

ANNEXURE

Annexure - I

QC & QA checking form

No. & Date : _____

State Name : _____

Name of Analyst : _____

Name of Zone/HQ. : _____

Name of Asst. Director : _____

Steps	Geometric/ToA Correction	Interpretation	Pre Ground Truth change points generation and Area calculation	Post field corrections	Edge Matching (scene-wise)	Edge Matching (state-wise)	Final area calculation
Comments and Signature of the person who has checked the scene		Please fill your remarks in QC and QA form-II					
Signature of Asstt. Director							

QC & QA Reporting form (Scene-wise)

Scene Path & Row. _____

State _____

Name of Analyst _____

Name of Zone/HQ. _____

Name of Astd. Director _____

Date of checking exercise From _____ to _____

A. Major observations of person who checked the scene

B. Analyst's comments about incorporation of changes

C. Final comments by checking Team/person

A. Comments of Assistant Director

Signature of Analyst _____

Signature of the person who has checked the scene _____

A. Signature of Assistant Director _____

Signature of Deputy Director (FCM) _____



Abbreviations of State/UTs followed in FCM

State/UTs Name	Code
Andaman & Nicobar	an
Andhra Pradesh	ap
Arunachal Pradesh	ar
Assam	as
Bihar	bi
Chandigarh	ch
Chhattisgarh	cg
Dadra & Nagar Haveli	dh
Delhi	dl
Daman & Diu	dd
Goa	go
Gujarat	gj
Haryana	hr
Himachal Pradesh	hp
Jammu & Kashmir	jk
Jharkhand	jh
Karnataka	kr
Kerala	kl
Lakshadweep	lk
Madhya Pradesh	mp
Maharashtra	mh
Manipur	mn
Meghalaya	mg
Mizoram	mz
Nagaland	ng
Odisha	od
Puducherry	pd
Punjab	pb
Rajasthan	rj
Sikkim	sk
Tamil Nadu	tn
Telangana	tl
Tripura	tr
Uttarakhand	uk
Uttar Pradesh	up
West Bengal	wb

Standards of Nomenclature of files

S.No.	Steps to be followed	File Name	Remarks
1.	All the classified layer are mosaicked and data smoothing is performed (clump using connected neighbour 4 option and eliminate using minimum 1 ha)	15-uk-finalclass-96-50-u.img	Cycle-state-finalclass-path-row-projection
	The quality checking of the sheet-wise by the concerned in-charge		
Classification for the current cycle			
2	New water file as per current cycle FCC	15-uk-finalclass-wt-96-50-u.img	Cycle-state-finalclass-water-path-row-projection
	Correct the classification as per new FCC by editing or by any classification scheme		
	Marking of change patches (both real and interpretational)		
	Final classification after inclusion of change patches and water files		
3	Smoothing of final classified layer after running Clump (using connected neighbour 4 option) and Eliminate (using minimum 1 ha)	16-uk-finalclass-96-50-u.img 16-uk-finalclass-96-50-u (.shp)	Cycle-state-finalclass-path-row-projection
4	Real change patches are to be stored separately	16-uk-real-change-96-50-u.img	Cycle-state-real-change-path-row-projection
5	All the scene-wise real change patches are mosaicked to get the state-wise real change patches	16-uk-real-change-u.img 16-uk-real-change-u(.shp)	Cycle-state-real-change-projection
Computation of District-wise area			
	Mosaic all the scene-wise classified layer Edge matching of the mosaicked classified layer has to be performed by the Analysts under the guidance of their respective in-charge.		
6	Subset the mosaic with the state boundary file	16-uk-finalclass-u.img	Cycle-state-finalclass projection
	Quality checking of the finalised data has to be performed by the team		
7	Run summary report of matrix to get the district wise area figures using the subsetted mosaic and the district boundary file. The excel table has to be prepared as shown in Annexure I	16-uk-finalclass-u-area.txt	Cycle-state-finalclass-path-row-projection-area.txt Normalise the figures wherever needed
Computation of Change Matrix (Scene-Wise)			
8	Run Matrix between 15-uk-finalclass.img and 16-uk-finalclass-u.img	16-uk-change-only-u.img	Cycle-state-change-only-projection The output of the matrix should be unsigned 16 bit
	Recode code no. 1213 and 1312 as 0 in 16-uk-change-only-u.img. The excel table has to be prepared as shown in Annexure II		Normalise the figures wherever needed



