

USER MANUAL

Geospatial Information Platform for COVID-19 (GIPC) version 1.2

1. The link to the GIPC in Thailand portal is <http://103.156.150.93:66/>. It can also be separated by country lists as below

- Cambodia:  Cambodia Country Code is 855

<http://103.156.150.93:855/>

- Laos:  Cambodia Country Code is 856

<http://103.156.150.93:856/>

- Sri Lanka:  Sri Lanka Country Code is 94

<http://103.156.150.93:94/>



USER MANUAL

1.1 First, sign up your account. e.g., user name: tom@example.com

The screenshot shows a web-based sign-up interface. On the left, there is a vertical sidebar with links for 'Home', 'Sign Up' (which is currently selected), and 'Login'. The main content area has a header featuring logos for UNESCAP, GISTDA, and ARTSA. Below the header, the title 'Sign up' is centered. The form consists of three input fields: 'Email' containing 'test@gpc.com', 'Password' with a placeholder '(6 characters minimum)' and a masked input field showing '.....', and 'Password confirmation' with a masked input field showing '.....'. A red 'SIGN UP' button is positioned below the password fields. At the bottom of the form, there is a link 'Log in'.

Here, 5 functions of system

01 COVID-19 Cases Management

02 Living Supplies Management

03 Medical Capacity Management

04 Vaccine Registration Form

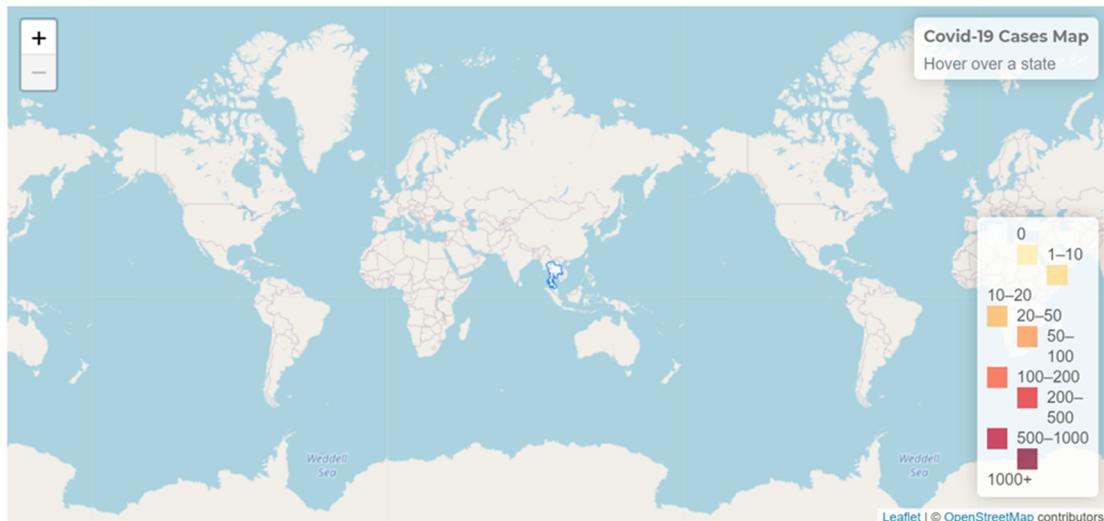
05 COVID-19 SIR Model

USER MANUAL

After login to the system, you are now ready to start using the system!

Summary Report

The overview of current COVID-19 situation of the World



Here, shows the system functions at left side

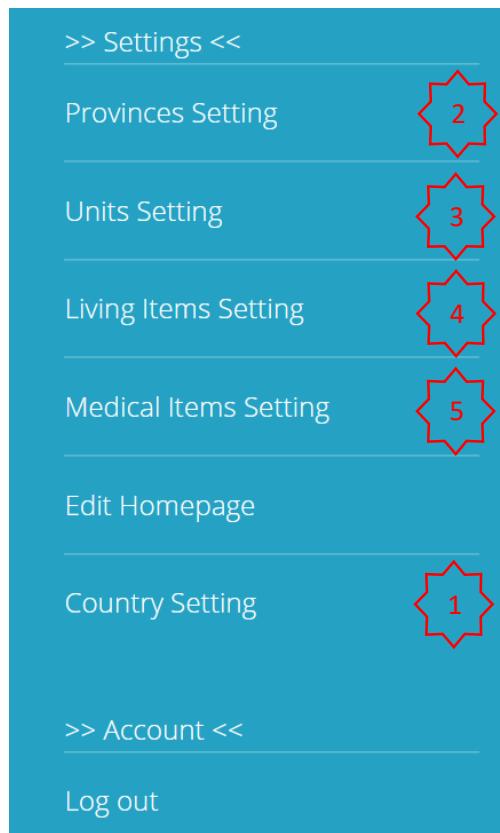
The screenshot shows the system's user interface. On the left, a vertical sidebar menu is highlighted with a red border and three red arrows pointing to its sections: "Report <<", "Functions <<", and "Settings <<". The menu items include:

- Home
- >> Report <<
- COVID Summary Report
- Medical Summary Report
- Living Summary Report
- Vaccine Register Report
- >> Functions <<
- Covid-19 Cases Management
- Living Supplies Management
- Medical Capacity Management
- Vaccine Registration Form
- >> Settings <<
- Provinces Setting
- Units Setting
- Living Items Setting
- Medical Items Setting
- Edit Homepage
- >> Account <<

The main content area displays the "The overview of current COVID-19 situation of Thailand". It features a map of Thailand and surrounding regions, a pie chart titled "Gender Distribution" showing approximately 50% Male and 50% Female, a histogram titled "Age Distribution" showing the age range of cases, and a bar chart titled "Covid-19 Quarantine Distribution" showing the number of cases across different categories.

USER MANUAL

1.2 After successfully login an account, you need to set up the system in order first



Click the **Country Setting** and then click the **New Countryinfo**

New Countryinfo

Country Name:

Country ISO code:

Center Longitude:

Center Latitude:

Zoom Level:

Map Height:

px

CREATE COUNTRYINFO

USER MANUAL

Fill the parameters of Country information, you can search basic information by Google map/Wiki in order to link with web mapping

Thailand / ISO code
THA

People also search for

Vietnam (VNM) Philippines (PHL)

Feedback

https://en.wikipedia.org/wiki/ISO_3166-2:TH ▾
ISO 3166-2:TH - Wikipedia

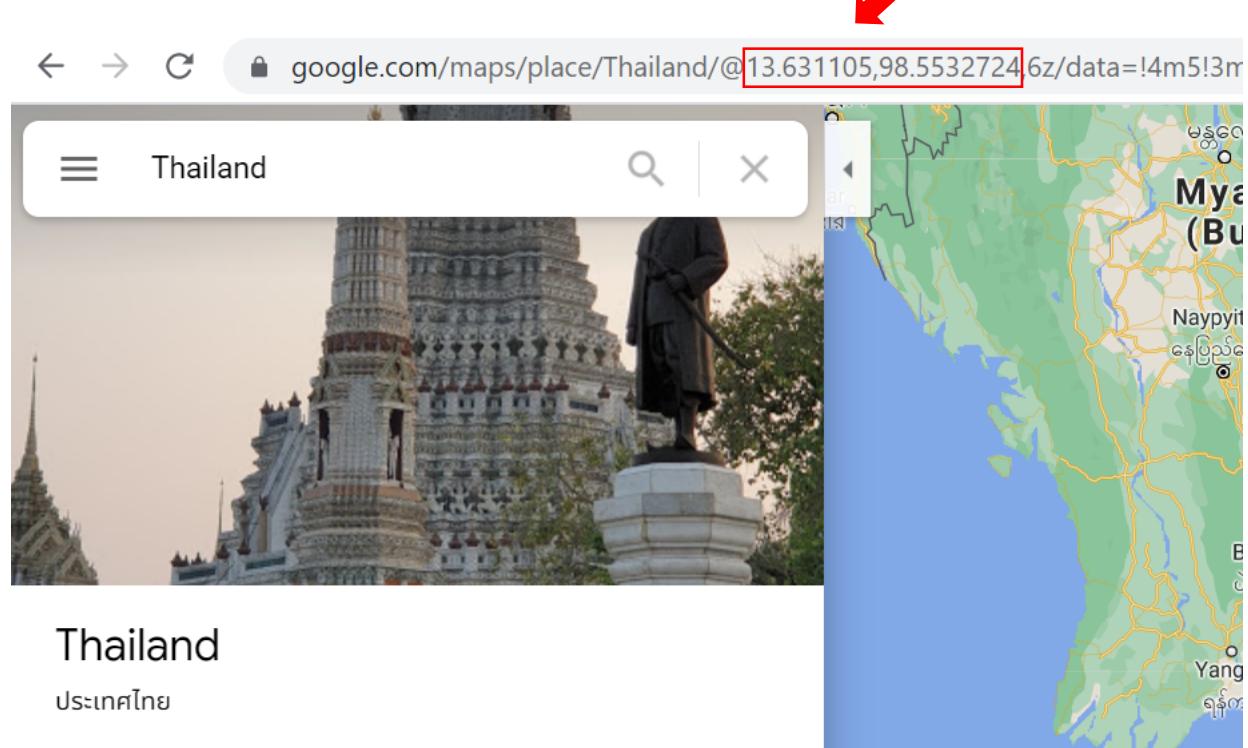
Code Subdivision name (th); (National 2000 = ISO 11940-2...
TH-10 Krung Thep Maha Nakhon; (local variant is Bangkok)
TH-S Phatthaya
TH-37 Amnat Charoen
View 75 more rows



Thailand
Country in Asia

Thailand is a Southeast Asian country. It's known for tropical beaches, opulent royal palaces, ancient ruins and ornate temples displaying figures of Buddha. In Bangkok, the capital, an ultramodern cityscape rises next to quiet canalside communities and the iconic temples of Wat Arun, Wat Pho and the Emerald Buddha Temple (Wat Phra Kaew). Nearby beach resorts include bustling Pattaya and fashionable Hua Hin. — Google

← → ⌂ google.com/maps/place/Thailand/@13.631105,98.5532724,6z/data=!4m5!3m4!1s0x0:0x0!2sThailand!3d13.631105!4d98.5532724



Thailand

ประเทศไทย

USER MANUAL

E.g., Country Setting (Parameters would be adjusted by different requirement of users):

