

## DAFTAR PUSTAKA

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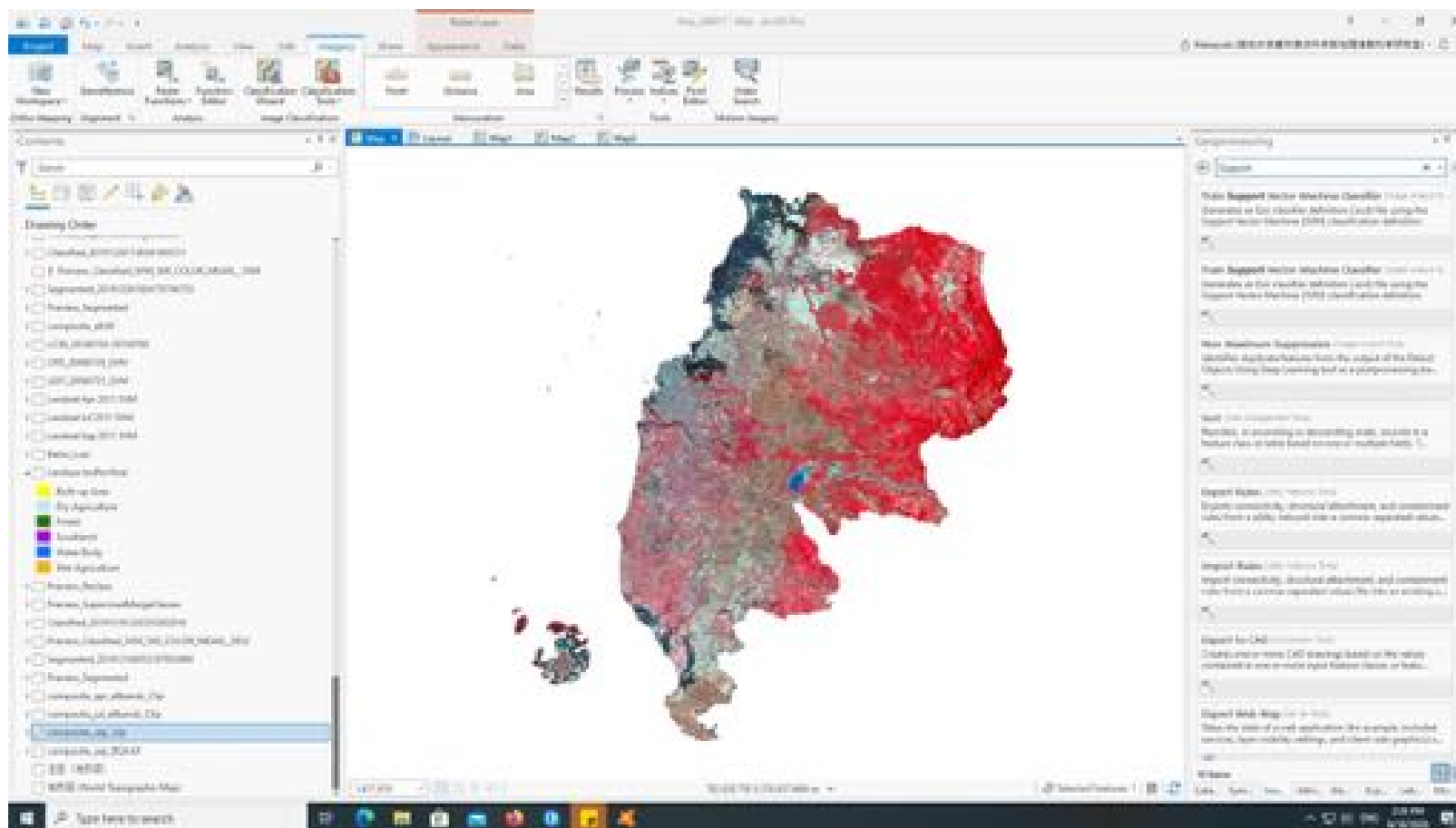
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## LAMPIRAN

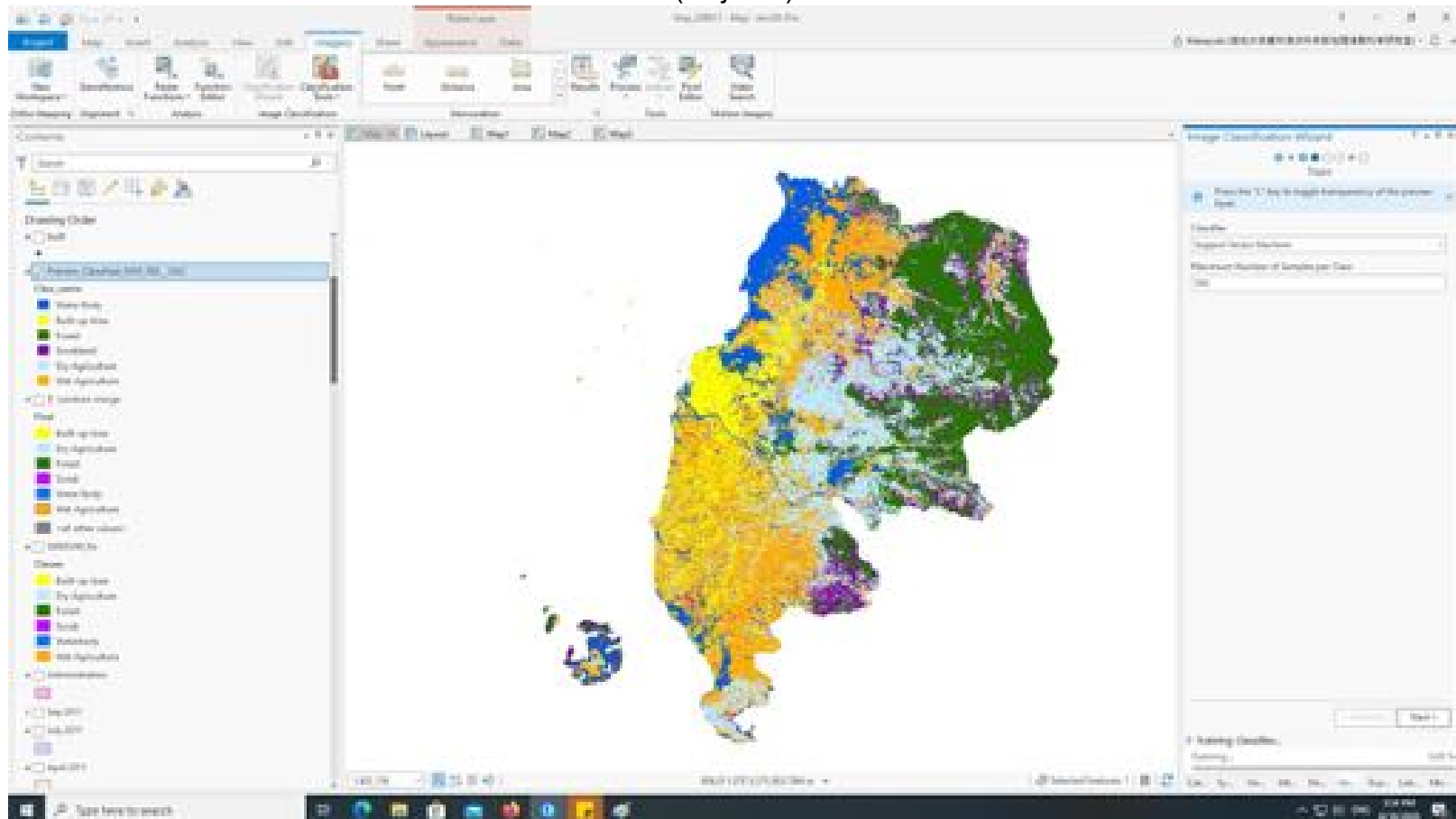
Lampiran 1. Metode *cloud masking* dan *Support Vector Machine*







(lanjutan)





