

Figure S1. Box plots of Sentinel-1 VH and VV backscatter (γ°) for flood and non-flood samples.

Table S1. List of Sentinel-1 images used for the flood inundation mapping.





Sl no	Sentinel-1 image ID (S1A_IW_GRDH_1SDV pre-fixed)	Obs. Date	Month
1	20170316T234707_20170316T234732_015724_019E1B_F71F	2017/03/16	March
2	20170316T234732_20170316T234757_015724_019E1B_8EAC	2017/03/16	March
3	20170316T234757_20170316T234822_015724_019E1B_C4A3	2017/03/16	March
4	20170319T120451_20170319T120516_015761_019F2B_4031	2017/03/19	March
5	20170321T235500_20170321T235525_015797_01A044_FDC1	2017/03/21	March
6	20170321T235525_20170321T235550_015797_01A044_C2CA	2017/03/21	March
7	20170321T235550_20170321T235615_015797_01A044_F850	2017/03/21	March
8	20170321T235615_20170321T235640_015797_01A044_A382	2017/03/21	March
9	20170324T121233_20170324T121258_015834_01A15C_251B	2017/03/24	March
10	20170324T121258_20170324T121323_015834_01A15C_E88C	2017/03/24	March
11	20170326T115610_20170326T115635_015863_01A239_4F1B	2017/03/26	March
12	20170421T234709_20170421T234734_016249_01ADF2_7BD6	2017/04/21	April
13	20170421T234734_20170421T234759_016249_01ADF2_84C9	2017/04/21	April
14	20170421T234759_20170421T234824_016249_01ADF2_3D15	2017/04/21	April
15	20170424T120338_20170424T120403_016286_01AF0F_478D	2017/04/24	April
16	20170424T120403_20170424T120428_016286_01AF0F_80B2	2017/04/24	April
17	20170424T120428_20170424T120453_016286_01AF0F_DDC2	2017/04/24	April
18	20170424T120453_20170424T120518_016286_01AF0F_F63B	2017/04/24	April
19	20170426T235551_20170426T235616_016322_01B021_044F	2017/04/26	April
20	20170429T121145_20170429T121210_016359_01B13B_2761	2017/04/29	April
21	20170429T121210_20170429T121235_016359_01B13B_6812	2017/04/29	April
22	20170429T121235_20170429T121300_016359_01B13B_714F	2017/04/29	April
23	20170429T121300_20170429T121325_016359_01B13B_A2F0	2017/04/29	April
24	20170623T120341_20170623T120406_017161_01C9D6_4D29	2017/06/23	June
25	20170623T120406_20170623T120431_017161_01C9D6_F6EC	2017/06/23	June
26	20170623T120431_20170623T120456_017161_01C9D6_E4B4	2017/06/23	June
27	20170623T120456_20170623T120521_017161_01C9D6_9B01	2017/06/23	June
28	20170628T121148_20170628T121213_017234_01CC09_2A47	2017/06/28	June
29	20170628T121213_20170628T121238_017234_01CC09_02F6	2017/06/28	June
30	20170628T121238_20170628T121303_017234_01CC09_0518	2017/06/28	June
31	20170628T121303_20170628T121328_017234_01CC09_83FD	2017/06/28	June
32	20170630T115525_20170630T115550_017263_01CCEB_8F92	2017/06/30	June
33	20170630T115550_20170630T115615_017263_01CCEB_C475	2017/06/30	June
34	20170630T115615_20170630T115640_017263_01CCEB_5D5	2017/06/30	June

35	20170822T120344_20170822T120409_018036_01E472_909	2017/08/22	August
36	20170822T120409_20170822T120434_018036_01E472_3E8F	2017/08/22	August
37	20170824T235508_20170824T235533_018072_01E586_84D5	2017/08/24	August
38	20170824T235533_20170824T235558_018072_01E586_DA7	2017/08/24	August
39	20170824T235558_20170824T235623_018072_01E586_FF38	2017/08/24	August
40	20170824T235623_20170824T235648_018072_01E586_A241	2017/08/24	August
41	20170827T121242_20170827T121307_018109_01E69C_3B9A	2017/08/27	August
42	20170827T121307_20170827T121332_018109_01E69C_C108	2017/08/27	August
43	20170829T115553_20170829T115618_018138_01E77F_BD36	2017/08/29	August
44	20170829T115618_20170829T115643_018138_01E77F_620E	2017/08/29	August

Table S2. Landsat 8 operational land imager (OLI) spectral bandwidth spatial resolution.

Landsat 8	Wavelength (μm)	Resolution (m)
Band 1 - Ultra Blue (coastal/aerosol)	0.435 - 0.451	30
Band 2 - Blue	0.452 - 0.512	30
Band 3 - Green	0.533 - 0.590	30
Band 4 - Red	0.636 - 0.673	30
Band 5 - Near Infrared (NIR)	0.851 - 0.879	30
Band 6 - Shortwave Infrared (SWIR) 1	1.566 - 1.651	30
Band 7 - Shortwave Infrared (SWIR) 2	2.107 - 2.294	30
Band 8 - Panchromatic	0.503 - 0.676	15
Band 9 - Cirrus	1.363 - 1.384	30
Band 10 - Thermal Infrared (TIRS) 1	10.60 - 11.19	100 * (30)
Band 11 - Thermal Infrared (TIRS) 2	11.50 - 12.51	100 * (30)

Table S3. Land cover classification system (LCCS) along with adopted code.

Land cover classification label (LCCLevel)	LCCOwnLabel	Field photo
A3 = Trees (Main Layer) A11 = Open General (70 – 60) – (20 – 10)% (Main Layer) B2 = >30- 3 m (Tree height Main Layer) D1 = Broadleaved E1 = Evergreen E4 = Semi-Deciduous or Semi-Evergreen Zt38 = Floristic Aspect: Artocarpus chaplasha, Dipterocarpus spp	Hill forest	
A3 = Trees (Main Layer) A10 = Close >(70-60)% Main Layer B2 = >30- 3 m (Tree height Main Layer) D1 = Broadleaved E2 = Deciduous	Madhupur forest	
A3 = Trees (Main Layer) A12 = Close > (70-60)% Main Layer B2 = >30- 3 m (Tree height Main Layer) C3 = On Waterlogged Soil D1 = Broadleaved E1 = Evergreen R3 = Water Quality: Saline Water	Sundarbans forest	
A3 = Herbaceous Crops C3 = One Additional Crop B2= Small Sized Field(s)	Cropland	






A6 = Graminoids A10 = Deciduous B4 = 3 - 0.03 m (Herbaceous Height Main Layer) A5 = Bare Soil and/or Other Unconsolidated Material(s)	Grassland	
A2 = Unconsolidated Bare Area A5 = Bare Soil & Unconsolidated Material	Barren area	
B15 = Artificial Surfaces and Associated Areas A15 = Medium Density S0615 = Mango (Mangifera indica L.) S0607 = Coconut (Cocos nucifera L.)	Rural settlement and homestead orchard	
A4 = Built Up Area – Non-Linear A13 = Urban Area(s) A14 = High Density	Built-up area	
A1= Inland Water	Waterbodies	

Table S4. Omission and commission (%) errors between Landsat (August 22, 2017) and Sentinel images (August 29, 2017).

		Landsat images			
		Class name	Flood	Other	Total
Sentinel images	Flood		53	17	70
	Other		6	24	30
	Total		59	41	100