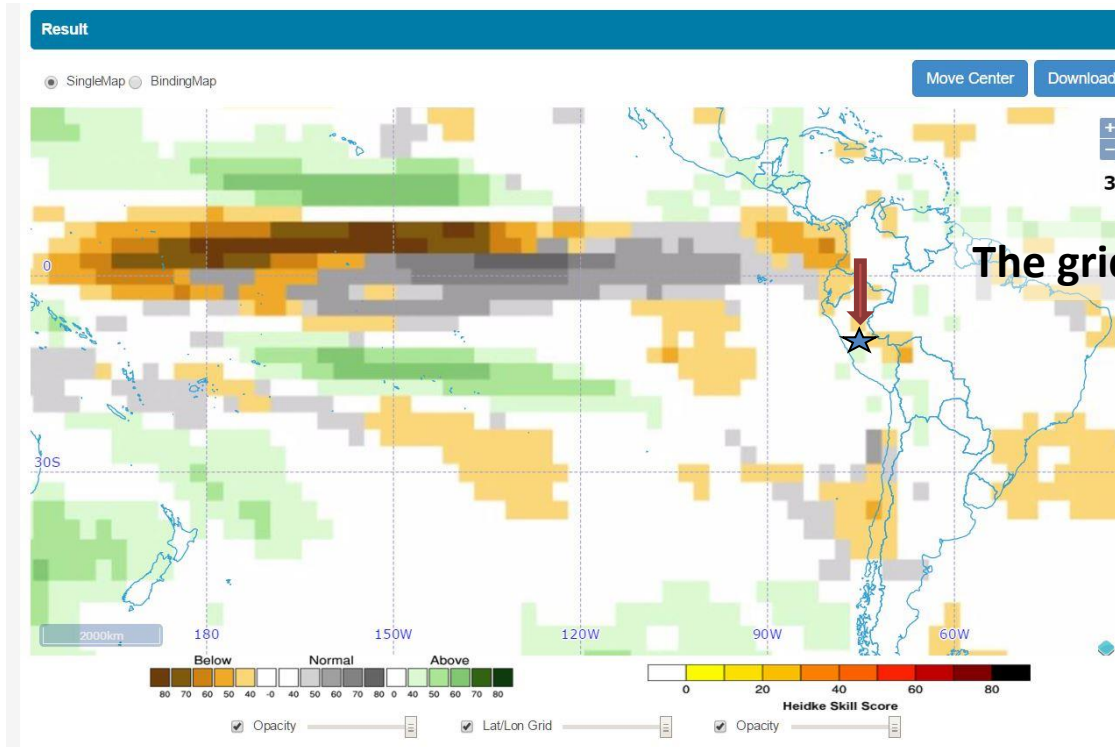


CLIK hands-on (PART III):
Data Processing for CLIK
(<http://clik.apcc21.org>)

Yoojin Kim

Dynamical Forecast

- seasonal prediction graphic by dynamical MME forecast system (CLIK)



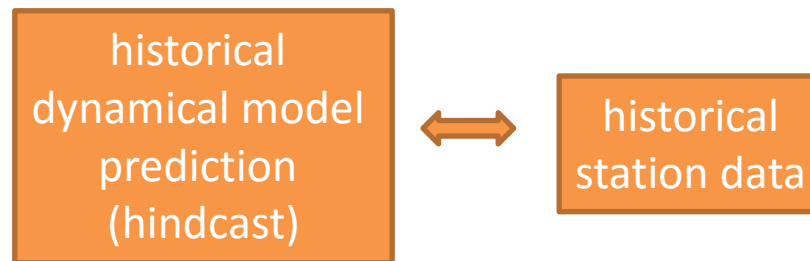
The grid size of the MME is 2.5° by 2.5°.

- What if you want to know a forecast information at a specific point?