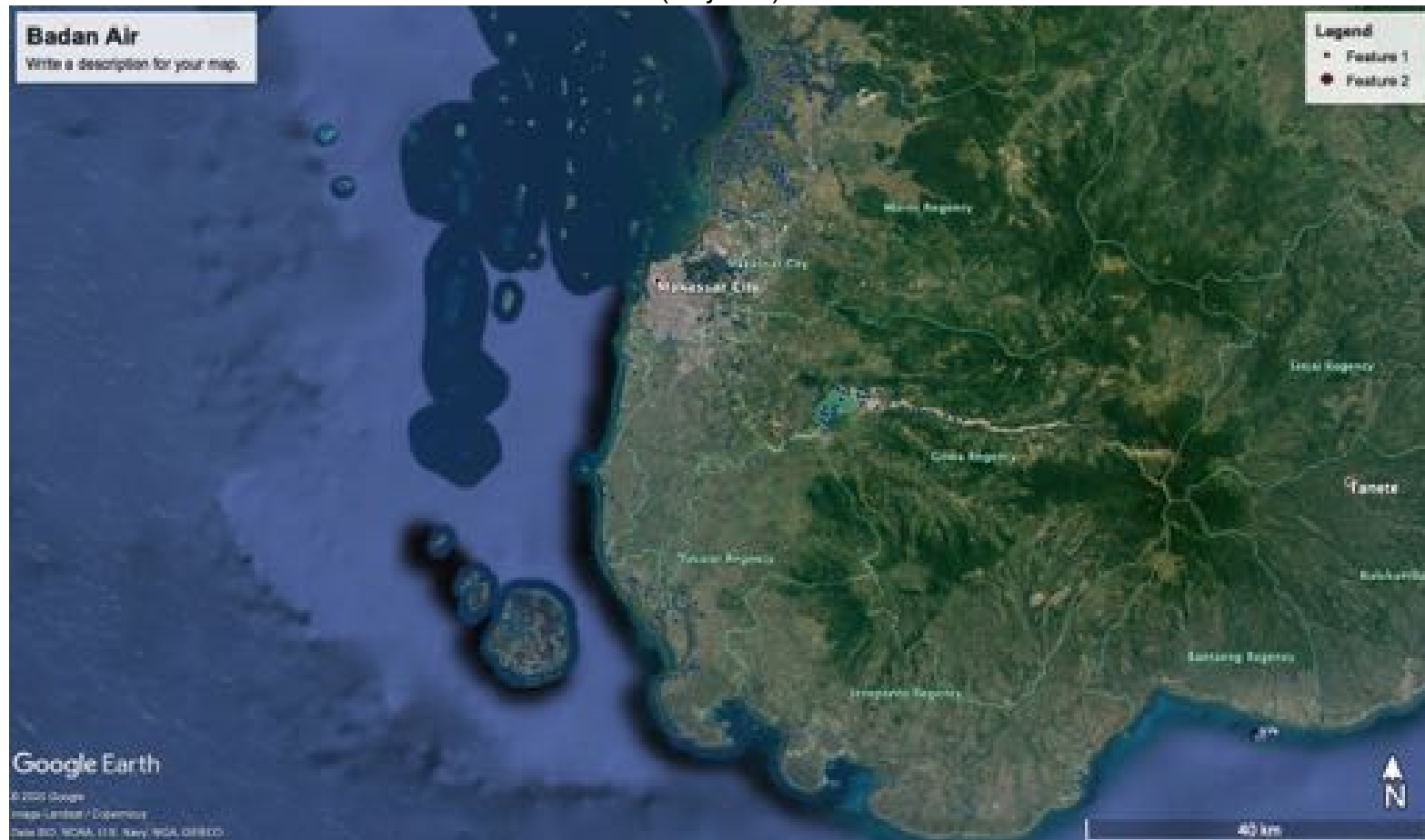






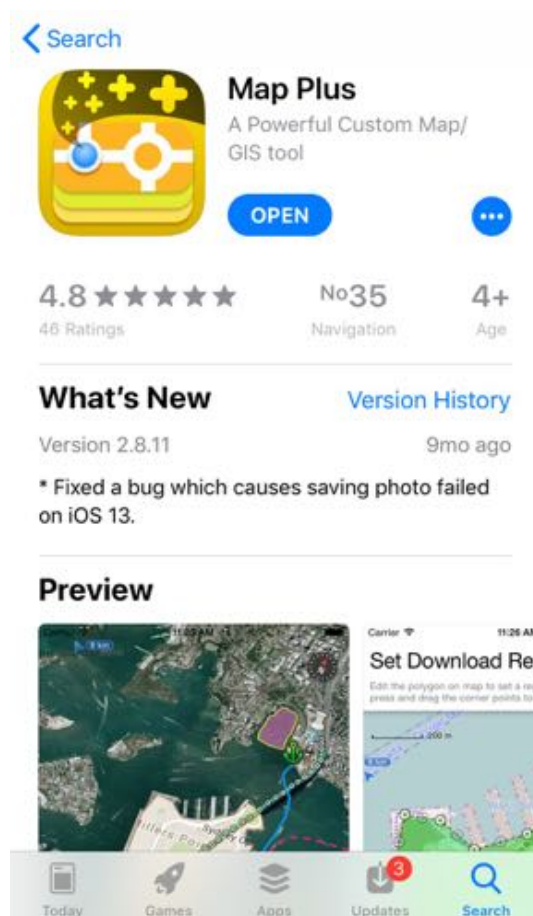


(lanjutan)







Lampiran 4. Perangkat lunak *Map Plus*

The screenshot shows the App Store page for the application "Map Plus". At the top, there is a search bar with a back arrow and the word "Search". Below this is the app's icon, which is a yellow square with rounded corners, featuring a white gear and a blue location pin. To the right of the icon, the app name "Map Plus" is displayed in bold black text, followed by the subtitle "A Powerful Custom Map/ GIS tool". Below the subtitle is a blue "OPEN" button and a blue circle with three white dots. The app's rating is shown as 4.8 stars with 46 ratings. It is categorized as "Navigation" and has a version number of "No35". The age rating is "4+".

**What's New** [Version History](#)

Version 2.8.11 9mo ago

\* Fixed a bug which causes saving photo failed on iOS 13.

**Preview**

The preview section shows two screenshots from the app. The left screenshot shows a satellite map with a red polygon drawn over a body of water. The right screenshot shows a map with a red polygon and a scale bar. Below the preview images is a navigation bar with icons for "Today", "Games", "Apps", "Updates" (with a red notification badge showing the number 3), and "Search".



## Lampiran 5. Metode deteksi perubahan

```

Last login: Mon Aug 24 10:38:26 on console
land110[~]<581> yasser_
yasser_change_detection      yasser_comp1_fill
yasser_change_detection_2004 yasser_eriand_mask
yasser_change_detection_2014 yasser_normalized_difference
yasser_comp1_merge2
land110[~]<582> yasser_change_detection

yasser_change_detection: Generate changed land cover map

usage: yasser_change_detection ClassFile NormDiffFile Inq2011List Mask2011List
InqYYYYList MaskYYYYList Threshold OutClassFile

ClassFile: SVM classification map
NormDiffFile: Normalized difference file
Inq2011List: List file of images in 2011 (4 seasons x 4 bands)
Mask2011List: List file of mask in 2011 (4 seasons)
InqYYYYList: List file of images in 2004/2014 (4 seasons x 4 bands)
MaskYYYYList: List file of mask in 2004/2014 (4 seasons)
Threshold: threshold for changed area (normally more than 2.0)
OutClassFile: Output land cover classification map

land110[~]<583> █

Last login: Mon Aug 24 11:42:19 on ttye000
land110[~]<581> yasser_comp1_merge2

yasser_comp1_merge2: Composite step 1 (merge 2 scenes)

usage: yasser_comp1_merge2 InName1 InName2 OutName

InName{1,2}: InName1_b{1,2,3,4,5,7}.raw and InName1_BQA.raw are used
OutName: OutName_b{1,2,3,4,5,7}.raw and OutName_BQA.raw will be produced

land110[~]<582> █

Last login: Mon Aug 24 11:42:19 on ttye000
land110[~]<584> yasser_comp2_fill

yasser_comp2_fill: Composite step 2 (fill gap)

usage: yasser_comp2_fill BaseName FillNameList Size OutName

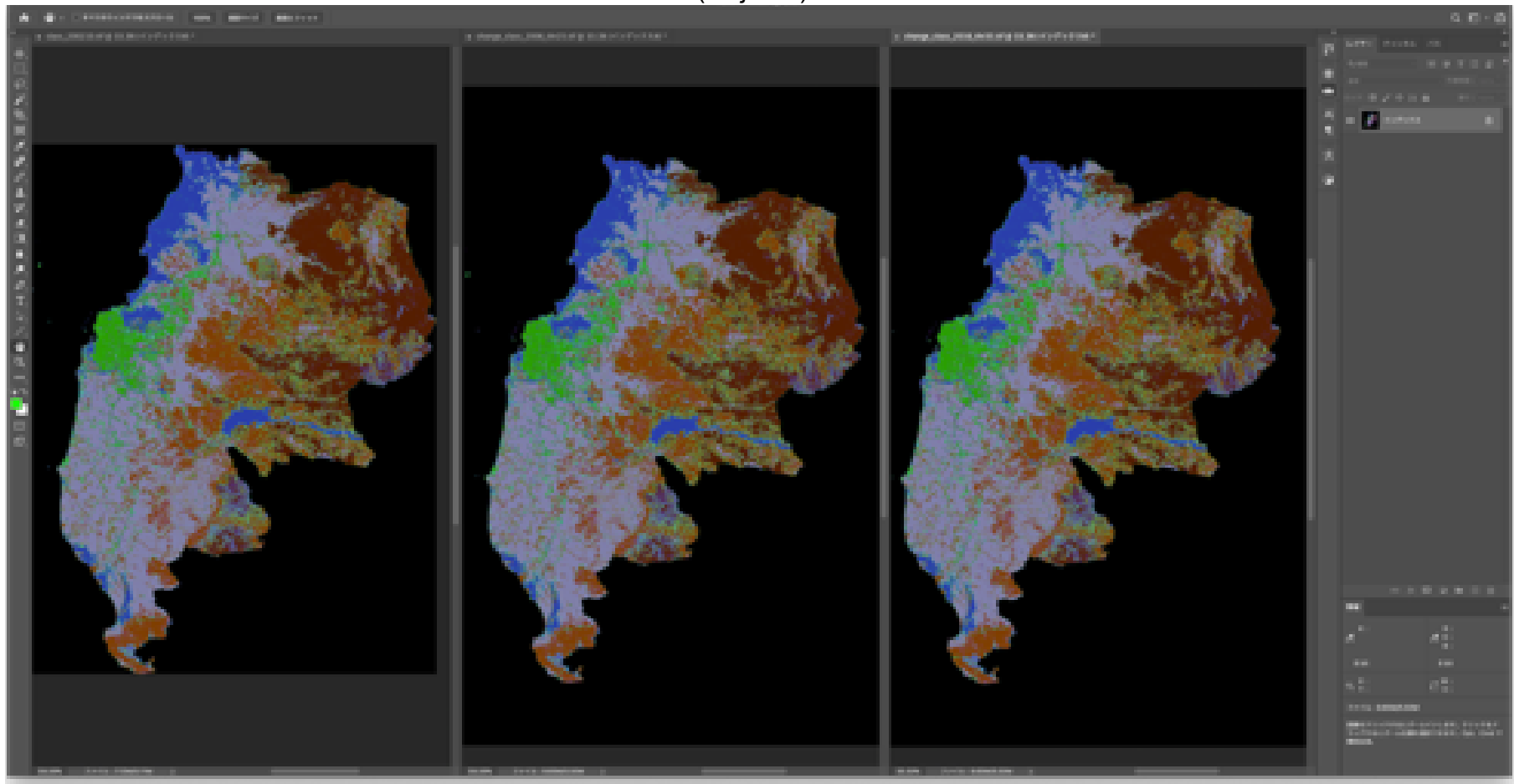
BaseName: BaseName_b{1,2,3,4,5,7}.raw and BaseName_BQA.raw are used
FillNameList: List file of FillName
Size: Size of image (LINExPIXEL)
OutName: OutName_b{1,2,3,4,5,7}.raw and OutName_BQA.raw will be produced

land110[~]<585> █

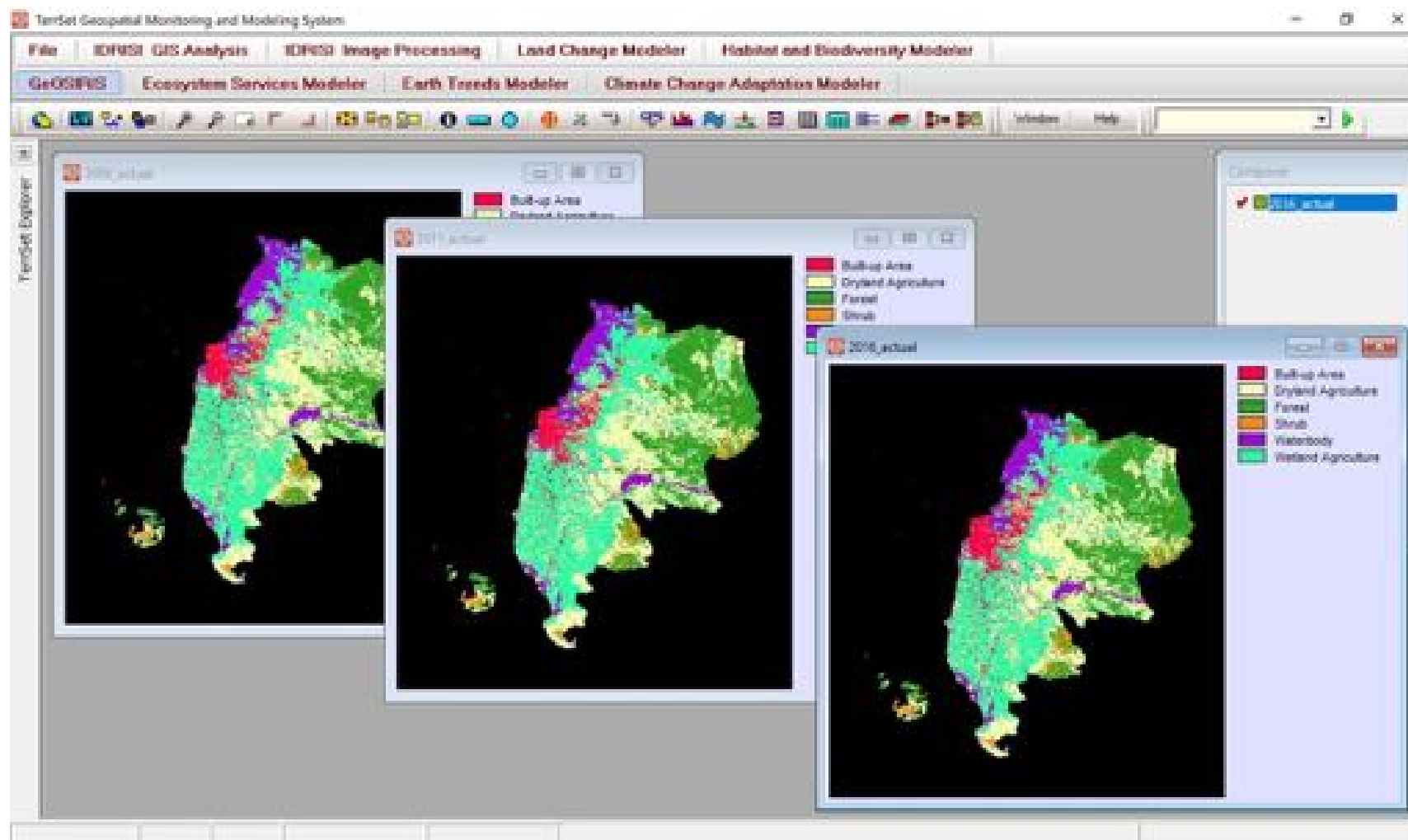
Last login: Mon Aug 24 11:42:19 on ttye000
land110[~]<581> cd data/people/19_y
-bash: cd: data/people/19_y: No such file or directory
land110[~]<582> cd data/people/19_yasser/
land110[19_yasser]<583> ls
change/      img_journal/  landsat11/   landuse/     o1d/
lis_forum/   landsat04/   landsat14/   landuse_svm/
land110[19_yasser]<584> cd landuse_svm/
land110[landuse_svm]<585> ls
class_200210.msh      osh/
class_200210.raw      org/
class_200210.tif      rsw/
class_200210.tif.sse.xml  sh/
cls_class.ssv         tmp/
cls_class_out.txt     tmp.tif
cls_train.ssv
land110[landuse_svm]<586> cd ../landsat04
land110[landsat04]<587> ls
brows/      ocp/      sh/      tmp/
img/        raw/      test_mask1.raw
land110[landsat04]<588> █

