CLIK: Multi-Model Prediction
(http://clik.apcc21.org)

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APCC APEC CLIMATE CENTER

Maritime Continent

JAVA, SUMATRA, KALIMATAN, SULAWES, TIMOR ….
Quite complicated and regionaly varying climate system.

Jakarta: 107° 36′ E, 6° 55′ S

Q. Rainfall near Jakarta in MJJ, 2016?

Let's produce MME forecast!

http://clik.apcc21.org

Customize your own prediction!

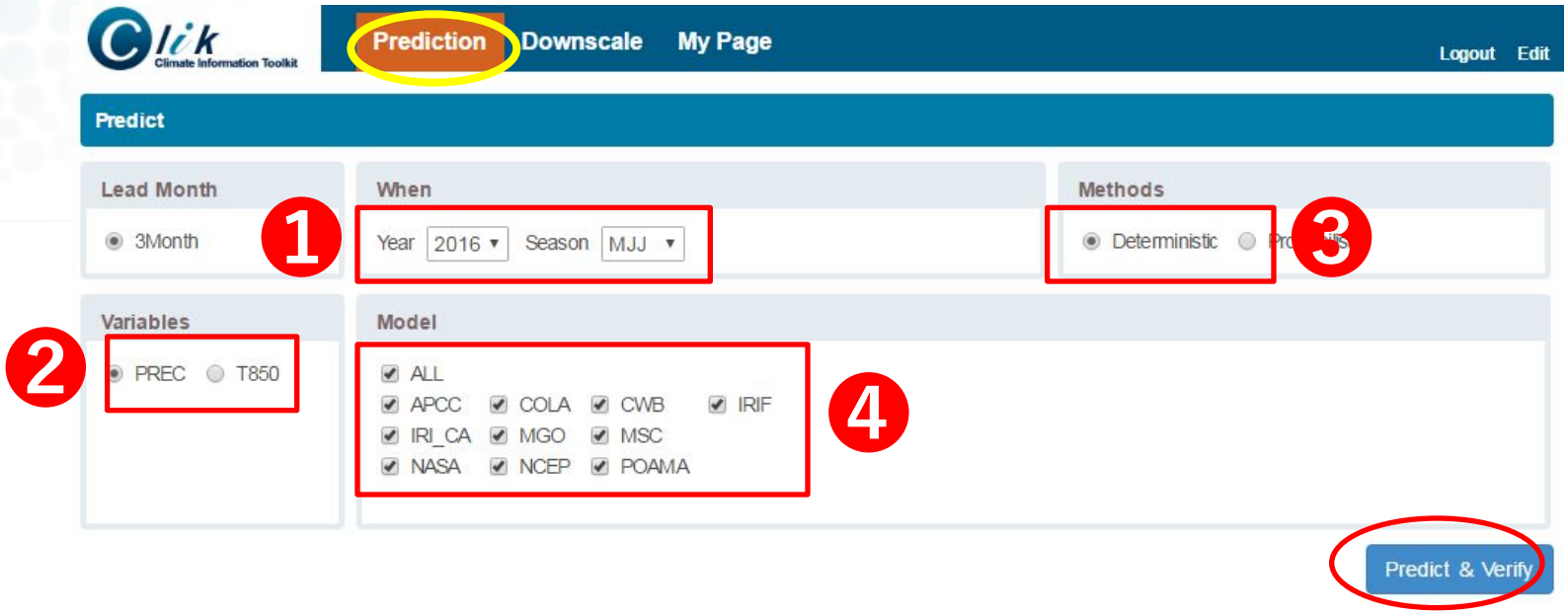
① WHEN(Year/Month)
: 3-month lead prediction data is updating every month

② Variables
: choose the target variable

③ Methods
: 1 deterministic (SCM) and 1 probabilistic (GAUS) MME methods

④ Models
: (multiply) select GCM models for a MME prediction

Customize your own prediction!



