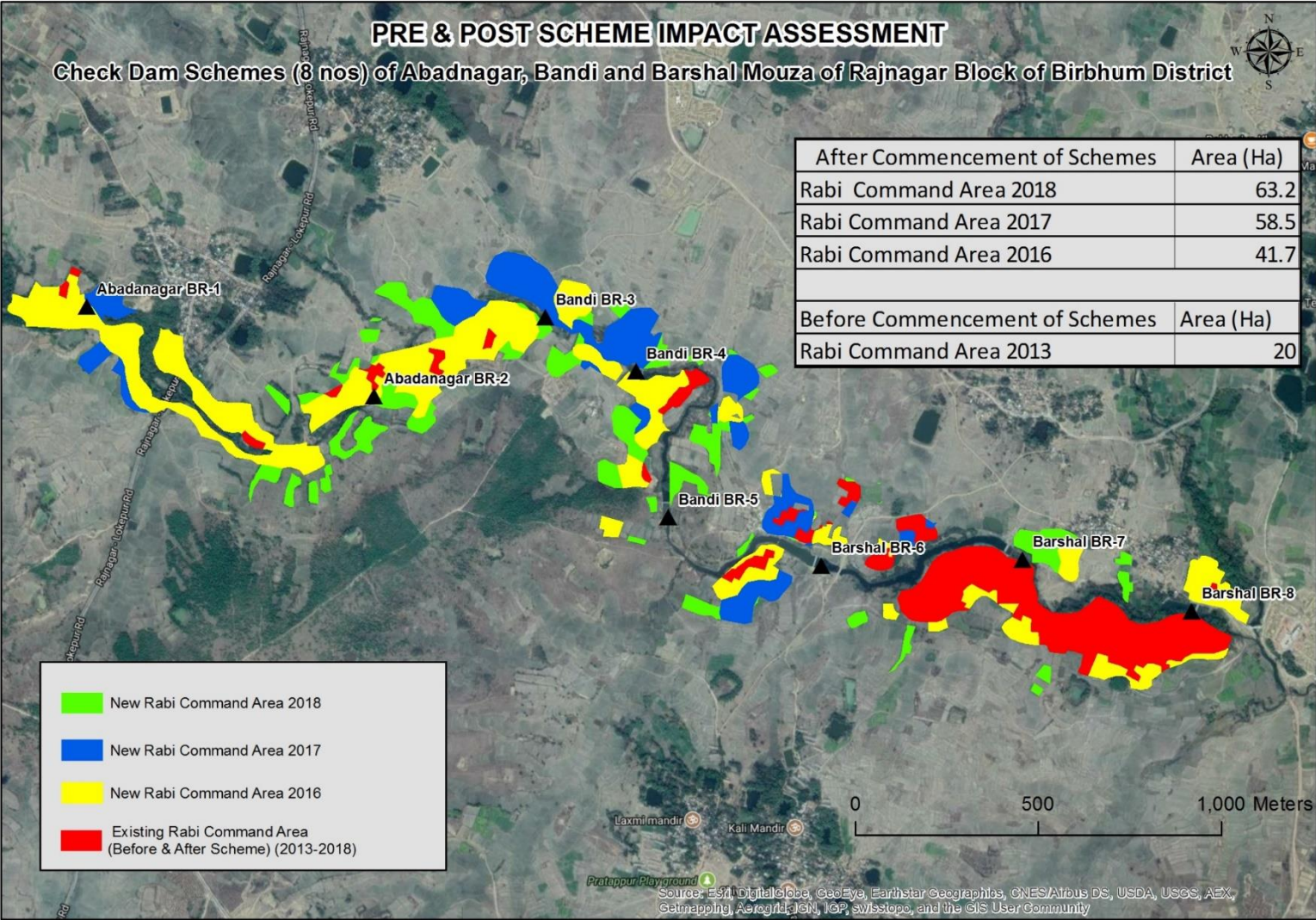


IMPACT ASSESSMENT OF WBADMI PROJECT

Using cloud service based Google earth engine with remote sensing



ADVANTAGES OF USING GEE IN ASSESSMENT

- Quick assessment
- Easy accessibility of Data
- Almost Realtime tracking
- Can be used as DSS apps
 - Unbiased
- Minimum man power
- Huge cost saving and practically Zero cost

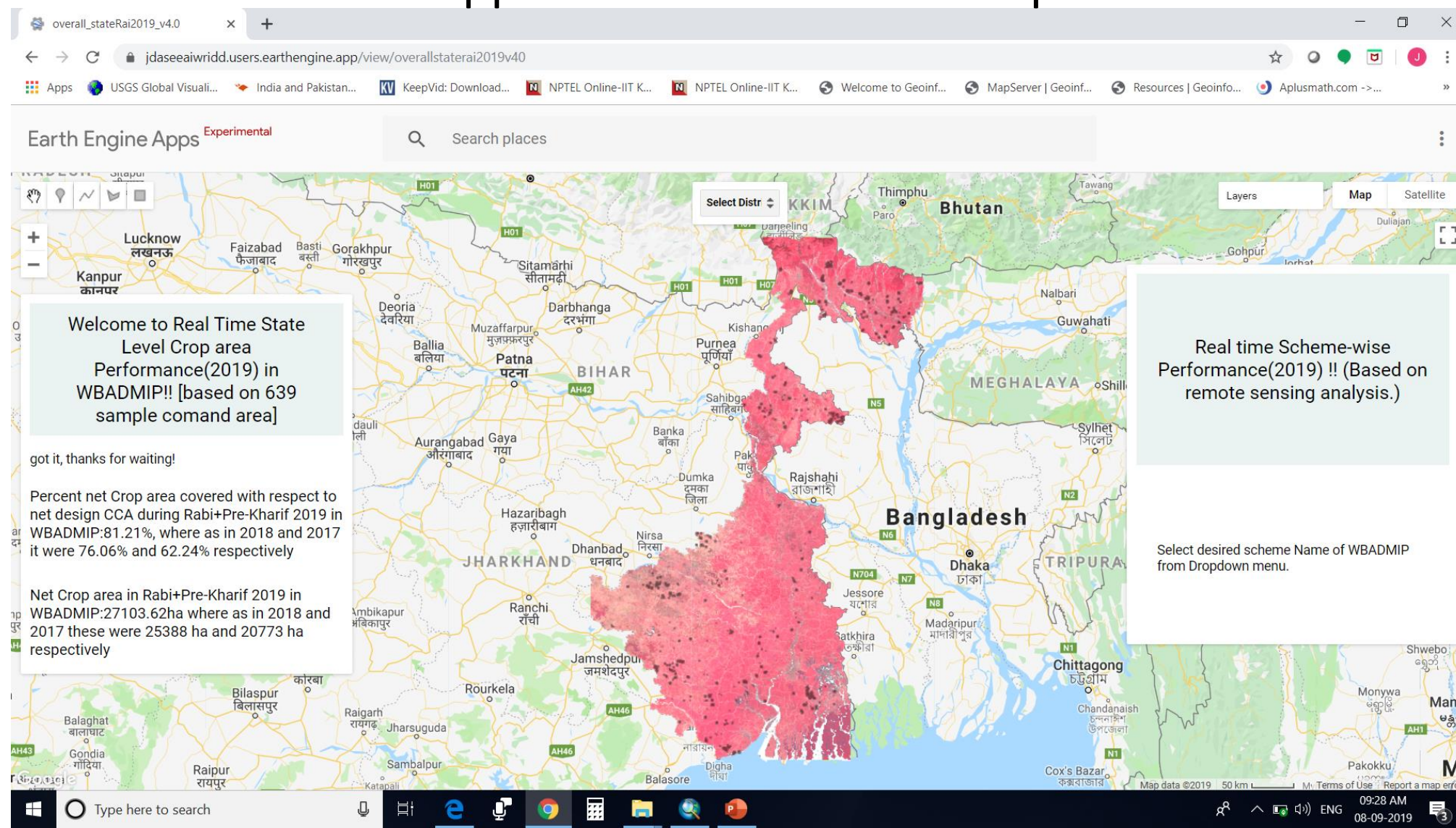
Data used for WBADMIP Impact assessment

- ✓ Sentinel S1 & S2 data of European Space Agency (ESA),
- ✓ Landsat 7 & 8 data USGS and NASA
- ✓ SRTM & ASTER data
- ✓ Climate Data of TRMM etc

(Resolution of data varies with 10 m to 30 m)

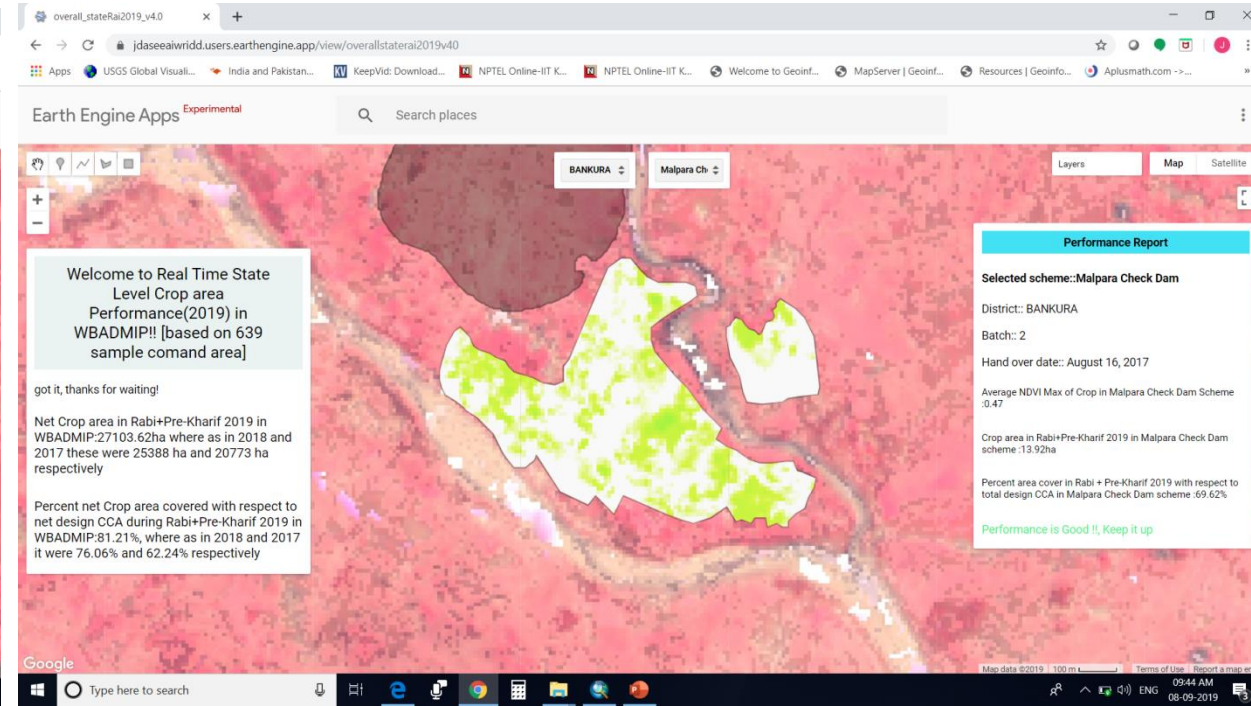
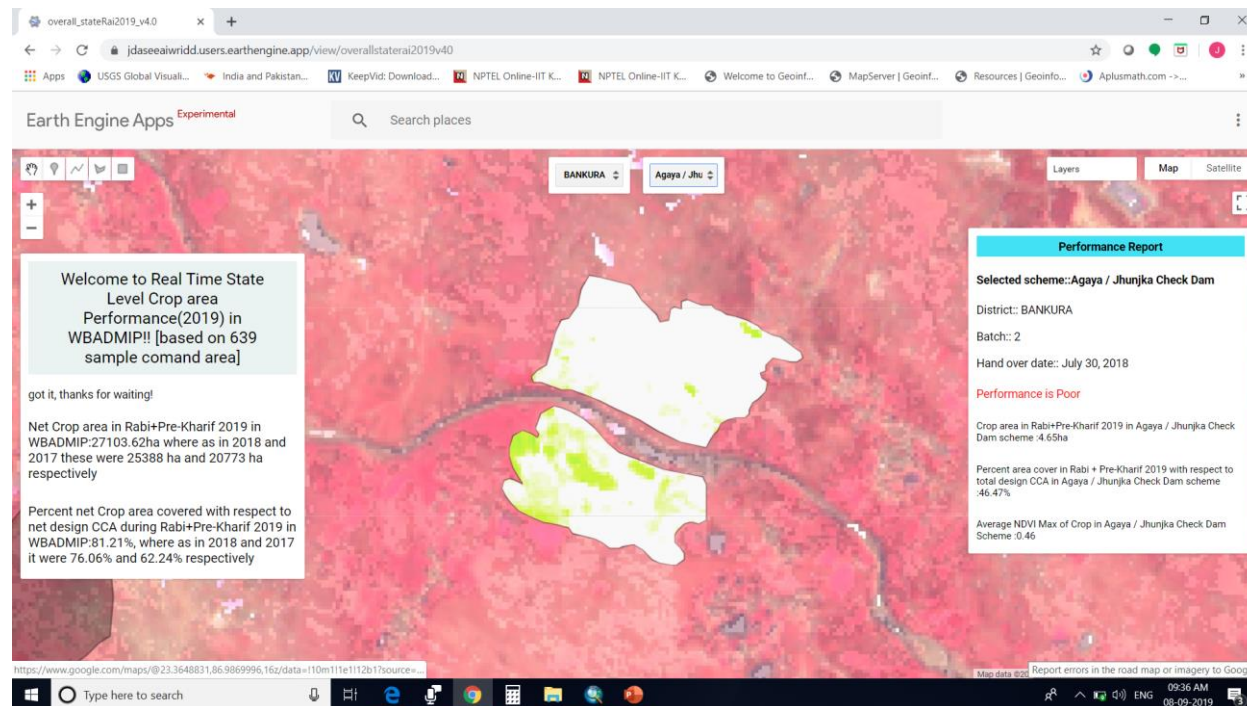
Tracking individual scheme performance on Realtime basis

