clust_logFCS	(2) clust_logFCS	(3) clust_logFCS
ipc_lag1	0.032 (0.025)	0.025 (0.020)	0.016 (0.019)
ipc_lag12	-0.140*** $(0.053)$	-0.113*** $(0.042)$	-0.092** $(0.044)$
TA_L12raincytot	0.132** (0.065)	$0.090* \\ (0.052)$	0.117** (0.052)
TA_L12day1rain	-0.014 (0.156)	-0.089 $(0.125)$	-0.114 $(0.125)$
TA_L12maxdays	0.063 $(0.173)$	0.148 $(0.139)$	0.189 $(0.138)$
TA_floodmax	-0.052 $(0.400)$	0.138 $(0.320)$	0.243 $(0.318)$
$TA\_price$	-0.035 $(0.042)$	-0.068** $(0.034)$	-0.064* $(0.034)$
$\mathrm{TA}_{-\mathrm{thinn}}$	-0.012 (0.040)	-0.005 $(0.032)$	-0.007 $(0.032)$
TA_percent_ag	-0.071 $(0.045)$	0.051 $(0.037)$	0.043 $(0.037)$
$TA_{elevation}$	-0.020 $(0.034)$	-0.098*** $(0.028)$	-0.106*** $(0.027)$
$TA\_nutri\_reten\_constrained$	-0.020 $(0.024)$	-0.016 (0.019)	-0.025 $(0.019)$
$TA\_dist\_road$	-0.008*** $(0.001)$	-0.002*** $(0.001)$	-0.002*** $(0.001)$
$TA\_dist\_admarc$	$0.002 \\ (0.002)$	0.004*** $(0.001)$	0.004*** $(0.001)$
TA_roof		0.147*** $(0.051)$	$0.066 \\ (0.054)$
TA_cells_own		0.175*** $(0.024)$	0.162*** (0.025)
TA_hhsize			-0.028* (0.015)
$TA\_hh\_age$			-0.002 $(0.002)$
$TA\_hh\_gender$			-0.080 $(0.086)$
$TA_asset$			0.141*** (0.033)
Observations $\mathbb{R}^2$	546 0.168	546 0.470	546 0.497

Table 3: Cluster level average of logFCS measure

	$(1)$ clust_logFCS	(2) clust_logFCS	(3) clust_logFCS
ipc_lag1	0.019 $(0.025)$	0.020 (0.019)	0.013 (0.018)
ipc_lag12	-0.134** $(0.053)$	-0.105*** $(0.039)$	-0.075* $(0.039)$
clust_L12raincytot	$0.095 \\ (0.058)$	0.094** (0.043)	0.112*** (0.042)
clust_L12day1rain	0.091 $(0.123)$	-0.010 $(0.092)$	-0.077 $(0.090)$
clust_L12maxdays	0.144 $(0.148)$	0.130 $(0.111)$	0.180* $(0.107)$
clust_floodmax	-0.028 (0.316)	0.153 $(0.234)$	0.258 $(0.227)$
clust_price	-0.049 (0.030)	-0.070*** $(0.023)$	-0.076*** $(0.022)$
clust_thinn	-0.014 $(0.024)$	-0.000 $(0.018)$	-0.007 $(0.018)$
clust_percent_ag	-0.071** (0.034)	$0.006 \\ (0.026)$	$0.006 \\ (0.025)$
clust_elevation	-0.021 (0.032)	-0.111*** $(0.024)$	-0.120*** $(0.024)$
$clust\_nutri\_reten\_constrained$	-0.008 $(0.020)$	-0.002 $(0.015)$	-0.009 $(0.014)$
clust_dist_road	-0.008*** $(0.001)$	-0.003*** $(0.001)$	-0.003*** $(0.001)$
clust_dist_admarc	$0.000 \\ (0.001)$	0.003*** $(0.001)$	0.003*** (0.001)
clust_roof		0.189*** (0.037)	0.145*** (0.037)
clust_cells_own		0.155**** (0.017)	0.133*** (0.018)
clust_hhsize			-0.010 $(0.010)$
clust_hh_age			-0.003* $(0.001)$
clust_hh_gender			-0.028 $(0.053)$
clust_asset			0.121*** (0.021)
Observations $\mathbb{R}^2$	532 0.189	532 0.557	532 0.591