Country Name: Thailand

Country ISO code: THA

Center Longitude: 13.637989

Center Latitude: 98.3177562

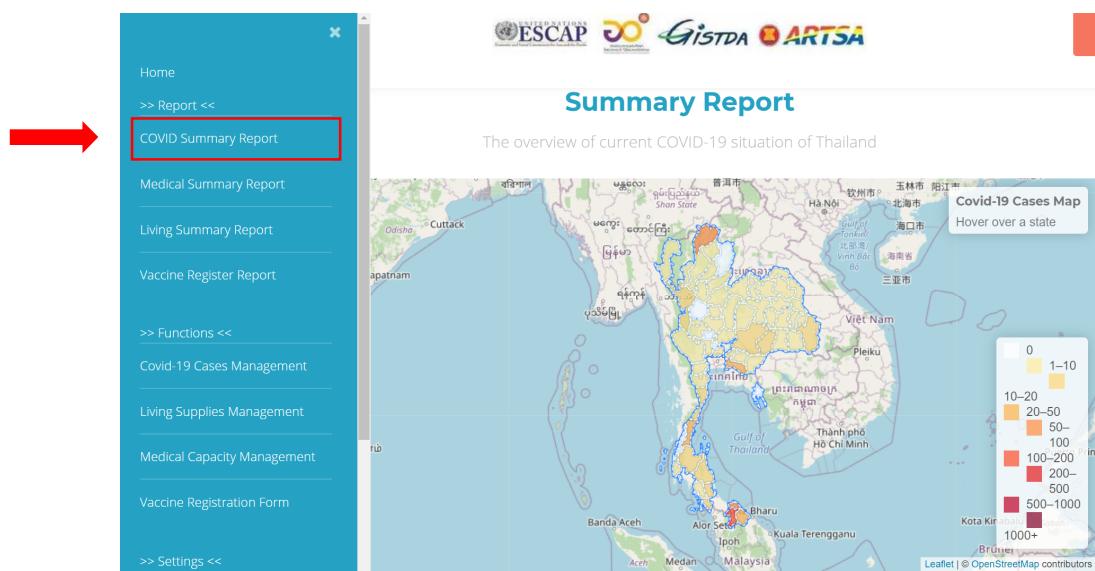
Zoom Level: 4.5

Map Height: 450

Editing Countryinfo

Country Name:	<input type="text" value="Thailand"/>
Country ISO code:	<input type="text" value="THA"/>
Center Longitude:	<input type="text" value="13.1929177"/>
Center Latitude:	<input type="text" value="98.5747373"/>
Zoom Level:	<input type="text" value="5"/>
Map Height:	<input type="text" value="450"/> px
<input type="button" value="UPDATE COUNTRYINFO"/>	

After add country information, you can click the **COVID Summary Report** to see your interactive map, the parameters would be adjusted by different requirement of users.



USER MANUAL

1.3 Users at province level will login to the GIPC portal using their registered email. So, you need to go to province setting.

The screenshot shows a 'Provinces' page with a sidebar on the left containing links like 'Provinces Setting', 'Units Setting', 'Living Items Setting', 'Medical Items Setting', 'Edit Homepage', 'Country Setting', 'Account Setting', and 'Log out'. A red arrow points to the 'Provinces Setting' link. The main area displays a table with columns for 'Name' and 'Remark'. Each row represents a province with its name, a polygon icon indicating its shape, and actions to 'Show', 'Edit', or 'Remove'.

Name	Remark	Show	Edit	Remove
Chiang Charoen	Polygon	Show	Edit	Remove
Chiang Thong	Polygon	Show	Edit	Remove
Chiang Rai	Polygon	Show	Edit	Remove
Chiang Chaoengsao	Polygon	Show	Edit	Remove
Chiang Mai Nat	Polygon	Show	Edit	Remove
Chiang Mai Yaphum	Polygon	Show	Edit	Remove
Chiang Rai	Polygon	Show	Edit	Remove

The screenshot shows a 'New Province' form. It includes fields for 'Name', 'Population', 'Density', and 'Polygon'. The 'Polygon' field is highlighted with a red box and contains a note '(Unit: Square kilometre)'. Below the polygon input is a 'Remark' field, also highlighted with a red box. At the bottom right is a large orange 'CREATE PROVINCE' button. A red arrow points to the 'Polygon' field.

Name

Population

Density

(Unit: Square kilometre)

Polygon

Remark

CREATE PROVINCE

NOTE: Before add province information, you need a very important Geojeson format for web mapping.

USER MANUAL

1.3.1 Download administrative level 1 (province) of GeoJSON

GeoJSON is a format for encoding a variety of geographic data structures. First download GeoJSON file for the geographic area you are interested in e.g., THA is Alpha-3 code of Thailand. The link of Geojson Open Data as following

https://www.geoboundaries.org/data/1_3_3/zip/geojson/

Index of /data/1_3_3/zip/geojson

Name	Last modified	Size	Description
Parent Directory			
AFG/	2018-08-30 12:22	-	
AGO/	2018-08-30 12:22	-	
ALB/	2018-08-30 12:21	-	
AND/	2018-08-30 12:20	-	
ARE/	2018-08-30 12:22	-	
ARG/	2018-08-30 12:20	-	
ARM/	2018-08-30 12:20	-	
ATG/	2018-08-30 12:21	-	
AUS/	2018-08-30 12:20	-	
AUT/	2018-08-30 12:26	-	
AZE/	2018-08-30 12:20	-	
BDI/	2018-08-30 12:23	-	

Index of /data/1_3_3/zip/geojson/THA

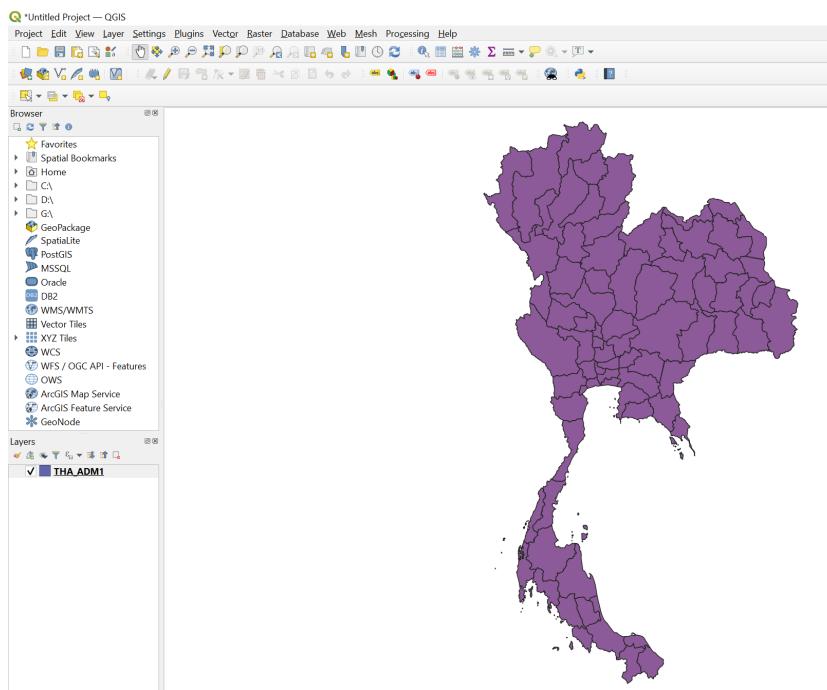
Name	Last modified	Size	Description
Parent Directory			
THA_ADMIN0.geojson.zip	2018-08-30 12:32	3.5M	
THA_ADMIN1.geojson.zip	2018-08-30 12:32	3.6M	

NOTE: Thailand administrative level 0 (country), 1 (province), 2 (district), and 3 (sub-district, tambon) boundaries.