A GEE App for WBADMIP scheme performance



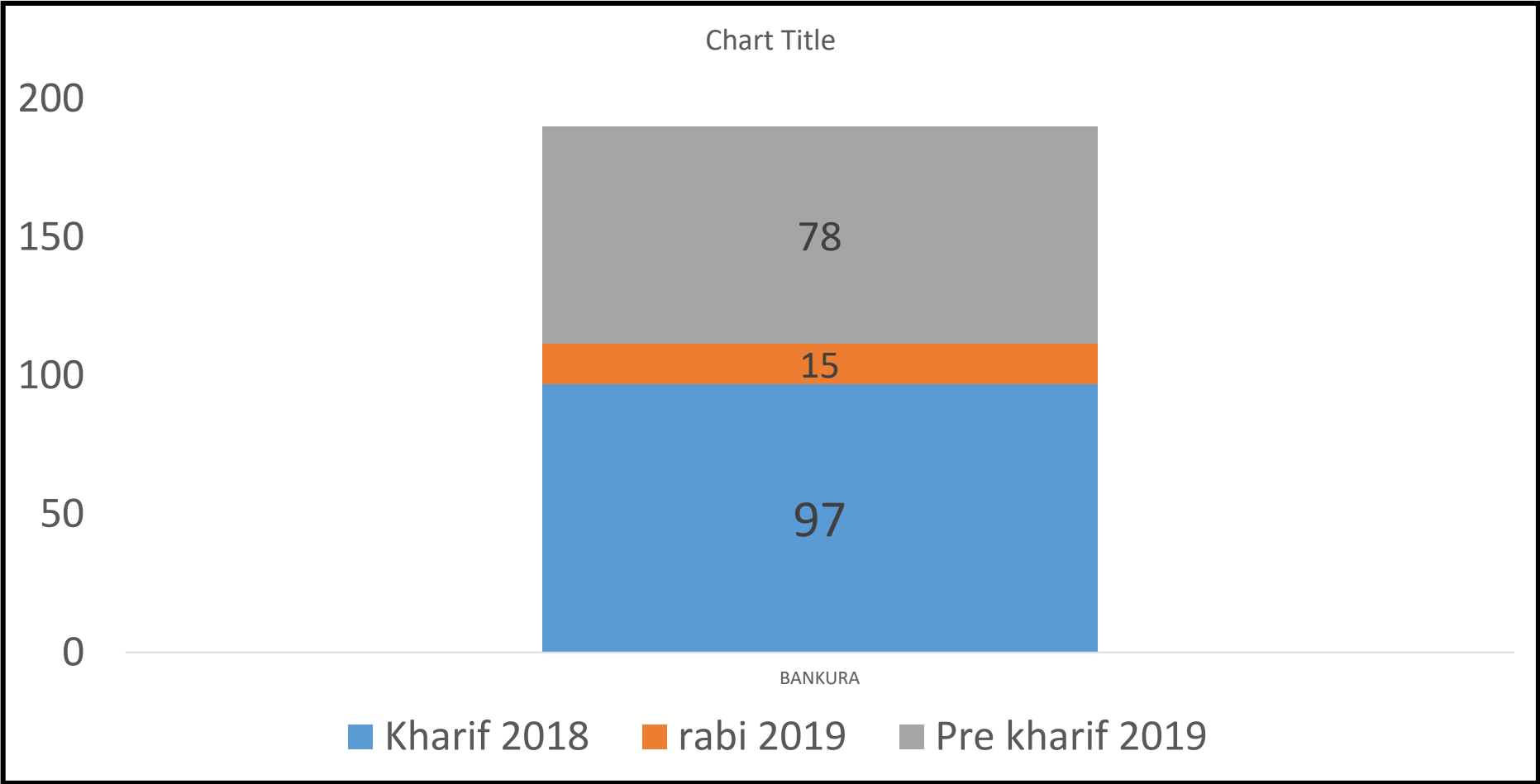
Tracking Each and Every Individual Scheme Performance on Realtime Basis

WEB BASED GEE APP ALSO ACCESSIBLE FROM MOBILE



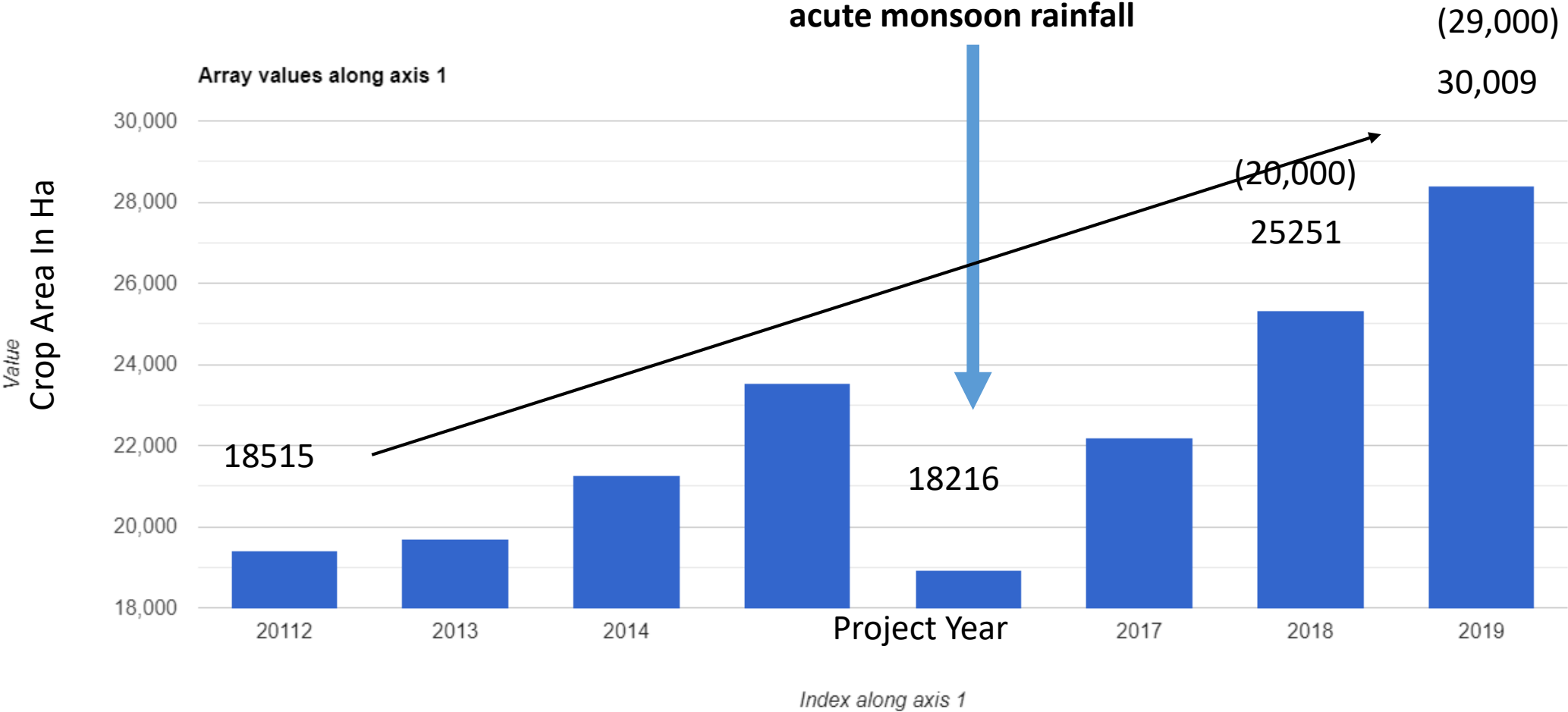
ON THE BASIS OF ABOVE APPS IN GEE

PERCENT KHARIF (2018) RABI (2019) & PREKHARIF (2019) CROP AREA
(in project Command area of Bankura)



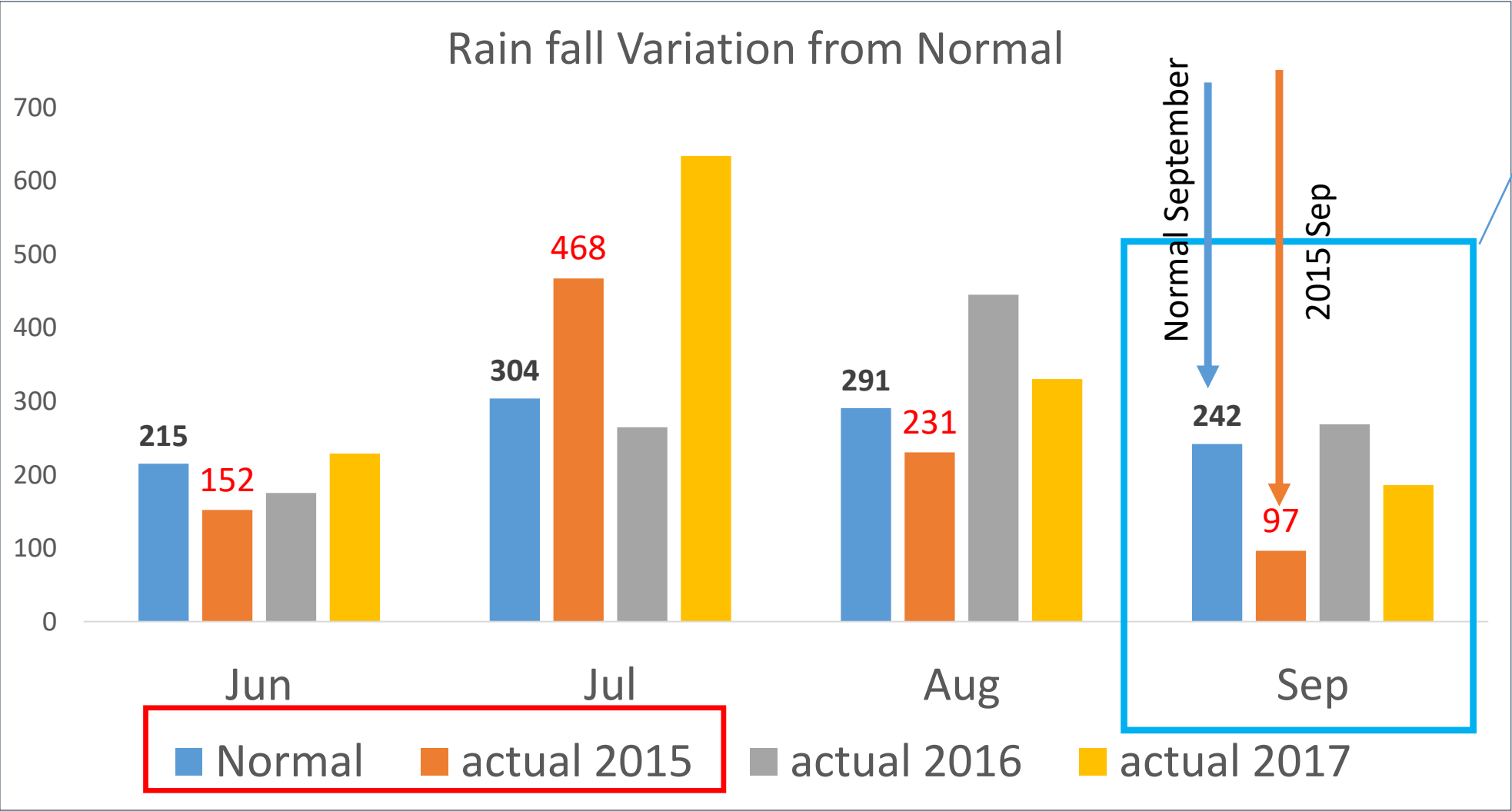
GROWTH OF CROPPED AREA SINCE INCEPTION OF THE PROJECT [2012 TO 2019] IN RABI AND PREKHARIF SEASON (on field)

