

Supplementary Materials. Table S1.—Information collected from the silos in Portugal’s EPAC network.

Region	District	Town/Village	Geolocation	Year construction	Extension year	Ownership	Use	State of conservation	Category	Capacity (t)	Height (m)	Ground plan	Roof shape	Tower position	No. of storage cells	No. of rows of cells	No. of rows of internal cells	Shape of cells	Cell dimensions (m)	Facade types	Constr. Mat.	Receiving machinery cap. (t/h)	No. elevators	N° upper storey horizontal conveyors	N° down storey horizontal conveyors	Firefighting system	Lift	Thermometric sensors	Railway	Lorry weighbridge (t)	Railway weighbridge (t)
Alentejo	Beja	Aljustrel	37°52'47.0"N 8°09'25.7"W	1970	1973/78	LC	GS	1	CF	14,500	37.5	S	F	FT	43	3	2	C	5.4	SII	RC	120	2	2	2	N	Y	N	N	30	
Alentejo	Beja	Inside Beja	38°01'18.2"N 7°51'38.2"W	1961		LC	WU	2	CF	15,000	45.0	S	2	FT	28	3	2	C	6.3	SII	RC	240	3	3	2	Y	Y	N	N	30	
Alentejo	Beja	Outside Beja	38°01'55.6"N 7°52'15.5"W	1977	1981	PS	GS	1	CF	26,500	70.0	S	2	FT	48	3	2	C	7.0	SII	RC	360	3	3	2	Y	Y	N	Y	60+100	200
Alentejo	Beja	Cuba	38°09'57.5"N 7°53'49.4"W	1973	1980	LC	GS	1	CF	23,500	42.5	S	F	FT	35	2	1	C	6.5	SIII	RC	120	2	2	1	N	Y	N	Y	50	200
Alentejo	Beja	Ferreira do Alentejo	38°03'44.9"N 8°07'10.8"W	1973	1976	LC	GS	1	CF	23,500	44.1	S	F	FT	32	2	1	C	6.5	SIII	RC	120	2	2	1	Y	Y	N	N	60	
Alentejo	Beja	Mertola	37°38'12.5"N 7°39'39.2"W	1938		PS	WU	2	R	4,500	37.5	S	F	ST	17	2		S	2.3	ST	RB	120	2	2	1	N	N	N	N	50	
Alentejo	Beja	Moura	38°08'10.3"N 7°26'47.4"W	1974		LC	GS	1	R	10,000	43.2	S	F	FT	17	2	1	C	6.5	SII	RC	120	2	2	1	N	Y	N	N	30+60	
Alentejo	Beja	Serpa	37°56'49.8"N 7°36'16.0"W	1974	1980	LC	GS	1	CF	19,000	44.1	S	F	FT	32	2	1	C	6.5	SIII	RC	120	2	2	1	Y	Y	N	N	30+60	
Alentejo	Evora	Estremoz	38°50'36.9"N 7°34'50.5"W	1973	1979	PS	WU	2	CF	16,000	43.4	L	2	FT	29	2	1	C	6.5	SII	RC	120	2	4	2	Y	Y	N	N	50	
Alentejo	Evora	Evora	38°33'40.1"N 7°54'29.3"W	1971	1976	LC	GS	1	CF	23,000	45.1	S	V	FT	38	3	2	C	6.3	SI	RC	240	4	2	2	N	Y	N	Y	60	200
Alentejo	Evora	Pavia	38°52'43.0"N 8°01'00.6"W	1976	1979	PS	WU	2	CF	18,000	45.4	S	2	FT	29	2	1	C	6.5	SII	RC	120	2	2	1	Y	Y	N	Y	60	200
Alentejo	Evora	Reguengos de Monsaraz	38°25'25.6"N 7°32'31.3"W	1976	1979	LC	GS	1	CF	35,000	43.2	S	2	FT	41	2	1	C	6.5	SII	RC	120	2	2	1	Y	Y	N	Y	60	200
Alentejo	Evora	Vila Viçosa	38°46'45.8"N 7°25'34.0"W	1973			WU	4	R	2,300																				Y	
Alentejo	Portalegre	Alter do Chão	39°12'03.1"N 7°39'21.0"W	1969		LC	GS	1	R	8,000	37.5	S	F	FT	14	2	1	C	5.5	SI	RC	120	2	1	1	N	N	N	N	50	
Alentejo	Portalegre	Elvas	38°53'44.6"N 7°08'18.1"W	1970		LC	GS	1	CF	15,000	47.0	S	2	FT	28	3	2	C	6.5	SII	RC	240	2	2	1	Y	Y	N	Y	80	200
Alentejo	Portalegre	Fronteira	39°02'50.6"N 7°38'36.9"W	1973	1979	LC	GS	1	R	16,000	43.2	S	2	FT	29	2	1	C	6.5	SII	RC	120	2	2	1	Y	Y	N	Y	30+80	200