① **WHEN [2016/MJJ]**
: 3-month lead prediction data is updating every month

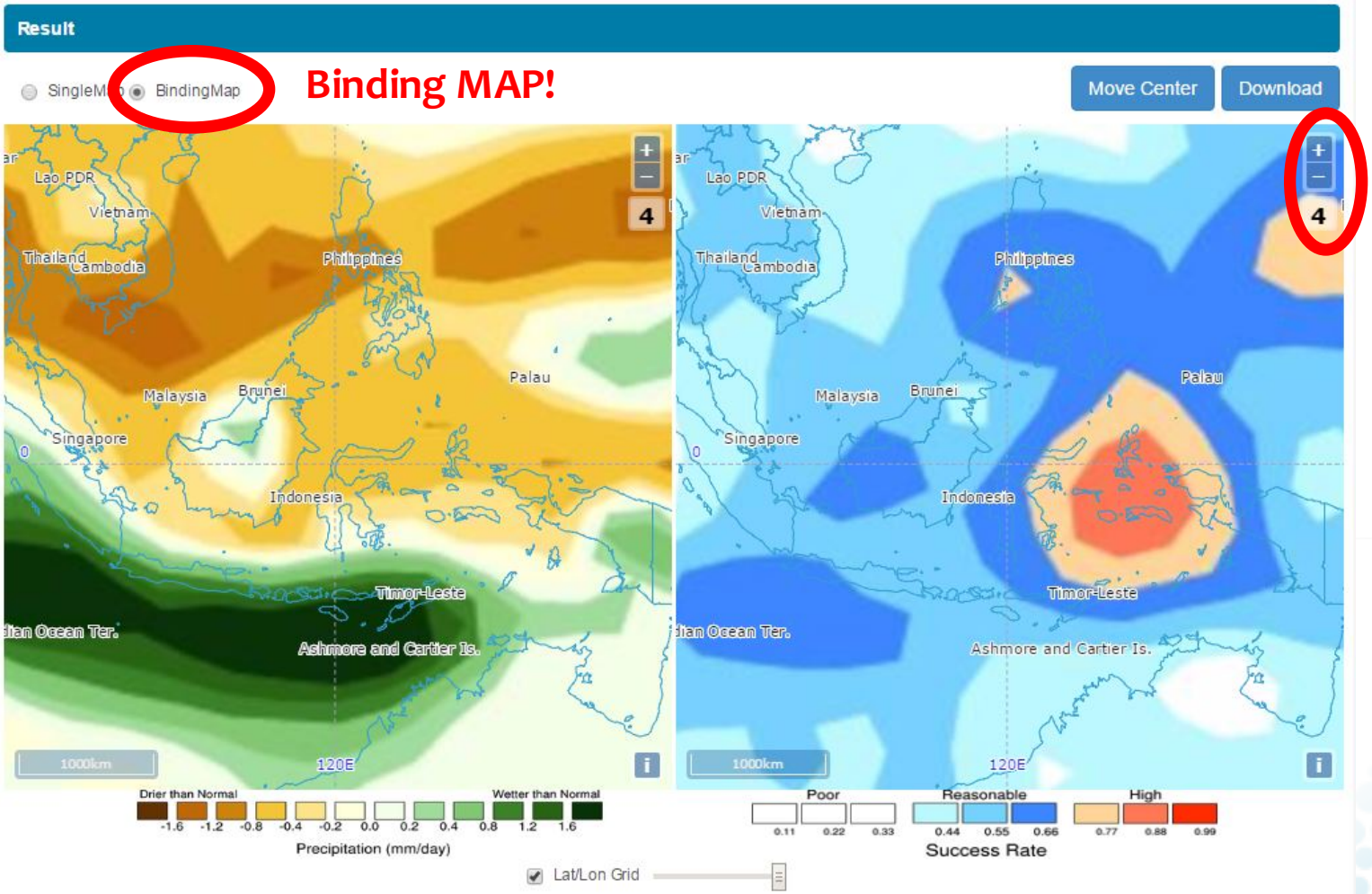
② **Variables [PREC]**
: choose the target variable

③ **Methods [Deterministic]**
: 1 deterministic (SCM) and 1 probabilistic (GAUS) MME methods

④ **Models [ALL]**
: (multiply) select GCM models for a MME prediction

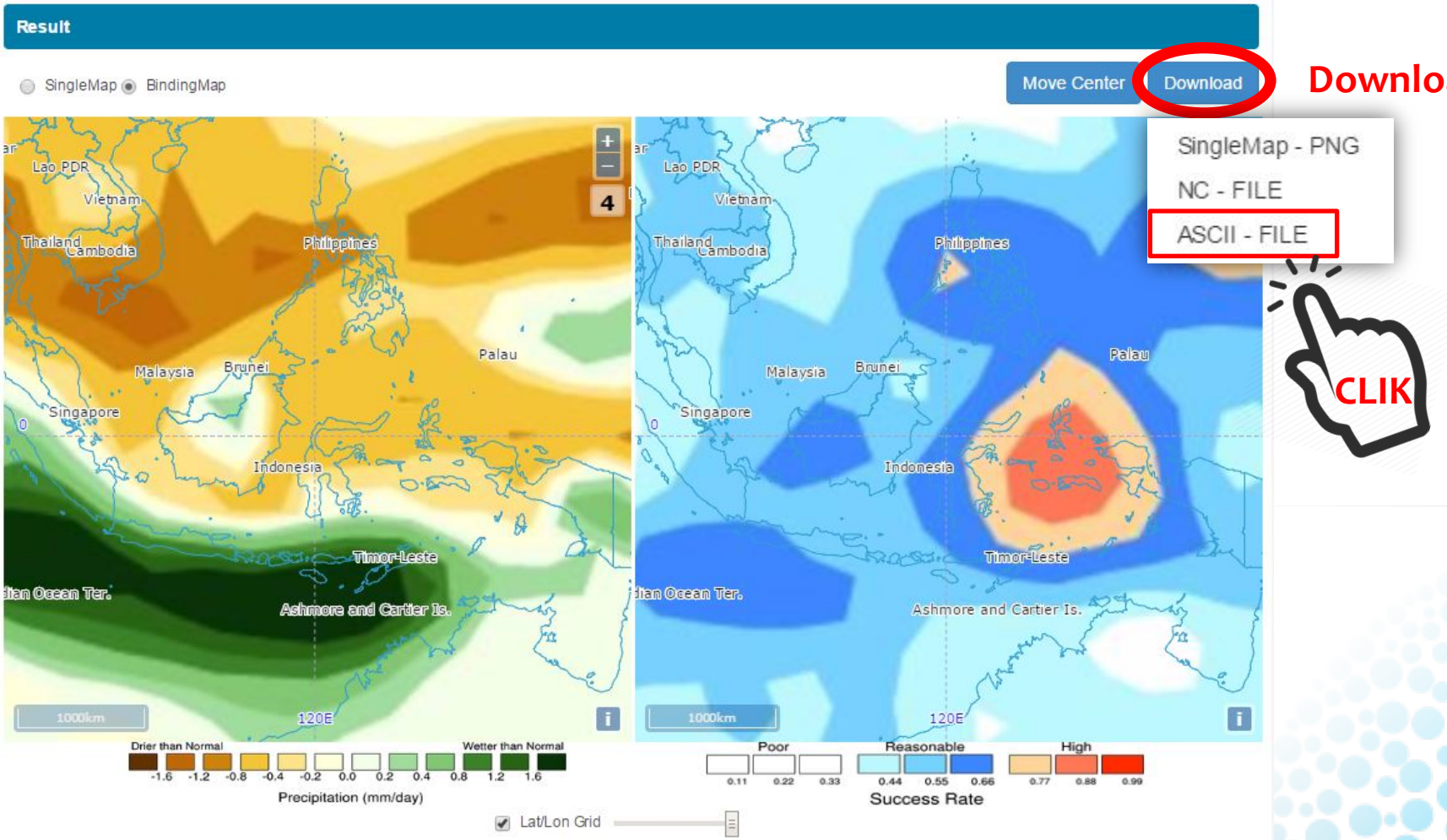
Resultant Map - DMME

Read the map near Jakarta!