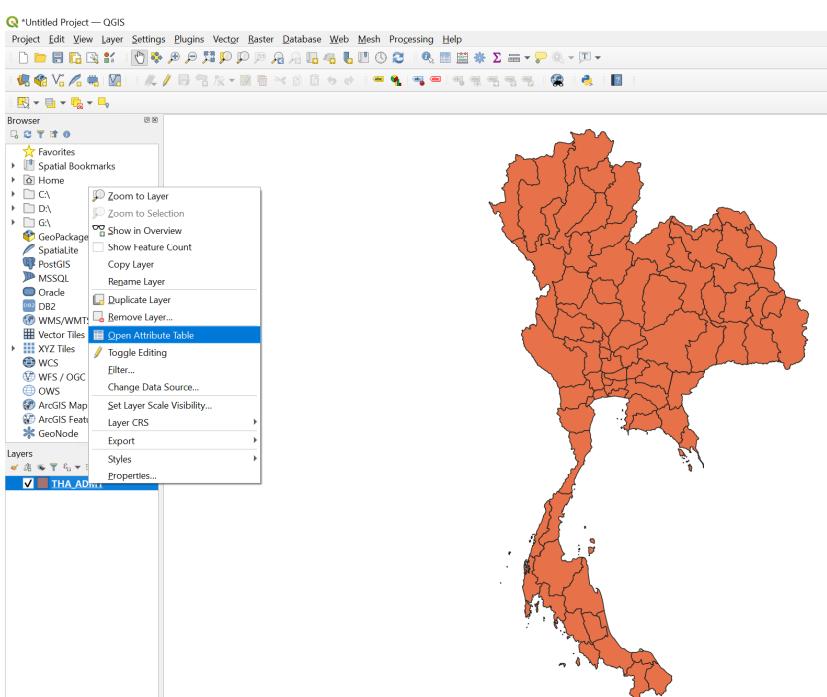
USER MANUAL

1.3.2 Processing GeoJSON in Quantum GIS (QGIS)

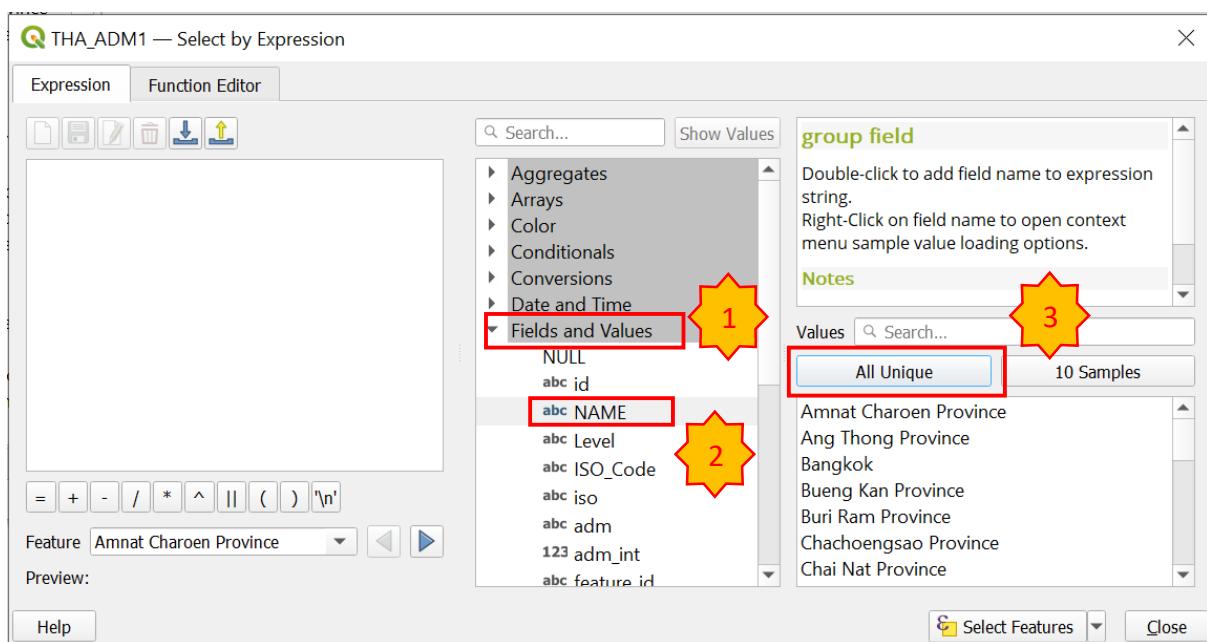
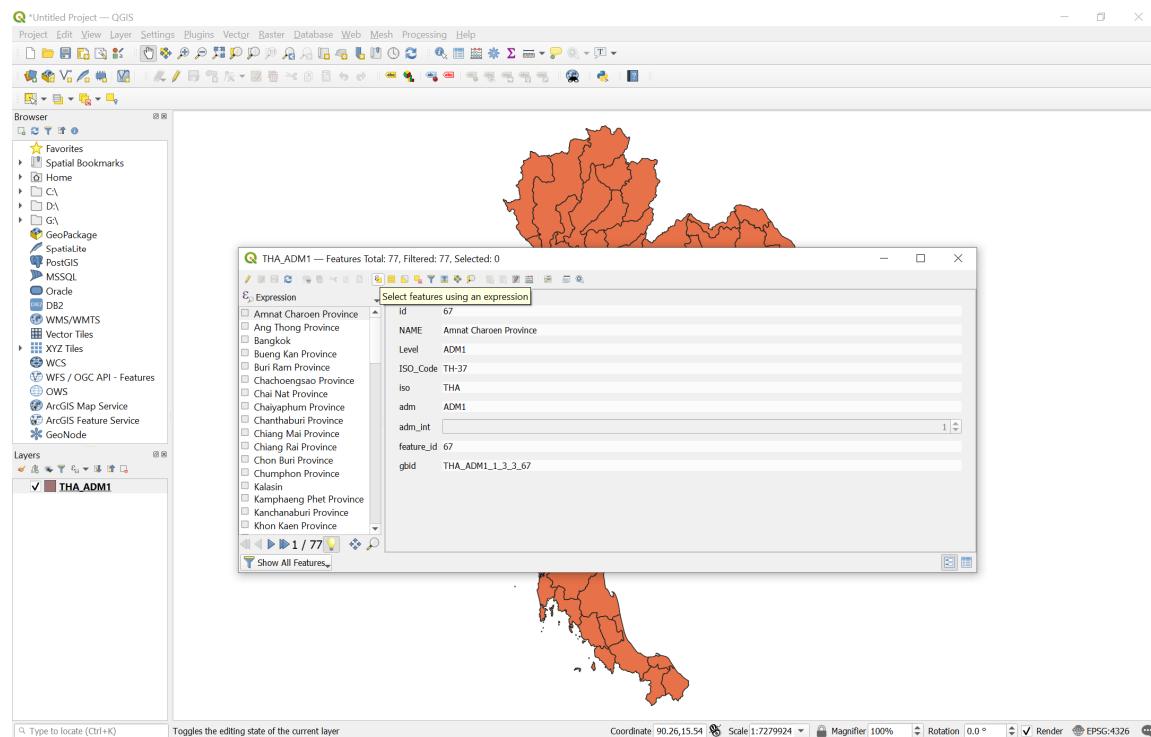
If you already get a GeoJSON file, you can just drag and drop it (e.g., **THA_ADM1**) from the Forder into the Layers Panel.



In the case of QGIS, exporting is done layer-by-layer. To export a layer to GeoJSON format use **Select by Expression** tool. **Select By Attributes** allows you to provide a SQL query expression that is used to select features that match the selection criteria.

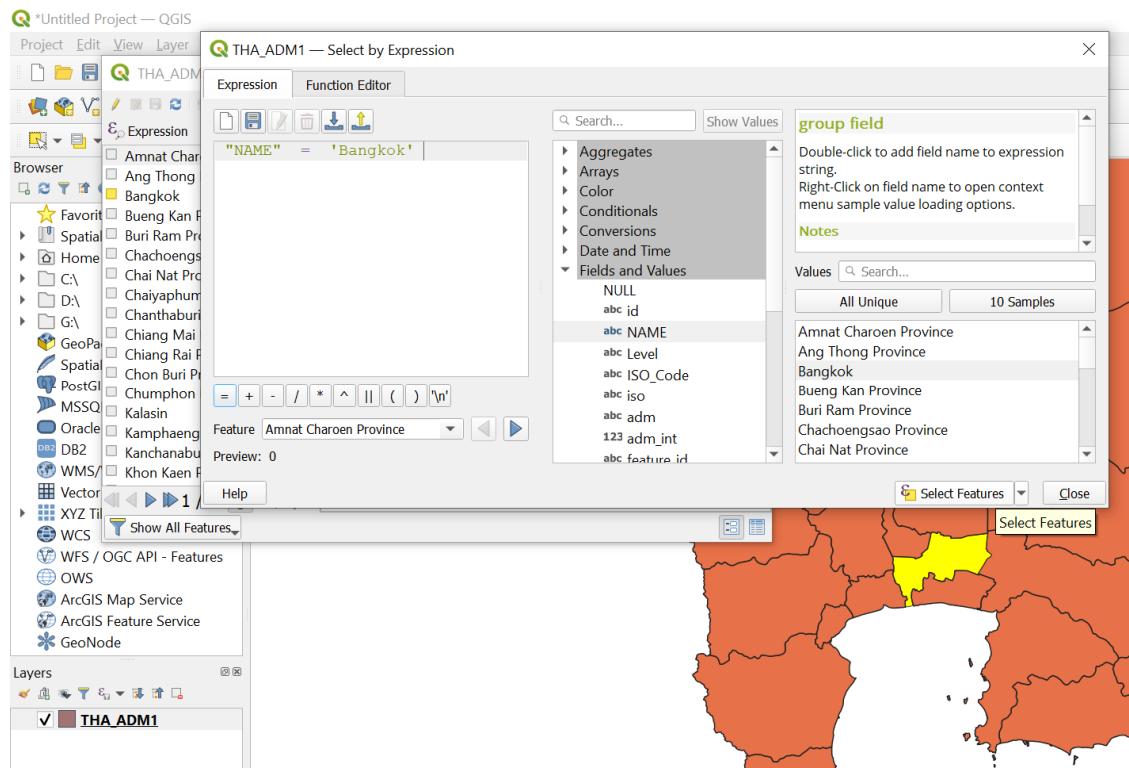


USER MANUAL

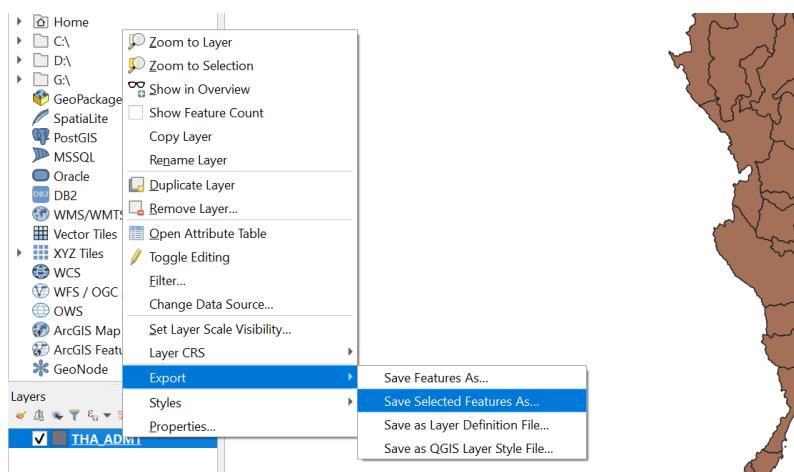


USER MANUAL

- 1) From the attribute toolbar, click **Select Features by Expression**
- 2) On the Select by Expression window, click **Fields and Values** the column you want to use. In this case, we use “**NAME**” column.
- 3) Type your criteria. In this example, we want to filter or select province which name is **Bangkok**.
- 4) Click **Select Features** and then you should see the selected features that match your criteria.

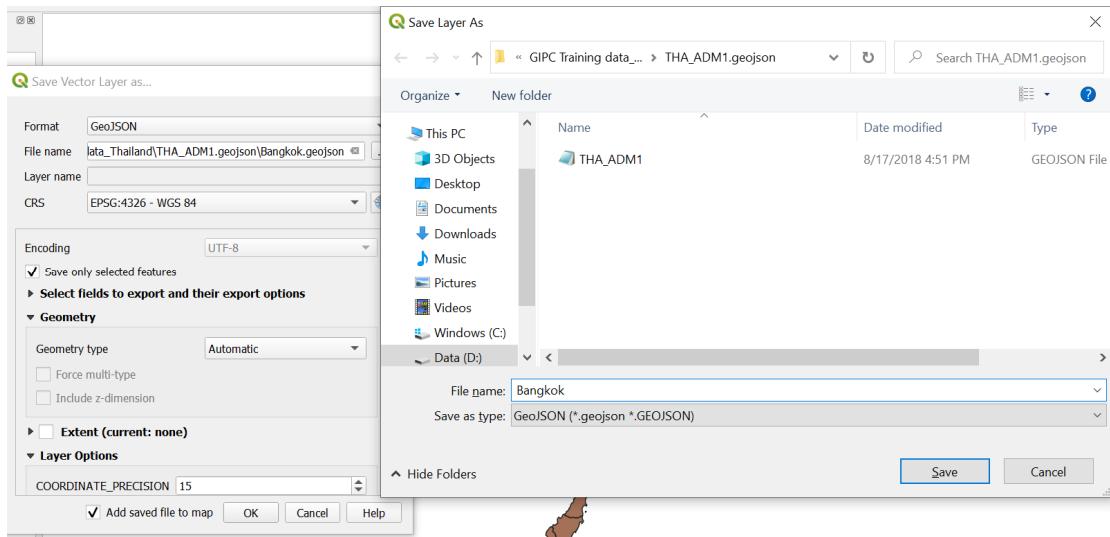


After you select the area, then you can look at the left menu, right-click on the Layers Panel, then click **Export** and click **Save Features As**.