Fall of crop area due to shortage of
acute monsoon rainfall

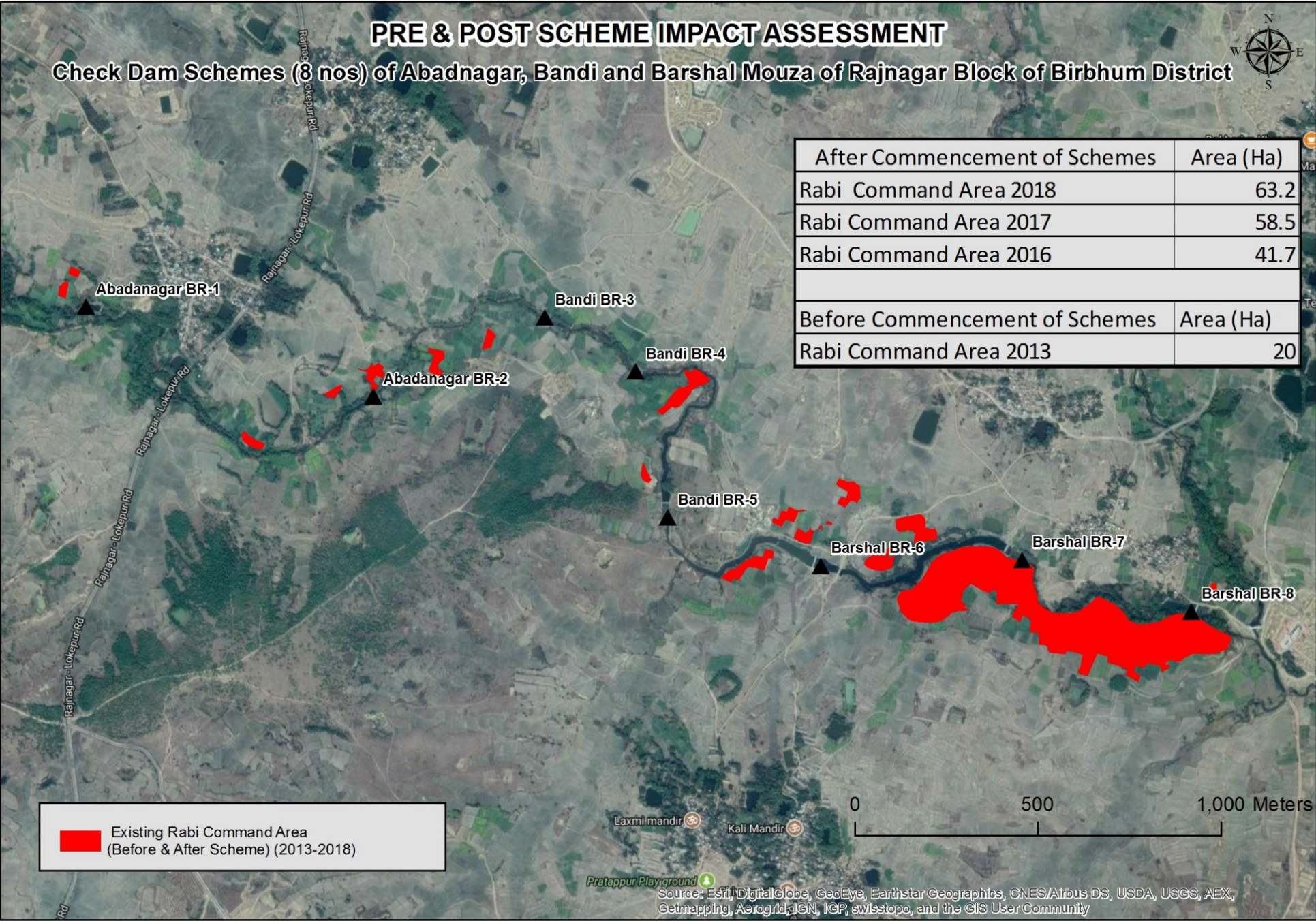


Note: Obtained through remote sensing analysis on google earth engine

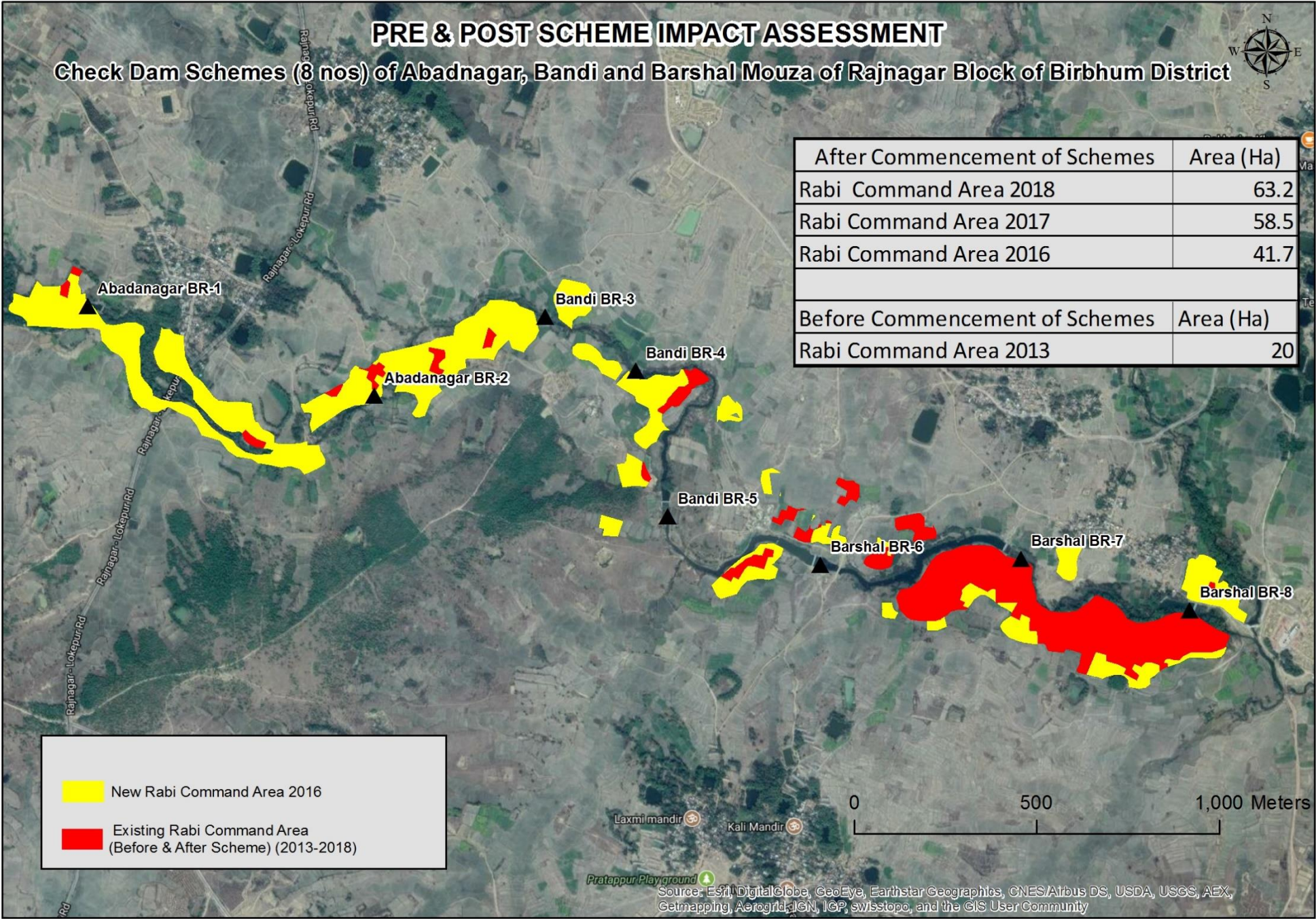
Critical Month for Paddy



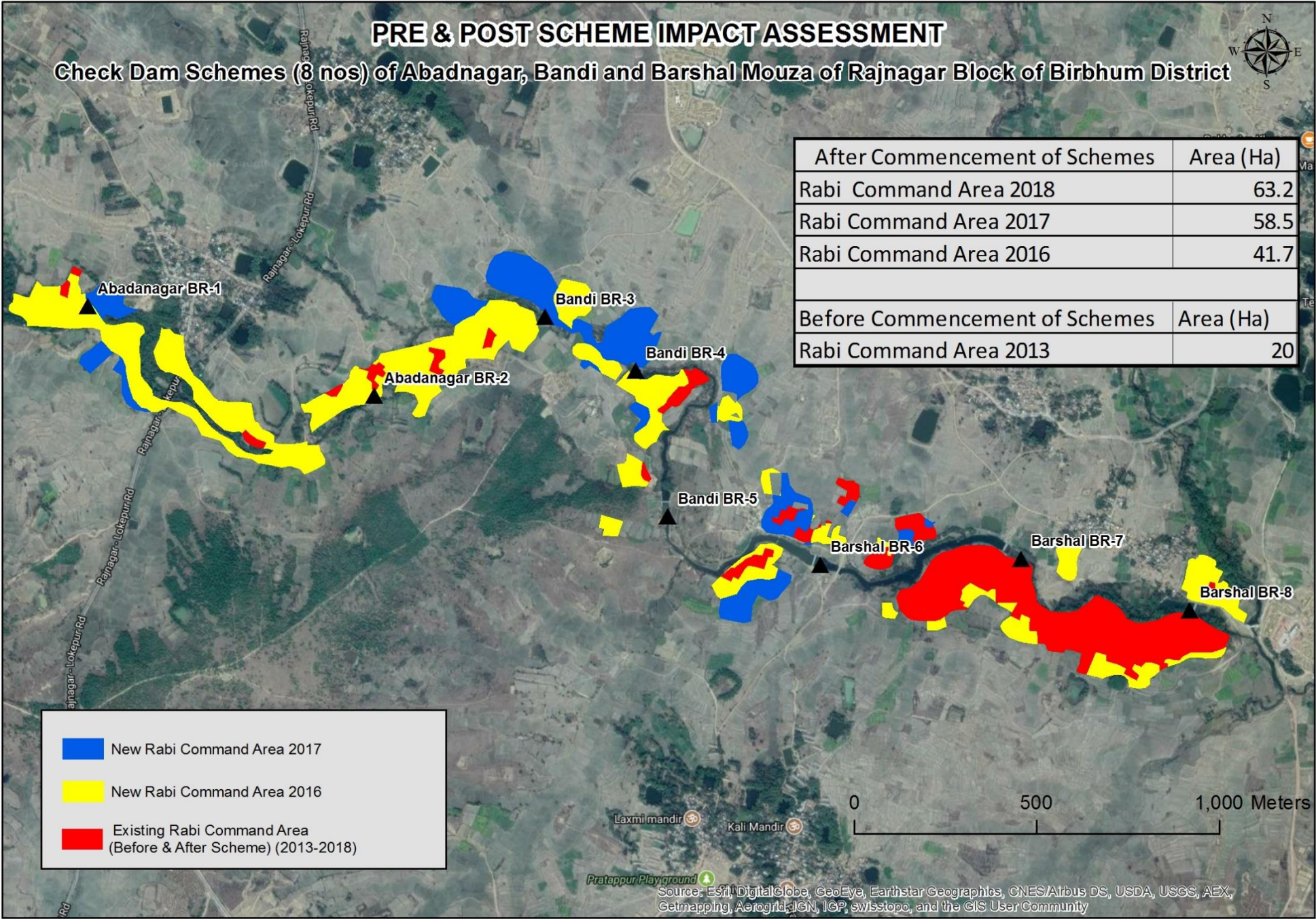
GRADUAL INCREMENT OF DOUBLE CROP AREA OVER THE YEARS AFTER COMPLETION OF CHECK DAMS