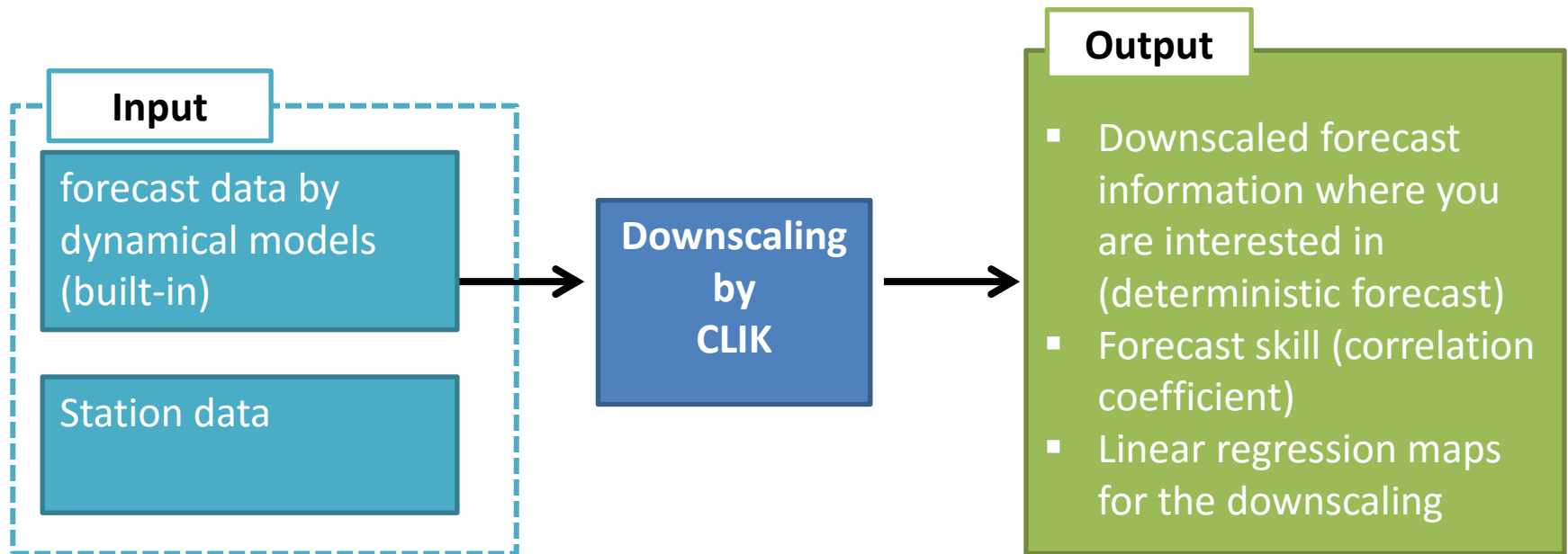
Post Processing, Downscaling

“Post-Processing of forecast data” CLIK provides “downscaling”

- Many approaches in downscaling (similar)
- CLIK uses the relationships between forecast (by dynamical models) and station data



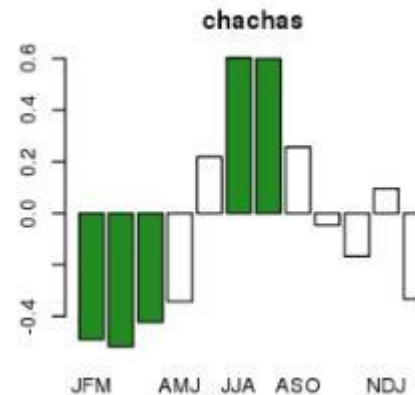
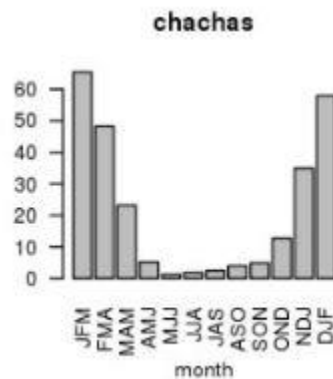
Downscaling by CLIK