Alentejo	Portalegre	Portalegre	39°11'58.7"N 7°27'47.3"W	1978		PS	WU	2	CF	10,000	45.5	S	2	FT	17	2	1	C	6.5	SII	RC	120	2	2	1	Y	Y	N	Y	60	200
Alentejo	Portalegre	Vila de Boim	38°51'43.8"N 7°16'22.0"W	1964		PC	R	3	R	4,000	40.0	S	F	CT	14	3		S	2.0	ST	RB	100	2	1	1	N	N	N	N	30	
Algarve	Faro	Santa Catarina da Fonte do Bispo	37°09'13.8"N 7°47'07.4"W	1958		LI	R	3	R	1,300	18.0	S	F	FT	14	2	1	C	3.6	SII	RC	50	2	1	1	N	N	N	N	50	Sur
Azores	Punta Delgada	Punta Delgada	37°44'43.6"N 25°39'03.4"W	1972	1978	PC	GS	1	R	34,000	45.0	S	F	FT	61	3	2	C	6.0	SII	RC	120	3	4	4	Y	Y	N	N	60	
Azores	Angra do Heroísmo	Angra do Heroísmo	38°39'17.0"N 27°12'46.3"W	1953	1975	PS	WU	1	R	21,000	40.0	S	F	FT	35	3,2	2,1	C	6.5	SII	RC	120	3	3	3	Y	Y	N	N	60	
Centro	Castelo Branco	Alcains	39°55'12.4"N 7°26'09.1"W	1977		PS	WU	2	CF	10,000	37.5	S	2	FT	17	2	1	C	6.0	SI	RC	120	2	2	1	Y	Y	N	Y	60+80	200
Centro	Leiria	Caldas de Rainha	39°24'08.6"N 9°08'21.7"W	1959		PS	WU	2	R	6,500	32.0	S	F	FT	18	3	2	C	5.5	SI	RC	120	2	2	1	N	N	N	Y	50	200
Centro	Santarem	Vale de Figueria	39°18'59.4"N 8°37'43.5"W	1977	1979	LPS	GS	1	CF	24,000	37.0	S	2	FT, IT	34	2	1	C	6.0	SII, SIII	RC	120	4	2	1	Y	Y	Y	Y	60+100	200
Lisboa	Lisboa	Beato	38°44'06.3"N 9°06'09.8"W	1958	1962/75 /85	LPS	GS	1	P	120,000	65.0	S	2	FT, IT	128	3	2	C	7- 13	SII, SIII	RC	1,000	13	8	9	N	Y	Y	Y	70+2x100	200
Lisboa	Lisboa	Vila Franca de Xira	38°57'47.8"N 8°59'02.3"W	1956		PC	WU	2	R	6,500	33.0	S	F	FT	11	2	1	C	6.0	SI	RC	120	2	1	1	N	N	N	Y	30	200
Lisboa	Setubal	Caparica e Trafaria	38°40'21.9"N 9°14'15.9"W	1986		LPS	GS	1	P	200,000	60.0	S	2	CT	114	4,3	3,2	C	8- 10	SIII	RC	3,000	14	10	8	N	Y	Y	N	5x100	
Madeira	Funchal	Funchal	32°38'33.6"N 16°55'00.1"W	1984		PS	WU	4	P	16,000	47.0	S	F	FT	21	3	2	C	6.0	SII	RC	240	3	3	3	Y	Y	N	N	60	
Norte	Braganza	Braganza	41°48'01.1"N 6°46'13.2"W	1973	1978	M	R	3	CF	12,000	37.7	S	F	FT	20	2	1	C	6.5	SIII	RC	120	2	2	1	Y	Y	N	Y	80	200
Norte	Braganza	Mogadouro	41°20'02.2"N 6°39'02.7"W	1973		PS	WU	2	R	6,000	37.5	S	F	FT	11	2	1	C	6.5	SIII	RC	120	2	1	1	N	Y	N	Y	80	200
Norte	Oporto	Leixoes. Matosinhos	41°12'00.3"N 8°40'54.3"W	1978	1980	LPS	GS	1	P	100,000	60.0	S	F- 2	FT	76	3	2	C	8.0	SII	RC	1,000	5	3	3	N	Y	Y	Y	2x100	200