```

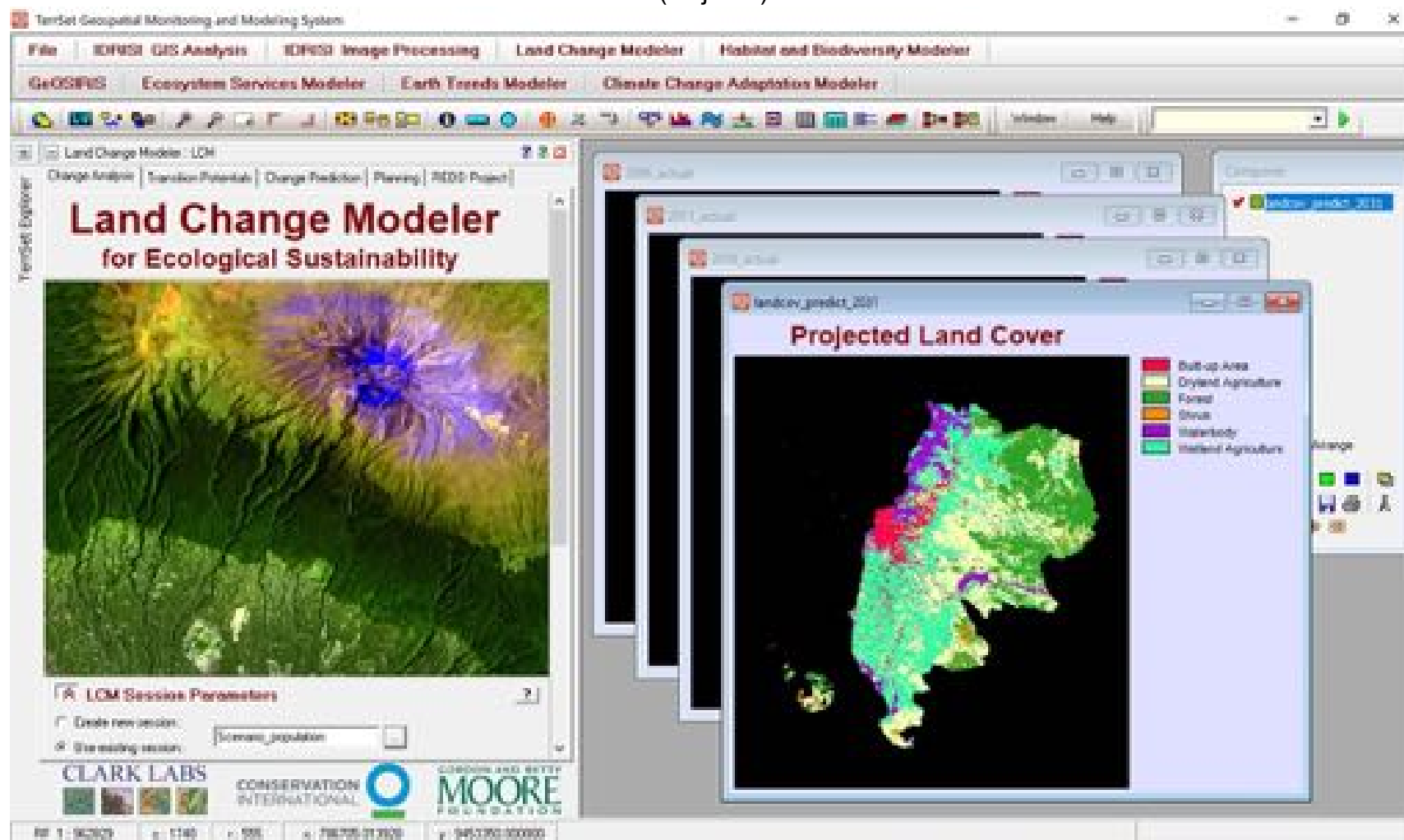
(lanjutan)



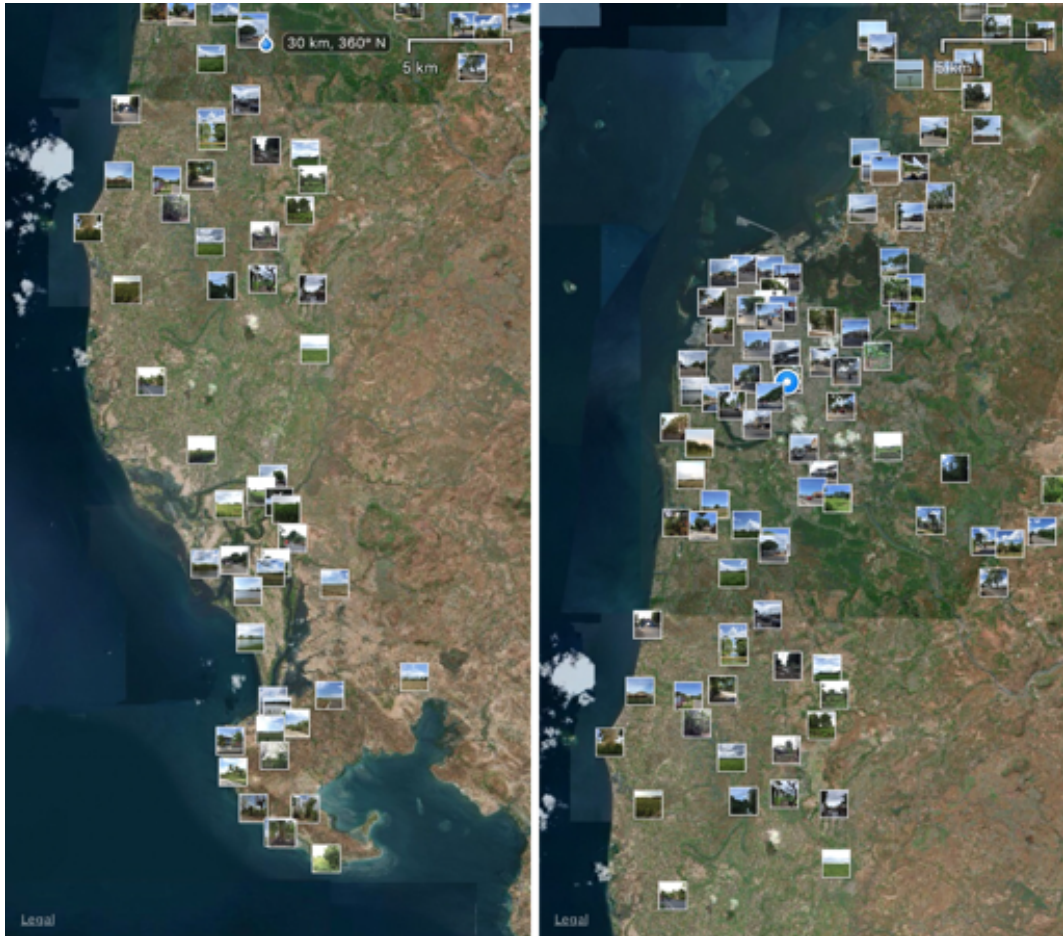
## Lampiran 6. Metode model perubahan penggunaan lahan