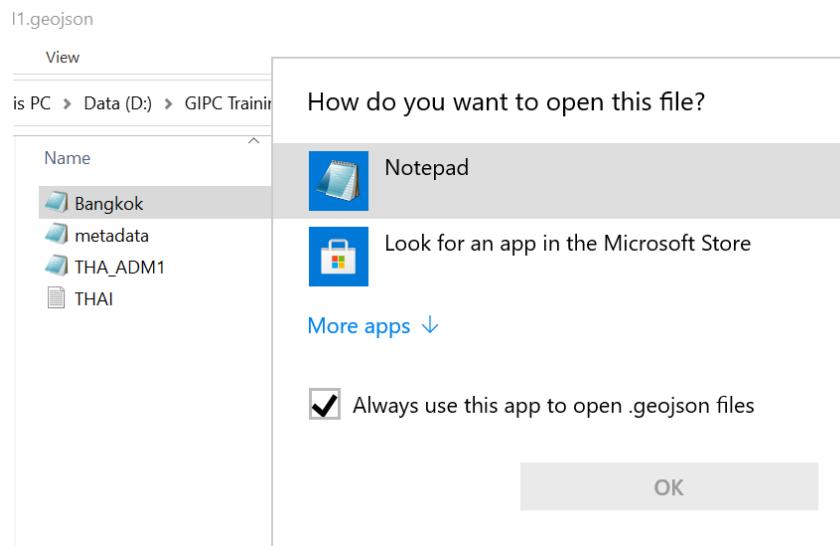


USER MANUAL

Change the Format to **GeoJSON**, name the file and the location and then click **OK**.



After export your GeoJSON file, then you can open it with **Notepad**



USER MANUAL

1.4 Back to GIPC, and add province information.

New Province

Name
Bangkok

Population
5666264

Density
3623

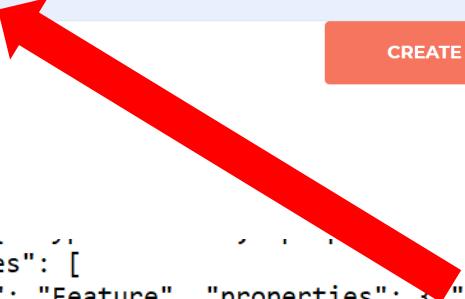
(Unit: Square kilometre)
Polygon

Polygon
[[[100.3278772, 13.8041844], [100.3318503, 13.8038721], [100.3416789, 13.8034898], [100.3502511, 13.8032452], [100.35191, 13.8031972], [100.370776, 13.8026197], [100.3737869, 13.8025276], [100.3750247, 13.8024897], [100.3803059, 13.8023609], [100.3804144, 13.8019201], [100.3800055, 13.8019143], [100.3804171, 13.8014076], [100.38032401, 13.8014061]]]

Remark

Polygon

CREATE PROVINCE

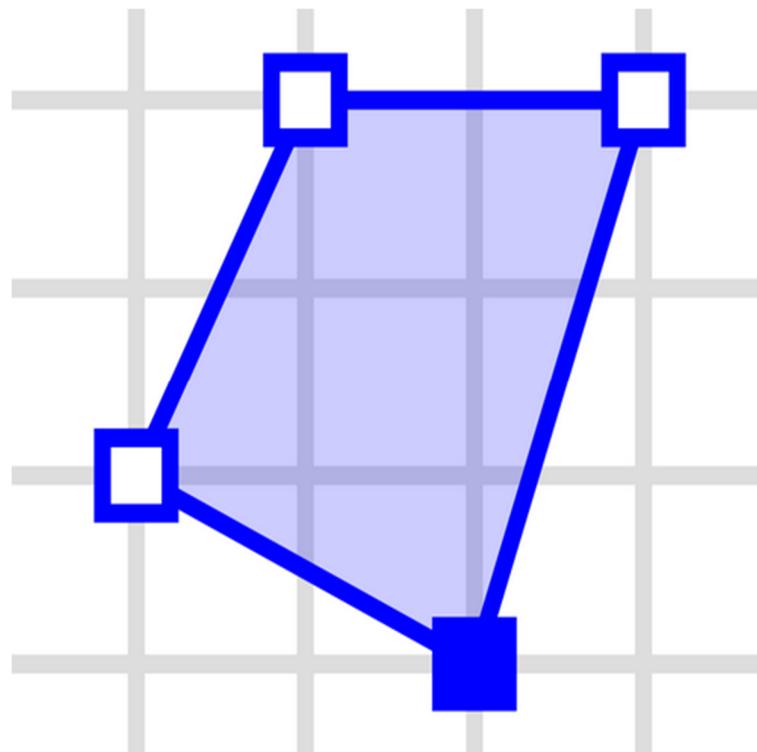


```
"features": [
  { "type": "Feature", "properties": { "id": "14", "NAME": "Bangkok", "Level": "/THA_ADM1_1_3_3_14" }, "geometry": { "type": "Polygon", "coordinates": [ [ [ 100.3278772, 13.8041844 ], [ 100.3318503, 13.8038721 ], [ 100.3416789, 13.8034898 ], [ 100.3502511, 13.8032452 ], [ 100.35191, 13.8031972 ], [ 100.370776, 13.8026197 ], [ 100.3737869, 13.8025276 ], [ 100.3750247, 13.8024897 ], [ 100.3803059, 13.8023609 ], [ 100.3804144, 13.8019201 ], [ 100.3800055, 13.8019143 ], [ 100.3804171, 13.8014076 ], [ 100.38032401, 13.8014061 ] ] ] }
], "name": "urn:ogc:def:crs:OGC:1.3:CRS84" } },
{ "id": "54", "NAME": "Chon Buri Province", "Level": "ADM1", "ISO_Code": "TH-20", "iso": "THA", "gbid": "THA_ADM1_1_3_3_64" }, "geometry": { "type": "MultiPolygon", "coordinates": [ [ [ [ 100.9558763, 12.511323 ], [ 100.9546747, 12.5136692 ], [ 100.9524431, 100.9532383, 12.5185439 ], [ 100.9531349, 12.519914 ], [ 100.9535256, 12.5214532 ], [ 100.9545325 ], [ 100.9530535, 12.5282569 ], [ 100.9528545, 12.5299464 ], [ 100.9535534, 100.9540053, 12.5296000 ], [ 100.9556071, 12.5296000 ], [ 100.9556045, 12.5296100 ] ] ] ] }
```

***Please note that there are two types in GeoJSON,**

- **Polygon: an array of arrays of positions.**
- **MultiPolygon: a multidimensional array of positions**

1.5 Add coordinates of province



```
{  
  "type": "Polygon",  
  "coordinates": [  
    [[30.0, 10.0], [40.0, 40.0], [20.0, 40.0], [10.0, 20.0], [30.0, 10.0]]  
  ]  
}
```

It is a set of location points, GeoJSON uses the points to identify an area.

* References :

<https://en.wikipedia.org/wiki/GeoJSON>

<https://geojson.org/>

NOTE: You need to copy the information in square brackets and includes square brackets.

USER MANUAL

If you add it successfully then will show like this as below

Province was successfully updated.