Geolocation: coordinates ETRS 89 Use 30. **Ownership:** PS: Portuguese state; LC: lease to cooperative; LPC: lease to private company; LI: lease to institute; PC: private company; M: municipality **Use:** GS: grain storage; R: reused; WU: without use. **State of conservation:** 1: in use; 2: abandoned and poor condition; 3: rehabilitated; 4: demolish. **Category:** R: regional; CF: concentration or final; P: Port. **Ground plan:** S: square; L: L-shape. **Roof shape:** F: flat roof; 2: gable roof; F-2: flat and gable roof; V: vaulted roof. **Tower position:** FT: front tower; ST: side tower; CT: corner tower; IT: interior tower. **Form of cells:** CI: circular; S: Square. **Façade types:** ST: straight; SI: semicircular type I: Consisting of straight façade, semi-circular façade and straight façade; SII: semicircular type II: Consisting of semi-circular façade and straight façade; SIII: semicircular type III: Consisting of semi-circular façade only. **Cell construction material:** RB: reinforced brick; RC: reinforced concrete. **Railway:** Y: exist; N: does not exist. **Firefighting system:** Y: exist; N: does not exist. **Lift:** Y: exist; N: does not exist. **Thermometric sensors:** Y: exist; N: does not exist.

Supplementary Materials. Table S2.- Indicators for 30 villages in Portugal, sites of 31 silos.