(lanjutan)

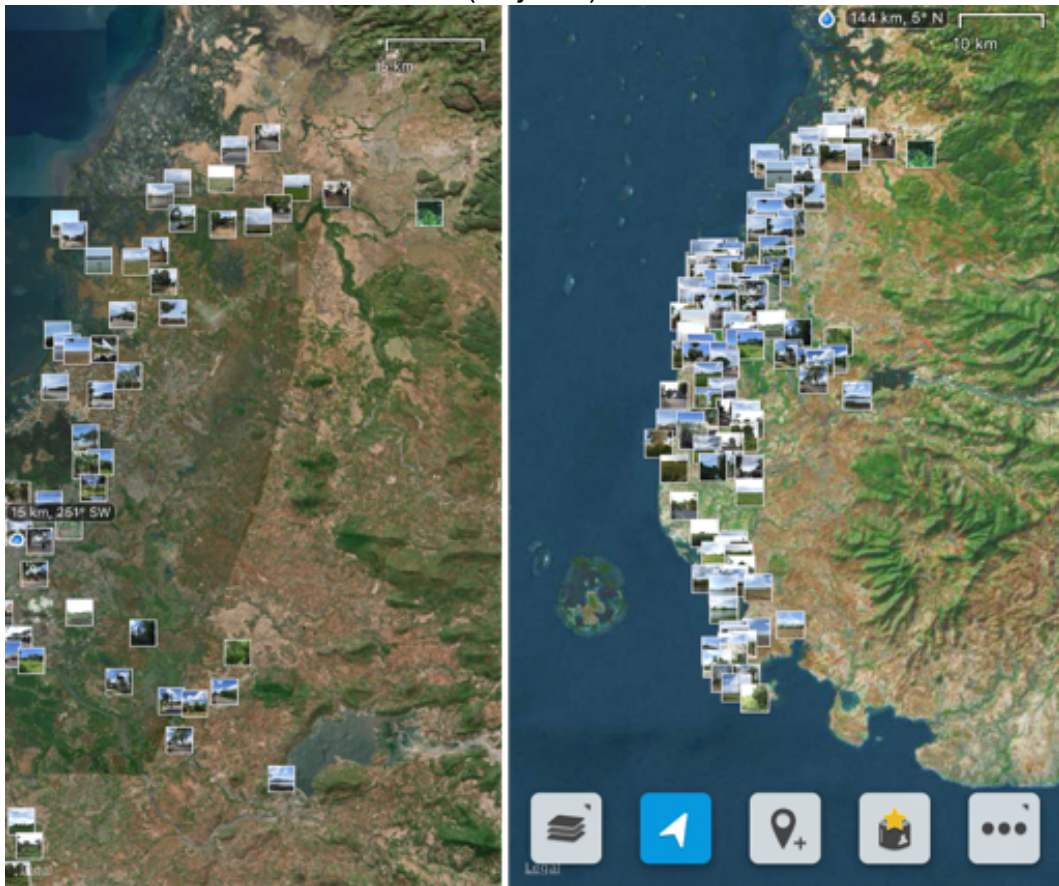


## Lampiran 7. Dokumentasi survei lapangan





(lanjutan)



(lanjutan)





Lampiran 8. Titik survei lapangan berdasarkan jenis penggunaan lahan

Lahan Terbangun				
No	Longitude	Latitude	Kecamatan	Kota/Kabupaten
1	119.44364285000	-5.29334182900	Bajeng	Gowa
2	119.48434665200	-5.29129939300	Bajeng	Gowa
3	119.41676977800	-5.30269093200	Bajeng Barat	Gowa
4	119.39165005000	-5.28821201100	Bajeng Barat	Gowa
5	119.41330286600	-5.21169579700	Barombong	Gowa
6	119.40402807200	-5.18809293900	Barombong	Gowa
7	119.51595350900	-5.24845177500	Bontomarannu	Gowa
8	119.52506774400	-5.24132077600	Bontomarannu	Gowa
9	119.50464330000	-5.24051252500	Bontomarannu	Gowa
10	119.43852064100	-5.33590299500	Bontonompo	Gowa
11	119.43396803300	-5.32791027000	Bontonompo	Gowa
12	119.42475369300	-5.40059334600	Bontonompo Selatan	Gowa
13	119.41015335400	-5.37072250300	Bontonompo Selatan	Gowa
14	119.39340551500	-5.37050351300	Bontonompo Selatan	Gowa
15	119.58048283100	-5.28989242400	Manuju	Gowa
16	119.68849789700	-5.26416246900	Manuju	Gowa
17	119.45336376100	-5.21462674200	Palangga	Gowa
18	119.44058767100	-5.20623172800	Palangga	Gowa
19	119.43904184600	-5.19471262200	Palangga	Gowa
20	119.65612519100	-5.24512811300	Parangloe	Gowa
21	119.67731917300	-5.23732394200	Parangloe	Gowa
22	119.59870900800	-5.16368179400	Parangloe	Gowa
23	119.58312103000	-5.25702741600	Pattallassang	Gowa
24	119.54820540700	-5.22727957300	Pattallassang	Gowa
25	119.48448103300	-5.23518741700	Somba Opu	Gowa
26	119.45095995300	-5.20432199800	Somba Opu	Gowa
27	119.48962632700	-5.20268229100	Somba Opu	Gowa
28	119.48218008900	-5.20143819100	Somba Opu	Gowa
29	119.67442109900	-5.01902606300	Bantimurung	Maros
30	119.66432672700	-4.97973882900	Bantimurung	Maros
31	119.58910397000	-4.92595610800	Bontoa	Maros
32	119.60986597800	-4.89885998700	Bontoa	Maros
33	119.78265736000	-5.00474124200	Cenrana	Maros
34	119.78357087200	-4.97822903900	Cenrana	Maros
35	119.57485458800	-4.97787216600	Lau	Maros
36	119.56743909700	-4.95636956700	Lau	Maros
37	119.56980827600	-5.06454786900	Mandai	Maros
38	119.54182808200	-5.05565213000	Mandai	Maros
39	119.56821252200	-5.04378509200	Mandai	Maros
40	119.56249918000	-5.01133082100	Maros Baru	Maros
41	119.55056379200	-4.99609733500	Maros Baru	Maros
42	119.49887160300	-5.02303865900	Marusu	Maros
43	119.54265503900	-5.14370597600	Moncongloe	Maros
44	119.60478439300	-5.04258402400	Simbang	Maros
45	119.67395139700	-5.03945266600	Simbang	Maros
46	119.67434955600	-5.03111582000	Simbang	Maros
47	119.62802942000	-5.13186403200	Tanralili	Maros

48	119.60154098300	-5.10810966300	Tanralili	Maros
49	119.62784405200	-5.08911730000	Tanralili	Maros
50	119.66036506400	-5.14592506800	Tompobulu	Maros
51	119.67756584000	-5.13521353700	Tompobulu	Maros
52	119.69331171700	-5.13349389500	Tompobulu	Maros
53	119.56530454800	-5.04275431600	Turikale	Maros
54	119.56885052000	-5.03509105600	Turikale	Maros
55	119.58647032200	-5.02169328900	Turikale	Maros
56	119.36958247700	-5.33416793200	Galesong	Takalar
57	119.36123466500	-5.32483522700	Galesong	Takalar
58	119.36831859400	-5.39545444600	Galesong Selatan	Takalar
59	119.48300500200	-5.51942539600	Mangarabombang	Takalar
60	119.45833156500	-5.42186969900	Pattalassang	Takalar
61	119.42759022700	-5.41833129400	Pattalassang	Takalar
62	119.51901381700	-5.40546764300	Polombangkeng Selatan	Takalar
63	119.54544082200	-5.40464272700	Polombangkeng Selatan	Takalar
64	119.44867459400	-5.36378250100	Polombangkeng Utara	Takalar
65	119.51980314100	-5.33543908900	Polombangkeng Utara	Takalar
66	119.37900414300	-5.41934568700	Sanrobone	Takalar
67	119.41149442600	-5.41741460500	Sanrobone	Takalar
68	119.49436812400	-5.07501771800	Biringkanaya	Makassar
69	119.49627105500	-5.07453583700	Biringkanaya	Makassar
70	119.51414905500	-5.07079437700	Biringkanaya	Makassar
71	119.52254898400	-5.07052126600	Biringkanaya	Makassar
72	119.41960059500	-5.13049033600	Bontoala	Makassar
73	119.42480341200	-5.12793142700	Bontoala	Makassar
74	119.42282478900	-5.14762812200	Makassar	Makassar
75	119.43236850000	-5.13771203400	Makassar	Makassar
76	119.42866600000	-5.13581165500	Makassar	Makassar
77	119.42061629700	-5.16134218900	Mamajang	Makassar
78	119.42301154500	-5.15879996600	Mamajang	Makassar
79	119.42411403500	-5.15389884700	Mamajang	Makassar
80	119.48046002600	-5.15813519000	Manggala	Makassar
81	119.46465997200	-5.15505560200	Manggala	Makassar
82	119.41138913000	-5.15958111200	Mariso	Makassar
83	119.40739822200	-5.15387248400	Mariso	Makassar
84	119.45030875300	-5.13557517900	Panakkukang	Makassar
85	119.43208619000	-5.13297100500	Panakkukang	Makassar
86	119.43921188800	-5.13103592400	Panakkukang	Makassar
87	119.45385859300	-5.17040786800	Rappocini	Makassar
88	119.44774939300	-5.16832884900	Rappocini	Makassar
89	119.42872956400	-5.16272677400	Rappocini	Makassar
90	119.46476397300	-5.12096515400	Tallo	Makassar
91	119.44696446500	-5.10370673700	Tallo	Makassar
92	119.47480805000	-5.09598994500	Tamalanrea	Makassar
93	119.50050767800	-5.09074604700	Tamalanrea	Makassar
94	119.49261533700	-5.08975045400	Tamalanrea	Makassar
95	119.41226507700	-5.18260596100	Tamalate	Makassar
96	119.39582025900	-5.17467704500	Tamalate	Makassar
97	119.42250088700	-5.16830440700	Tamalate	Makassar