S.No.	Steps to be followed	File Name	Remarks
Computation of forest cover in different patch size classes			
	Run the clump using connected neighbour 4 option in 16-uk-finalclass-u.img		
9	Add area to the clump file	16-uk-finalclass-clump-u.img	Cycle-state-finalclass-clump-projection
	Cluster the clump according to the size to get the no. of patches and area of the patches. The excel table has to be prepared as shown in Annexure III		Normalise the figures wherever needed
Computation of altitude-wise forest cover			
10	Using the SRTM of the state, the altitude zone wise area is calculated using 16-uk-finalclass-u.img. The excel table has to be prepared as shown in Annexure IV	16-uk-finalclass-srtm-u.img	Normalise the figures wherever needed
Computation of forest cover within and outside RFA/Greenwash			
11	Subset the 16-uk-finalclass-u.img with the RFA/Greenwash boundary of the state to get the forest cover within the RFA/Greenwash	16-uk-finalclass-inrfa-u.img/ 16-uk-finalclass-ingw-u.img	Cycle-state-finalclass-inrfa-projection Cycle-state-finalclass-ingw-projection
	Run summary report of matrix to get the district wise area figures using 16-uk-finalclass-inrfa-u.img/16-uk-finalclass-ingw-u.img and the district boundary file		Use the same Normalisation Factor used in district-wise area calculation
	Subtract the total forest cover area (all classes) with the forest cover within the RFA/Greenwash to get forest cover outside the RFA/Greenwash. The excel table has to be prepared as shown in Annexure V		
Water bodies within forest			
12	Extraction of water bodies within the forest areas, with Greenwash/RFA as reference.	16-uk-wt-withinf-u.img	Cycle-state-water-withinf-projection

Note: All the above files pertaining to a particular scene should be kept in one folder. Name of the folder should be same as scene number (path row) in the main state name folder

District-wise Forest Cover

District	Geographical Area	2019 Assessment				% of GA	Real Change	Interpretational Change	Total Change	Scrub
		VDF	MDF	OF	Total					

Forest Cover Change Matrix

District	2019 Assessment					Total ISFR 2017
	VDF	MDF	OF	Scrub	NF	
VDF						
MDF						
OF						
Scrub						
NF						
Total ISFR 2019						
Net Change						

Annexure - VII

Forest cover in different patch size classes

S.No.	Patch Size Range (sq.km)		No. of Patches	Area (sq.km)	%age
1	>=0.01	<=1.0			
2	>1.0	<=10			
3	>10	<=100			
4	>100	<=500			
5	>500	<=1000			
6	>1000	<=5000			
7	>5000	<=10000			
8	>10000				
	Total				

Annexure - VIII

Altitude-wise forest cover

Altitude Zone (m)	Geographical Area	VDF	MDF	OF	Total
0-500m					
500-1000m					
1000-2000m					
2000-3000m					
3000-4000m					
> 4000 m					
Total					



Annexure - IX

Forest Cover within and outside Recorded Forest Area

S.No.	District	Geographical Area	Recorded Forest area as per State records	Recorded Forest area as per digitized RFA boundary	Forest cover inside RFA 2017				Forest cover outside RFA 2017				Forest cover outside RFA 2019				% of forest cover within RFA	% of forest cover outside RFA	Change inside RFA	Change outside RFA	Net Change																				
					VDF	MDF	OF	Total	VDF	MDF	OF	Total	VDF	MDF	OF	Total																									