Region	District	Village	Population	Demographic pattern	Annual village budget (€)	Economic activity	Land communications	Distance to major urban centre (km)
Alentejo	Beja	Aljustrel	8,879	-1	37,481,577	1	N	Beja 37, Evora 96, Faro 130, Lisboa 164
Alentejo	Beja	Beja	33,401	0	40,540,647	1, 3	N, T	Evora 80, Faro 147, Lisboa 176
Alentejo	Beja	Cuba	4,378	-1	7,979,609	1, 3	P	Beja 20, Evora 67, Faro 166, Lisboa 177
Alentejo	Beja	Ferreira do Alentejo	7,686	-1	20,053,091	1, 3	N	Beja 24, Evora 74, Faro 149, Lisboa 153
Alentejo	Beja	Mertola	8,712	-2	19,041,908	1, 3	P	Beja 53, Ayamonte 67, Huelva 114, Faro 117, Lisboa 234
Alentejo	Beja	Moura	13,259	-2	35,095,085	1, 3	N	Beja 52, Evora 78, Sevilla 185, Faro 203, Lisboa 209
Alentejo	Beja	Serpa	13,764	-1	27,762,400	1, 2, 3	N	Beja 28, Evora 102, Faro 166, Sevilla 203, Lisboa 203
Alentejo	Evora	Estremoz	13,683	-1	20,169,328	1, 2, 3	N, M	Elvas 43, Evora 47, Badajoz 72, Beja 125, Lisboa 171
Alentejo	Evora	Evora	53,591	0	49,824,915	2, 3	N, M, T	Beja 80, Badajoz 101, Lisboa 134
Alentejo	Evora	Pavia	932	-1	2,400,674	1	N	Evora 38, Elvas 91, Badajoz 104, Lisboa 143
Alentejo	Evora	Reguengos de Monsaraz	9,871	-1	14,241,037	1	N, T	Evora 39, Badajoz 99, Lisboa 170
Alentejo	Evora	Vila Viçosa	8,871	0	11,672,154	1, 2, 3	N	Elvas 31, Badajoz 58, Evora 63, Lisboa 187
Alentejo	Portalegre	Alter do Chão	3,044	-1	9,481,442	1	N	Elvas 62, Evora 93, Badajoz 79, Lisboa 195
Alentejo	Portalegre	Elvas	20,753	0	30,828,796	1, 2, 3	N, M, T	Badajoz 20, Evora 84, Lisboa 208
Alentejo	Portalegre	Fronteira	2,858	-2	5,303,650	1	N	Elvas 53, Evora 74, Badajoz 77, Lisboa 180
Alentejo	Portalegre	Portalegre	22,341	-1	27,666,431	1, 2, 3	N, M, T	Elvas 58, Badajoz 68, Evora 103, Caceres 128, Lisboa 227
Alentejo	Portalegre	Vila de Boim	2,109	-1	3,132,941	1,	N, M	Elvas 10, Badajoz 33, Evora 73, Lisboa 197
Algarve	Faro	Santa Catarina da Fonte do Bispo	2,085	1	2,506,847	1, 3	N, M	Faro 26, Albufeira 54, Lagoa 73, Lagos 104
Azores	Punta Delgada	Punta Delgada	67,287	1	38,215,821	1, 2, 3	N, M, Port, Airport	Flights to many European capitals especially between April and October. Port of call for cruise ships.
Azores	Angra do heroismo	Angra do Heroismo	35,402	0	26,291,101	1, 2, 3	N, M, Port, Airport	Flights to many European capitals especially between April and October.
Centro	Castelo Branco	Alcains	4,615		4,943,975	2, 3	N, M, T	Castelo Branco 12, Guarda 89, Coimbra 148, Lisboa 230
Centro	Leiria	Caldas de Rainha	50,917	0	36,864,045	2, 3	N, M, T	Santarem 56, Lisboa 93, Entrocamento 91
Centro	Santarem	Vale de Figueria	1,294	-1	982,151	1	P	Santarem 12, Entroncamento 29, Lisboa 91
Lisboa	Lisboa	Beato	14,241	0	33,927,384	2, 3	N, M, T, Port	Lisboa 5, Santarem 79, Evora 132
Lisboa	Lisboa	Vila Franca de Xira	137,540	1	78,891,043	2, 3	N, M, T	Lisboa 35, Santarem 51, Entroncamento 87
Lisboa	Setubal	Trafaria	26,357	0	146,545,738	1, 2, 3	P, Port	Lisboa 16, Evora 134, Badajoz 227
Madeira	Funchal	Funchal	105,795	1	104,080,116	2, 3	N, M, Port, Airport	Flights to many European capitals especially between April and October. Port of call for cruise ships.
Norte	Braganza	Braganza	34,582	0	46,148,600	1,2, 3	N, M,	Zamora 103, Vila Real 118, Oporto 207, Braga 217
Norte	Braganza	Mogadouro	8,304	-2	10,985,000	1	N, M	Braganza 74, Mirandela 78, Zamora 101, Vila Real 125, Salamanca 133
Norte	Oporto	Matosinhos	172,577	0	133,272,282	2, 3	N, M, T	Oporto 9, Braga 59, Viana do Castelo 70

Demographic pattern: -2: significant decline; -1: slight decline; 0: stable; 1: slight rise; 2: significant rise. Economic activity: 1: primary sector; 2: secondary sector; 3: tertiary sector. Land communication: P: poor; N: national road; M: motorway; T: railway