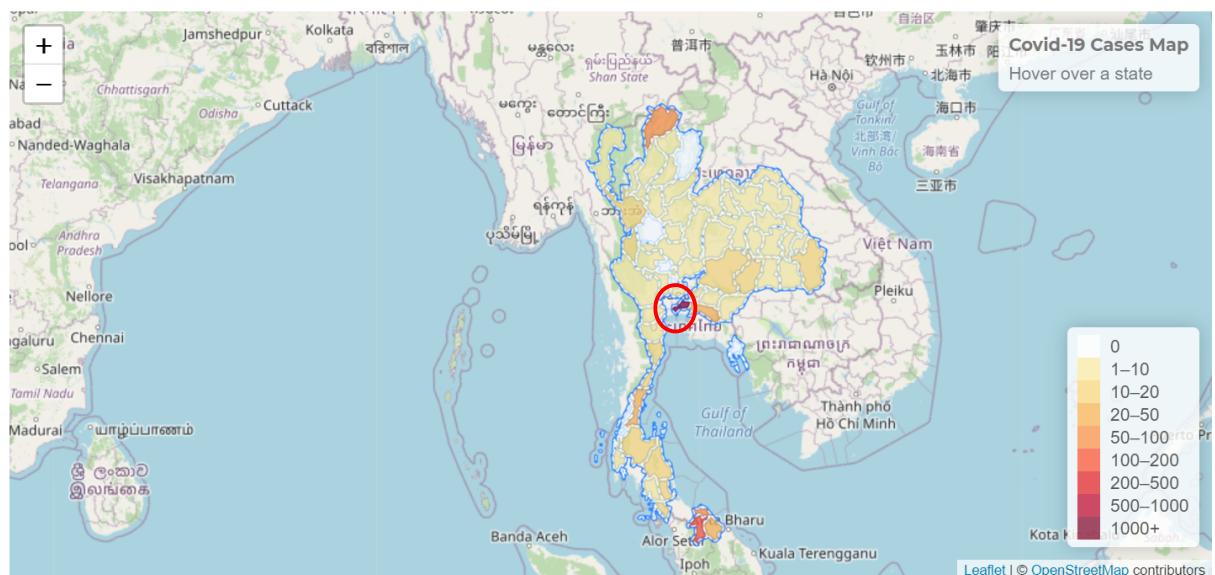
Name: Bangkok

Population: 10539000

Density: 5300

Polygon: [[[100.3278772, 13.8041844], [100.3318503, 13.8038721], [100.3416789, 13.8034898], [100.3502511, 13.8032452], [100.35191, 13.8031972], [100.370776, 13.8026197], [100.3737869, 13.8025276], [100.3750247, 13.8024897], [100.3803059, 13.8023609], [100.3986144, 13.8018203], [100.3988065, 13.801814], [100.4048588, 13.801617], [100.4084876, 13.8013349], [100.4110664, 13.801299], [100.4152199, 13.8011558], [100.4154546, 13.8011418], [100.4265403, 13.8004795], [100.4300594, 13.8001638], [100.4325062, 13.8000071], [100.4448725, 13.7992154], [100.4486002, 13.7989767], [100.4503115, 13.7988532], [100.458854, 13.7982595], [100.4622733, 13.7976178], [100.4632022, 13.7974016], [100.4640039, 13.797215], [100.4663013, 13.7963074], [100.4681721, 13.7953703], [100.4687643, 13.7951553], [100.4692651, 13.79494], [100.4697407, 13.7947483], [100.4694156, 13.7940783], [100.468568, 13.7931236], [100.467858, 13.7920137], [100.4671413, 13.7909124], [100.4666193, 13.7898976], [100.4662677, 13.7891559], [100.466517, 13.7892136], [100.4702495, 13.7900884], [100.472105, 13.790533], [100.4735353, 13.7909514], [100.4750689, 13.7914927], [100.476066, 13.7918712], [100.4764205, 13.7920388], [100.4783256, 13.7927214], [100.478672, 13.7928033], [100.4804512, 13.793412], [100.4819273, 13.7939492], [100.4884969, 13.7962995], [100.4925472, 13.7977351], [100.4967366, 13.7992139], [100.499766, 13.8003212], [100.5010877, 13.8010047], [100.5019622, 13.8015618], [100.5028918, 13.8022816], [100.5055737, 13.8046973], [100.5101101, 13.8088274], [100.5148118, 13.8133685], [100.5144133, 13.8137241], [100.512249, 13.8149649], [100.5096342, 13.8156968], [100.5063218, 13.816492], [100.5068005, 13.8175878], [100.5066645, 13.8179889], [100.5064156, 13.8186973], [100.5062782, 13.8190057], [100.5063212, 13.8194308], [100.5065014, 13.8196975], [100.5066731, 13.8200059], [100.5068361, 13.8204893], [100.5070335, 13.821006], [100.5073796, 13.8213861], [100.5075571, 13.8215811], [100.5075829, 13.8218311], [100.5075657, 13.8221478], [100.5075657, 13.8223979], [100.5075743, 13.8226396], [100.5077374, 13.822898], [100.5079519, 13.822973], [100.5081665, 13.823073], [100.5083468, 13.823198], [100.5085098, 13.8233397], [100.5086386, 13.8234564], [100.508939, 13.8235314], [

1.6 Back to summary report page



The area of the new province should be shown on the map.

USER MANUAL

1.7 Units Setting

The units list can be followed by Kg, Box, Ton, Set, Person, Cars, Units and etc., you can also edit and delete it.

The screenshot shows a left sidebar with a blue background containing navigation links. A yellow starburst highlights the 'Units Setting' link. Another yellow starburst highlights the 'NEW UNIT' button at the bottom of the main content area. The main content area has a white background with a title 'Units' and a table listing seven rows of unit data, each with 'Show', 'Edit', and 'Destroy' links. The 'NEW UNIT' button is located at the bottom of this table.

	Show	Edit	Destroy
1	Show	Edit	Destroy
2	Show	Edit	Destroy
3	Show	Edit	Destroy
4	Show	Edit	Destroy
5	Show	Edit	Destroy
6	Show	Edit	Destroy

Editing Unit

The screenshot shows a form titled 'Editing Unit'. It has three input fields: 'Name' (containing 'Kg'), 'Des' (empty), and 'Remark' (empty). Below these fields is a red 'UPDATE UNIT' button. At the bottom of the form are links for 'Show' and 'Back'.

The screenshot shows a table titled 'Name' listing eight units: Kg, Box, Ton, Set, Person, Cars, and Units. Each row contains a 'Show' link, an 'Edit' link, and a 'Destroy' link.

Name	Show	Edit	Destroy
Kg	Show	Edit	Destroy
Box	Show	Edit	Destroy
Ton	Show	Edit	Destroy
Set	Show	Edit	Destroy
Person	Show	Edit	Destroy
Cars	Show	Edit	Destroy
Units	Show	Edit	Destroy

USER MANUAL

1.8 Living items Setting

The Living items list can be followed by Rice, Water, Egg, Meat, Milk, Vegetables Tissue and etc., you can also edit and dele it.

The screenshot shows the Vaccine Registration Form sidebar on the left and the Livingitems list page on the right. The sidebar includes links for Settings, Provinces Setting, Units Setting, Living Items Setting (highlighted with a yellow starburst labeled '1'), Medical Items Setting, Edit Homepage, Country Setting, Account, and Log out. The main page title is 'Livingitems'. It displays a table with columns for Show, Edit, and Destroy. The table rows correspond to the items listed in the sidebar: Rice, Water, Egg, Meat, Milk, Vegetables, and Tissue. A red starburst labeled '2' points to the 'New Livingitem' link at the bottom of the list.

	Show	Edit	Destroy
Rice	Show	Edit	Destroy
Water	Show	Edit	Destroy
Egg	Show	Edit	Destroy
Meat	Show	Edit	Destroy
Milk	Show	Edit	Destroy
Vegetables	Show	Edit	Destroy
Tissue	Show	Edit	Destroy

The screenshot shows the 'New Livingitem' creation form. It has fields for Name (Rice), Des (empty), and Remark (empty). A large orange button at the bottom right says 'CREATE LIVINGITEM'. Below the form is a 'Back' link.

Name
Rice

Des

Remark

CREATE LIVINGITEM

[Back](#)

The screenshot shows the 'Livingitems' list page after creating a new item. The table now includes a row for 'Rice'. The other items listed are Water, Egg, Meat, Milk, Vegetables, and Tissue.

Name	Show	Edit	Destroy
Rice	Show	Edit	Destroy
Water	Show	Edit	Destroy
Egg	Show	Edit	Destroy
Meat	Show	Edit	Destroy
Milk	Show	Edit	Destroy
Vegetables	Show	Edit	Destroy
Tissue	Show	Edit	Destroy

[New Livingitem](#)

USER MANUAL

1.9 Medical Items Setting

The Medical items list can be followed by Hospital Beds, Health Workers, Ventilators, ICU medical equipment, Negative Pressure Ambulances, Protective Suits, Masks and etc., you can also edit and dele it.

Name	Show	Edit	Destroy
Hospital Beds	Show	Edit	Destroy
Health Workers	Show	Edit	Destroy
Ventilators	Show	Edit	Destroy
ICU medical equipment	Show	Edit	Destroy
Negative Pressure Ambulances	Show	Edit	Destroy
Protective Suits	Show	Edit	Destroy
Masks	Show	Edit	Destroy

New Medical Item

Name

Des

Remark

CREATE MEDICALITEM

[Back](#)

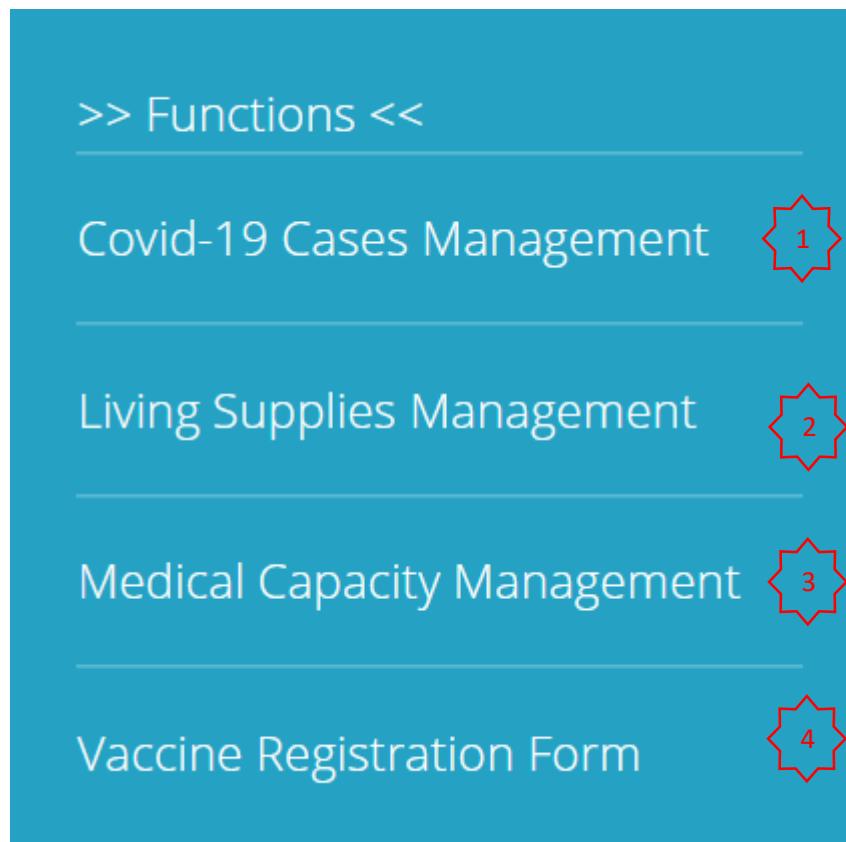
Medical Items Management

Name	Show	Edit	Destroy
Hospital Beds	Show	Edit	Destroy
Health Workers	Show	Edit	Destroy
Ventilators	Show	Edit	Destroy
ICU medical equipment	Show	Edit	Destroy
Negative Pressure Ambulances	Show	Edit	Destroy
Protective Suits	Show	Edit	Destroy
Masks	Show	Edit	Destroy

USER MANUAL

2. Data Management

After successfully setting the units, then now you can add the data such as Covid-19 cases, Goods supplies, Medical supplies and Vaccine registration data. All data for this training are simulated data.



