

Table S1. The main properties of soil in the Tărlung river basin depicted at layer and sub-layer level

Soil characteristics	Soil type																	
	Rendolls			Eutric Cambisols				Dystric Cambosols				Prepodzols			Litosols	Aluviosols		
	Soil subtype																	
	-	Typic	Mollic	Lithic	Gleyc	Stagnic	Typic	Umbric	Prespodic	Lithic	Typic	Lithic	Histic	Renzic	Typic	Gleyc		
Hydrologic group	-	B	B	B	B	B	B	B	B	B	B	B	C	C	C	C	C	
Depth of soil profile (cm)	C	1200	1400	600	1500	1500	1000	800	800	450	800	450	800	400	700	700		
Number of soil layers	800	3	3	2	3	3	3	3	3	2	3	2	3	1	2	2		
Depth of soil layer (cm)	Layer 1	-	2	200	400	200	300	300	150	150	150	150	150	200	400	300	300	
	Layer 2	-	300	600	700	600	700	700	600	500	500	450	450	500	-	700	700	
	Layer 3	-	800	1200	1400		1500	1500	1000	800	800	-	800	-	800	-	-	
Soil particle composition (%)	Layer 1	Clay	-	22.69	23.00	23.00	23.00	23.00	16.08	16.08	16.08	16.08	30.20	30.20	30.20	22.00	20.00	25.00
		Silt	28.13	45.50	45.00	45.00	45.00	45.00	36.27	36.27	36.27	36.27	17.24	17.24	17.24	40.00	38.00	33.00
		Sand	39.58	31.81	32.00	32.00	32.00	32.00	47.64	47.64	47.64	47.64	52.56	52.56	52.56	38.00	42.00	42.00
		Rocks fragments	32.31	5.00	2.00	10.00	2.00	2.00	10.00	15.00	20.00	25.00	20.00	30.00	15.00	40.00	20.00	20.00
	Layer 2	Clay	10.00	25.62	25.00	25.00	31.00	32.00	20.44	20.44	20.44	20.44	28.06	28.06	28.06	-	19.00	27.00
		Silt	24.20	41.60	42.00	42.00	37.00	37.00	30.54	30.54	30.54	30.54	15.46	15.46	15.46	-	36.00	33.00
		Sand	39.81	32.78	33.00	33.00	32.00	32.00	50.88	50.88	50.88	50.88	56.48	56.48	56.48	-	45.00	40.00
		Rocks fragments	36.05	5.00	5.00	25.00	5.00	5.00	25.00	30.00	35.00	45.00	35.00	50.00	35.00	-	60.00	60.00
	Layer 3	Clay	35.00	22.14	22.00	-	28.00	28.00	18.73	18.73	18.73	-	20.63	-	20.63	-	-	-
		Silt	-	37.91	38.00	-	38.00	38.00	29.26	29.26	29.26	-	12.07	-	12.07	-	-	-
		Sand	-	39.95	40.00	-	34.00	34.00	52.00	52.00	52.00	-	67.30	-	67.30	-	-	-
		Rocks fragments	-	15.00	10.00	-	15.00	15.00	30.00	40.00	45.00	-	50.00	-	50.00	-	-	-
Organic carbon content (%)	Layer 1		2.77	4.25	5.22	4.23	4.23	4.23	2.46	2.46	2.46	2.46	6.47	6.47	6.47	1.45	2.61	2.61
	Layer 2		1.35	1.26	1.45	1.22	1.28	1.28	0.90	0.90	0.90	0.90	0.85	0.85	0.85	-	0.59	0.59
	Layer 3		-	1.04	1.04	-	1.04	1.04	0.72	0.72	0.72	-	0.59	-	0.59	-	-	-
Bulk density (g/cm³)	Layer 1		1.40	1.41	1.41	1.41	1.41	1.41	1.45	1.45	1.45	1.45	1.48	1.48	1.48	1.43	1.44	1.44
	Layer 2		1.42	1.41	1.41	1.41	1.40	1.40	1.46	1.46	1.46	1.46	1.49	1.49	1.49	-	1.45	1.43
	Layer 3		-	1.43	1.43	-	1.41	1.41	1.46	1.46	1.46	-	1.51	-	1.51	-	-	-
Available water capacity (cm/cm)	Layer 1		0.15	0.15	0.15	0.15	0.15	0.15	0.13	0.13	0.13	0.13	0.11	0.11	0.11	0.14	0.14	0.13
	Layer 2		0.15	0.15	0.15	0.15	0.14	0.14	0.12	0.12	0.12	0.12	0.11	0.11	0.11	-	0.13	0.13

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		Soil subtype																	
-	Typic	Mollic	Lithic	Gleyc	Stagnic	Typic	Umbric	Prespodic	Lithic	Typic	Lithic	Histic	Renzic	Typic	Gleyc				
Hydraulic conductivity (mm/hr)	Layer 3	-	0.14	0.14	-	0.14	0.14	0.12	0.12	0.12	-	0.09	-	0.09	-	-	-		
	Layer 1	7.74	11.37	11.37	11.37	11.37	11.37	23.69	23.69	23.69	23.69	6.14	6.14	6.14	12.94	15.84	10.32		
	Layer 2	10.85	9.10	9.84	9.84	6.03	6.03	17.46	17.46	17.46	17.46	7.83	7.83	7.83	-	17.80	8.53		
	Layer 3	-	13.17	13.17	-	7.75	7.75	21.09	19.31	19.31	-	18.43	-	18.43	-	-	-		
Soil albedo	Layer 1	0.06	0.14	0.09	0.14	0.13	0.13	0.20	0.11	0.11	0.20	0.11	0.11	0.06	0.13	0.11	0.11		
	Layer 2	0.11	0.16	0.16	0.16	0.15	0.15	0.27	0.27	0.27	0.27	0.27	0.27	0.16	-	0.23	0.23		
	Layer 3	-	0.20	0.20	-	0.18	0.18	0.30	0.30	0.30	-	0.30	-	0.30	-	-	-		
Soil erodibility factor	Layer 1	0.17	0.18	0.17	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.15	0.15	0.15	0.18	0.18	0.17		
	Layer 2	0.17	0.18	0.18	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.15	0.15	0.15	-	0.18	0.16		
	Layer 3	-	0.17	0.17	-	0.17	0.17	0.17	0.17	0.17	-	0.14	-	0.14	-	-	-		