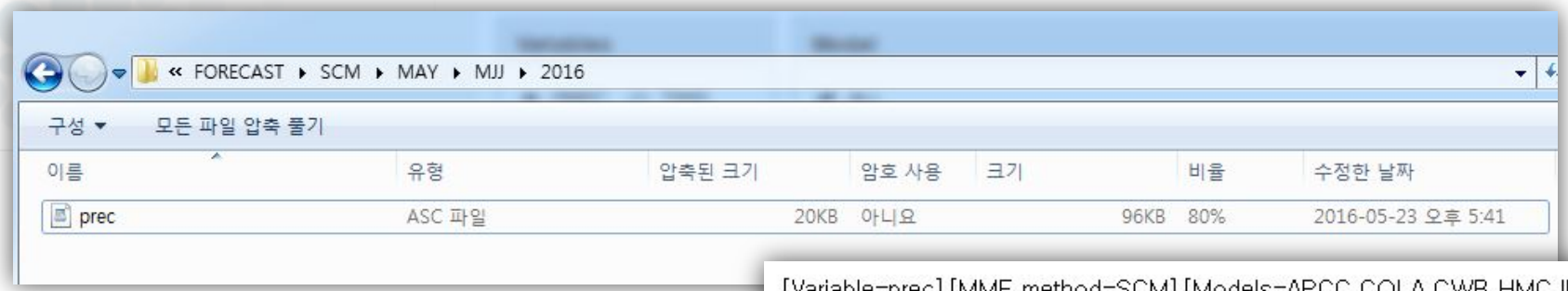


Resultant Map - DMME

Getting quantities!



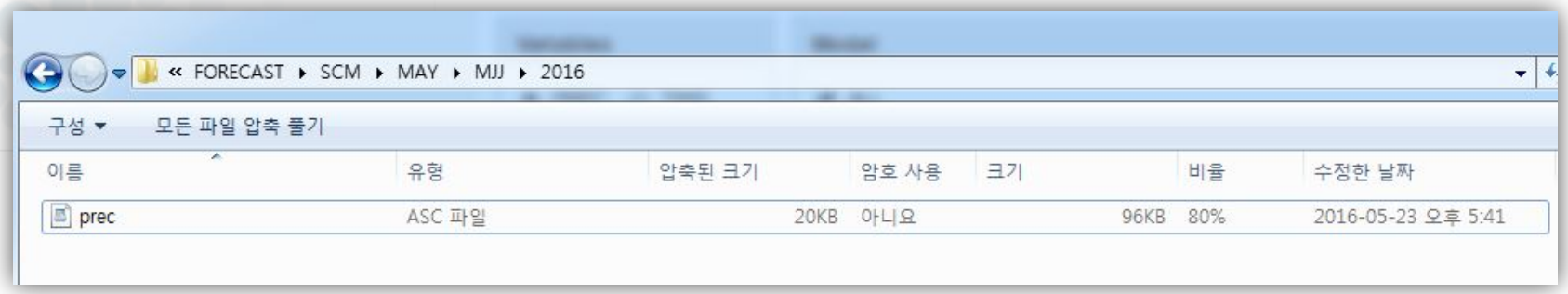
Getting quantities!



***Microsoft EXCEL* recommended!**

[Variable=prec] [MME method=SCM] [Models=APCC COLA CWB HMC IRIF IRI_CA MGO MSC NASA NCEP PNU POAMA] [Training Period=1983-2002]
[Longitude=], 0, 2.5, 5, 7.5, 10, 12.5, 15, 17.5, 20, 22.5, 25, 27.5, 30, 32.5, 35, 37.5, 40, 42.5, 45, 47.5, 50, 52.5, 55, 57.5, 60, 62.5, 65, 67.5, 70, 72.5, 75, 77.5, 80, 82.5, 85, 87.5, 90, 92.5, 95, 97.5, 100, 102.5, 105, 107.5, 110, 112.5, 115, 117.5, 120, 122.5, 125, 127.5, 130, 132.5, 135, 137.5, 140, 142.5, 145, 147.5, 150, 152.5, 155, 157.5, 160, 162.5, 165, 167.5, 170, 172.5, 175, 177.5, 180, 182.5, 185, 187.5, 190, 192.5, 195, 197.5, 200, 202.5, 205, 207.5, 210, 212.5, 215, 217.5, 220, 222.5, 225, 227.5, 230, 232.5, 235, 237.5, 240, 242.5, 245, 247.5, 250, 252.5, 255, 257.5, 260, 262.5, 265, 267.5, 270, 272.5, 275, 277.5, 280, 282.5, 285, 287.5, 290, 292.5, 295, 297.5, 300, 302.5, 305, 307.5, 310, 312.5, 315, 317.5, 320, 322.5, 325, 327.5, 330, 332.5, 335, 337.5, 340, 342.5, 345, 347.5, 350, 352.5, 355, 357.5
[time=2016MJJ] [lat=-90], -0.001, -0.001, -0.002, -0.002, -0.002, -0.002, -0.002, -0.002, -0.002, -0.002, -0.002, -0.002, -0.002, -0.002, -0.002, -0.001, -0.001, -0.001, -0.001, -0.001, -0.000, 0.000, 0.000, 0.000, 0.000, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.001, 0.002, 0.002, 0.002, 0.002, 0.002, 0.003, 0.003, 0.003, 0.003, 0.004, 0.004, 0.004, 0.004, 0.004, 0.004, 0.004, 0.004, 0.005, 0.004, 0.003, 0.003, 0.003, 0.002, 0.002, 0.002, 0.001, 0.000, -0.000, -0.001, -0.003, -0.004, -0.006, -0.007, -0.008, -0.010, -0.010, -0.011, -0.013, -0.014, -0.014, -0.014, -0.013, -0.013, -0.012, -0.011, -0.010, -0.009, -0.008, -0.006, -0.005, -0.004, -0.002, -0.002, 0.000, 0.002, 0.003, 0.005, 0.006, 0.007, 0.009, 0.009, 0.009, 0.010,