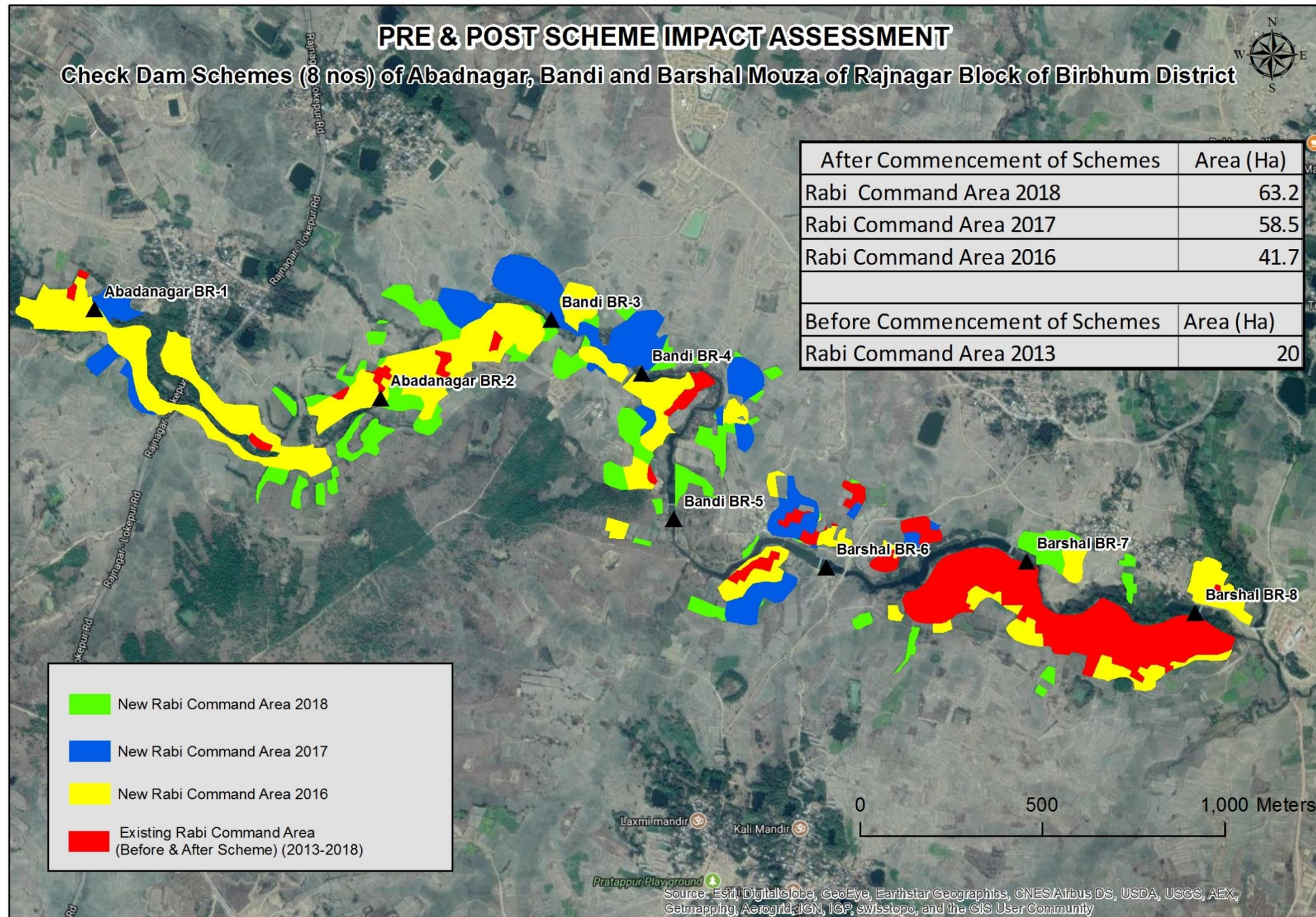


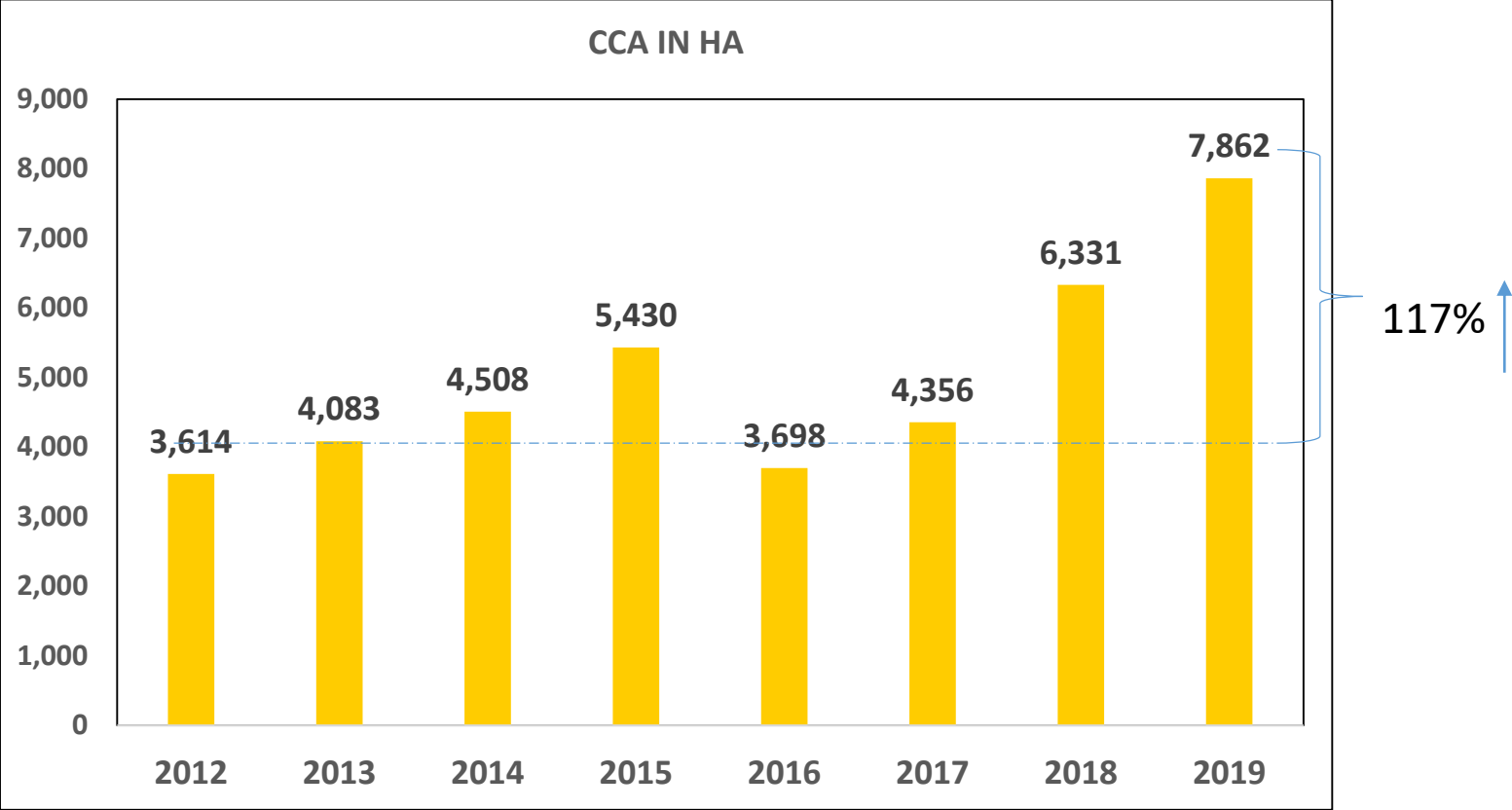
GRADUAL INCREMENT OF DOUBLE CROP AREA OVER THE YEARS AFTER COMPLETION OF CHECK DAMS



GRADUAL INCREMENT OF DOUBLE CROP AREA OVER THE YEARS AFTER COMPLETION OF CHECK DAMS



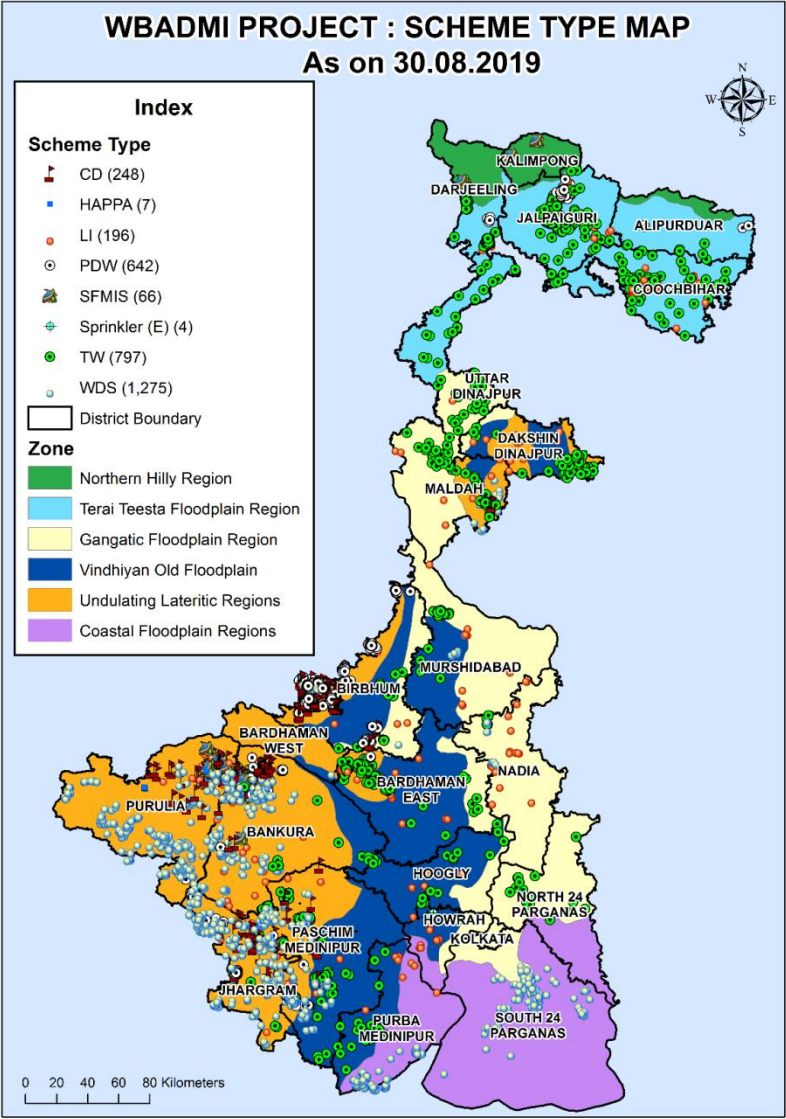


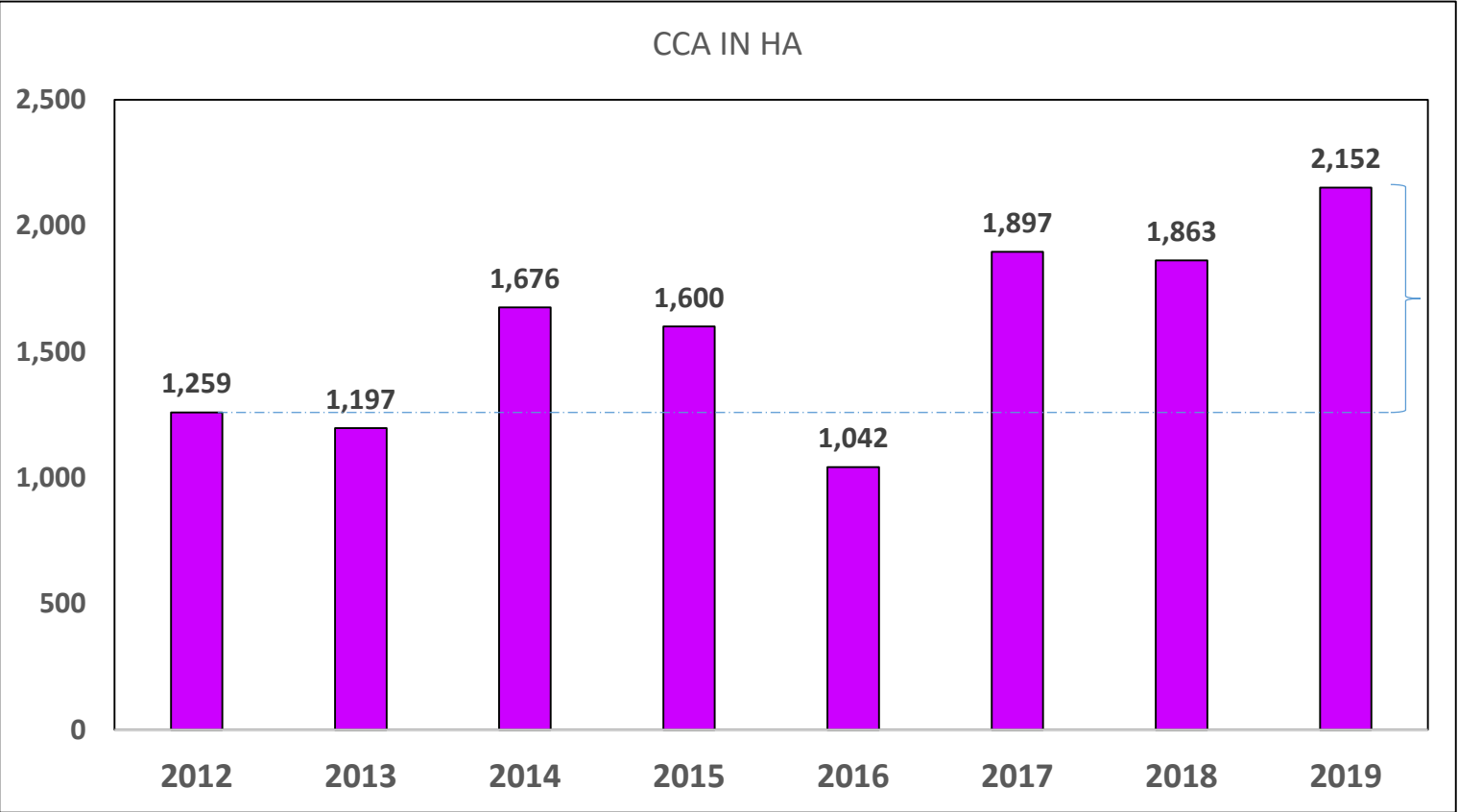


Scheme type: Check Dam, WDS, PDW,LI

Growth of Double or triple crop area in scheme command in Undulating Terrain (2012-2019)