USER MANUAL

2.1 Covid-19 Cases Management

Covid19cases

ADD NEW CASE

← Previous 1 2 3 4 5 6 7 8 9 ... 141 142 Next →

Sex	Age	ID/Passport	Status	Show	Edit	Remove
Female	27	T0003606	Hospitalized	Show	Edit	Remove
Female	39	T0003605	Hospitalized	Show	Edit	Remove
Male	23	T0003604	Hospitalized	Show	Edit	Remove
Female	34	T0003603	Hospitalized	Show	Edit	Remove
Female	37	T0003602	Hospitalized	Show	Edit	Remove
Female	36	T0003601	Hospitalized	Show	Edit	Remove

New Covid-19 Case

Name	
Age	
Sex	
Nationality	
Quarantine province	
Notification date	2021 July

Covid19cases

ADD NEW CASE

← Previous 1 2 3 4 5 6 7 8 9 ... 141 142 Next →

Case ID	Sex	Age	ID/Passport	Status	Show	Edit	Remove
4238	Female	27	T0003606	Hospitalized	Show	Edit	Remove
4237	Female	39	T0003605	Hospitalized	Show	Edit	Remove
4236	Male	23	T0003604	Hospitalized	Show	Edit	Remove
4235	Female	34	T0003603	Hospitalized	Show	Edit	Remove
4234	Female	37	T0003602	Hospitalized	Show	Edit	Remove
4233	Female	36	T0003601	Hospitalized	Show	Edit	Remove
4232	Male	27	T0003600	Hospitalized	Show	Edit	Remove
4231	Female	33	T0003599	Hospitalized	Show	Edit	Remove

USER MANUAL

e.g., COVID-19 cases Information (Please leave it blank if not have information)

Name:

* **Age:** 58

* **Sex:** Male

* **Nationality:** Thailand

* **Quarantine province:** Bangkok

* **Notification date:** 2021 12 July

* **Announce date:** 2021 13 July

Onset province: Bangkok

Onset district:

* **Status:** Hospitalized/Recovered/Deaths

* **Id / passport** T0003606

Remark1

Remark2

New Covid-19 Case

Name	
Age	58
Sex	Male
Nationality	Thailand
Quarantine province	Bangkok
Notification date	2021
	July
	12

NOTE: The fields marked (*) must be completed in all cases.

USER MANUAL

2.2 Living (Goods) Supplies Management

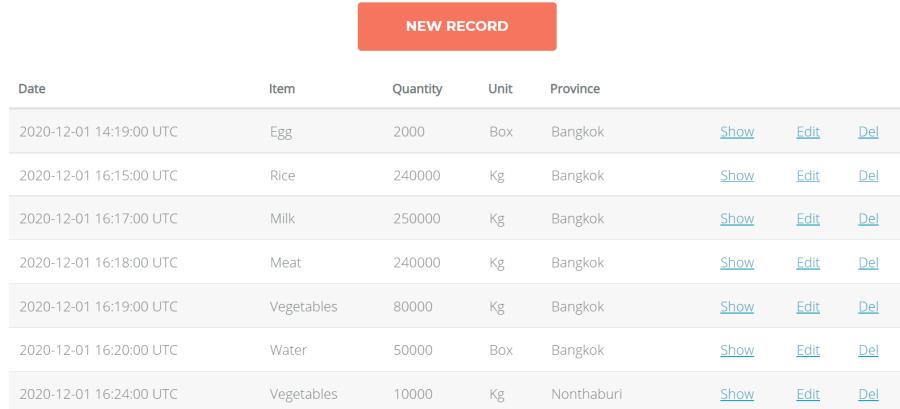


Living Supplies Management							
		Item	Quantity	Unit	Province		
9:00 UTC	Egg	2000	Box	Bangkok	Show	Edit	Del
5:00 UTC	Rice	240000	Kg	Bangkok	Show	Edit	Del
7:00 UTC	Milk	250000	Kg	Bangkok	Show	Edit	Del
3:00 UTC	Meat	240000	Kg	Bangkok	Show	Edit	Del
9:00 UTC	Vegetables	80000	Kg	Bangkok	Show	Edit	Del
0:00 UTC	Water	50000	Box	Bangkok	Show	Edit	Del
4:00 UTC	Vegetables	10000	Kg	Nonthaburi	Show	Edit	Del
3:00 UTC	Egg	468	Box	Samut Prakan	Show	Edit	Del

New Living Supply Record

Date	2021
	July
	12
—	06
:	34
Item	
Quantity	

Living Supplies Management



Living Supplies Management							
		Item	Quantity	Unit	Province		
2020-12-01 14:19:00 UTC	Egg	2000	Box	Bangkok	Show	Edit	Del
2020-12-01 16:15:00 UTC	Rice	240000	Kg	Bangkok	Show	Edit	Del
2020-12-01 16:17:00 UTC	Milk	250000	Kg	Bangkok	Show	Edit	Del
2020-12-01 16:18:00 UTC	Meat	240000	Kg	Bangkok	Show	Edit	Del
2020-12-01 16:19:00 UTC	Vegetables	80000	Kg	Bangkok	Show	Edit	Del
2020-12-01 16:20:00 UTC	Water	50000	Box	Bangkok	Show	Edit	Del
2020-12-01 16:24:00 UTC	Vegetables	10000	Kg	Nonthaburi	Show	Edit	Del

USER MANUAL

e.g., Goods supplies (Please leave it blank if not have information)

* Date: 2021 July 12

* Item: Egg

* Quantity: 2000

* Unit: Box

* Province: Bangkok

Remark

Editing Living Supply

Date	2021
	July
	12
—	
	14
	:
	19
Item	Egg
Quantity	2000
Unit	Box
Province	Bangkok
Remark	

SUBMIT

NOTE: The fields marked (*) must be completed in all cases.

USER MANUAL

2.3 Medical Supplies Management

The screenshot shows a left sidebar with navigation links like 'Covid-19 Cases Management', 'Living Supplies Management', 'Medical Capacity Management' (which is highlighted with a yellow starburst labeled '1'), 'Vaccine Registration Form', and 'Settings'. The main area is titled 'Medical Capacity Management' and contains a table of medical supplies. A red button at the top right says 'NEW MEDICAL CAPACITY RECORD'. The table has columns: Item, Quantity, Unit, Province, and actions (Show, Edit, Del). The data includes Hospital Beds, Health Workers, Ventilators, ICU medical equipment, Negative Pressure Ambulances, Protective Suits, and Masks.

	Item	Quantity	Unit	Province	Show	Edit	Del
1-01	Hospital Beds	6000	Set	Bangkok	Show	Edit	Del
2-01	Health Workers	10000	Person	Bangkok	Show	Edit	Del
2-01	Ventilators	25	Set	Bangkok	Show	Edit	Del
2-01	ICU medical equipment	3000	Set	Bangkok	Show	Edit	Del
2-01	Negative Pressure Ambulances	100	Cars	Bangkok	Show	Edit	Del
2-01	Protective Suits	400000	Set	Bangkok	Show	Edit	Del
2-01	Masks	800000	Units	Bangkok	Show	Edit	Del

This screenshot shows the 'New Medical Capacity Record' form. It has fields for Date (set to 2021-07-06), Item (empty), Quantity (empty), Unit (empty), Province (empty), and Remark (empty). A large red 'SUBMIT' button is at the bottom.

Date	2021
	July
	6
Item	
Quantity	
Unit	
Province	
Remark	

SUBMIT

This screenshot shows the 'Medical Capacity Management' page again. The table now includes a new row for 'Health Workers' on 2020-12-01 with a quantity of 2250, located in Samut Prakan. The rest of the data remains the same as in the first screenshot.

	Item	Quantity	Unit	Province	Show	Edit	Del
2020-12-01	Hospital Beds	6000	Set	Bangkok	Show	Edit	Del
2020-12-01	Health Workers	10000	Person	Bangkok	Show	Edit	Del
2020-12-01	Ventilators	25	Set	Bangkok	Show	Edit	Del
2020-12-01	ICU medical equipment	3000	Set	Bangkok	Show	Edit	Del
2020-12-01	Negative Pressure Ambulances	100	Cars	Bangkok	Show	Edit	Del
2020-12-01	Protective Suits	400000	Set	Bangkok	Show	Edit	Del
2020-12-01	Masks	800000	Units	Bangkok	Show	Edit	Del
2020-12-01	Health Workers	2250	Person	Samut Prakan	Show	Edit	Del

USER MANUAL

e.g., medical supplies (Please leave it blank if not have information)

*Date: 2021 July 12

*Item: ICU medical equipment

*Quantity: 3000

*Unit: Set

*Province: Bangkok

Remark:

Editing Medical Capacity Record

Date	2020
	July
	12
Item	ICU medical equipment
Quantity	3000
Unit	Set
Province	Bangkok
Remark	

SUBMIT

NOTE: The fields marked (*) must be completed in all cases.

USER MANUAL

2.4 Vaccine Registration Management

The screenshot shows a software interface for 'Vaccine Registration Management'. On the left, a sidebar lists 'Medical Capacity Management' and 'Vaccine Registration Form' (highlighted with a red starburst containing the number 1). Below these are 'Provinces Setting', 'Units Setting', 'Living Items Setting', and 'Medical Items Setting'. The main area is titled 'Vaccine Registration Records' and displays a table with four rows of data. The columns are 'First Name', 'Last Name', 'Gender', 'Email', and 'Phone'. The data is as follows:

First Name	Last Name	Gender	Email	Phone	Show	Edit	Del
Jie lun	Zhou	Female	1234567@mail.com	0998888888	Show	Edit	Del
Ling	Kun	Male	7654321@mail.com	0999999999	Show	Edit	Del
Jie lun	Zhou		1234567@mail.com	0998888888	Show	Edit	Del
Ling	Kun		7654321@mail.com	0999999999	Show	Edit	Del

In the center, there is a link '[New Vaccinereg](#)' (highlighted with a red starburst containing the number 2).

For example, for testing purposes you can use a simulated database implementation.

