

Ahead of the training, you will need to:

- i) Download and install some software,
- ii) Register for Google Earth Engine (GEE) and create a Google Earth Engine project, and
- iii) Create three folders in your Google Drive.

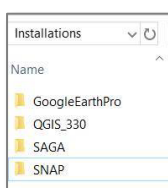
Please note that the **software installation** instructions provided below are **the same** as those used in the July 2024 training organised by ESCAP.

- ! If you participated in that training and still have the same versions of all the software installed, you will not need to repeat these steps, but it is important to check that the versions of QGIS and the SAGA plug-in installed on your computer are the correct ones.

Please download the “Installations.zip” file to your computer from:

<https://tinyurl.com/2jrm74w2>

Unzip the file. You should have all subfolders under a parent folder called “Installations”:



## How to install QGIS

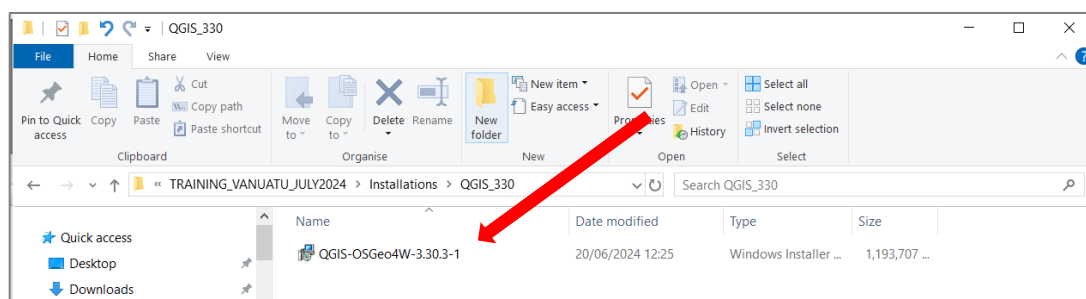
During the training sessions, we will use **QGIS version 3.30**. Note that if you have an older or newer version of QGIS, you still need to install QGIS version 3.30.

- ! **It is very important that we all use the same version of QGIS** to guarantee compatibility between the software and the plugins. The materials for this workshop have been tested using this version. Using older or newer versions may mean that certain functions are not available or that plugins do not work as intended.

To install QGIS version 3.30 using the Standalone installer for Windows, please follow the next steps:

### Step 1

Go to the **Installations\QGIS\_330** folder on your computer and find the executable file—**Double-click** on it to open it.



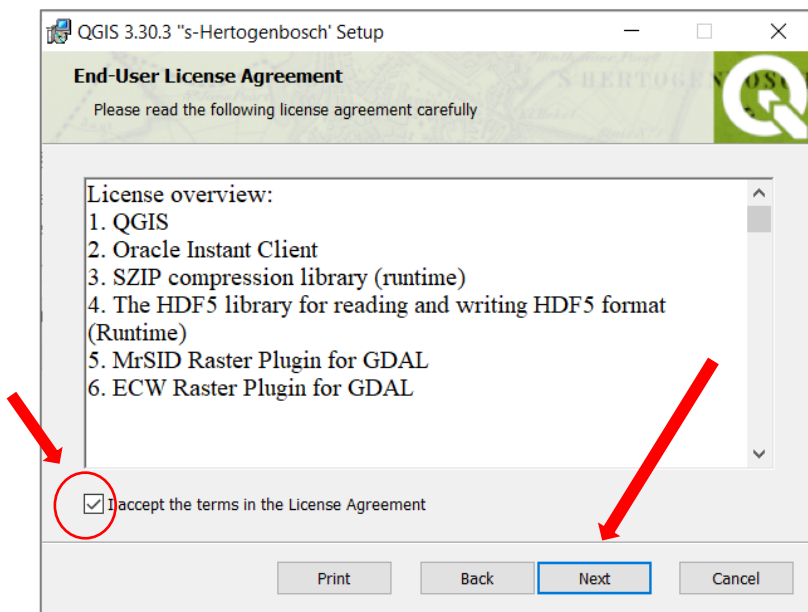
### Step 2

After double-clicking on it, the installation process will start. Click on the **Next** button.