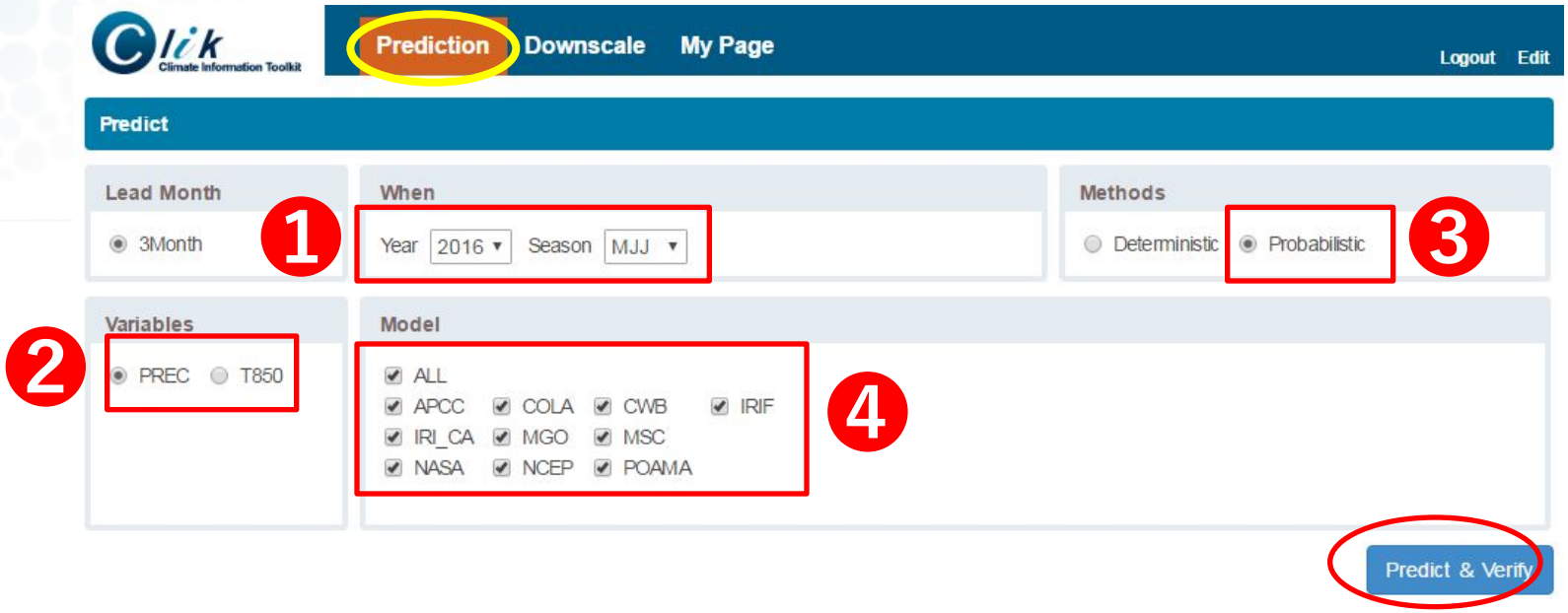
Getting quantities!



Near Jakarta (107° 36′ E, 6° 55′ S)?
(Longitude=107.5 , Latitude=-7.5)

	A	AL	AM	AN	AO	AP	AQ	AR	AS	AT	AU
1	[Longitude=]	90	92.5	95	97.5	100	102.5	105	107.5	110	112.5
26	[time=2016MJJ][lat=-30]	0.176	0.117	0.151	0.08	-0.003	-0.066	-0.105	-0.154	-0.184	-0.182
27	[time=2016MJJ][lat=-27.5]	0.171	0.138	0.124	0.029	-0.045	-0.059	-0.081	-0.119	-0.15	-0.117
28	[time=2016MJJ][lat=-25]	0.153	0.141	0.087	-0.014	-0.049	-0.08	-0.09	-0.102	-0.118	0.02
29	[time=2016MJJ][lat=-22.5]	0.091	0.099	0.061	0.01	-0.041	-0.084	-0.13	-0.139	-0.091	0.045
30	[time=2016MJJ][lat=-20]	0.104	0.105	0.061	0.025	0.003	-0.055	-0.049	0.007	0.064	0.161
31	[time=2016MJJ][lat=-17.5]	-0.08	-0.14	-0.162	-0.126	0.044	0.143	0.184	0.273	0.382	0.539
32	[time=2016MJJ][lat=-15]	-0.114	-0.124	-0.097	0.137	0.449	0.641	0.728	0.918	1.01	1.231
33	[time=2016MJJ][lat=-12.5]	0.167	0.382	0.603	0.897	1.07	1.149	1.222	1.364	1.518	1.82
34	[time=2016MJJ][lat=-10]	0.9	1.171	1.445	1.761	2.007	1.917	1.709	1.584	1.649	1.832
35	[time=2016MJJ][lat=-7.5]	1.222	1.409	1.65	2.054	2.215	2.052	1.498	0.947	0.788	0.79
36	[time=2016MJJ][lat=-5]	0.638	0.878	1.175	1.373	1.315	1.163	0.624	0.11	-0.186	-0.217
37	[time=2016MJJ][lat=-2.5]	0.097	0.215	0.523	0.646	0.875	0.414	0.109	-0.279	-0.312	-0.318
38	[time=2016MJJ][lat=0]	0.029	0.033	0.15	0.438	0.363	0.17	-0.316	-0.553	-0.23	0.144
39	[time=2016MJJ][lat=2.5]	0.035	0.013	0.087	0.141	0.143	-0.101	-0.398	-0.57	-0.302	0.361
40	[time=2016MJJ][lat=5]	-0.063	-0.109	0.135	-0.149	-0.214	-0.197	-0.711	-0.954	-0.725	-0.274
41	[time=2016MJJ][lat=7.5]	-0.468	-0.488	-0.452	-0.573	-0.699	-0.902	-1.118	-1.496	-1.346	-0.798