Table 4: Cluster level average of HDDS measure: IPC zone covariates

	$(1)$ clust_HDDS	(2) clust_HDDS	$(3)$ clust_HDDS
ipc_lag1	-0.007 $(0.089)$	-0.076 $(0.083)$	$-0.151^*$ $(0.084)$
ipc_lag12	-0.608*** $(0.197)$	-0.382** $(0.185)$	-0.157 $(0.224)$
ipczone_L12raincytot	-0.887*** $(0.269)$	-0.893*** $(0.255)$	-0.709*** $(0.265)$
ipczone_L12day1rain	-0.264 $(0.250)$	0.408 $(0.252)$	0.011 $(0.273)$
ipczone_L12maxdays	-0.364 (0.746)	-0.009 $(0.690)$	0.214 $(0.703)$
ipczone_floodmax	-0.820 (1.579)	-0.132 (1.456)	0.813 $(1.495)$
ipczone_price	-0.397*** $(0.119)$	-0.609*** $(0.117)$	-0.596*** $(0.117)$
$ipczone\_thinn$	-0.146 (0.112)	-0.164 $(0.105)$	-0.174* $(0.104)$
ipczone_percent_ag	-0.508** (0.250)	0.053 $(0.269)$	-0.260 $(0.281)$
ipczone_elevation	$0.003 \\ (0.135)$	-0.095 $(0.128)$	-0.145 $(0.137)$
$ipczone\_nutri\_reten\_constrained$	-0.038 (0.119)	0.079 $(0.123)$	0.139 $(0.125)$
ipczone_dist_road	-0.028*** $(0.004)$	-0.010** $(0.004)$	-0.009** $(0.004)$
$ipczone\_dist\_admarc$	0.024** (0.010)	0.029*** (0.009)	0.017* (0.010)
ipczone_roof		1.295*** (0.380)	1.021** (0.409)
ipczone_cells_own		0.262 $(0.210)$	0.065 $(0.247)$
ipczone_hhsize			-0.089 $(0.120)$
ipczone_hh_age			-0.008 $(0.022)$
ipczone_hh_gender			0.467 $(0.673)$
ipczone_asset			0.915*** (0.246)
Observations $\mathbb{R}^2$	553 0.158	553 0.291	553 0.312

Table 5: Cluster level average of HDDS measure : TA level covariates

	(1) clust_HDDS	(2) clust_HDDS	(3) clust_HDDS
ipc_lag1	0.086 (0.082)	0.049 (0.066)	0.012 $(0.065)$
ipc_lag12	-0.531*** $(0.175)$	-0.444*** (0.141)	-0.300** $(0.145)$
TA_L12raincytot	0.033 $(0.216)$	-0.147 $(0.174)$	-0.068 $(0.172)$
TA_L12day1rain	0.597 $(0.518)$	0.301 $(0.416)$	0.144 $(0.414)$
TA_L12maxdays	-0.088 $(0.576)$	0.129 $(0.462)$	0.385 $(0.459)$
TA_floodmax	-0.109 (1.334)	0.461 $(1.069)$	0.763 $(1.056)$
TA-price	-0.037 $(0.139)$	-0.201* (0.114)	-0.205* $(0.112)$
$\mathrm{TA}_{-\mathrm{thinn}}$	-0.129 $(0.132)$	-0.085 $(0.106)$	-0.107 $(0.105)$
$TA_{percent\_ag}$	-0.228 (0.149)	0.127 $(0.124)$	0.072 $(0.123)$
$TA$ _elevation	0.162 $(0.113)$	-0.118 $(0.092)$	-0.130 $(0.091)$
$TA\_nutri\_reten\_constrained$	-0.083 (0.080)	-0.048 $(0.065)$	-0.072 $(0.064)$
$TA\_dist\_road$	-0.027*** $(0.003)$	-0.007*** $(0.003)$	-0.007** $(0.003)$
$TA\_dist\_admarc$	0.001 $(0.006)$	0.012** (0.005)	0.010** (0.005)
TA_roof		0.852*** (0.171)	0.588*** (0.178)
TA_cells_own		0.416*** (0.081)	0.348*** (0.084)
TA_hhsize			-0.065 $(0.050)$
TA_hh_age			-0.014* (0.008)
TA_hh_gender			$0.163 \\ (0.285)$
TA_asset			0.538*** (0.110)
Observations $R^2$	546 0.166	546 0.467	546 0.497

