

Table S1. SERLAB and Sentinel-1 databases of rainfall, runoff and antecedent soil moisture observations

Period	N.	Event Date		P (mm)	Q (mm)	Date of Satellite Acquisition	SSM(t) (%)	ADSI (mm)	ADSI+P (mm)	Q _R	W $\left(\frac{mm}{h}\right)$	I _M $\left(\frac{mm}{h}\right)$	I ₃₀ $\left(\frac{mm}{h}\right)$	R _e $\left(\frac{MJ\ mm}{ha\ h}\right)$	A _e $\left(\frac{t}{ha}\right)$	Q _R R _e $\left(\frac{MJ\ mm}{ha\ h}\right)$	A _{e,N} $\left(\frac{Mg}{ha}\right)$
		Start Date	End Date														
Summer and Spring	1	25/03/2015	26/03/2015	57.20	9.47	24/03/2015	53.00	26.50	83.70	0.17	14.67	3.90	10.80	78.99	0.23	13.08	0.11
	2	22/05/2015	23/05/2015	37.00	0.34	17/05/2015	49.50	24.75	61.75	0.01	12.25	3.02	4.40	18.49	**	0.17	**
	3	14/06/2015	14/06/2015	6.40	0.00	10/06/2015	61.00	30.50	36.90	0.00	0.50	12.80	12.40	16.90	0.00	0.00	0.00
	4	09/08/2015	10/08/2015	56.60	9.33	08/08/2015	54.50	27.25	83.85	0.16	7.75	7.30	28.40	298.26	5.60	49.15	2.79
	5	10/08/2015	10/08/2015	5.20	0.00	09/08/2015	100.00	50.00	55.20	0.00	1.50	3.47	4.00	2.48	0.00	0.00	0.00
	6	16/08/2015	16/08/2015	8.20	0.00	15/08/2015	71.00	35.50	43.70	0.00	2.17	3.78	5.20	5.65	0.00	0.00	0.00
	7	24/08/2015	24/08/2015	5.80	0.00	21/08/2015	64.00	32.00	37.80	0.00	1.25	4.64	7.60	6.34	0.00	0.00	0.00
	8	24/08/2015	24/08/2015	9.60	0.00	21/08/2015	64.00	32.00	41.60	0.00	1.33	7.20	6.40	11.54	0.00	0.00	0.00
	9	23/03/2016	23/03/2016	8.00	0.00	18/03/2016	24.50	12.25	20.25	0.00	3.17	2.53	3.20	2.76	0.00	0.00	0.00
	10	23/04/2016	25/04/2016	65.80	0.94	17/04/2016	8.00	4.00	69.80	0.01	14.58	4.51	16.80	159.97	0.07	2.28	0.03
	11	12/05/2016	12/05/2016	8.40	0.00	11/05/2016	23.50	11.75	20.15	0.00	1.50	5.60	11.20	16.00	0.00	0.00	0.00
	12	19/05/2016	24/05/2016	42.80	5.30	17/05/2016	57.00	28.50	71.30	0.12	5.42	7.90	23.60	158.16	6.05	19.58	3.01
	13	30/05/2016	30/05/2016	7.80	0.00	29/05/2016	54.50	27.25	35.05	0.00	1.08	7.20	9.60	12.96	0.00	0.00	0.00
	14	24/07/2016	25/07/2016	31.20	0.93	21/07/2016	64.00	32.00	63.20	0.03	3.75	8.32	25.60	127.62	0.34	3.81	0.17
	15	14/09/2016	18/09/2016	50.80	0.87	08/09/2016	42.50	21.25	72.05	0.02	9.33	5.44	11.20	75.04	0.14	1.29	0.07
	16	14/09/2016	14/09/2016	6.60	0.00	08/09/2016	42.50	21.25	27.85	0.00	0.67	9.90	11.20	12.91	0.00	0.00	0.00
	17	18/04/2017	18/04/2017	6.20	0.00	17/04/2017	34.00	17.00	23.20	0.00	1.58	3.92	7.20	6.27	0.00	0.00	0.00
	18	30/06/2017	30/06/2017	7.60	0.00	29/06/2017	4.50	2.25	9.85	0.00	3.17	2.40	2.00	1.59	0.00	0.00	0.00
	19*	24/07/2017	25/07/2017	38.00	9.34	23/07/2017	1.00	0.50	38.50	0.25	2.17	17.54	44.00	341.81	17.76	84.02	8.84
	20	04/04/2018	05/04/2018	18.80	0.36	01/04/2018	40.00	20.00	38.80	0.02	3.08	6.10	17.20	52.18	0.04	1.00	0.02
	21	03/05/2018	06/05/2018	28.20	0.25	01/05/2018	21.00	10.50	38.70	0.01	6.25	4.51	13.60	48.79	0.03	0.44	0.01
	22	09/05/2018	16/05/2018	57.40	0.50	06/05/2018	76.00	38.00	95.40	0.01	12.33	4.65	18.80	106.88	0.04	0.93	0.02
	23	08/06/2018	08/06/2018	20.40	0.32	06/06/2018	56.50	28.25	48.65	0.02	2.67	7.65	22.00	83.38	0.13	1.29	0.07
	24*	12/06/2018	13/06/2018	44.60	13.90	11/06/2018	66.50	33.25	77.85	0.31	3.17	14.08	44.40	441.43	17.42	137.57	8.67
	25*	28/07/2019	28/07/2019	57.80	15.45	19/07/2019	38.50	19.25	77.05	0.27	3.16	18.29	54	762.6	**	203.84	**
Winter and Autumn	26	30/01/2015	07/02/2015	87.40	8.85	29/01/2015	34.00	17.00	104.40	0.10	28.75	3.04	10.40	73.46	0.16	7.44	0.08
	27	21/02/2015	22/02/2015	6.40	0.00	16/02/2015	56.50	28.25	34.65	0.00	2.58	2.48	2.00	1.40	0.00	0.00	0.00
	28	04/03/2015	05/03/2015	26.20	0.29	28/02/2015	22.50	11.25	37.45	0.01	5.92	4.43	18.80	71.20	0.02	0.78	0.01
	29	15/03/2015	17/03/2015	45.00	0.66	12/03/2015	33.50	16.75	61.75	0.01	17.17	2.62	7.00	23.47	0.02	0.35	0.01
	30	24/09/2015	24/09/2015	5.60	0.00	20/09/2015	47.50	23.75	29.35	0.00	2.17	2.58	2.80	1.69	0.00	0.00	0.00
	31	01/10/2015	01/10/2015	9.20	0.00	26/09/2015	53.50	26.75	35.95	0.00	3.67	2.51	2.00	1.96	0.00	0.00	0.00