98	119.40964917900	-5.11701923100	Ujung Tanah	Makassar
99	119.42170321200	-5.11189302500	Ujung Tanah	Makassar
100	119.09538689600	-5.03272928200	Ujung Tanah	Makassar
Pertanian Lahan Kering				
No	Longitude	Latitude	Kecamatan	Kota/Kabupaten
1	119.50255744600	-5.32111074800	Bajeng	Gowa
2	119.42835847100	-5.22940772400	Barombong	Gowa
3	119.51536187600	-5.26580001800	Bontomarannu	Gowa
4	119.57391423900	-5.26468934800	Bontomarannu	Gowa
5	119.52777413000	-5.26295406200	Bontomarannu	Gowa
6	119.52989489300	-5.24198378500	Bontomarannu	Gowa
7	119.45406531900	-5.33929607100	Bontonompo	Gowa
8	119.43747139500	-5.38471315300	Bontonompo Selatan	Gowa
9	119.73922362100	-5.28495489900	Manuju	Gowa
10	119.66162326200	-5.28443867500	Manuju	Gowa
11	119.64474355900	-5.28310517500	Manuju	Gowa
12	119.65019265500	-5.27886671700	Manuju	Gowa
13	119.69496823500	-5.27724775800	Manuju	Gowa
14	119.71799216900	-5.27667392100	Manuju	Gowa
15	119.61240044300	-5.27570448100	Manuju	Gowa
16	119.51290089900	-5.28372875200	Palangga	Gowa
17	119.49409240800	-5.24411825300	Palangga	Gowa
18	119.63847555100	-5.20675345200	Parangloe	Gowa
19	119.64119233700	-5.20238240300	Parangloe	Gowa
20	119.64474424800	-5.19813336800	Parangloe	Gowa
21	119.61702340000	-5.19039592600	Parangloe	Gowa
22	119.59952279600	-5.18548548400	Parangloe	Gowa
23	119.60712775600	-5.18099765500	Parangloe	Gowa
24	119.59799508900	-5.17755926400	Parangloe	Gowa
25	119.53966519600	-5.21964724200	Pattallassang	Gowa
26	119.55202423700	-5.21817975400	Pattallassang	Gowa
27	119.54654666800	-5.20778592600	Pattallassang	Gowa
28	119.53215465800	-5.18347859100	Pattallassang	Gowa
29	119.56331463900	-5.17779458200	Pattallassang	Gowa
30	119.49203017900	-5.20548808800	Somba Opu	Gowa
31	119.49749031900	-5.07158823100	Biringkanaya	Makassar
32	119.49413673400	-5.16222758400	Manggala	Makassar
33	119.48178758500	-5.08604562000	Tamalanrea	Makassar
34	119.66204605700	-4.96387924700	Bantimurung	Maros
35	119.64638734500	-4.96318857500	Bantimurung	Maros
36	119.64451175000	-4.94512684000	Bantimurung	Maros
37	119.62558876100	-4.92603930300	Bantimurung	Maros
38	119.61602482800	-4.91470917400	Bontoa	Maros
39	119.79881971000	-4.98545046300	Cenrana	Maros
40	119.79462357300	-4.97778959300	Cenrana	Maros
41	119.80387629600	-4.96623662300	Cenrana	Maros
42	119.80103096100	-4.96582370200	Cenrana	Maros
43	119.79921094300	-4.96099473300	Cenrana	Maros
44	119.80814322700	-4.95408888500	Cenrana	Maros
45	119.54656897400	-5.08659372500	Mandai	Maros

46	119.55224564200	-5.08130007200	Mandai	Maros
47	119.57221740000	-5.07150938100	Mandai	Maros
48	119.57376910900	-5.06965759400	Mandai	Maros
49	119.57644497800	-5.06705915000	Mandai	Maros
50	119.58374647000	-5.06407679700	Mandai	Maros
51	119.56556781500	-5.00741422700	Maros Baru	Maros
52	119.52246463100	-5.05564202700	Marusu	Maros
53	119.53253883100	-5.05037624800	Marusu	Maros
54	119.50855186100	-5.03464245400	Marusu	Maros
55	119.57118208900	-5.14174473500	Moncongloe	Maros
56	119.54651160300	-5.13867709400	Moncongloe	Maros
57	119.58297292500	-5.13849892700	Moncongloe	Maros
58	119.55774862800	-5.13713091700	Moncongloe	Maros
59	119.57171217700	-5.13561234600	Moncongloe	Maros
60	119.55431358100	-5.13043744300	Moncongloe	Maros
61	119.71171391000	-5.04639973800	Simbang	Maros
62	119.61751151000	-5.04529569400	Simbang	Maros
63	119.67525674200	-5.04446300300	Simbang	Maros
64	119.69124488000	-5.04025421900	Simbang	Maros
65	119.66838522300	-5.02747493000	Simbang	Maros
66	119.64341322700	-5.09651617900	Tanralili	Maros
67	119.65713224000	-5.09099946300	Tanralili	Maros
68	119.65654067800	-5.08875428600	Tanralili	Maros
69	119.64432463300	-5.08089702000	Tanralili	Maros
70	119.63087177400	-5.08069262400	Tanralili	Maros
71	119.67149370700	-5.12722927700	Tompobulu	Maros
72	119.68792491000	-5.12713471400	Tompobulu	Maros
73	119.75446764000	-5.12267197800	Tompobulu	Maros
74	119.74475332100	-5.11054024700	Tompobulu	Maros
75	119.71305000800	-5.10482494300	Tompobulu	Maros
76	119.69190504100	-5.09933653000	Tompobulu	Maros
77	119.71434406700	-5.08862585100	Tompobulu	Maros
78	119.71166127900	-5.08736601800	Tompobulu	Maros
79	119.36837480200	-5.35695869400	Galesong Selatan	Takalar
80	119.39145978100	-5.35666686800	Galesong Selatan	Takalar
81	119.46497029100	-5.54887231300	Mangarabombang	Takalar
82	119.45956328300	-5.54618974600	Mangarabombang	Takalar
83	119.48014017000	-5.54536032500	Mangarabombang	Takalar
84	119.46919114200	-5.53420655600	Mangarabombang	Takalar
85	119.47487784100	-5.53100805500	Mangarabombang	Takalar
86	119.43709926400	-5.52098189700	Mangarabombang	Takalar
87	119.49082684000	-5.51675942400	Mangarabombang	Takalar
88	119.29360835900	-5.50225669200	Mappakasunggu	Takalar
89	119.28726091700	-5.46175340100	Mappakasunggu	Takalar
90	119.55097445700	-5.43530204900	Polombangkeng Selatan	Takalar
91	119.50662370800	-5.41225315300	Polombangkeng Selatan	Takalar
92	119.50646234600	-5.39796473300	Polombangkeng Selatan	Takalar
93	119.53979504200	-5.34038419300	Polombangkeng Utara	Takalar
94	119.54620680700	-5.33872599700	Polombangkeng Utara	Takalar
95	119.58427593200	-5.33825178600	Polombangkeng Utara	Takalar

96	119.46467168300	-5.32436836300	Polombangkeng Utara	Takalar
97	119.56029612600	-5.32284263800	Polombangkeng Utara	Takalar
98	119.56297982200	-5.32042373500	Polombangkeng Utara	Takalar
99	119.55974032400	-5.30672131800	Polombangkeng Utara	Takalar
100	119.40274430200	-5.41720682100	Sanrobone	Takalar
Hutan				
No	Longitude	Latitude	Kecamatan	Kota/Kabupaten
1	119.54006583000	-5.29096918200	Bontomarannu	Gowa
2	119.71992092300	-5.29299557600	Manuju	Gowa
3	119.71090385100	-5.28864521100	Manuju	Gowa
4	119.72401020600	-5.28809135200	Manuju	Gowa
5	119.70500129800	-5.28436201000	Manuju	Gowa
6	119.68288364900	-5.27919245100	Manuju	Gowa
7	119.69853479900	-5.27777883900	Manuju	Gowa
8	119.67584857600	-5.27353372000	Manuju	Gowa
9	119.71708355400	-5.19710244100	Parangloe	Gowa
10	119.69711445500	-5.19331625500	Parangloe	Gowa
11	119.65941068900	-5.19327481300	Parangloe	Gowa
12	119.68778252800	-5.19298730500	Parangloe	Gowa
13	119.71232298500	-5.19190384400	Parangloe	Gowa
14	119.74137940000	-5.18924254300	Parangloe	Gowa
15	119.74281466700	-5.18879818700	Parangloe	Gowa
16	119.70471752200	-5.18756942300	Parangloe	Gowa
17	119.71660253100	-5.18633537200	Parangloe	Gowa
18	119.64450736700	-5.18485416300	Parangloe	Gowa
19	119.62401436400	-5.18188094900	Parangloe	Gowa
20	119.69379566300	-5.17538460900	Parangloe	Gowa
21	119.62500758600	-5.17534969100	Parangloe	Gowa
22	119.61552511200	-5.16729662900	Parangloe	Gowa
23	119.58294041600	-5.23619852400	Pattallassang	Gowa
24	119.55561156400	-5.23567697600	Pattallassang	Gowa
25	119.72608837900	-4.97239163100	Bantimurung	Maros
26	119.74119521900	-4.96708654300	Bantimurung	Maros
27	119.69544643600	-4.96659016900	Bantimurung	Maros
28	119.75500998500	-4.96412041300	Bantimurung	Maros
29	119.75427971000	-4.96184068000	Bantimurung	Maros
30	119.75592026700	-4.95983094600	Bantimurung	Maros
31	119.74977965600	-4.95930220900	Bantimurung	Maros
32	119.74624566500	-4.95869423100	Bantimurung	Maros
33	119.75265350500	-4.95830508800	Bantimurung	Maros
34	119.75381581800	-4.95795309400	Bantimurung	Maros
35	119.76095374700	-4.95385325700	Bantimurung	Maros
36	119.67511559800	-4.95202717900	Bantimurung	Maros
37	119.63590552800	-4.94878097900	Bantimurung	Maros
38	119.72942866300	-4.94686705500	Bantimurung	Maros
39	119.71715342800	-4.94518901000	Bantimurung	Maros
40	119.71081033800	-4.94479499900	Bantimurung	Maros
41	119.60400980300	-4.91637842000	Bontoa	Maros
42	119.62027222900	-4.90875918100	Bontoa	Maros
43	119.81353843000	-5.04154544300	Cenrana	Maros