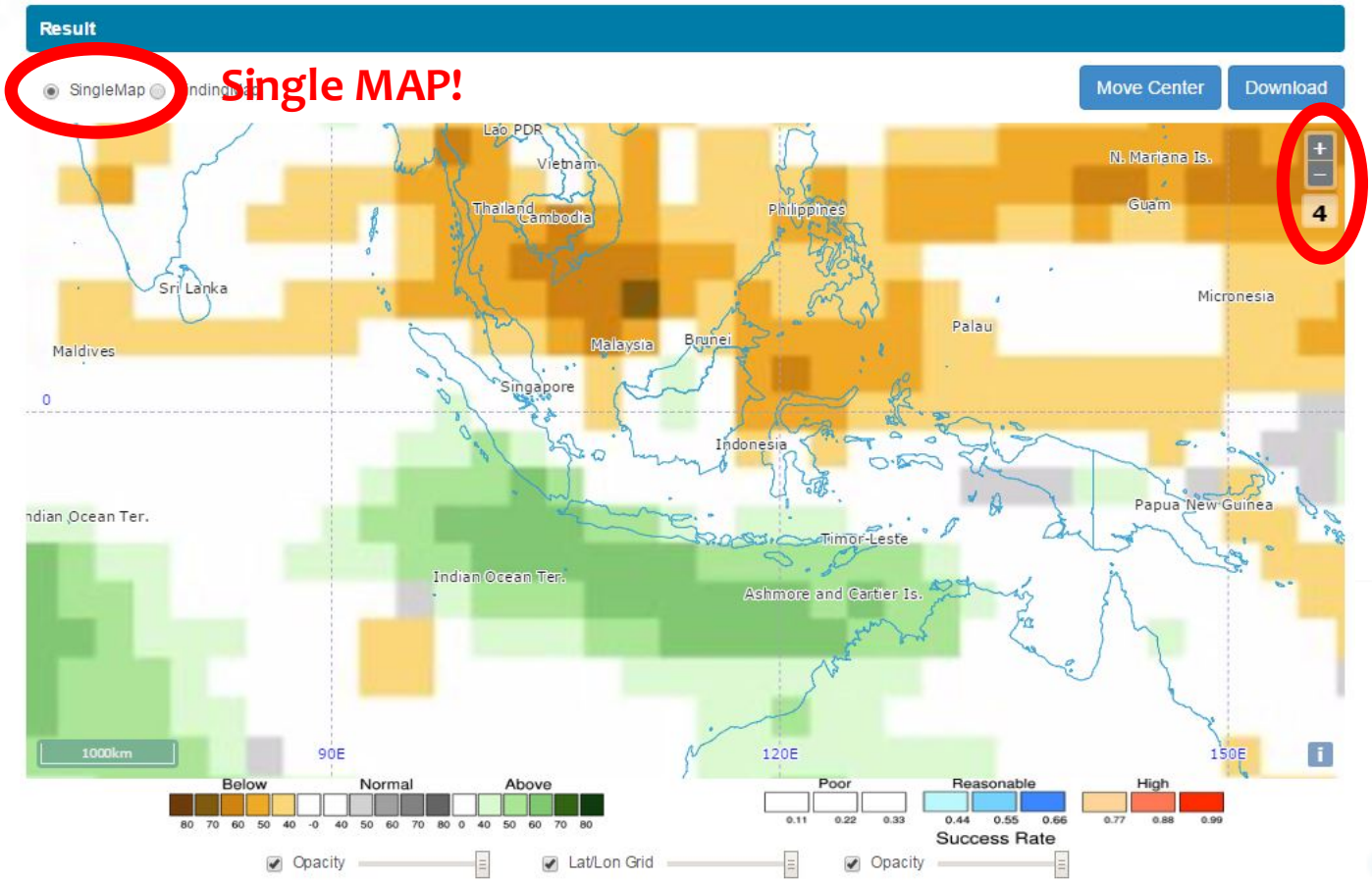
With a different MME method!



① **WHEN [2016/MJJ]**
: 3-month lead prediction data is updating every month
② **Variables [PREC]**
: choose the target variable
③ **Methods [Deterministic] → [Probabilistic]**
: 3 deterministic and 1 probabilistic MME methods
④ **Models [ALL]**
: (multiply) select GCM models for a MME prediction