Command area created-9870 ha , DC achived-7862 ha, Net achived-4248 ha

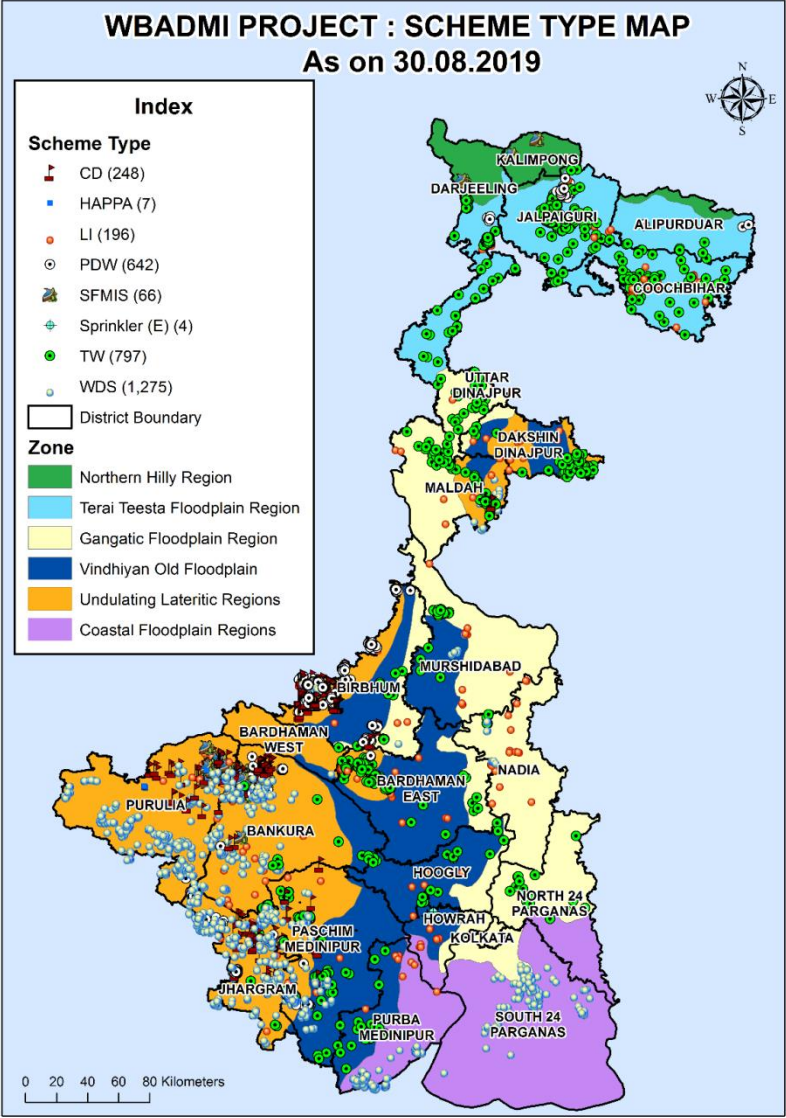


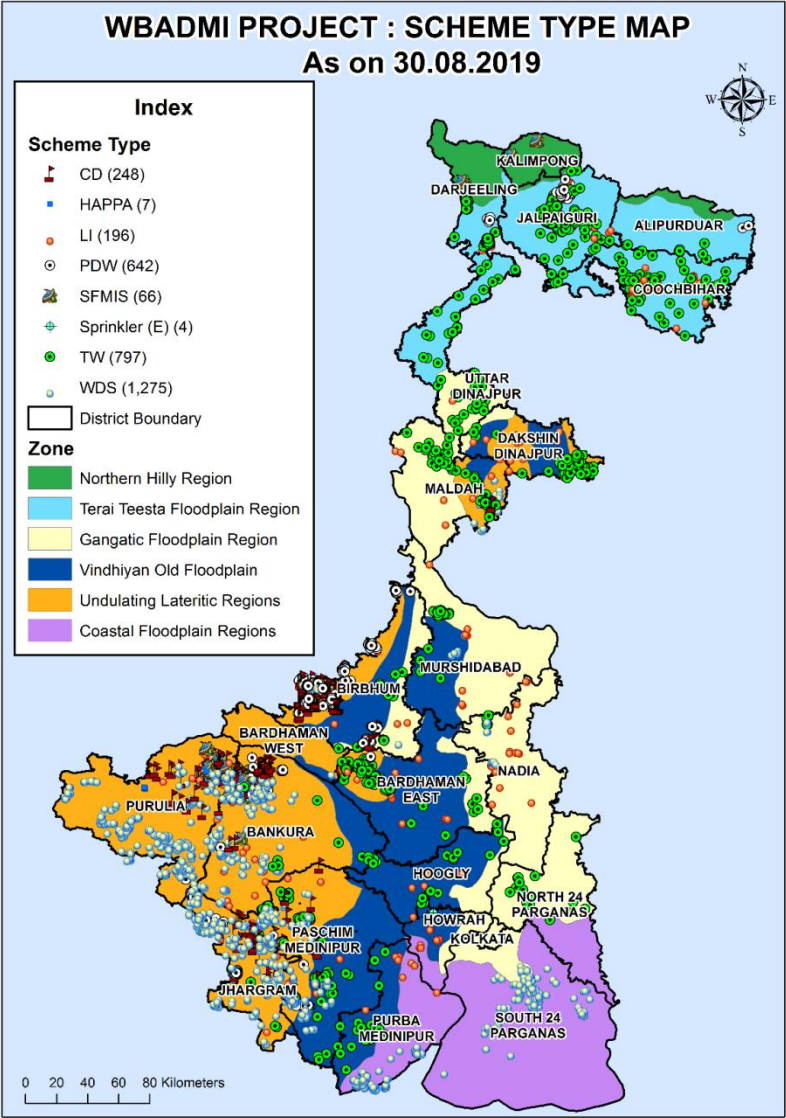
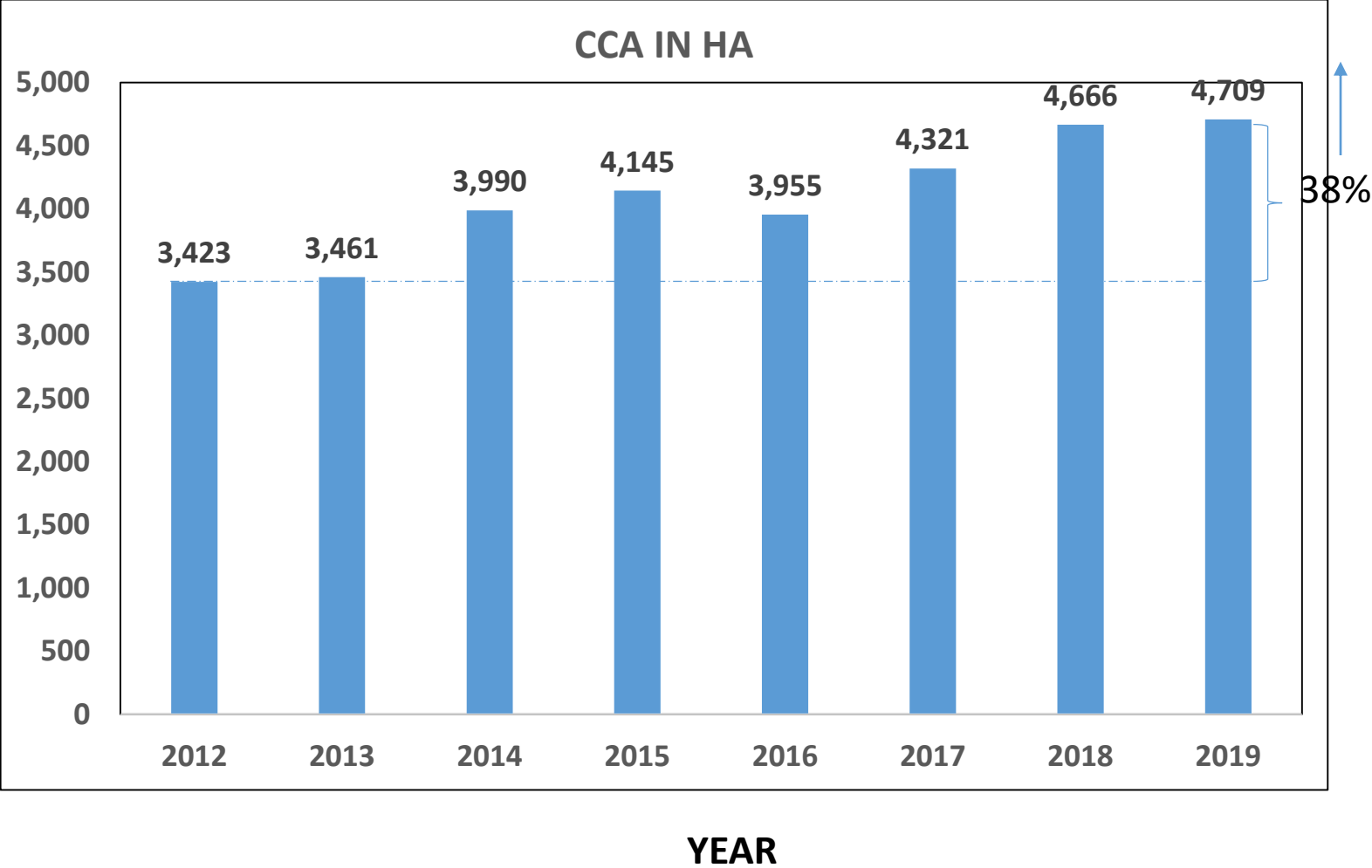