44	119.82540620500	-5.04011493700	Cenrana	Maros
45	119.83565163700	-5.03833973100	Cenrana	Maros
46	119.80631929300	-5.03787881300	Cenrana	Maros
47	119.82834147500	-5.03505654200	Cenrana	Maros
48	119.82543067600	-5.03386196100	Cenrana	Maros
49	119.73780206300	-5.03335378700	Cenrana	Maros
50	119.81744411100	-5.02568265700	Cenrana	Maros
51	119.73628982800	-5.02444628200	Cenrana	Maros
52	119.76432716100	-5.00569380300	Cenrana	Maros
53	119.76291179400	-5.00548087600	Cenrana	Maros
54	119.81888392300	-4.99797949900	Cenrana	Maros
55	119.80596955000	-4.99088042800	Cenrana	Maros
56	119.81800993200	-4.97596018700	Cenrana	Maros
57	119.76195716800	-4.96747346400	Cenrana	Maros
58	119.57558249900	-5.12549935300	Mandai	Maros
59	119.55906004500	-5.10106433000	Mandai	Maros
60	119.60238395900	-5.15720892400	Moncongloe	Maros
61	119.49628987000	-5.15202266100	Moncongloe	Maros
62	119.74146359600	-5.04497031300	Simbang	Maros
63	119.72625059200	-5.04489017000	Simbang	Maros
64	119.74325514900	-5.04405647100	Simbang	Maros
65	119.63540171700	-5.04054524000	Simbang	Maros
66	119.71271046600	-5.03688311500	Simbang	Maros
67	119.69326028800	-5.03107109800	Simbang	Maros
68	119.69915327300	-5.03022338000	Simbang	Maros
69	119.68490958000	-5.02745082100	Simbang	Maros
70	119.69757339200	-5.01767452100	Simbang	Maros
71	119.65224286100	-5.11488054300	Tanralili	Maros
72	119.79749972500	-5.20675041000	Tompobulu	Maros
73	119.79351995100	-5.11113623000	Tompobulu	Maros
74	119.77614474400	-5.10746410400	Tompobulu	Maros
75	119.81915766500	-5.10606513100	Tompobulu	Maros
76	119.81934512300	-5.10481254600	Tompobulu	Maros
77	119.81527549500	-5.10037198900	Tompobulu	Maros
78	119.70767642500	-5.09855205000	Tompobulu	Maros
79	119.78427251900	-5.09840967000	Tompobulu	Maros
80	119.80422285800	-5.09475122400	Tompobulu	Maros
81	119.79795283900	-5.09463531200	Tompobulu	Maros
82	119.73054684000	-5.09097708500	Tompobulu	Maros
83	119.73762383600	-5.08862306900	Tompobulu	Maros
84	119.67656457800	-5.08837599400	Tompobulu	Maros
85	119.73393292800	-5.08662674000	Tompobulu	Maros
86	119.72740444800	-5.08438600100	Tompobulu	Maros
87	119.66818222400	-5.08219353900	Tompobulu	Maros
88	119.29809663800	-5.47677397700	Mappakasunggu	Takalar
89	119.30072097800	-5.47428521600	Mappakasunggu	Takalar
90	119.29770178900	-5.47346133500	Mappakasunggu	Takalar
91	119.27685807700	-5.46272528100	Mappakasunggu	Takalar
92	119.27467996600	-5.45896824900	Mappakasunggu	Takalar
93	119.29882954600	-5.45862709500	Mappakasunggu	Takalar

94	119.27661683200	-5.45754986800	Mappakasunggu	Takalar
95	119.55961647100	-5.43331778000	Polombangkeng Selatan	Takalar
96	119.63457932500	-5.39482408300	Polombangkeng Utara	Takalar
97	119.61196898400	-5.38248911100	Polombangkeng Utara	Takalar
98	119.60119106300	-5.36973617400	Polombangkeng Utara	Takalar
99	119.59274552000	-5.36422142700	Polombangkeng Utara	Takalar
100	119.58558109800	-5.34247348500	Polombangkeng Utara	Takalar

## Semak Belukar

No	Longitude	Latitude	Kecamatan	Kota/Kabupaten
1	119.40058369700	-5.30443946500	Bajeng Barat	Gowa
2	119.53133288100	-5.27467891300	Bontomarannu	Gowa
3	119.42518872400	-5.43807177600	Bontonompo Selatan	Gowa
4	119.72822832500	-5.29685687000	Manuju	Gowa
5	119.73443653900	-5.28982458000	Manuju	Gowa
6	119.68089508800	-5.28580363800	Manuju	Gowa
7	119.76637994700	-5.28579859500	Manuju	Gowa
8	119.68576468900	-5.28406105300	Manuju	Gowa
9	119.66437715500	-5.27287406400	Manuju	Gowa
10	119.44456236700	-5.21103540900	Palangga	Gowa
11	119.69743317700	-5.19985624600	Parangloe	Gowa
12	119.70395322200	-5.19122013900	Parangloe	Gowa
13	119.62162958000	-5.17646458400	Parangloe	Gowa
14	119.68743694800	-5.17492352900	Parangloe	Gowa
15	119.59969445900	-5.17393586400	Parangloe	Gowa
16	119.59268683900	-5.17143999600	Parangloe	Gowa
17	119.57857508800	-5.24105256900	Pattallassang	Gowa
18	119.52787449600	-5.07524741800	Biringkanaya	Makassar
19	119.50540949400	-5.18013700300	Manggala	Makassar
20	119.50197488000	-5.17914662800	Manggala	Makassar
21	119.50650685600	-5.17871206600	Manggala	Makassar
22	119.45724129500	-5.08423641400	Tamalanrea	Makassar
23	119.72970481600	-4.94350167900	Bantimurung	Maros
24	119.62345041000	-4.94041604600	Bantimurung	Maros
25	119.64294721000	-4.93842825900	Bantimurung	Maros
26	119.64066327900	-4.93475636800	Bantimurung	Maros
27	119.66376657400	-4.93077987900	Bantimurung	Maros
28	119.63072847500	-4.92962841700	Bantimurung	Maros
29	119.62391744100	-4.92483013000	Bantimurung	Maros
30	119.62146261200	-4.92436158000	Bantimurung	Maros
31	119.61779960400	-4.92110301000	Bontoa	Maros
32	119.60414044500	-4.91083390500	Bontoa	Maros
33	119.61894843500	-4.90953102600	Bontoa	Maros
34	119.82779170800	-4.99525632400	Cenrana	Maros
35	119.74973517100	-4.99261045100	Cenrana	Maros
36	119.78407949000	-4.98920663900	Cenrana	Maros
37	119.81744003900	-4.97960760800	Cenrana	Maros
38	119.81206597800	-4.96766135900	Cenrana	Maros
39	119.82198348800	-4.96285065800	Cenrana	Maros
40	119.81008102600	-4.96259016600	Cenrana	Maros
41	119.82167934000	-4.96229163800	Cenrana	Maros

42	119.78745264600	-4.95963373300	Cenrana	Maros
43	119.52790663600	-4.97697875800	Lau	Maros
44	119.53993832900	-5.09367235500	Mandai	Maros
45	119.47780919200	-5.01688352000	Marusu	Maros
46	119.59046788900	-5.14646734600	Moncongloe	Maros
47	119.54030794300	-5.14454768100	Moncongloe	Maros
48	119.59314108700	-5.13759245600	Moncongloe	Maros
49	119.57542120700	-5.13462948700	Moncongloe	Maros
50	119.67353794200	-5.04486509500	Simbang	Maros
51	119.62834925500	-5.04406165700	Simbang	Maros
52	119.69377648400	-5.04287066300	Simbang	Maros
53	119.69323429100	-5.03304190100	Simbang	Maros
54	119.66744068700	-5.02478139400	Simbang	Maros
55	119.64399540100	-5.02121436000	Simbang	Maros
56	119.60023941100	-5.12970674100	Tanralili	Maros
57	119.59563368700	-5.12035980100	Tanralili	Maros
58	119.58154036400	-5.09768685800	Tanralili	Maros
59	119.60480140700	-5.08526162700	Tanralili	Maros
60	119.62265053200	-5.06038175800	Tanralili	Maros
61	119.84022233000	-5.14093746800	Tompobulu	Maros
62	119.83850536600	-5.13833600900	Tompobulu	Maros
63	119.80711296600	-5.13557897600	Tompobulu	Maros
64	119.86442068100	-5.13468046600	Tompobulu	Maros
65	119.81134124400	-5.12928292400	Tompobulu	Maros
66	119.67955932000	-5.12039760200	Tompobulu	Maros
67	119.79027791800	-5.10974054900	Tompobulu	Maros
68	119.73204100100	-5.10564551800	Tompobulu	Maros
69	119.74415096500	-5.09124992400	Tompobulu	Maros
70	119.67329393900	-5.09076178100	Tompobulu	Maros
71	119.71086638900	-5.08531242800	Tompobulu	Maros
72	119.36733384800	-5.31779706000	Galesong	Takalar
73	119.39811301500	-5.24166123400	Galesong Utara	Takalar
74	119.46122420900	-5.56238681000	Mangarabombang	Takalar
75	119.46490622400	-5.55996428300	Mangarabombang	Takalar
76	119.48834235600	-5.55915346300	Mangarabombang	Takalar
77	119.49841863800	-5.55599453600	Mangarabombang	Takalar
78	119.49714045200	-5.55162459000	Mangarabombang	Takalar
79	119.27556070800	-5.50687579800	Mappakasunggu	Takalar
80	119.28734242500	-5.50618701500	Mappakasunggu	Takalar
81	119.25011935000	-5.49901496700	Mappakasunggu	Takalar
82	119.27980055200	-5.49591454100	Mappakasunggu	Takalar
83	119.28100474500	-5.49349588000	Mappakasunggu	Takalar
84	119.26466115900	-5.46033779200	Mappakasunggu	Takalar
85	119.30217517700	-5.45738909800	Mappakasunggu	Takalar
86	119.23860527100	-5.44943639800	Mappakasunggu	Takalar
87	119.49317537600	-5.45866746100	Polombangkeng Selatan	Takalar
88	119.48452270300	-5.45805985900	Polombangkeng Selatan	Takalar
89	119.53975870100	-5.41835146300	Polombangkeng Selatan	Takalar
90	119.48801190400	-5.40950548100	Polombangkeng Selatan	Takalar
91	119.52211963000	-5.40487107600	Polombangkeng Selatan	Takalar