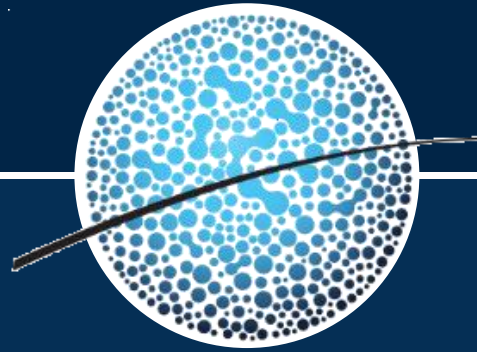


- **CLIK needs the information of the station for the downscale process.**
- **Data processing: Entering station data into the CLIK for customization**

Data Processing

- **In the part 3, Data processing:**
Making and uploading your station data into the CLIK system.
 - **In the part 4, Downscaling**
- ✓ **Target: Chachas JFM precipitation**





A. Preparing the station data

- **Use the example files (Chachas)**

- ✓ **After uploading, we'll try other station.**
- ✓ **In case the network is not good,**

Entering station data into CLIK

A. Preparing Input data

1. Input two files: **metadata**, **observation** data
 - a. metadata file contains information about station.
 - b. observation data file is the station data itself.
2. You can input data only for one country at a time.
3. Only input monthly mean data (currently)
4. Use Notepad!
5. Format: delimited by comma, space, tab, or colon
6. File naming : '*.txt'
 - 'Chachas_meta.txt' & 'Chachas_prcp.txt'

Entering station data into CLIK

A. Preparing Input data

1. Metadata file

The first line of this file should contain the following headers:

Name, Station_id, WMO_id, Latitude, Longitude, Undefined, Public

- **Name:** name of the station
- **Station_id:** unique id for the station (integer)
- **WMO_id:** WMO_id for station (integer, any number)
- **Latitude:** latitude for this station (float, for mapping)
- **Longitude:** longitude for this station (float, for mapping)
- **Undefined:** missing data (numeric)
- **Public:** true, if your data can be used by others
false, if your data can not be used by others

Entering station data into CLIK

A. Preparing Input data

1. Metadata file

The first line of this file should contain the following headers:

Name, Station_id, WMO_id, Latitude, Longitude, Undefined, Public

Let's make a metadata file.

Example: Chachas metadata

- Use Notepad.
- The filename is 'chachas_meta.txt'.

```
name      station_id  wmo_id  latitude  longitude  undefined  public
chachas  157312  0014   -15.499  -72.267  -999.9  TRUE
```

Entering station data into CLIK

A. Preparing Input data

2. Station data file

The first line of this file should contain the following headers:

Station_id, year, jan, feb, mar, apr, may, jun, jul, aug, sep, oct, nov, dec

Let's make a station data file.

Example:

- Use Notepad. Copy and past data from Exel to notepad in the specified format. (one year per row)
- The filename is 'chachas_prpc.txt'.

station_id	year	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
157312	1964	175.8	117.1	53.6	8.6	0	0	0	0	9	2.4	73.1	
157312	1965	4.5	93.2	17.7	7.8	0	0	0.8	0	13.3	3.4	0	3.8
157312	1966	10.4	61.1	23.4	0	15	0	0	0	13.3	8.8	9.6	
157312	1967	109.8	91.6	132.5	21.3	3	0.9	1.3	0	7	5.1	3.2	12.8
157312	1968	112	55.5	93.7	0	0.9	0.8	0	0	4.5	27.3	0	
157312	1969	66.1	57.2	60.6	6.7	0	0	0	0	0	10.6	30.9	
157312	1970	70.4	62.1	26	0	7.7	0	0.1	0.1	1	0	12	



Entering station data into CLIK

B. Station data upload module

A brief preview then explaining the detail

Entering station data into CLIK

B. Station data upload module

1. Click “Downscale”. This brings a page list currently available data sets.
2. Click “Create” to create a new data set.
3. Fill up two fields in the new entry page.
 - Name: a identifying name of the dataset
 - Description: describe your dataset
 - Click “Create Dataset”
 - You’ll see the new data set in the list.
4. Choose the new data set and click “Edit” button.