Annexure - XI

Proforma for Ground Truthing of Forest Cover Mapping

Patch No.	Name of District, Division, Range	Locational Coordinates	Area Ground truthed approx (ha.)	Forest Cover (crown density wise)			Reasons for change	Forest with main sp.	Remarks (forest fire, disease, ground truthing photos etc. or any other relevant observation)
				As reported in previous cycle (Cycle No. 15)	As per initial interpretation in the current cycle (Cycle No. 16)	As per joint ground truthing			
Place :				Signature:			Signature:		
Date :				Name & Designation with Range and Division State Forest Department			Name & Designation Forest Survey of India		

Change Code and Color Scheme followed in Forest Cover Mapping

2	VDF	56	SCRUB TO TOF- VD	106	SCRUB TO TOF-VD	410	MANGROVE-MD TO TOF-VD	OF TO MANGROVE-MD
3	MDF	57	SCRUB TO TOF-MD	107	SCRUB TO TOF-MD	411	MANGROVE-MD TO TOF-MD	OF TO MANGROVE-OPEN
4	OF	58	SCRUB TO TOF-OPEN	108	SCRUB TO TOF-OPEN	412	MANGROVE-MD TO TOF-OPEN	OF TO WATAER
5	SCRUB	59	SCRUB TO MANGROVE-VD	109	SCRUB TO MANGROVE-VD	413	MANGROVE-MD TO MANGROVE-VD	OF TO NON FOREST
6	TOF-VD	62	TOF-VD TO VDF	112	TOF-VD TO VDF	510	MANGROVE-OPEN TO VDF	SCRUB TO MANGROVE-MD
7	TOF-MD	63	TOF-VD TO MDF	113	TOF-VD TO MDF	511	MANGROVE-OPEN TO MDF	SCRUB TO MANGROVE-OPEN
8	TOF-OPEN	64	TOF- VD TO OF	114	MANGROVE-OPEN TO OF	512	MANGROVE-OPEN TO OF	SCRUB TO WATER
9	MANGROVE-VD	65	TOF-VD TO SCRUB	115	MANGROVE-OPEN TO SCRUB	513	MANGROVE-OPEN TO SCRUB	SCRUB TO NON FOREST
10	MANGROVE-MD	67	TOF-VD TO TOF-MD	116	MANGROVE-OPEN TO TOF-VD	610	MANGROVE-OPEN TO TOF-VD	TOF-VD TO MANGROVE-MD
11	MANGROVE-OPEN	68	TOF-VD TO TOF-OPEN	117	MANGROVE-OPEN TO TOF-MD	611	MANGROVE-OPEN TO TOF-MD	TOF-VD TO MANGROVE-OPEN
12	WATER	69	TOF-VD TO MANGROVE-VD	118	TOF-VD TO MANGROVE-VD	612	MANGROVE-OPEN TO TOF-OPEN	TOF-VD TO WATER
13	NON FOREST	72	TOF-MD TO VDF	119	MANGROVE-OPEN TO MANGROVE-VD	613	MANGROVE-OPEN TO MANGROVE-VD	TOF-VD TO NON FOREST
23	VDF TO MDF	73	TOF-MD TO MDF	122	WATER TO VDF	710	WATER TO VDF	TOF-MD TO MANGROVE-MD
24	VDF TO OF	74	TOF-MD TO OF	123	WATER TO MDF	711	WATER TO MDF	TOF-MD TO MANGROVE-OPEN
25	VDF TO SCRUB	75	TOF-MD TO SCRUB	124	WATER TO OF	712	WATER TO OF	TOF-MD TO WATER
26	VDF TO TOF-VD	76	TOF-MD TO TOF-VD	125	WATER TO SCRUB	713	WATER TO SCRUB	TOF-MD TO NON FOREST