92	119.61477782900	-5.35991261200	Polombangkeng Utara	Takalar
93	119.58202934800	-5.35442031600	Polombangkeng Utara	Takalar
94	119.60043328600	-5.35294598000	Polombangkeng Utara	Takalar
95	119.61005763200	-5.35110924100	Polombangkeng Utara	Takalar
96	119.57185766800	-5.35086334500	Polombangkeng Utara	Takalar
97	119.51695506200	-5.34467484100	Polombangkeng Utara	Takalar
98	119.60165987200	-5.33855567700	Polombangkeng Utara	Takalar
99	119.59505245000	-5.33800636400	Polombangkeng Utara	Takalar
100	119.56204477100	-5.33190186600	Polombangkeng Utara	Takalar

## Badan Air

No	Longitude	Latitude	Kecamatan	Kota/Kabupaten
1	119.48858491000	-5.30218895500	Bajeng	Gowa
2	119.41352244900	-5.23917377400	Barombong	Gowa
3	119.42306428900	-5.19444435100	Barombong	Gowa
4	119.54966726900	-5.29509573500	Bontomarannu	Gowa
5	119.51504852400	-5.27554319500	Bontomarannu	Gowa
6	119.51636076900	-5.27492171400	Bontomarannu	Gowa
7	119.40978796600	-5.44806972200	Bontonompo Selatan	Gowa
8	119.42189337100	-5.43875717200	Bontonompo Selatan	Gowa
9	119.36652829400	-5.41773543400	Bontonompo Selatan	Gowa
10	119.37726402500	-5.40621461700	Bontonompo Selatan	Gowa
11	119.72299525800	-5.27805031300	Manuju	Gowa
12	119.70284683800	-5.26942785900	Manuju	Gowa
13	119.68610794900	-5.26487501600	Manuju	Gowa
14	119.49345767100	-5.28643644000	Palangga	Gowa
15	119.48466197400	-5.23892509400	Palangga	Gowa
16	119.66346963800	-5.25496530900	Parangloe	Gowa
17	119.60550238700	-5.25368656700	Parangloe	Gowa
18	119.62322170300	-5.25060252100	Parangloe	Gowa
19	119.61333987000	-5.24781660900	Parangloe	Gowa
20	119.52388081400	-5.20751632200	Pattallassang	Gowa
21	119.50544126800	-5.20255618900	Pattallassang	Gowa
22	119.49951148000	-5.22381743300	Somba Opu	Gowa
23	119.47642164400	-5.21719806800	Somba Opu	Gowa
24	119.50017035900	-5.21602347600	Somba Opu	Gowa
25	119.48119383500	-5.18926176100	Somba Opu	Gowa
26	119.65486111200	-5.01339105700	Bantimurung	Maros
27	119.60176487400	-4.95063507000	Bantimurung	Maros
28	119.59816560400	-4.94582442400	Bantimurung	Maros
29	119.60306109100	-4.94255991800	Bantimurung	Maros
30	119.54864035600	-4.91932039000	Bontoa	Maros
31	119.57203770200	-4.91850347900	Bontoa	Maros
32	119.54574465800	-4.91550214300	Bontoa	Maros
33	119.54140473300	-4.91523229800	Bontoa	Maros
34	119.59250367800	-4.91503113500	Bontoa	Maros
35	119.52365672300	-4.97432466900	Lau	Maros
36	119.53259275800	-4.97286233700	Lau	Maros
37	119.51933567300	-4.96778795300	Lau	Maros
38	119.53317618500	-4.96685114300	Lau	Maros
39	119.51220951100	-4.96473466900	Lau	Maros

40	119.55153646600	-5.10653013300	Mandai	Maros
41	119.55140711600	-5.10083565900	Mandai	Maros
42	119.55092155400	-5.04730142100	Mandai	Maros
43	119.55153231600	-5.04703102200	Mandai	Maros
44	119.54648320900	-5.02681773000	Maros Baru	Maros
45	119.54322353300	-5.02501529900	Maros Baru	Maros
46	119.53803232500	-5.02443707100	Maros Baru	Maros
47	119.54479105200	-5.01754134800	Maros Baru	Maros
48	119.51161700800	-5.00818526600	Marusu	Maros
49	119.47979185600	-5.00624464600	Marusu	Maros
50	119.48376738400	-4.99832423800	Marusu	Maros
51	119.48694988700	-4.99462802500	Marusu	Maros
52	119.48040602600	-4.99196101500	Marusu	Maros
53	119.52234212600	-5.16928653800	Moncongloe	Maros
54	119.59718841100	-5.09401810700	Tanralili	Maros
55	119.55638228200	-5.04153605100	Turikale	Maros
56	119.54962407100	-5.03948789300	Turikale	Maros
57	119.55098917700	-5.03378523700	Turikale	Maros
58	119.39444937100	-5.34884175800	Galesong	Takalar
59	119.36111662700	-5.34057974100	Galesong	Takalar
60	119.36114618000	-5.40030622100	Galesong Selatan	Takalar
61	119.36932164500	-5.35331096100	Galesong Selatan	Takalar
62	119.36121576600	-5.35079088500	Galesong Selatan	Takalar
63	119.46560430300	-5.58640204500	Mangarabombang	Takalar
64	119.43573086600	-5.53929924100	Mangarabombang	Takalar
65	119.44944471500	-5.52878673100	Mangarabombang	Takalar
66	119.44511824400	-5.47016736900	Mangarabombang	Takalar
67	119.29257704200	-5.52644146300	Mappakasunggu	Takalar
68	119.27562993600	-5.51907357200	Mappakasunggu	Takalar
69	119.27636207300	-5.51580782100	Mappakasunggu	Takalar
70	119.27314348700	-5.51336133700	Mappakasunggu	Takalar
71	119.29747031800	-5.49809148000	Mappakasunggu	Takalar
72	119.44057588300	-5.45159715700	Pattalassang	Takalar
73	119.46264734900	-5.47468631800	Polombangkeng Selatan	Takalar
74	119.43456644200	-5.46659338900	Polombangkeng Selatan	Takalar
75	119.44780711700	-5.46602882300	Polombangkeng Selatan	Takalar
76	119.45539935400	-5.46251057200	Polombangkeng Selatan	Takalar
77	119.47441590800	-5.32453113100	Polombangkeng Utara	Takalar
78	119.51967282600	-5.31452546800	Polombangkeng Utara	Takalar
79	119.40593632500	-5.44475927300	Sanrobone	Takalar
80	119.39046822600	-5.44162736400	Sanrobone	Takalar
81	119.38634265500	-5.43781688700	Sanrobone	Takalar
82	119.36487492400	-5.41621027800	Sanrobone	Takalar
83	119.51408578300	-5.06862402700	Biringkanaya	Makassar
84	119.47683872800	-5.06206231900	Biringkanaya	Makassar
85	119.50162654200	-5.17576571400	Manggala	Makassar
86	119.47076767100	-5.17038864100	Manggala	Makassar
87	119.47219009600	-5.16632116300	Manggala	Makassar
88	119.46643386900	-5.13364408500	Panakkukang	Makassar
89	119.45421268300	-5.13187303800	Panakkukang	Makassar

90	119.45385859100	-5.12693963000	Panakkukang	Makassar
91	119.45881100800	-5.17083300900	Rappocini	Makassar
92	119.48865333700	-5.14041786000	Tamalanrea	Makassar
93	119.50868039500	-5.12937789600	Tamalanrea	Makassar
94	119.48192181800	-5.12318347900	Tamalanrea	Makassar
95	119.50140473400	-5.12177791100	Tamalanrea	Makassar
96	119.50053170400	-5.12081608700	Tamalanrea	Makassar
97	119.47840610700	-5.11656587600	Tamalanrea	Makassar
98	119.39294507900	-5.22602615400	Tamalate	Makassar
99	119.39294088600	-5.22551470900	Tamalate	Makassar
100	119.40679231100	-5.18294359500	Tamalate	Makassar

## Pertanian Lahan Basah

No	Longitude	Latitude	Kecamatan	Kota/Kabupaten
1	119.49140329100	-5.30873713700	Bajeng	Gowa
2	119.46069990400	-5.30619688900	Bajeng	Gowa
3	119.45499794000	-5.28416464000	Bajeng	Gowa
4	119.42570794700	-5.28332168700	Bajeng	Gowa
5	119.40098034400	-5.28676636900	Bajeng Barat	Gowa
6	119.39463107100	-5.28644030500	Bajeng Barat	Gowa
7	119.40472689800	-5.28194205100	Bajeng Barat	Gowa
8	119.43214053000	-5.22347497000	Barombong	Gowa
9	119.42586176200	-5.21302295600	Barombong	Gowa
10	119.41020907900	-5.20215651900	Barombong	Gowa
11	119.42017347000	-5.19870148200	Barombong	Gowa
12	119.51415008600	-5.23828861400	Bontomarannu	Gowa
13	119.51242363200	-5.23014904700	Bontomarannu	Gowa
14	119.51238449400	-5.22882436300	Bontomarannu	Gowa
15	119.52402780700	-5.22842646700	Bontomarannu	Gowa
16	119.44003480100	-5.33809173000	Bontonompo	Gowa
17	119.44665522500	-5.33769018900	Bontonompo	Gowa
18	119.43221641400	-5.33296394200	Bontonompo	Gowa
19	119.44265021400	-5.32795273800	Bontonompo	Gowa
20	119.37384123100	-5.39954447300	Bontonompo Selatan	Gowa
21	119.38631826700	-5.39790947900	Bontonompo Selatan	Gowa
22	119.41848371100	-5.38729210300	Bontonompo Selatan	Gowa
23	119.41687861000	-5.38259825000	Bontonompo Selatan	Gowa
24	119.59466506500	-5.29009741600	Manuju	Gowa
25	119.59143132200	-5.29001339800	Manuju	Gowa
26	119.45251302500	-5.25050790300	Palangga	Gowa
27	119.47025649900	-5.24479062500	Palangga	Gowa
28	119.47160999500	-5.23086800000	Palangga	Gowa
29	119.72679478300	-5.19786185400	Parangloe	Gowa
30	119.61116044900	-5.19289176700	Parangloe	Gowa
31	119.51479851700	-5.19886397700	Pattalassang	Gowa
32	119.57297740100	-5.19440235800	Pattalassang	Gowa
33	119.51972881600	-5.19437642100	Pattalassang	Gowa
34	119.53541410800	-5.18530237900	Pattalassang	Gowa
35	119.50372678500	-5.19391616200	Somba Opu	Gowa
36	119.50780665200	-5.18432377700	Manggala	Makassar
37	119.49751559400	-5.09588856600	Tamalanrea	Makassar