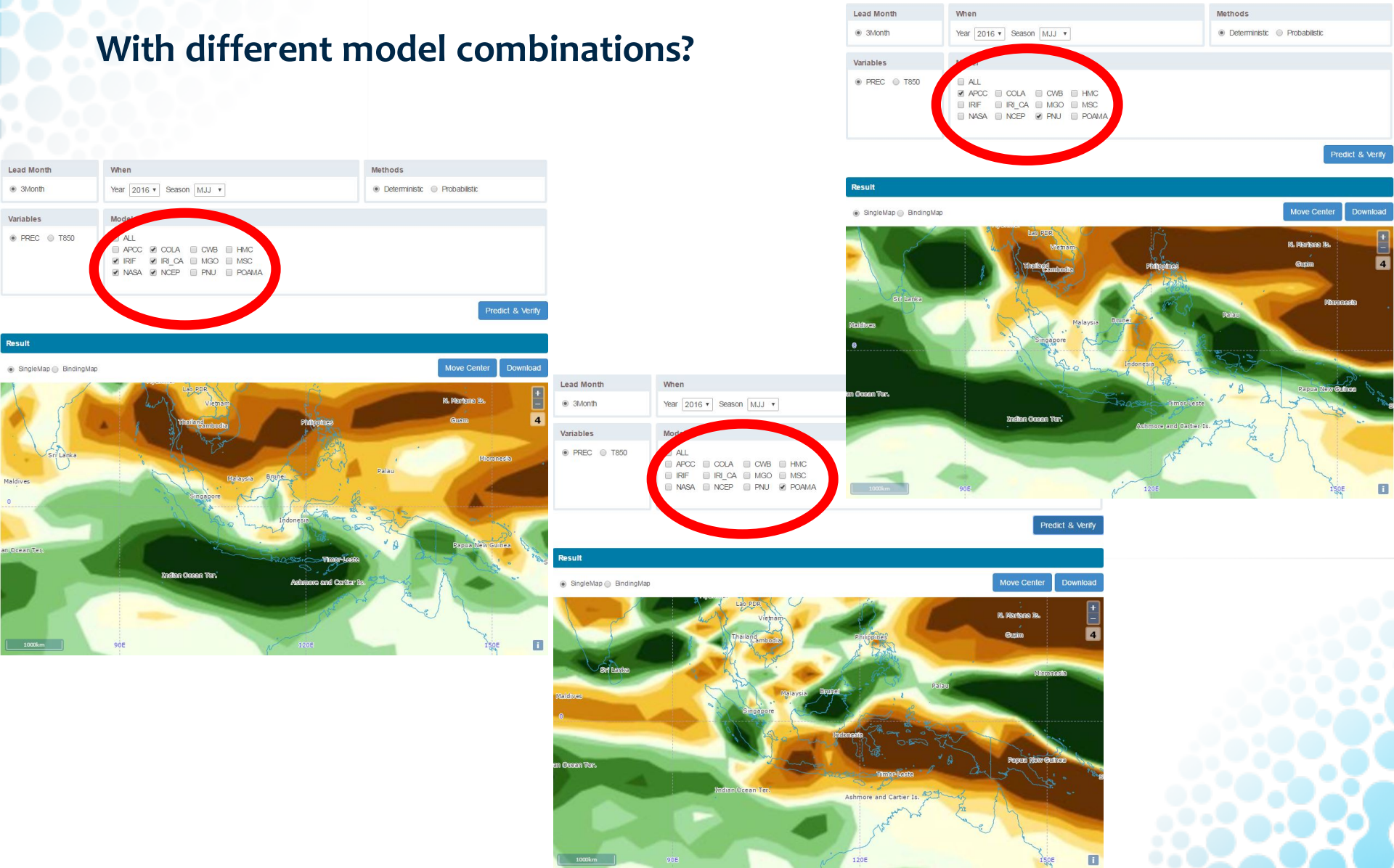
Resultant Map - PMME

Read the map near Jakarta!



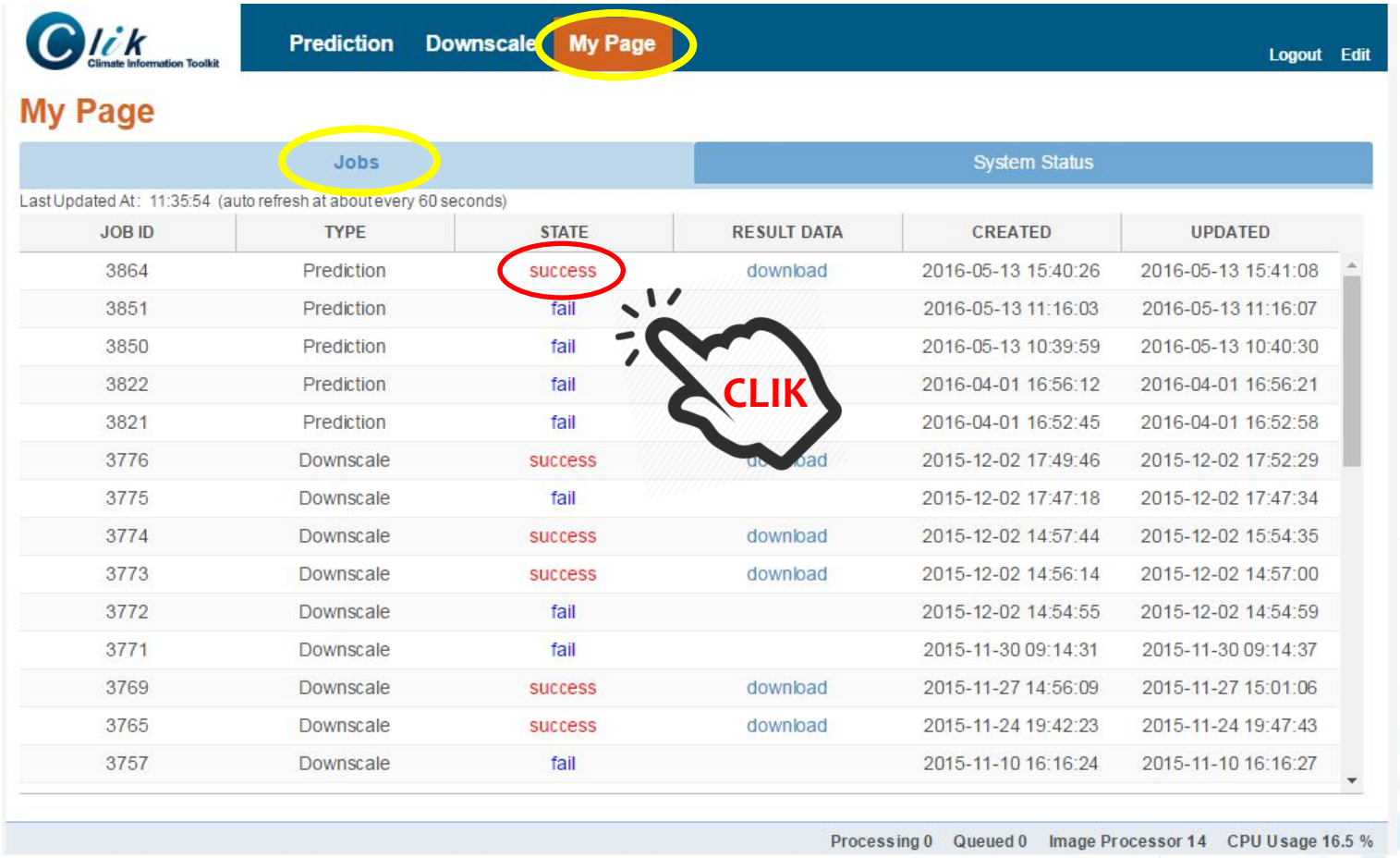
Prediction Uncertainty!