70%

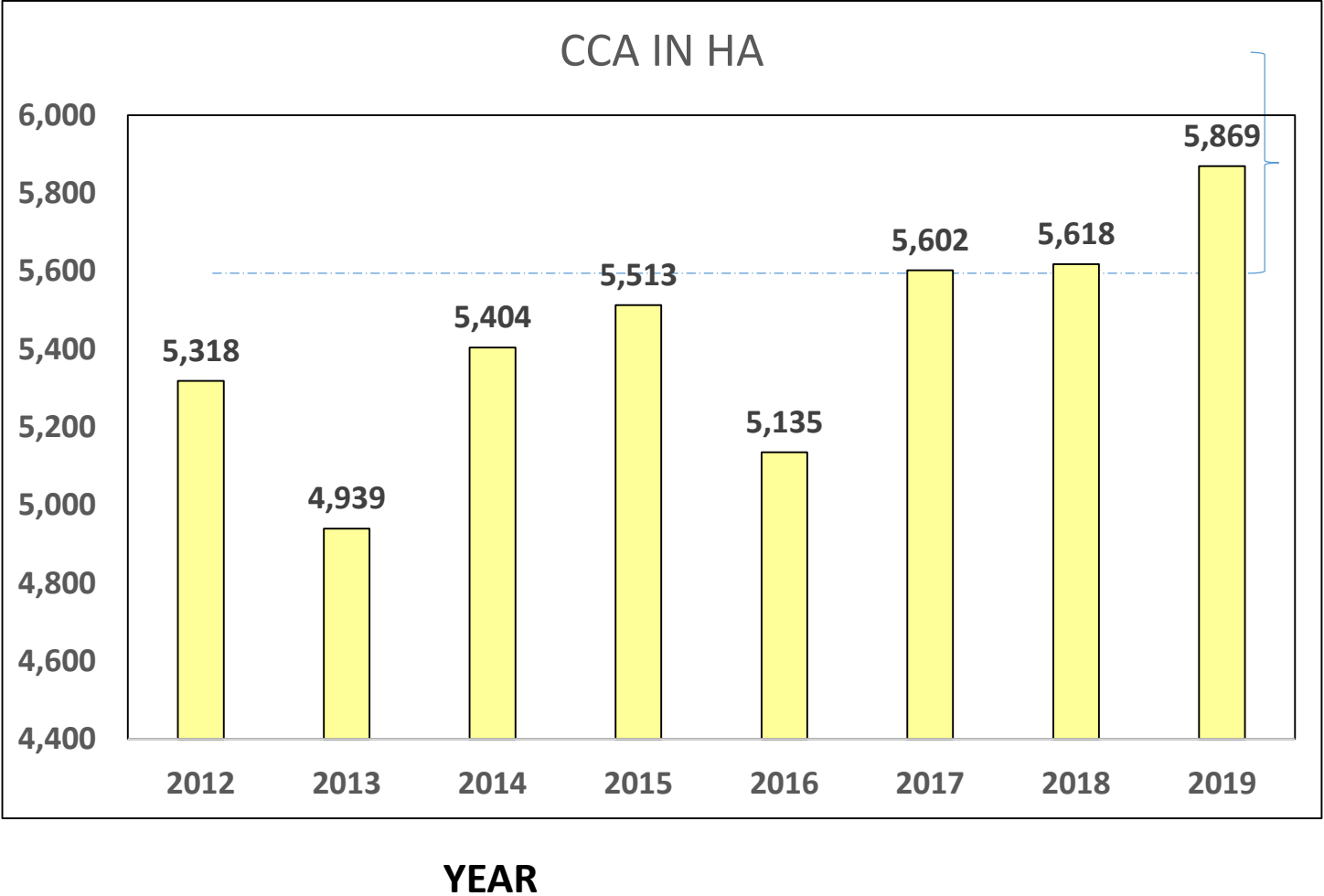
Scheme Type : WDS

Growth of Double Crop area in Coastal Region

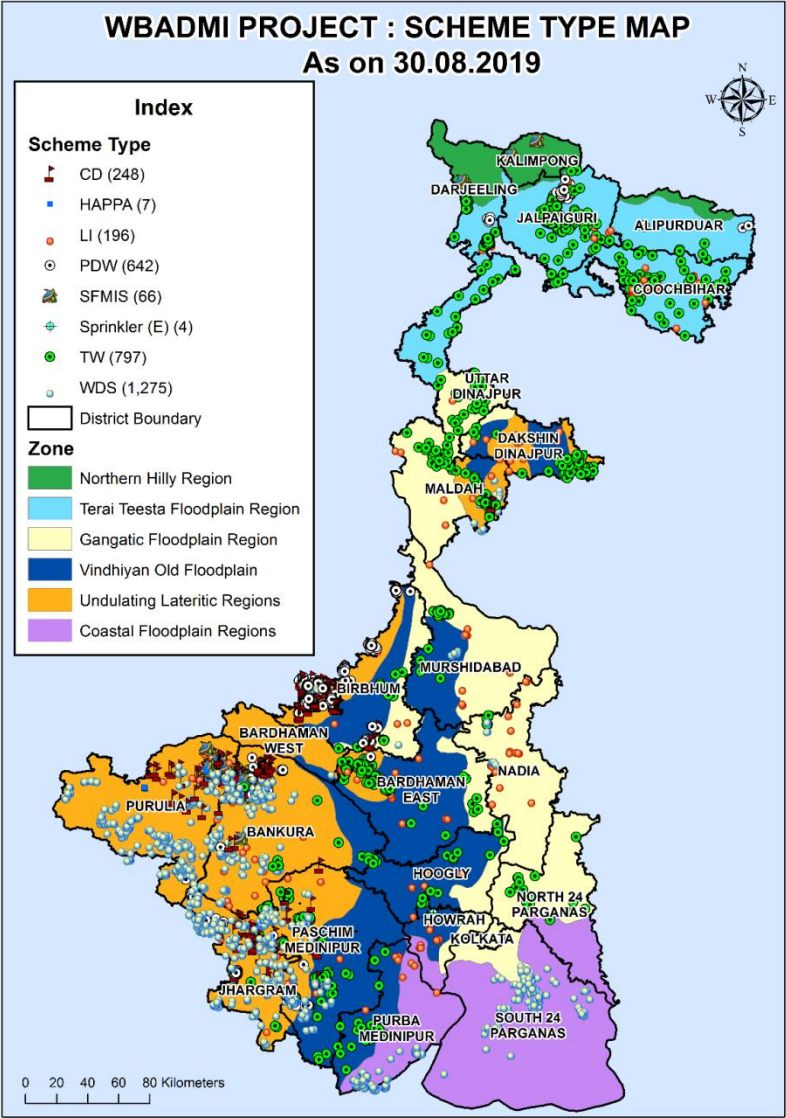


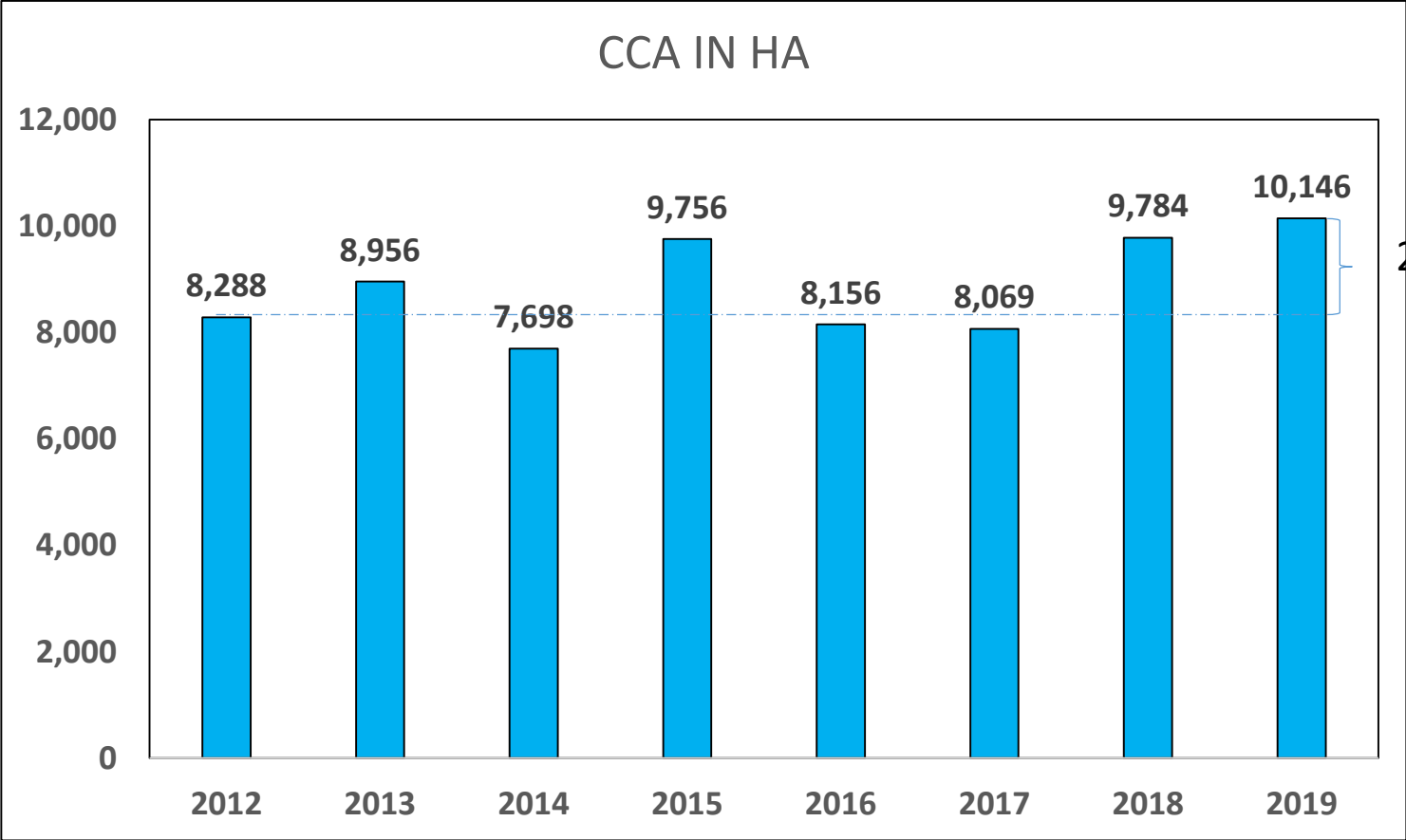


Growth of crop Area in Scheme command areas of Vindhyan Old Floodplain



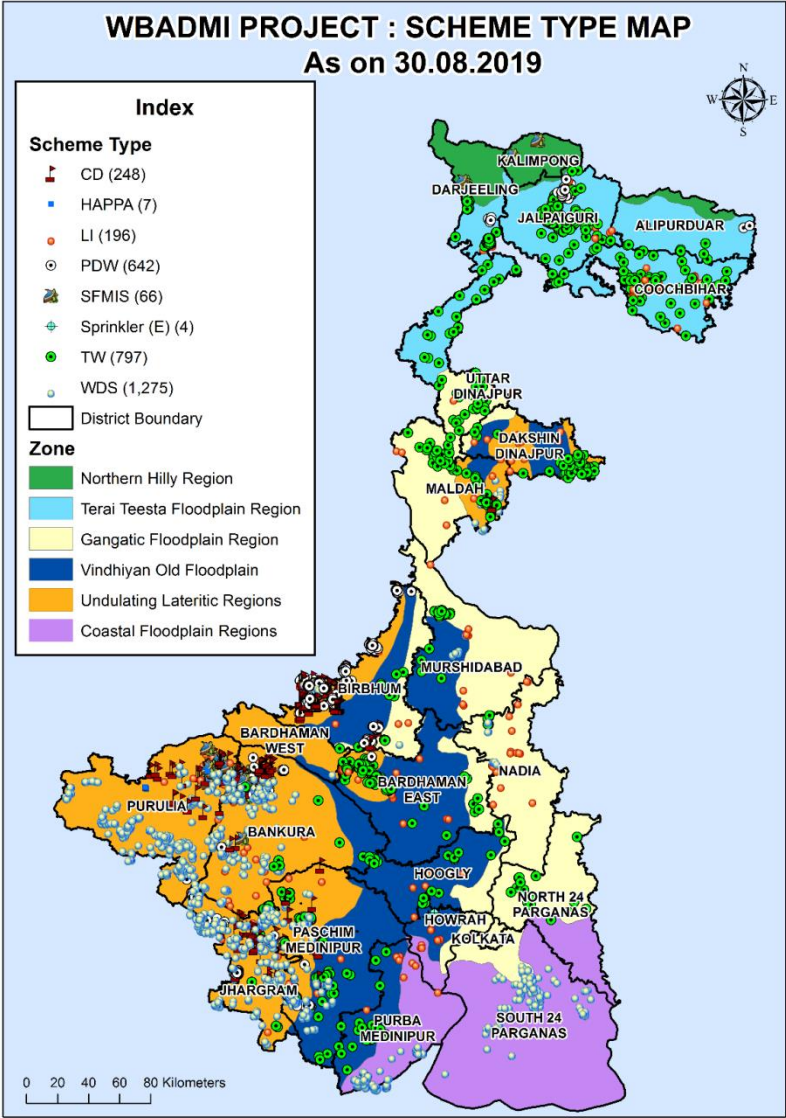
Growth of crop in scheme command areas in Gangatic flood Regions