38	119.40614232400	-5.20774567400	Tamalate	Makassar
39	119.61476323100	-4.96224719600	Bantimurung	Maros
40	119.61049920900	-4.95881882000	Bantimurung	Maros
41	119.63673167500	-4.95710417900	Bantimurung	Maros
42	119.60709151100	-4.95297687500	Bantimurung	Maros
43	119.58577582900	-4.90973403800	Bontoa	Maros
44	119.60407060800	-4.90288652400	Bontoa	Maros
45	119.61499490300	-4.89596386700	Bontoa	Maros
46	119.76912857600	-5.00851961400	Cenrana	Maros
47	119.58869997800	-4.95874110900	Lau	Maros
48	119.57678697300	-4.94862602900	Lau	Maros
49	119.57122769400	-4.94693975500	Lau	Maros
50	119.58158800700	-4.94173485000	Lau	Maros
51	119.53721344100	-5.07605894500	Mandai	Maros
52	119.57417339200	-5.06811708800	Mandai	Maros
53	119.57089563900	-5.05437746200	Mandai	Maros
54	119.54161762500	-5.04868946800	Mandai	Maros
55	119.55377600400	-4.99860744200	Maros Baru	Maros
56	119.51522130200	-5.02871575300	Marusu	Maros
57	119.52517738100	-5.01903004400	Marusu	Maros
58	119.52064571400	-5.01642726500	Marusu	Maros
59	119.54178062300	-5.14810386700	Moncongloe	Maros
60	119.54484919800	-5.13486006000	Moncongloe	Maros
61	119.64696099200	-5.02468285500	Simbang	Maros
62	119.64978994300	-5.02268198500	Simbang	Maros
63	119.63079345000	-5.01854458500	Simbang	Maros
64	119.64639292800	-5.01546986900	Simbang	Maros
65	119.57104839600	-5.10907382800	Tanralili	Maros
66	119.58363997900	-5.09687417300	Tanralili	Maros
67	119.70504366900	-5.13031994000	Tompobulu	Maros
68	119.64524825400	-5.07494061600	Tompobulu	Maros
69	119.56952656200	-5.01822226500	Turikale	Maros
70	119.56634513800	-5.01778803000	Turikale	Maros
71	119.57435275300	-5.00274558700	Turikale	Maros
72	119.39791372900	-5.32779560600	Galesong	Takalar
73	119.38796244800	-5.32438958900	Galesong	Takalar
74	119.38364874900	-5.32069690600	Galesong	Takalar
75	119.36757743300	-5.38811938000	Galesong Selatan	Takalar
76	119.37827656200	-5.37292080700	Galesong Selatan	Takalar
77	119.36411555800	-5.35281025000	Galesong Selatan	Takalar
78	119.39113040000	-5.25427289300	Galesong Utara	Takalar
79	119.40259098900	-5.24086475100	Galesong Utara	Takalar
80	119.38589824000	-5.23921660700	Galesong Utara	Takalar
81	119.46271199000	-5.49449183200	Mangarabombang	Takalar
82	119.42915127200	-5.49312279200	Mangarabombang	Takalar
83	119.43481766200	-5.49178303400	Mangarabombang	Takalar
84	119.44181815800	-5.48524439500	Mangarabombang	Takalar
85	119.44074960700	-5.48303502600	Mangarabombang	Takalar
86	119.42201782600	-5.46413632000	Mappakasunggu	Takalar
87	119.44665387800	-5.44600616800	Pattalassang	Takalar

88	119.44644996000	-5.42965745700	Pattalassang	Takalar
89	119.44932118200	-5.42602557100	Pattalassang	Takalar
90	119.53282930400	-5.41310617400	Polombangkeng Selatan	Takalar
91	119.51102994600	-5.40882871200	Polombangkeng Selatan	Takalar
92	119.54710519800	-5.40720249000	Polombangkeng Selatan	Takalar
93	119.52381218100	-5.40170019000	Polombangkeng Selatan	Takalar
94	119.55120906100	-5.33297767500	Polombangkeng Utara	Takalar
95	119.56432569700	-5.33120744900	Polombangkeng Utara	Takalar
96	119.51667102400	-5.33057063200	Polombangkeng Utara	Takalar
97	119.51868124100	-5.32781368700	Polombangkeng Utara	Takalar
98	119.39941481800	-5.43389201300	Sanrobone	Takalar
99	119.41251591200	-5.42327264700	Sanrobone	Takalar
100	119.40720327200	-5.42278894800	Sanrobone	Takalar

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## Lampiran 9. Artikel



International Journal of  
*Geo-Information*



*Article*

## Predicting Land Cover Change in the Mamminasata Area, Indonesia, to Evaluate the Spatial Plan

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## Modelling land use/land cover changes prediction using multi-layer perceptron neural network (MLPNN): a case study in Makassar City, Indonesia


**Andi Muhammad Yasser Hakim , Sumbangan Baja , Dorothea Agnes Rampisela & Samsu Arif**

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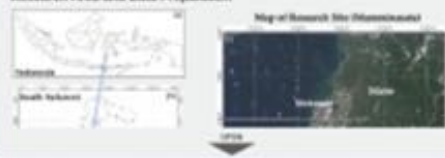
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# Land Cover Classification of Mamminasata, Indonesia using Landsat-7 ETM+: Reduction of the Influences of Cloud, Shadow, and Scan-gap



**Land Cover Classification of Mamminasata, Indonesia using Landsat-7 ETM+: Reduction of the Influences of Cloud, Shadow, and Scan-gap**  
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<p><b>Introduction</b></p> <p>Research related to land cover classification is very popular and has been done a lot both land cover for the actual year and for previous years. This related research is also supported by the availability/access, as well as its continuity and affordability of imagery data that can be obtained free of charge through several sites that provide low to medium resolution (Turner et al., 2022). However, image processing is often necessary prior to the land cover classification especially with the presence of striping black area as occurred in Landsat-7 ETM+ which causes a large gap (Zhu et al., 2022). It is due to the failure of the Scan Line Corrector (SLC) in Landsat-7 ETM+ in May 2003 which causes systematic data gaps on the captured imagery and obstructed the capacity to process spatially continuous fields (Pratiwi et al., 2022). The area covered by cloud and shadow is another obstacle in optical remote sensing. The cloud</p> <p style="text-align: center;">↓</p>	<p><b>Result and Discussion</b></p> <p><b>Composite Result</b></p> <p>Figure 2 shows the three composite images used for the classification in 2021, together with single-date images before the composite. Cloud, shadow, and scan gaps before the composite were reduced, and smooth and clear scenes were produced by the composite.</p>  <p style="text-align: center;">↓</p>
<p><b>Methods</b></p> <p><b>Research Area and Data Preparation</b></p>  <p style="text-align: center;">↓</p>	<p><b>Conclusion</b></p> <p>Remote sensing satellite imagery from the past to the present has greatly assisted researchers in conducting research activities related to natural and artificial spatial patterns, however, the availability of satellite image data to free with medium to low resolution requires its own challenges in terms of image processing. As an example, the scan-gaps which are contained in Landsat-7 ETM+ becomes an obstacle added with the presence of clouds and shadows. These are interfering with land cover classification.</p> <p>The simple image composite method in this study proved to be very helpful in overcoming obstacles in image processing. The results of land cover classification using the SLM classifier produced the precise land cover map with acceptable accuracy. Thus, the method used in this study is highly recommended to be applied by other researchers who work to utilize satellite images with obstacles occurred in our case.</p>

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## **DAFTAR RIWAYAT HIDUP**

### **A. DATA PRIBADI**

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### **B. PENDIDIKAN FORMAL**

1. Sekolah Dasar (SD) Negeri 16 Kota Parepare, Tamat Tahun 2006
2. Sekolah Menengah Pertama (SMP) Negeri 1 Kota Parepare, Tamat Tahun 2009
3. Sekolah Menengah Atas (SMA) Negeri 1 Kota Parepare, Tamat Tahun 2012
4. S1 Teknik Pengembangan Wilayah dan Kota Universitas Hasanuddin, Tamat Tahun 2016
5. S2 Perencanaan Pengembangan Wilayah Universitas Hasanuddin, Program PMDSU 2017–2018
6. Joint Research, SUIJI-JP-Dc Program at Kochi University 2019–2020

### **C. PUBLIKASI ILMIAH/JURNAL INTERNASIONAL**

1. Predicting Land Cover Change in the Mamminasata Area, Indonesia, to Evaluate the Spatial Plan
2. Modelling land use/land cover changes prediction using multi-layer perceptron neural network (MLPNN): a case study in Makassar City, Indonesia
3. Quantifying future environmental carrying capacity based on land use/land cover data and ecosystem services valuation: a case study in Makassar City, Indonesia

4. Spatial dynamic prediction of landuse / landcover change (case study: tamalanrea sub-district, makassar city)
5. Land Cover Classification of Mamminasata, Indonesia using Landsat-7 ETM+: Reduction of the Influences of Cloud, Shadow, and Scan-gap

#### **D. SEMINAR INTERNASIONAL**

1. The 4th International Conference of Indonesian Society for Remote Sensing (ICOIRS), Makassar City, Indonesia, 2018
2. The 12th International Symposium on City Planning and Environmental Management in Asian Countries (AURG), Seoul, South Korea, 2019
3. American Geophysical Union (AGU) Fall Meeting, America, 2020