New Vaccinereg

First Name:

Last Name:

ID / Passport:

Birthday:

Year:

Month:

Day:

Gender:

Email:

Phone:

Country:

Province:

City:

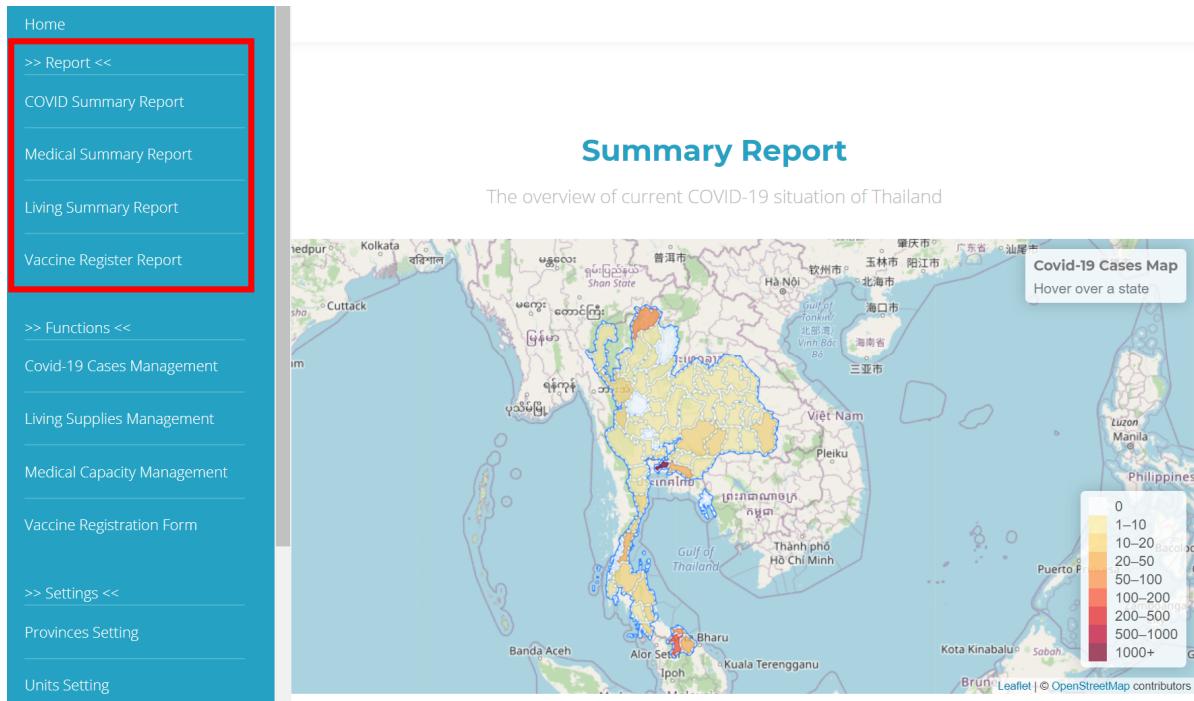
USER MANUAL

3. GIPC Dashboard

Congratulations! You almost done for this training, and let's try to give the overview from GIPC. You can view summary of report includes pandemic situation, goods supplies, medical supplies and vaccine distribution.



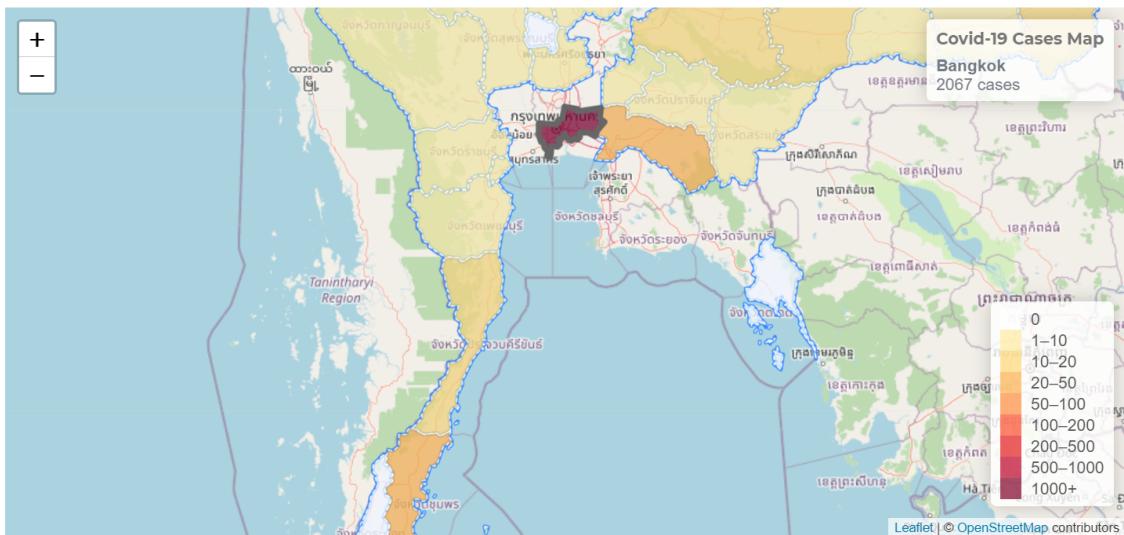
USER MANUAL



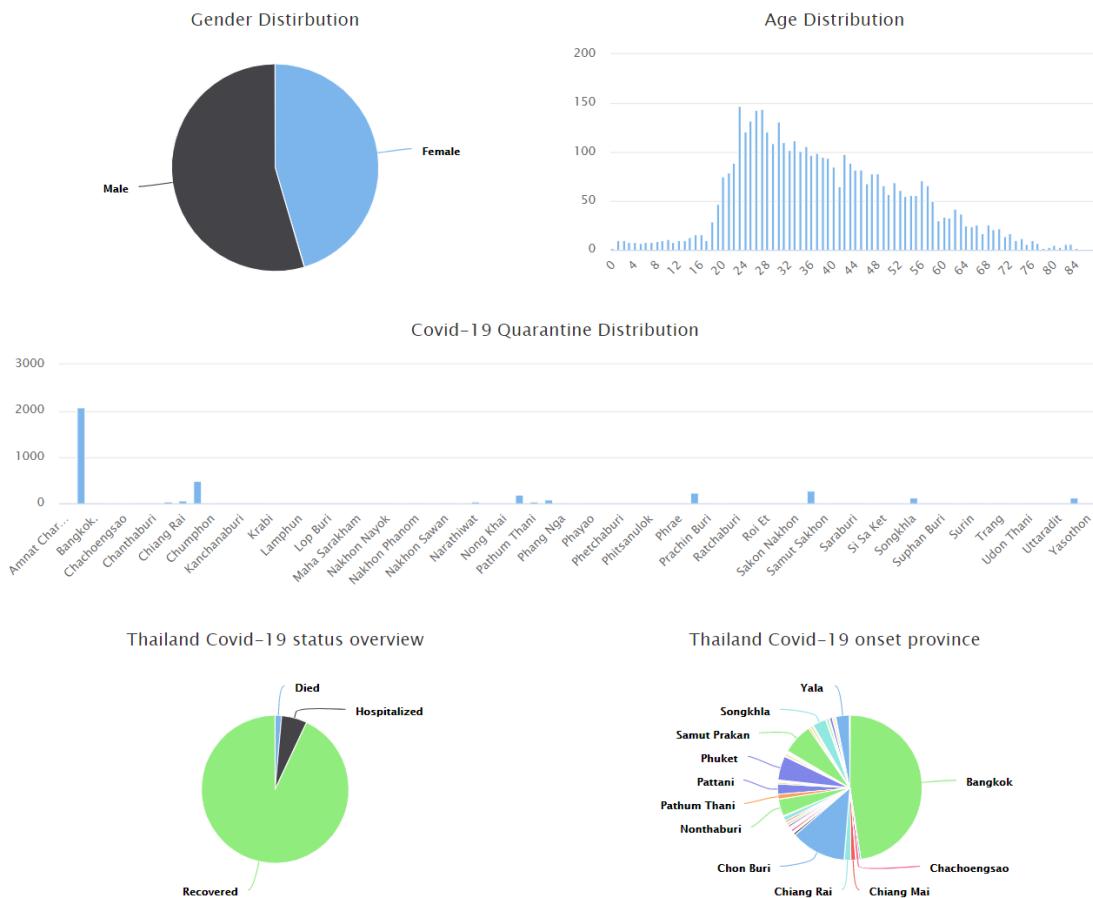
You also can view by this interactive map.