With different model combinations?



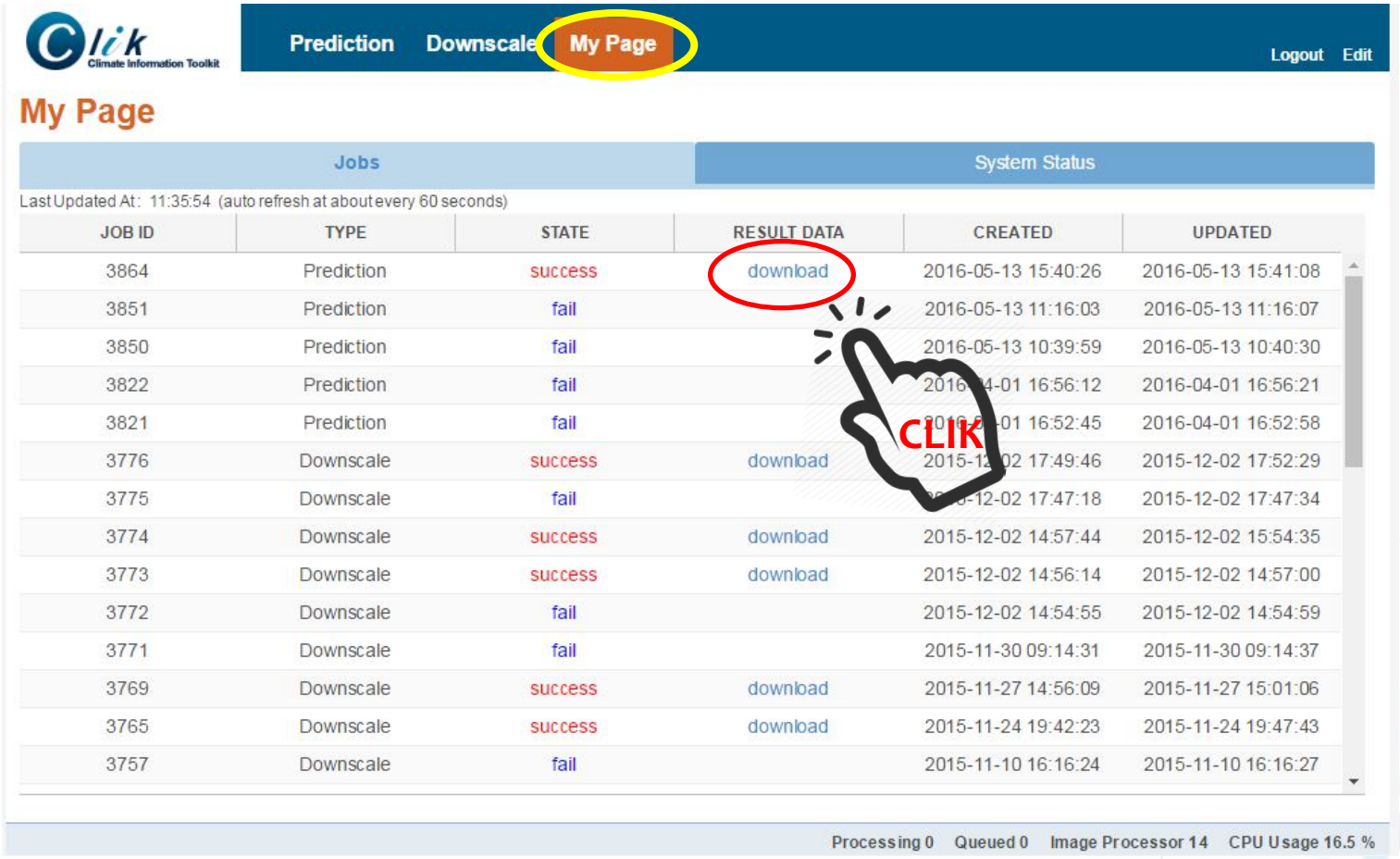
CLIK - My Page/Jobs

- ✓ List of jobs requested by yourself
- ✓ Figuring out the details of each job.