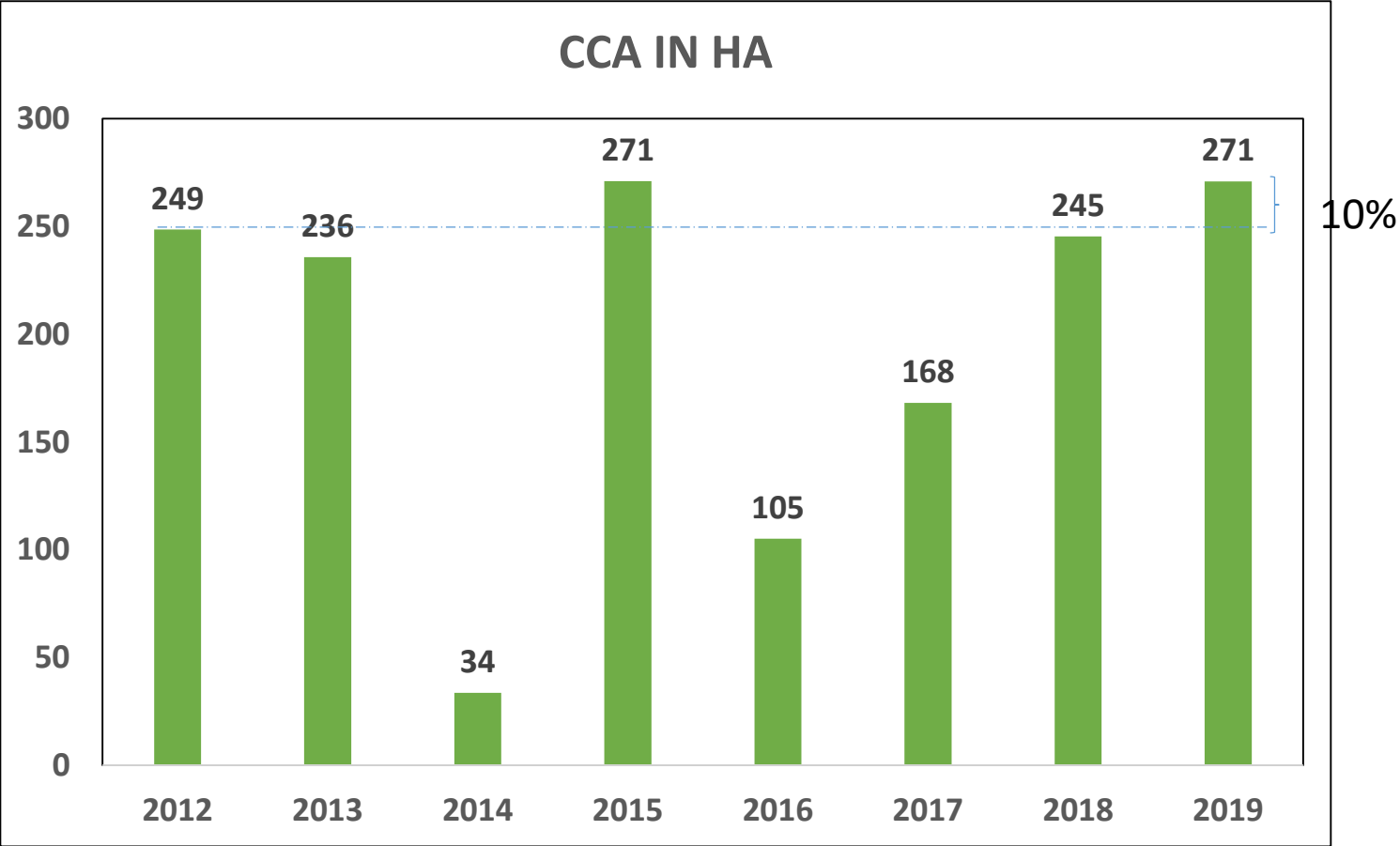




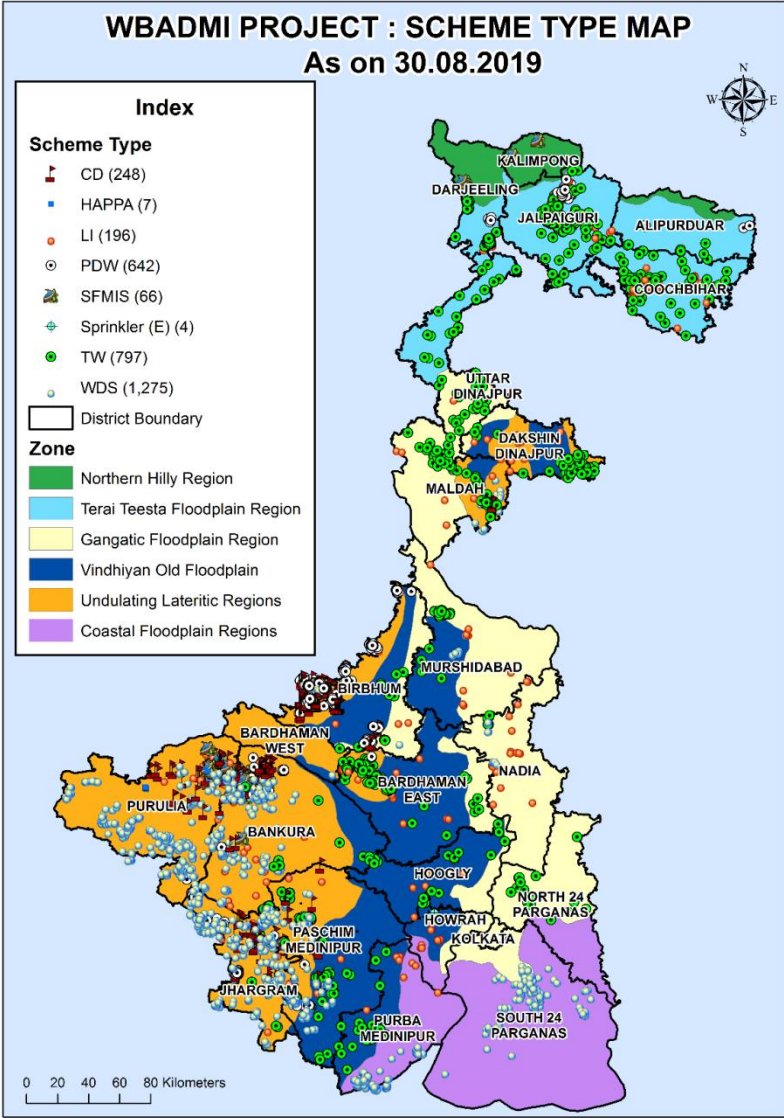
23%

Growth of Double crop area in scheme command in TERAJ FLOOD PLAIN



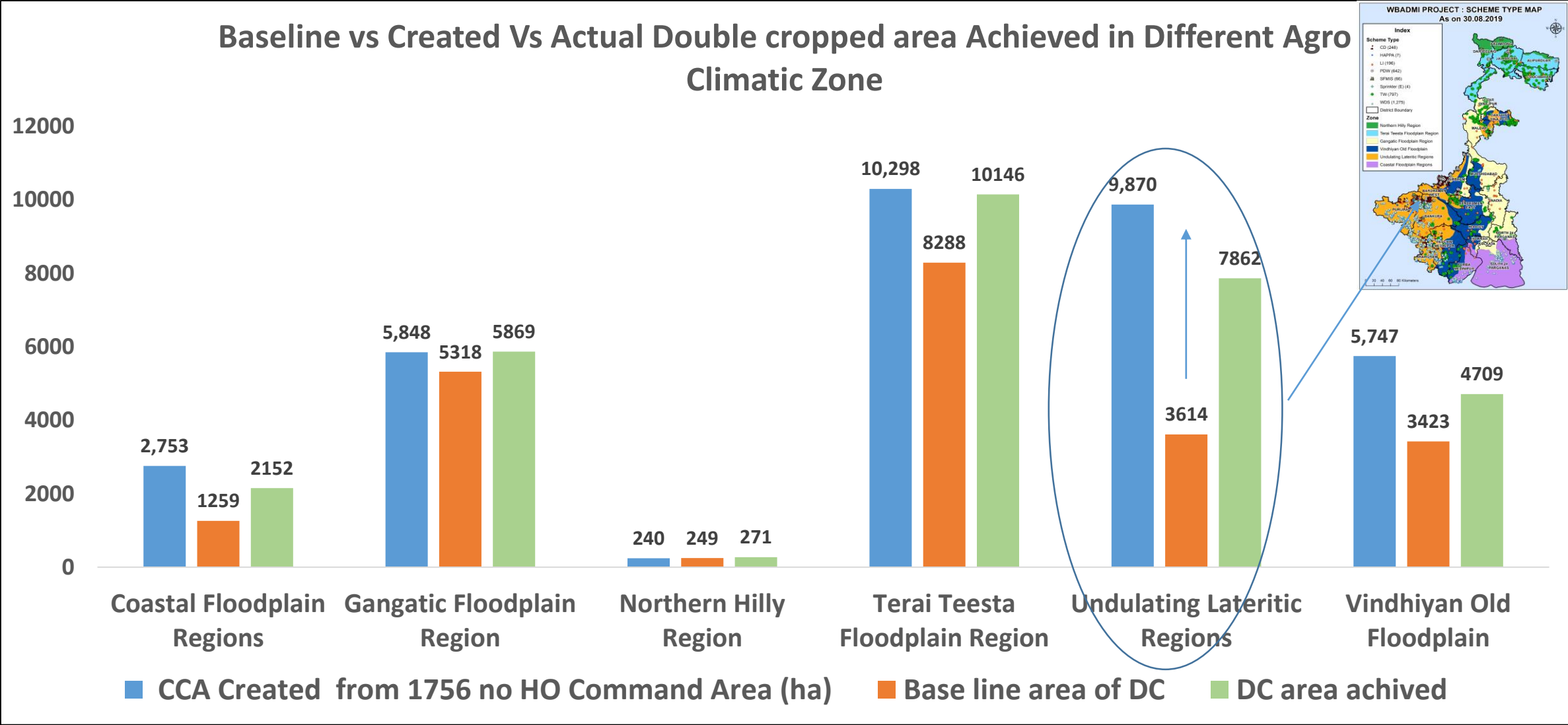


Growth of Double crop in HILLY REGION



IMPACT IN TERMS OF DOUBLE CROP AREA INCREMENT

SUMMARY AT A GLANCE



Over all Impact of Project in terms of Cropping intensity

GOOGLE EARTH ENGINE BASED IMPACT ASSESSMENT OF 989 NOS OF WBADMIP SUB-PROJECTS

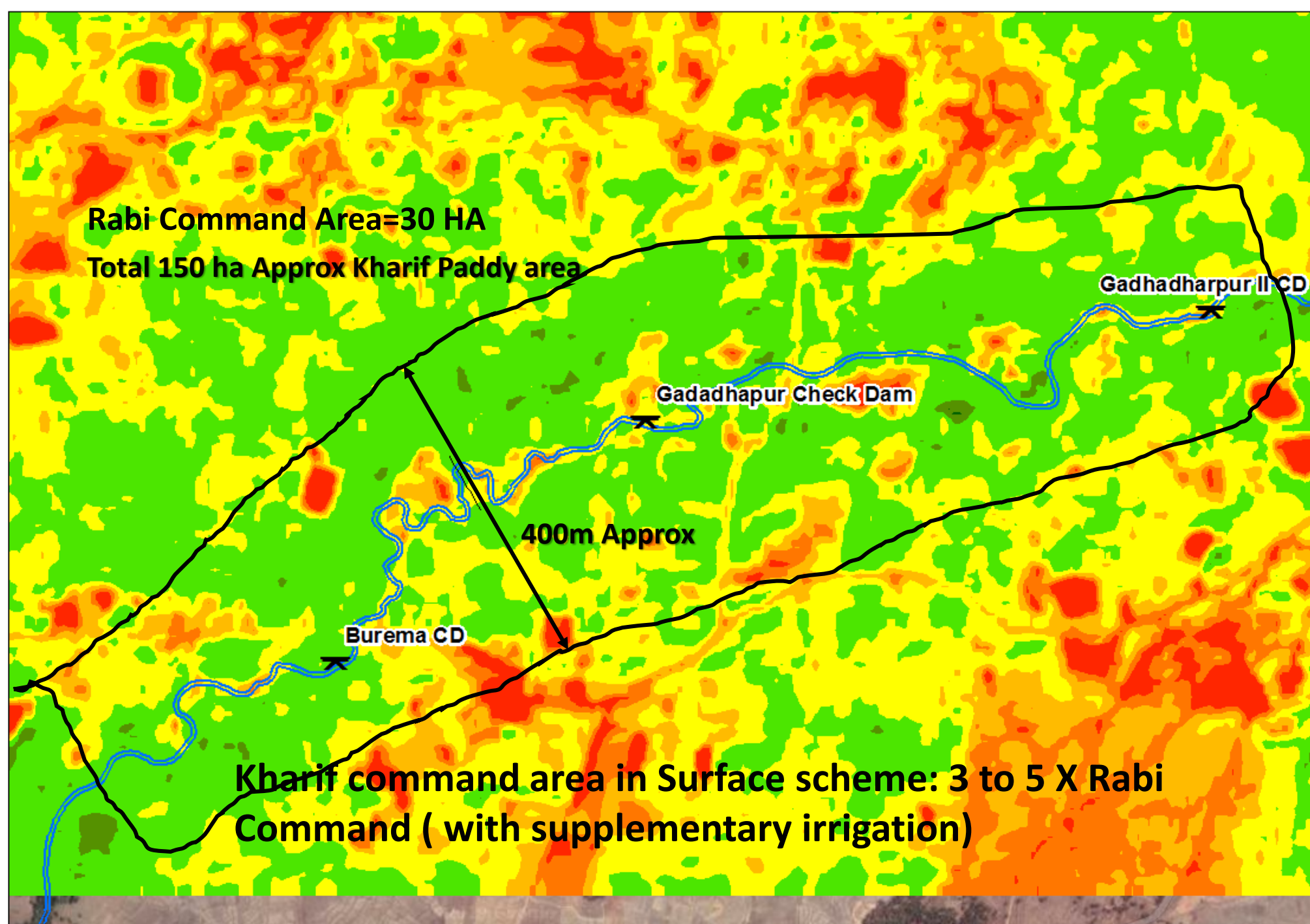
DISTRICT	CROPPED AREA IN HA WHOLE DISTRICT			CROPPED AREA IN HA IN WBADMIP SCHEMES			CROPPING INTENSITY 2018-19		SCHEME AVERAGE
	Kharif 2018	rabi 2019	Pre kharif 2019	Kharif 2018	rabi 2019	Pre kharif 2019	WHOLE DIST AVERAGE	As per Govt Record(2015)	
ALIPURDUAR	1,18,318.55	72,363.00	1,10,372.31	NODATA	NODATA	NODATA	254.44	254.00	NO DATA
BANKURA	4,22,376.36	95,607.76	1,61,679.24	1,210.00	175.57	948.79	160.91	146.00	192.92
BARDHAMAN EAST	4,20,078.70	1,40,920.92	3,20,859.26	1,646.00	722.03	1,487.80	196.16	171.00	234.25
BARDHAMAN WEST	80,287.38	6,674.77	12,699.77	NODATA	NODATA	NODATA			NO DATA
BIRBHUM	3,58,246.24	86,422.37	2,21,403.82	920.00	369.07	511.03	185.93	170.00	195.66
COOCHBIHAR	2,47,269.32	1,14,218.07	2,25,817.87	1,304.00	616.77	1,228.68	237.52	254.00	241.52
DAKSHIN DINAJPUR	1,84,979.36	91,170.10	1,48,312.60	1,904.00	368.56	1,793.27	229.46	164.00	213.54
DARJEELING	97,449.62	49,714.11	36,986.09	378.00	87.22	291.58	188.97	145.00	200.21
HOOGLY	2,30,522.88	1,41,039.94	2,29,022.53	415.00	313.21	408.79	260.53	256.00	273.98
HOWRAH	79,250.60	31,039.62	76,082.70	324.00	129.85	317.07	235.17	201.00	237.94
JALPAIGURI	2,04,276.69	92,002.18	1,09,668.07	1,478.00	693.22	1,130.60	198.72	165.00	223.40
JHARGRAM	1,59,903.23	22,805.94	1,39,789.33	NODATA	NODATA	NODATA	201.68	NODATA	NODATA
KALIMPONG	11,813.58	9,998.85	11,253.99	NODATA	NODATA	NODATA	279.90	NODATA	NODATA
MALDAH	2,53,317.56	1,65,066.51	2,24,188.73	1,412.00	735.63	1,271.49	253.66	195.00	242.15
MURSHIDABAD	3,51,934.00	2,55,004.86	3,53,527.49	20.00	19.75	19.36	272.91	239.00	295.55
NADIA	2,43,777.35	2,36,467.94	2,52,383.03	425.00	387.49	398.89	300.53	244.00	285.03
NORTH 24 PARGANAS	2,06,928.07	1,37,992.48	1,52,201.58	400.00	260.34	371.19	240.24	208.00	257.88
PASCHIM MEDINIPUR	4,10,133.88	1,95,101.24	4,05,248.14	2,223.50	676.98	2,041.19	246.38	195.00	222.25
PURBA MEDINIPUR	2,43,214.17	79,250.43	1,87,418.66	1,490.00	475.41	1,279.87	209.64	188.00	217.80
PURULIA	3,85,554.08	16,108.34	1,10,910.88	921.00	55.38	466.24	132.94	114.00	156.64
SOUTH 24 PARGANAS	3,31,417.87	74,304.89	2,18,907.29	1,804.00	167.08	1,473.14	188.47	153.00	190.92
UTTAR DINAJPUR	2,50,631.79	1,47,111.29	1,25,409.00	249.00	158.54	252.91	208.73	180.00	265.24
State	52,91,681.27	22,60,385.62	38,34,142.37	18,523.50	6,412.10	15,691.87	215.17	191	219.33

Over all Impact of Project in terms of Cropping intensity

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PURULIA	3,85,554.08	16,108.34	1,10,910.88	921.00	55.38	466.24	132.94	114.00	156.64
SOUTH 24 PARGANAS	3,31,417.87	74,304.89	2,18,907.29	1,804.00	167.08	1,473.14	188.47	153.00	190.92
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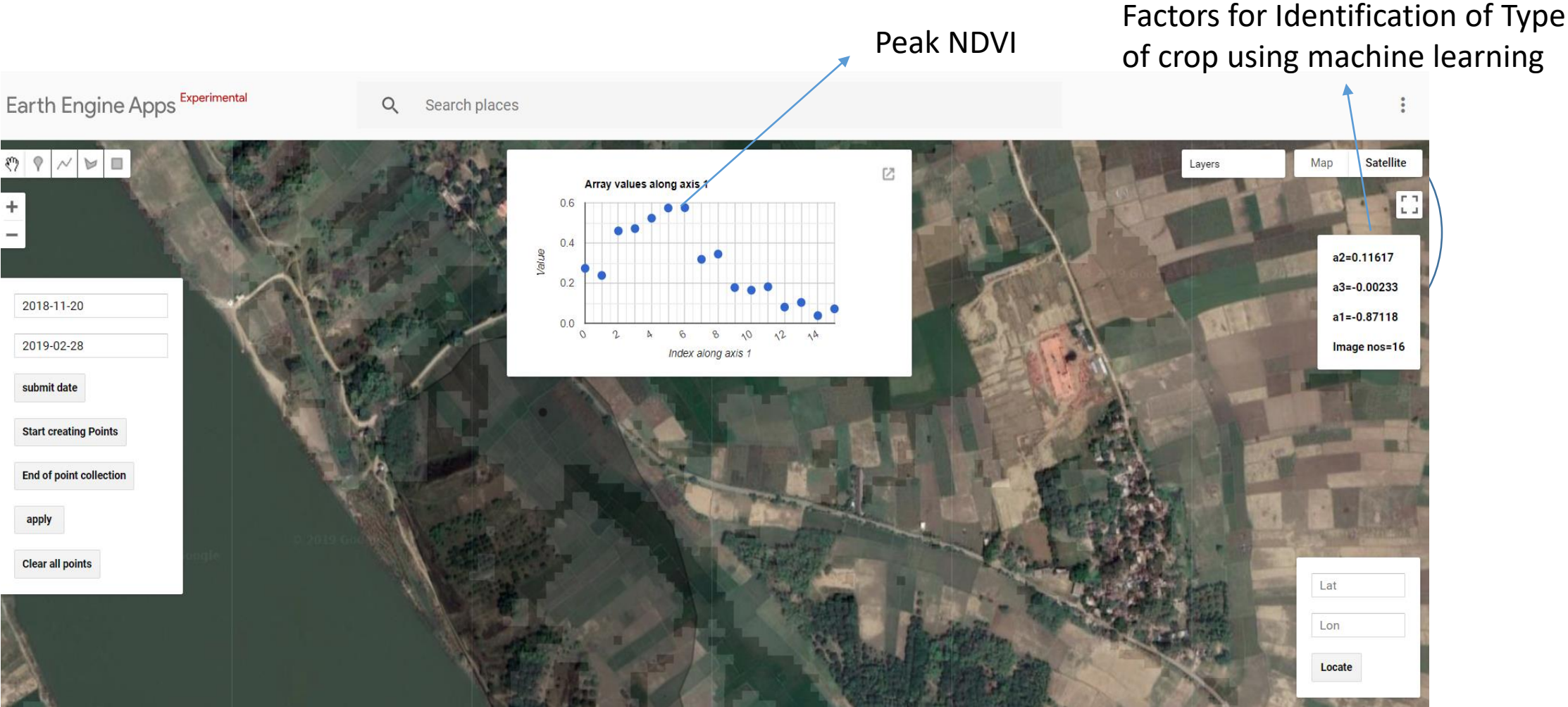
ASSESSMENT OF DESIGN KHARIF COMMAND AREA VS ACTUAL KHARIF COMMAND AREA