32	03/10/2015	07/10/2015	36.40	0.37	02/10/2015	98.50	49.25	85.65	0.01	4.00	9.10	34.40	236.80	0.08	2.43	0.04
33	21/11/2015	23/11/2015	42.60	0.34	19/11/2015	59.00	29.50	72.10	0.01	7.42	5.74	20.40	121.28	0.02	0.97	0.01
34	02/01/2016	12/01/2016	57.00	0.82	30/12/2015	79.00	39.50	96.50	0.01	8.67	6.58	24.40	158.26	0.10	2.27	0.05
35	13/02/2016	18/02/2016	31.40	0.44	11/02/2016	70.50	35.25	66.65	0.01	7.58	4.14	8.00	16.55	0.03	0.23	0.01
36	26/02/2016	29/02/2016	50.20	0.98	23/02/2016	49.50	24.75	74.95	0.02	11.42	4.40	9.60	56.27	0.02	1.10	0.01
37	05/03/2016	11/03/2016	34.00	0.89	29/02/2016	73.50	36.75	70.75	0.03	9.58	3.55	10.40	28.15	0.12	0.74	0.06
38	25/11/2016	25/11/2016	7.80	0.00	24/11/2016	89.50	44.75	52.55	0.00	3.25	2.40	2.00	1.64	0.00	0.00	0.00
39	05/02/2017	06/02/2017	26.80	0.30	02/04/2017	25.00	12.50	39.30	0.01	7.17	3.74	8.80	31.60	0.02	0.35	0.01
40	18/02/2017	18/02/2017	6.60	0.00	17/02/2017	30.50	15.25	21.85	0.00	1.50	4.40	8.00	7.80	0.00	0.00	0.00
41	24/02/2017	25/02/2017	9.00	0.00	23/02/2017	14.50	7.25	16.25	0.00	2.42	3.72	6.00	6.63	0.00	0.00	0.00
42	14/03/2017	14/03/2017	5.80	0.00	13/03/2017	15.00	7.50	13.30	0.00	0.17	34.73	11.60	17.53	0.00	0.00	0.00
43	27/10/2018	30/10/2018	51.80	1.24	27/10/2018	49.00	24.50	76.30	0.02	10.25	5.05	11.20	80.77	0.38	1.93	0.19
44	19/11/2018	26/11/2018	39.20	0.64	20/11/2018	96.50	48.25	87.45	0.02	13.83	2.83	3.20	24.25	0.06	0.40	0.03
45	30/01/2019	03/02/2019	68.80	13.43	31/01/2019	80.00	40.00	108.80	0.21	16.70	3.87	19.60	176.30	2.67	36.65	1.33
46	02/11/2019	07/11/2019	62.80	1.85	29/10/2019	51.50	25.75	93.35	0.03	35.20	1.92	18.40	130.45	0.33	3.57	0.17
47	08/11/2019	12/11/2019	31.60	2.05	04/11/2019	93.50	46.75	78.35	0.06	8.17	3.87	12.40	38.05	1.04	2.47	0.52
<i>Mean Value</i>			30.38	2.15	-	50.94	25.47	55.95	0.04	6.94	6.26	14.17	88.39	1.18	12.34	0.97
<i>Max. Value</i>			87.40	15.45	-	100.00	50.00	108.80	0.31	35.20	34.73	54.00	762.60	17.76	203.84	8.84
<i>Min. Value</i>			5.20	0.00	-	1.00	0.50	9.85	0.00	0.17	1.92	2.00	1.40	0.00	0.00	0.01

Notes and Caption:

* rill event.

** missing value.

- not calculated value.

P; cumulated event rainfall depth (SERLAB, 42°59'34"N 12°17'27"E)

Q; event runoff expressed (SERLAB, 42°59'34"N 12°17'27"E)

SSM(t); surface soil moisture derived by satellite observation (Sentinel1)

ADSI; antecedent degree of saturation index (equation 6)

Q_R; runoff coefficient computed as the ratio between P and Q (P/Q).

W; rainfall wet duration

I_M; mean intensity computed as the ratio between P and W (P/W).

I₃₀; maximum 30-min rainfall intensity observed during the event

R_e; erosivity factor of the single event.

A_e; measured event soil loss (SERLAB, 42°59'34"N 12°17'27"E)

A_{e,N}; normalised event soil loss according to plot characteristics