27	VDF TO TOF-MD	78	TOF-MD TO TOF-OPEN	126	WATER TO TOF-VD	810	WATER TO TOF-VD	TOF-MD TO MANGROVE-MD
28	VDF TO TOF-OPEN	79	TOF-MD TO MANGROVE-VD	127	WATER TO TOF-MD	811	WATER TO TOF-MD	TOF-OPEN TO MANGROVE-OPEN
29	VDF TO MANGROVE-VD	82	TOF-OPEN TO VDF	128	WATER TO TOF-OPEN	812	WATER TO TOF-OPEN	TOF-OPEN TO WATER
32	MDF TO VDF	83	TOF-OPEN TO MDF	129	WATER TO MANGROVE-VD	813	WATER TO MANGROVE-VD	TOF-OPEN TO NON FOREST
34	MDF TO OF	84	TOF-OPEN TO OF	132	NON FOREST TO MDF	910	NON FOREST TO VDF	MANGROVE-VD TO MANGROVE-MD
35	MDF TO SCRUB	85	TOF-OPEN TO SCRUB	133	NON FOREST TO SCRUB	911	NON FOREST TO MDF	MANGROVE-VD TO MANGROVE-OPEN
36	MDF TO TOF-VD	86	TOF-OPEN TO TOF-VD	134	NON FOREST TO OF	912	NON FOREST TO OF	MANGROVE-VD TO WATER
37	MDF TO TOF-MD	87	TOF-OPEN TO TOF-MD	135	NON FOREST TO SCRUB	913	NON FOREST TO SCRUB	MANGROVE-VD TO NON FOREST
38	MDF TO TOF-OPEN	89	TOF-OPEN TO MANGROVE-VD	136	NON FOREST TO TOF-VD	1011	NON FOREST TO TOF-VD	MANGROVE-MD TO MANGROVE-OPEN
39	MDF TO MANGROVE-VD	92	MANGROVE-VD TO VDF	137	NON FOREST TO TOF-MD	1012	NON FOREST TO TOF-MD	MANGROVE-MD TO WATER
42	OF TO VDF	93	MANGROVE-VD TO MDF	138	NON FOREST TO TOF-OPEN	1013	NON FOREST TO TOF-OPEN	MANGROVE-MD TO NON FOREST
43	OF TO MDF	94	MANGROVE-VD TO OF	139	NON FOREST TO MANGROVE-VD	1110	NON FOREST TO MANGROVE-VD	MANGROVE-OPEN TO MANGROVE-MD
45	OF TO SCRUB	95	MANGROVE-VD TO SCRUB	210	VDF TO MANGROVE-MD	1112	VDF TO MANGROVE-MD	MANGROVE-OPEN TO WATER
46	OF TO TOF-VD	96	MANGROVE-VD TO TOF-VD	211	VDF TO MANGROVE-OPEN	1113	VDF TO MANGROVE-OPEN	MANGROVE-OPEN TO NON FOREST
47	OF TO TOF-MD	97	MANGROVE-VD TO TOF-MD	212	VDF TO WATER	1210	VDF TO WATER	WATER TO MANGROVE-MD
48	OF TO TOF-OPEN	98	MANGROVE-VD TO TOF-OPEN	213	VDF TO NON FOREST	1211	VDF TO NON FOREST	WATER TO MANGROVE-OPEN
49	OF TO MANGROVE-VD	102	MANGROVE-MD TO VDF	310	MDF TO MANGROVE-MD	1213	MDF TO MANGROVE-MD	WATER TO NON FOREST
52	SCRUB TO VDF	103	MANGROVE-MD TO MDF	311	MDF TO MANGROVE-OPEN	1310	MDF TO MANGROVE-OPEN	NON FOREST TO MANGROVE-MD
53	SCRUB TO MDF	104	MANGROVE-MD TO OPEN	312	MDF TO WATER	1311	MDF TO WATER	NON FOREST TO MANGROVE-OPEN
54	SCRUB TO OF	105	MANGROVE-MD TO SCRUB	313	MDF TO NON FOREST	1312	MDF TO NON FOREST	NON FOREST TO WATER