The screenshot displays the CLIK interface with the 'Downscale' tab selected. A table lists various datasets, including 'MCDW(Monthly Climatic Data for th...', 'GHCN', 'Aphrodite data interpolated to Mons...', 'Korea 60 Stations', and 'koreamean'. A 'Dataset base information' dialog box is open, showing fields for 'Name' and 'Description'. The 'Create' button in this dialog is circled in red. A hand cursor points to the 'Create' button in the dataset list. The 'Edit' button in the dataset list is also circled in red.

Dataset Name	Countries	Total Stations	Period(prec)	Period(temp)	Public
MCDW(Monthly Climatic Data for th...	The World	6463	1998 ~ 2014	1998 ~ 2014	
GHCN	GHCN	3707	1950 ~ 2009	N/A	
new		0	N/A	N/A	
Aphrodite data interpolated to Mons...	Afghanistan, Bangladesh, Brunei Da...	4918	1961 ~ 2004	N/A	
Korea 60 Stations	Korea, Republic of	60	1973 ~ 2008	1973 ~ 2006	PUBLIC
koreamean	Korea, Republic of	1	1973 ~ 2014	N/A	yoojin10

Entering station data into CLIK

B. Station data upload module

5. Check the 'Field Separator' and 'Country' for the metadata.
6. Upload the metadata file.
7. Check the 'Field Separator', 'Variable', 'Unit', and 'Country' for the station data.
8. Upload the station data file.
9. Click the Station line at the upper panel to see station data.
10. Click "Close".

Metadata

Station ID	Country	NAME	WMO ID	Latitude	Longitude	Undefined
10	Korea, Republic of	korprcp	1999200	37	127	-99

Field Separator: Comma(,) Space() Tab() Colon(:)

Country:

Station definition file (example): metadata.txt

Station Data

Year	Variable	Unit	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1973	PREC	mm/month	71.1	21.2	9.1	131.2	145.6	95.1	129.8	145.1	152	74.1	28.4	12
1974	PREC	mm/month	22.8	35.2	48.9	163.8	200.6	109.5	392	187.9	57.7	76.6	15.9	31.5
1975	PREC	mm/month	18	18.8	74.9	146.6	103.8	107.2	340.8	101.9	203.2	73.7	68	34.8
1976	PREC	mm/month	66	100	36.1	102.7	50.7	120.9	99.9	344.8	49	56.6	35.2	42.4
1977	PREC	mm/month	5.2	2	59	204.1	76.9	91.2	159.1	123.5	102.5	21.5	90.4	34.5
1978	PREC	mm/month	24.8	41.3	53.4	31.4	14.4	362.5	202.8	274	59.5	81.3	32.3	33.3

Field separator: Comma(,) Space() Tab() Colon(:)

Variable: Precipitation Temperature

Unit: mm/month mm/day others:

Country:

Observed data file (example): korprcp.txt

Entering station data into CLIK

B. Station data upload module

11. After finish the data uploading, you can choose new station data set in the upper panel.
12. Check the map and select the area for downscaling (shift + drag).
13. Click "ADD" below the map. And check the station data.

Select Dataset / Station

Datasets Dataset Name	Countries	Total Stations	Period(prec)	Period(temp)	Public
Korea 00 Stations	Korea, Republic of	00	1973 ~ 2...	1973 ~ 2...	PUBLIC
peru	Peru	2	1964 ~ 2...	N/A	yoojin1
koreamean	Korea, Republic of	1	1973 ~ 2...	N/A	yoojin1

Create
Edit
Remove

Station (2)				
Station ID	Name	Precipitation	Temperature	
786	Huancane	1981/1 ~ 2015/12	N/A	
157312	chachas	1964/1 ~ 2016/12	N/A	

Common data period of selected stations

Month	1	2	3	4	5	6	7	8	9	10	11	12
1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964
Precipitation	~	~	~	~	~	~	~	~	~	~	~	~