IMPACT ASSESSMENT ON CROP GROWTH PARAMETER

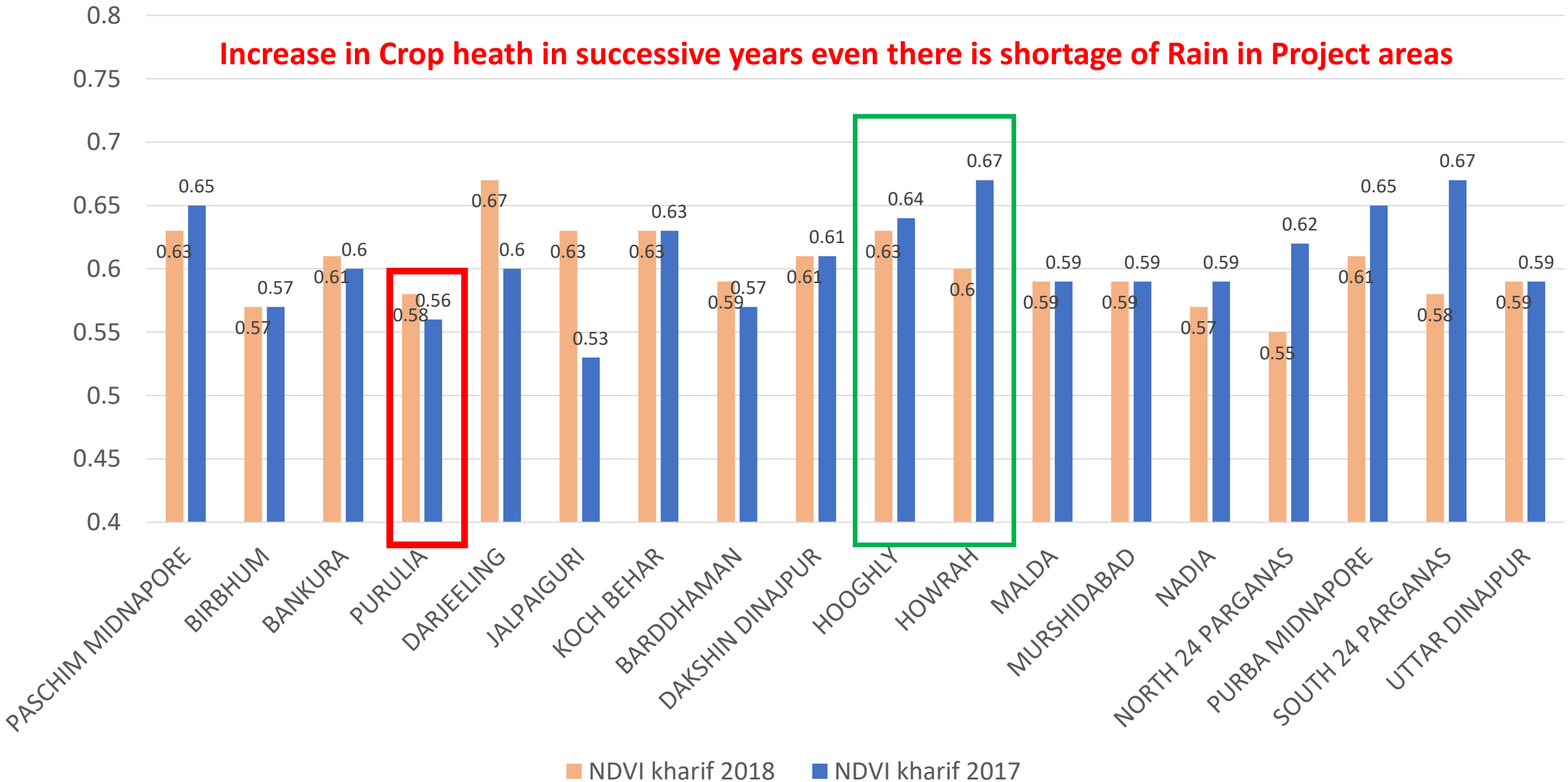
- NDVI based crop health monitoring for kharif Paddy
- It is a multispectral remote sensing based vegetation index related to Biomass content of crop or vegetation

Tracking crop health and crop phenology to identify type of crops



QUALITY OF CROP GROWTH IN KHARIF

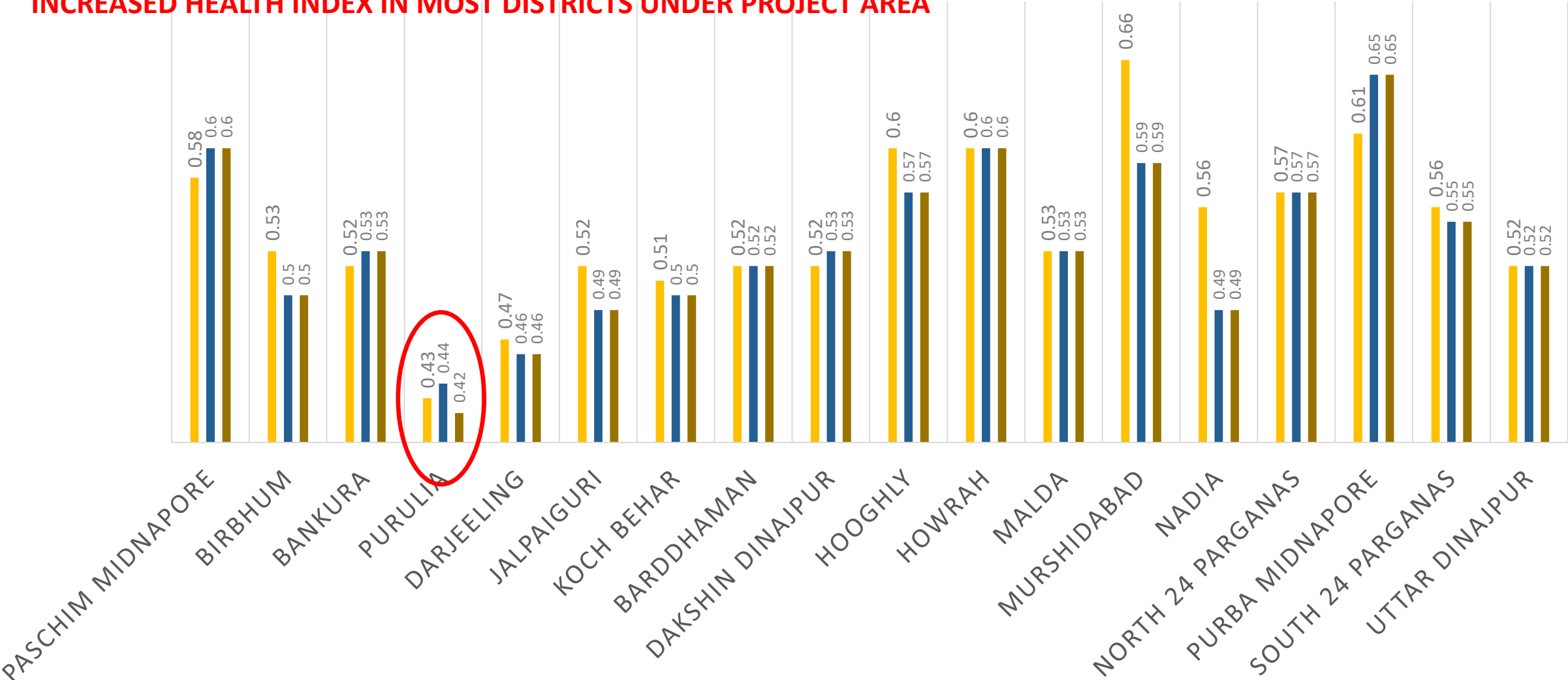
Increase in Crop heath in successive years even there is shortage of Rain in Project areas



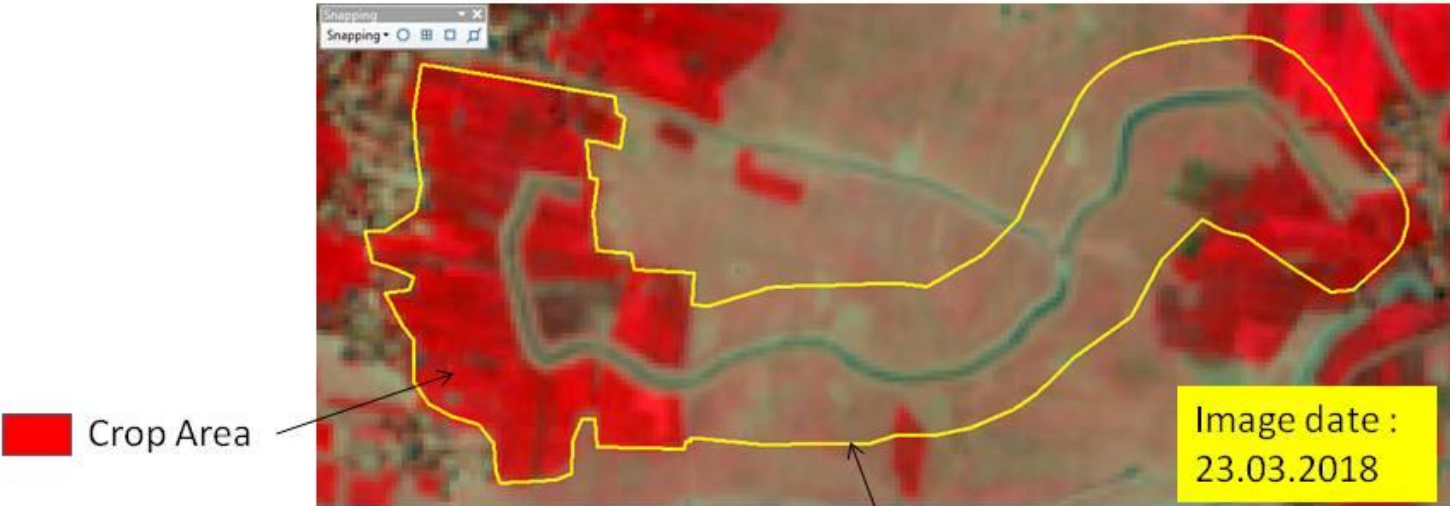
QUALITY OF CROP GROWTH IN RABI+PREKHARIF

NDVI rabi 2019 NDVI rabi 2018 NDVI rabi 2017

INCREASED HEALTH INDEX IN MOST DISTRICTS UNDER PROJECT AREA



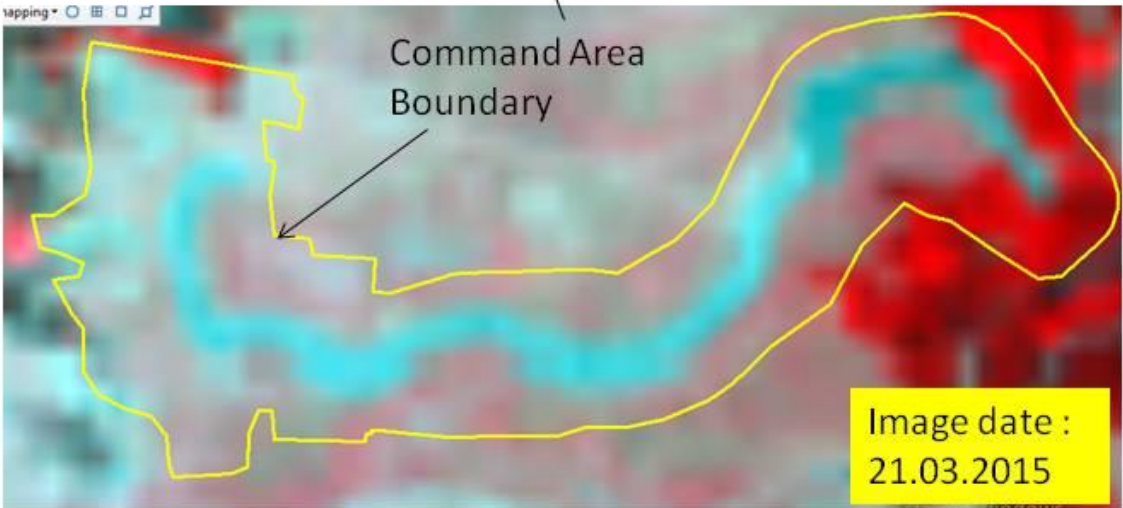
Change in Rabi Command Area of Bhaleya WDS, Canning I, 24 Pgs (S)
Before and After Implementation of Scheme



Total Rabi Command
Area, 2018 : 45 Ha

Total Rabi Command
Area, 2015 : 10 Ha

Scale : 1:7000



Thankyou