Summary Report

The overview of current COVID-19 situation of Thailand



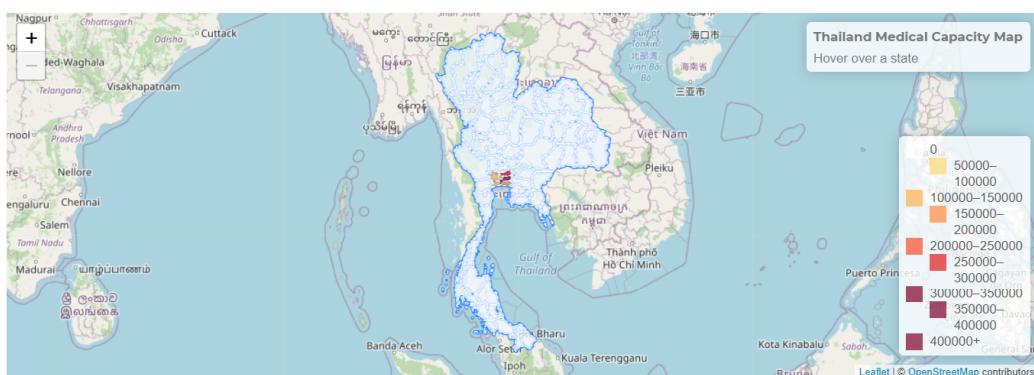
USER MANUAL



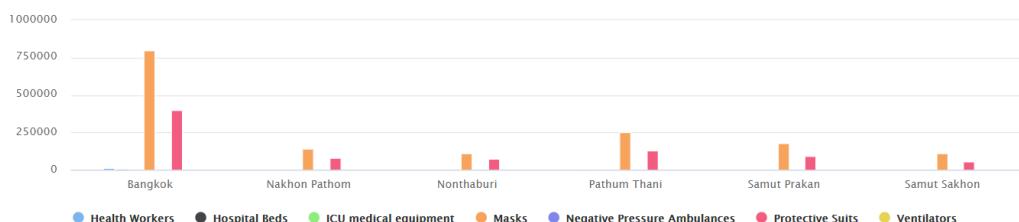
Data Analysis Dashboard

Thailand Medical Capacity Summary Report

The overview of current medical capacity summary of Thailand



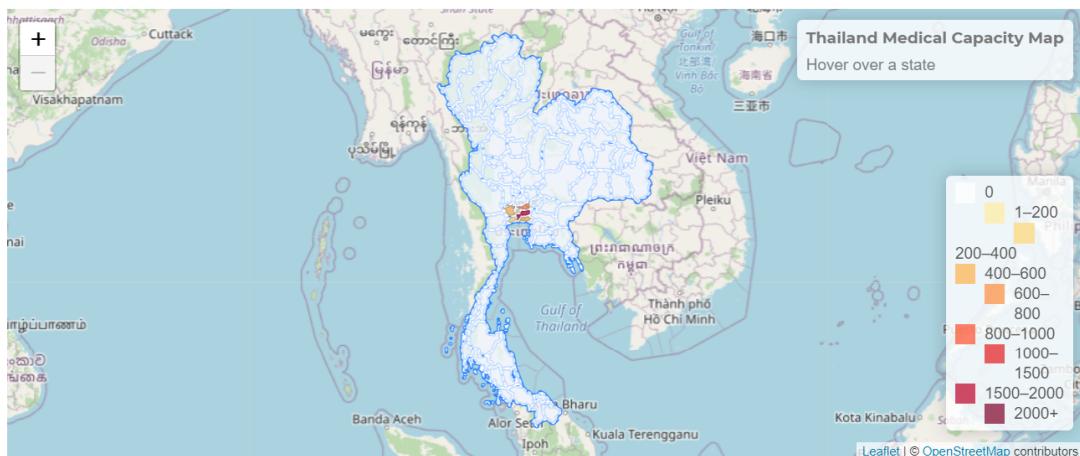
Medical Capacity Distribution



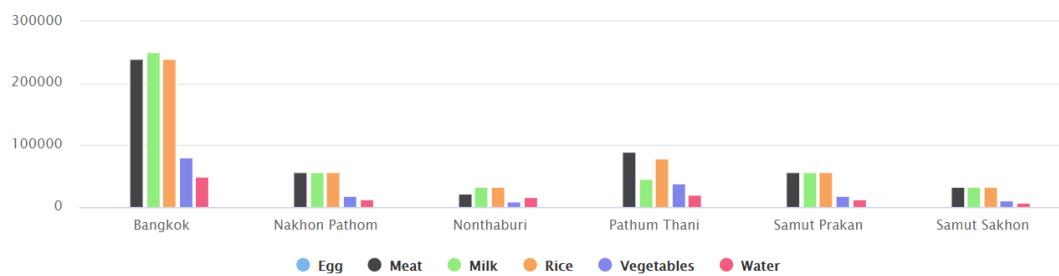
USER MANUAL

Thailand Living Supply Summary Report

The overview of current living supply summary of Thailand

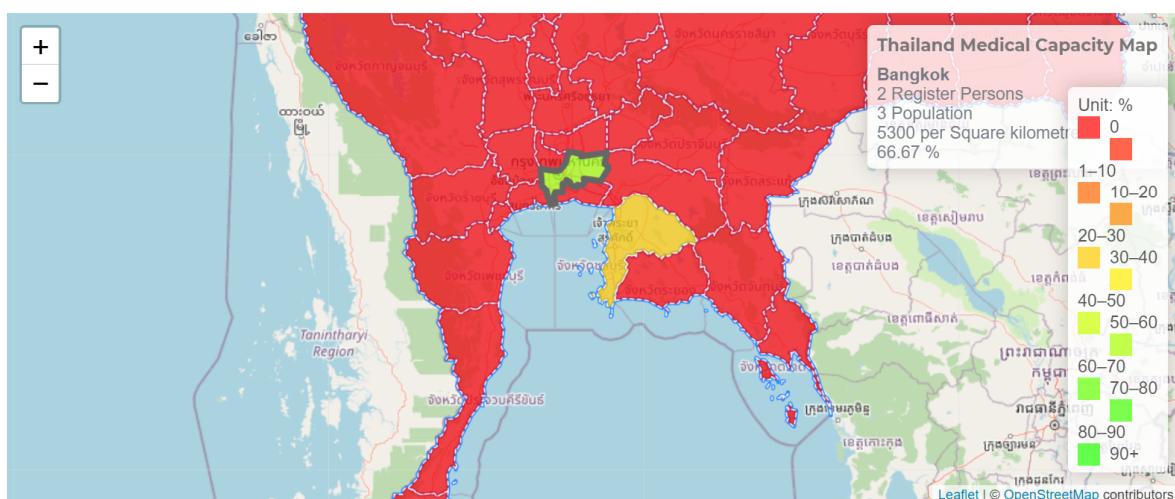


Living Supply Distribution



Thailand COVID Vaccine Register Summary Report

The overview of current vaccine register summary of Thailand



Vaccine Register distribution

USER MANUAL

- ❖ **COVID-19 Spatiotemporal Analysis and Prediction Base on GIPC**
 - Consider pandemic spread by contact with infected individuals.
 - Individuals recover from the pandemic and gain further immunity from it.

Susceptible - Infected - Recovered (SIR) Model

The SIR Model of current COVID-19 situation of Thailand

Covid-19 Pandemic Timeline

◆ Hospitalized ● Recovered ■ Dead

Initial Condition of SIR Model

Start Date: mm/dd/yyyy

End Date: mm/dd/yyyy

Province :

- Please Select Province -

Susceptible :

Beta (β) :

0.6

Gamma (γ) :

0.2

* Beta is Infectious rate per day

* Gamma is the Recovery rate

Lambda (λ) :

0.333

Delta (Δ) :

0.007

* Lambda is the rate of movement from exposed to infectious per day

* Delta is the rate of death for those who enter an infectious state

Time to simulate:

150

days

SUBMIT & ANALYZE

USER MANUAL

Susceptibles (S) have no immunity from the disease.

Infecteds (I) have the disease and can spread it to others.

Recovereds (R) have recovered from the disease and are immune to further infection.⁵



Susceptible - Infected - Recovered (SIR) Model

The SIR Model of current COVID-19 situation of Thailand

Selected Start Date: 2021-11-01

Selected End Date: 2021-11-30

Province: Chon Buri

Population: 5

Susceptible: 5000

Infected: 0

Recovered: 0

Dead: 0

Beta (β) : 0.6

* Beta is Infectious rate per day

Gamma (γ) : 0.2

* Gamma is the Recovery rate

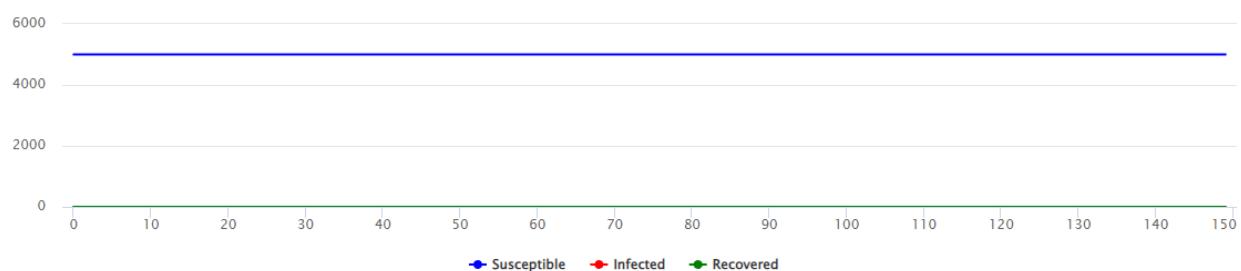
Lambda (λ) : 0.6

* Lambda is the rate of movement from exposed to infectious per day

Delta (Δ) : 0.2

* Delta is the rate of death for those who enter an infectious state

Covid-19 SIR Model

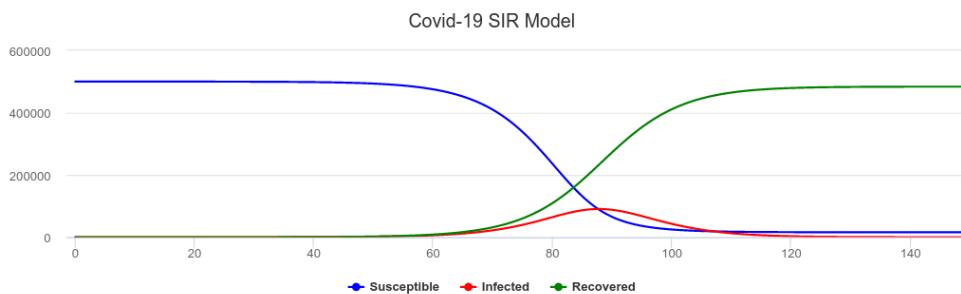


USER MANUAL

Susceptible - Infected - Recovered (SIR) Model

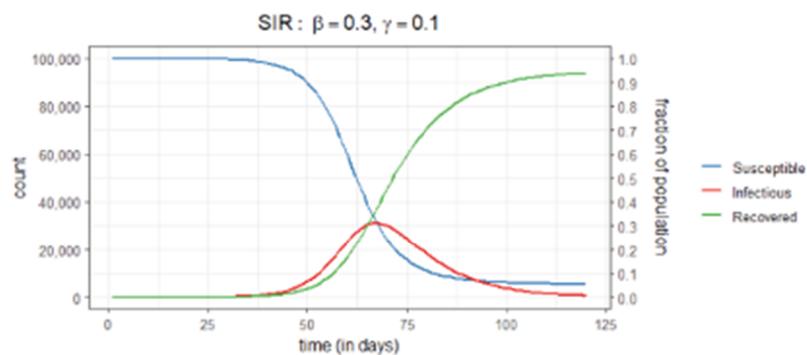
The SIR Model of current COVID-19 situation of Thailand

Selected Start Date: 2021-11-01	Selected End Date: 2021-11-30		
Province: Chon Buri	Population: 5		
Susceptible: 5000	Infected: 0	Recovered: 0	Dead: 0
Beta (β) : 0.6 <small>* Beta is Infectious rate per day</small>	Gamma (γ) : 0.2 <small>* Gamma is the Recovery rate</small>		
Lambda (λ) : 0.6 <small>* Lambda is the rate of movement from exposed to infectious per day</small>	Delta (Δ) : 0.2 <small>* Delta is the rate of death for those who enter an infectious state</small>		



In the real world, differential equations and their solvers would be used and you're free to explore that if you wish. Enjoy and let's talk about this online!

At this point in the pandemic, you may have seen the usual graphical output from a SIR model that shows the number (or proportion) of people in each state over time



These curves come from the (continuous time) SIR model which specifies a set of three ordinary differential equations:

$$\frac{dS_t}{dt} = -\frac{\beta I_t S_t}{N}, \quad \frac{dI_t}{dt} = \frac{\beta I_t S_t}{N} - \gamma I_t, \quad \frac{dR_t}{dt} = \gamma I_t$$