NEXT

Entering station data into CLIK

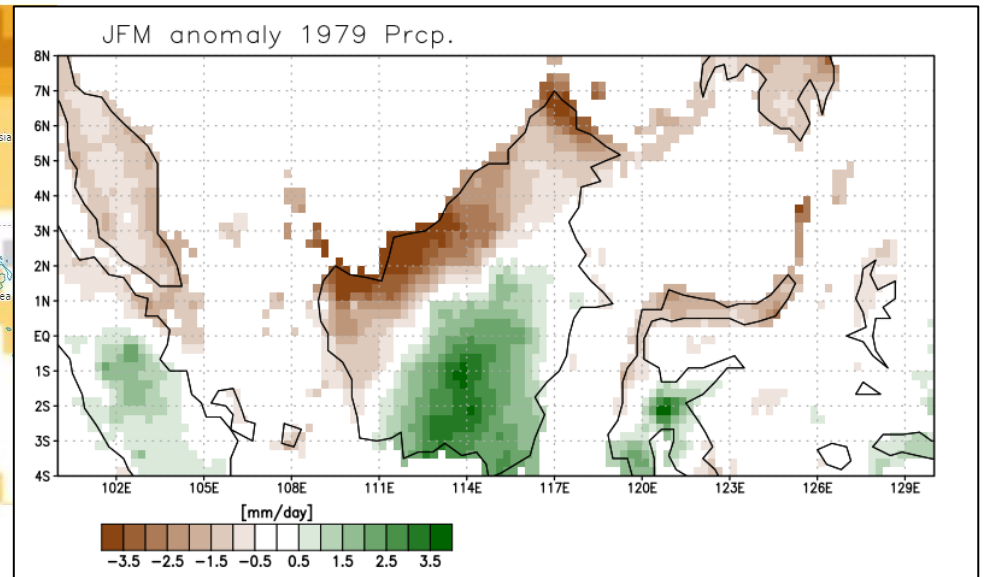
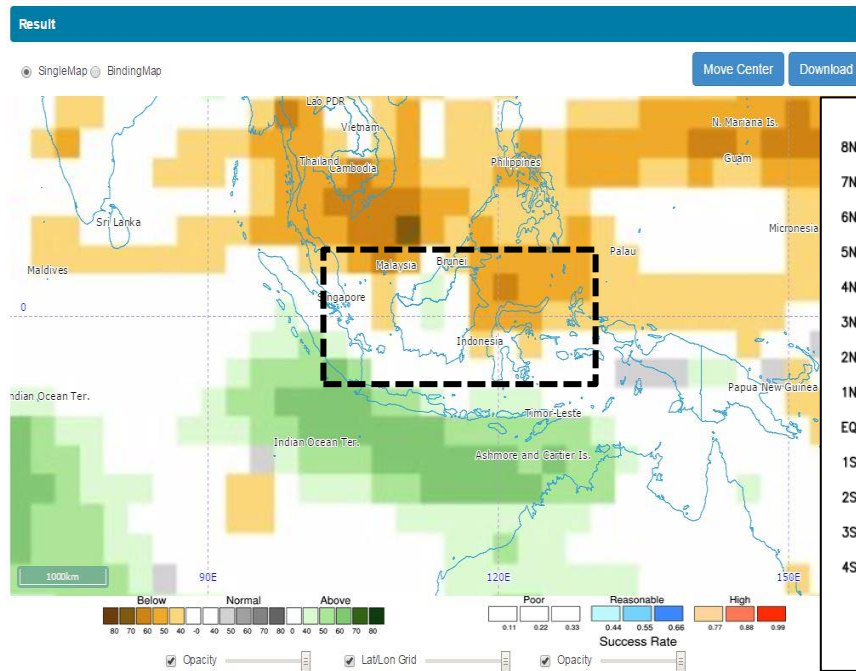
- ✓ You can add more station data.
- ✓ Let's upload one more station.



Thank you.

Post Processing

- **Real observation precipitation:**
APHRODITE gridded station precipitation (0.25 by 0.25)



Compare the grid size!