Table 6: Cluster level average of HDDS measure

	$(1)$ clust_HDDS	(2) clust_HDDS	$(3)$ clust_HDDS
ipc_lag1	0.040 (0.083)	0.041 $(0.062)$	0.004 $(0.059)$
$ipc\_lag12$	-0.470*** $(0.174)$	-0.370*** $(0.129)$	-0.214* $(0.128)$
clust_L12raincytot	-0.057 $(0.191)$	-0.057 $(0.142)$	-0.000 $(0.137)$
clust_L12day1rain	$0.675* \\ (0.405)$	0.287 $(0.304)$	-0.000 $(0.294)$
clust_L12maxdays	$0.308 \ (0.490)$	$0.202 \\ (0.367)$	0.428 $(0.350)$
clust_floodmax	-0.326 (1.044)	0.261 $(0.777)$	0.610 $(0.740)$
clust_price	-0.085 $(0.099)$	-0.175** (0.075)	-0.205*** $(0.071)$
$clust\_thinn$	-0.108 (0.081)	-0.060 $(0.060)$	-0.094 $(0.058)$
$clust\_percent\_ag$	-0.186 (0.113)	0.051 $(0.086)$	0.042 $(0.082)$
clust_elevation	0.174 $(0.107)$	-0.130 $(0.081)$	-0.161** (0.079)
$clust\_nutri\_reten\_constrained$	-0.086 $(0.066)$	-0.059 $(0.049)$	-0.084* $(0.047)$
clust_dist_road	-0.028*** $(0.003)$	-0.009*** $(0.002)$	-0.008*** $(0.002)$
$clust\_dist\_admarc$	-0.004 $(0.005)$	$0.005 \\ (0.004)$	$0.005 \\ (0.003)$
clust_roof		0.805*** (0.121)	0.648*** (0.119)
clust_cells_own		0.425**** $(0.058)$	0.333*** (0.058)
clust_hhsize			-0.028 (0.031)
clust_hh_age			-0.015*** $(0.005)$
clust_hh_gender			0.079 $(0.173)$
clust_asset			0.460*** (0.068)
Observations $\mathbb{R}^2$	532 0.201	532 0.559	532 0.606

Table 7: Cluster level average of with RCSI measure:IPC zone covariates

	(1) clust_RCSI	(2) clust_RCSI	(3) clust_RCSI
ipc_lag1	1.935*** (0.283)	1.789*** (0.281)	1.519*** (0.284)
ipc_lag12	1.019 $(0.627)$	0.392 $(0.628)$	0.489 $(0.755)$
ipczone_L12raincytot	-1.063 $(0.855)$	-2.020** $(0.865)$	-1.505* $(0.890)$
ipczone_L12day1rain	1.755** (0.795)	0.129 $(0.853)$	-1.207 (0.918)
ipczone_L12maxdays	-5.702** (2.368)	-4.896** (2.335)	-2.588 $(2.365)$
ipczone_floodmax	2.365 $(5.014)$	3.434 $(4.931)$	8.532* (5.030)
ipczone_price	0.397 $(0.379)$	$0.015 \\ (0.396)$	0.032 $(0.392)$
ipczone_thinn	-0.418 (0.357)	-0.149 $(0.355)$	-0.231 $(0.351)$
ipczone_percent_ag	2.104*** (0.793)	-0.228 (0.911)	-1.038 $(0.944)$
ipczone_elevation	-1.107*** $(0.427)$	-1.547*** $(0.435)$	
$ipczone\_nutri\_reten\_constrained$	1.684*** (0.377)	2.470*** (0.418)	2.561*** (0.419)
ipczone_dist_road	$0.000 \\ (0.013)$	-0.038** $(0.015)$	-0.044*** $(0.015)$
$ipczone\_dist\_admarc$	-0.043 (0.030)	-0.031 $(0.030)$	-0.046 $(0.033)$
ipczone_roof		4.630*** (1.288)	3.714*** (1.377)
$ipczone\_cells\_own$		-3.360*** $(0.712)$	-4.665*** $(0.832)$
ipczone_hhsize			-0.930** $(0.404)$
ipczone_hh_age			-0.182** $(0.075)$
$ipczone\_hh\_gender$			-3.414 (2.265)
ipczone_asset			2.452*** (0.826)
Observations $\mathbb{R}^2$	553 0.400	553 0.426	553 0.450