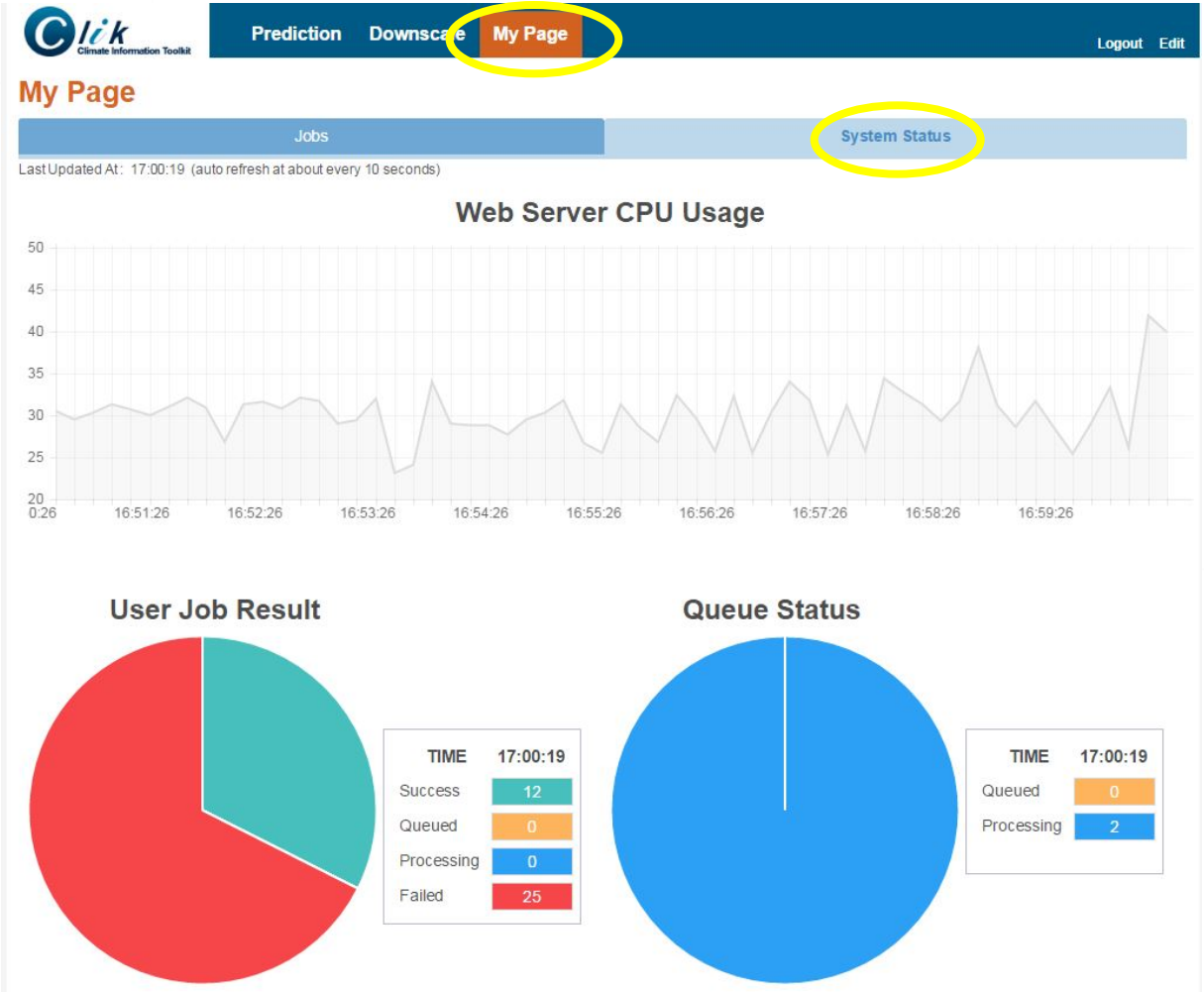
CLIK - My Page/Jobs

- ✓ What if you want to get quantities after completing predictions?



CLIK - My Page/System Status

- ✓ Current CPU usage & queued status
- ✓ Summary of user job results



Q. More or less rainfall near Jakarta in next three month **(JJA, 2016)**?

Exercise1

Produce the 2016 JJA forecast (PREC)

WHEN [2016/JJA]
Variables [PREC]
Methods [Deterministic]
Models [ALL]

→ Predict & Verify

0. Read the results map first!
1. Download ASCII-file.
2. Open the file (*Microsoft EXCEL* recommended).
3. Look over the table and read the value of forecasted PREC (anomaly) near Jakarta (Longitude=107.5 , Latitude=-7.5).

How much PREC?

Exercise1

Produce the 2016 JJA forecast (PREC)

WHEN [2016/JJA]
Variables [PREC]
Methods [Deterministic]
Models [ALL]

→ Predict & Verify

0. Read the results map first!
1. Download ASCII-file.
2. Open the file (*Microsoft EXCEL* recommended).
3. Look over the table and read the value of forecasted PREC (anomaly) near Jakarta (Longitude=107.5 , Latitude=-7.5).

How much PREC? **2.087**

Exercise2

Produce the 2016 JJA forecast (PREC)

WHEN [2016/JJA]
Variables [PREC]
Methods [Probabilistic]
Models [ALL]

→ Predict & Verify

0. Read the results map first!
1. Download ASCII-file.
2. Open the file (*Microsoft EXCEL* recommended).
3. Look over the table and read the value of forecasted PREC probability near Jakarta (Longitude=107.5 , Latitude=-7.5).

Probability in three tercile bins?

AN (lev=1)	NN(lev=2)	BN(lev=3)

Exercise3

Produce the 2016 JJA forecast (PREC)

WHEN [2016/JJA]
Variables [PREC]
Methods [Probabilistic]
Models [① ALL, ② NASA+NCEP+IRI_CA, ③ APCC+PNU, ④POAMA]

→ Predict & Verify

0. Read the results map first!
1. Download ASCII-file.
2. Open the file (Microsoft EXCEL recommended).
3. Look over the table and read the value of forecasted PREC probability near Jakarta (Longitude=107.5 , Latitude=-7.5).
4. Fill the below table (with above four model combinations).

Probability in three tercile bins?

	AN (lev=1)	NN (lev=2)	BN (lev=3)
ALL			
NASA+NCEP +IRI_CA			
APCC+PNU			
POAMA			


Thank you.