Table 8: Cluster level average of with RCSI measure: TA level covariates

	(1) clust_RCSI	(2) clust_RCSI	(3) clust_RCSI
ipc_lag1	2.222*** (0.264)	2.275*** (0.255)	2.273*** (0.258)
ipc_lag12	$0.460 \\ (0.567)$	0.331 $(0.547)$	0.533 $(0.578)$
TA_L12raincytot	-1.016 $(0.698)$	-0.757 $(0.677)$	-0.839 $(0.686)$
TA_L12day1rain	-0.113 $(1.675)$	0.316 $(1.617)$	$0.320 \\ (1.655)$
TA_L12maxdays	0.480 $(1.861)$	0.146 $(1.797)$	0.318 $(1.833)$
$TA_floodmax$	5.701 $(4.309)$	$4.846 \\ (4.154)$	$4.700 \\ (4.217)$
TA_price	1.442*** (0.449)	1.675*** (0.444)	1.610*** (0.448)
$\mathrm{TA}_{-}\mathrm{thinn}$	0.529 $(0.426)$	0.468 $(0.412)$	0.453 $(0.418)$
$TA_{-percent\_ag}$	0.493 $(0.482)$	-0.041 (0.480)	-0.077 $(0.489)$
$TA_{-}$ elevation	-1.244*** $(0.365)$	-0.834** $(0.359)$	-0.793** $(0.364)$
$TA\_nutri\_reten\_constrained$	0.917*** (0.257)	0.869*** (0.251)	0.835*** (0.255)
$TA\_dist\_road$	0.031*** (0.010)	0.002 $(0.011)$	0.003 $(0.011)$
$TA\_dist\_admarc$	0.027 $(0.018)$	0.012 $(0.018)$	0.010 $(0.018)$
TA_roof		-1.195* $(0.665)$	-1.088 $(0.712)$
$TA\_cells\_own$		-0.645** $(0.316)$	-0.810** $(0.336)$
TA_hhsize			0.234 $(0.199)$
$TA\_hh\_age$			-0.021 $(0.033)$
$TA\_hh\_gender$			0.680 $(1.137)$
$TA_asset$			0.376 $(0.439)$
Observations $R^2$	546 0.382	546 0.429	546 0.431

Table 9: Cluster level average of with RCSI measure

	(1) clust_RCSI	(2) clust_RCSI	(3) clust_RCSI
ipc_lag1	2.223*** (0.276)	2.226*** (0.265)	2.266*** (0.265)
$ipc\_lag12$	0.836 $(0.577)$	$0.685 \ (0.553)$	0.882 $(0.574)$
clust_L12raincytot	-0.310 $(0.636)$	-0.311 (0.609)	-0.471 (0.613)
clust_L12day1rain	-0.407 $(1.345)$	0.213 $(1.300)$	0.567 $(1.316)$
clust_L12maxdays	-1.174 $(1.629)$	-0.958 $(1.569)$	-1.175 $(1.569)$
clust_floodmax	0.833 $(3.467)$	-0.010 (3.324)	-0.342 (3.316)
clust_price	0.645* (0.329)	0.796** (0.320)	0.817** (0.319)
clust_thinn	0.021 $(0.268)$	-0.052 $(0.257)$	0.008 $(0.259)$
clust_percent_ag	0.510 $(0.376)$	0.185 $(0.366)$	0.128 $(0.366)$
$clust\_elevation$	-1.182*** $(0.355)$	-0.728** $(0.347)$	-0.552 $(0.354)$
$clust\_nutri\_reten\_constrained$	0.497** (0.220)	0.450** (0.212)	0.425** (0.212)
clust_dist_road	0.032*** (0.010)	$0.006 \\ (0.010)$	$0.006 \\ (0.010)$
$clust\_dist\_admarc$	0.017 $(0.016)$	0.003 $(0.016)$	0.003 $(0.016)$
clust_roof		-1.359*** $(0.520)$	-0.971* $(0.535)$
$clust\_cells\_own$		-0.528** $(0.248)$	-0.649** $(0.260)$
clust_hhsize			0.426*** (0.141)
clust_hh_age			-0.013 $(0.021)$
clust_hh_gender			0.951 $(0.776)$
$clust\_asset$			-0.210 $(0.305)$
Observations $\mathbb{R}^2$	532 0.359	532 0.414	532 0.426