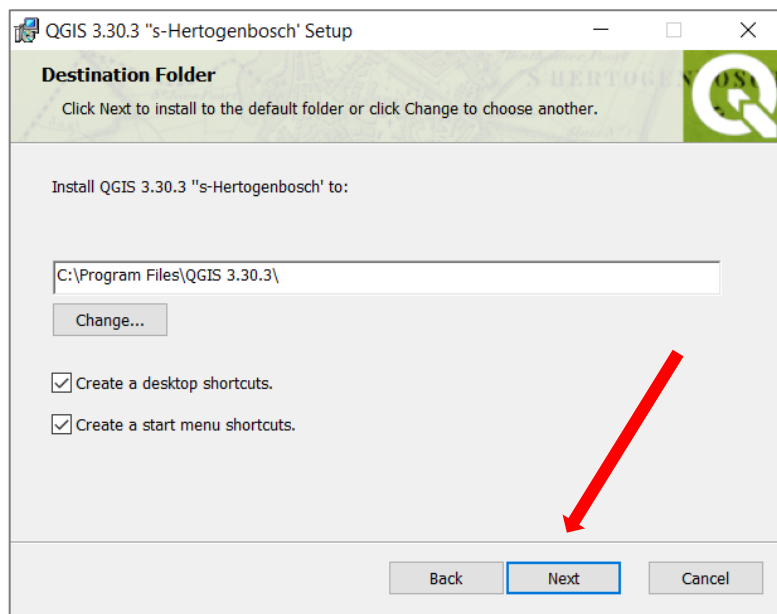
### Step 3

The next screen is about the License Agreement. To **accept the terms**, tick the box and then click the **Next** button.



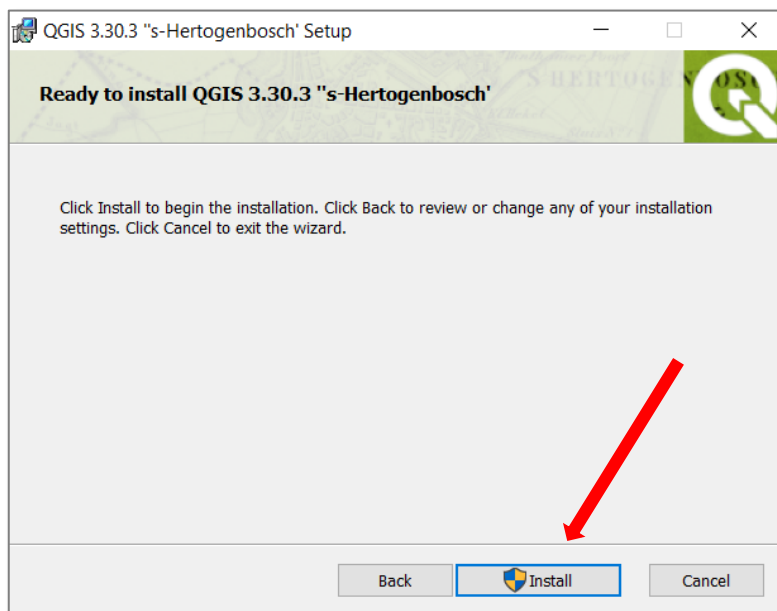
### Step 4

The next screen is about the installation location. It is recommended that you use the suggested location. Then click on the **Next** button.



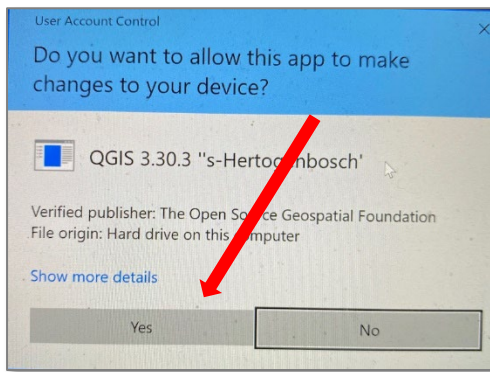
### Step 5

On the next screen, click on the **Install** button.



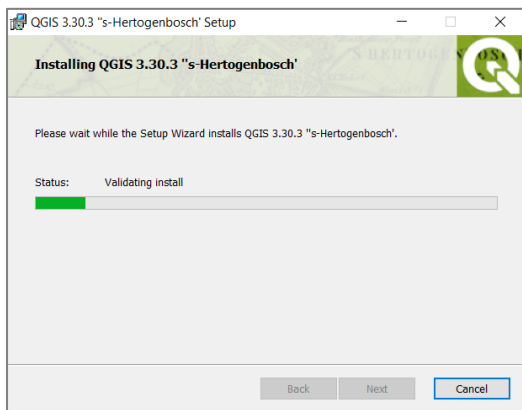
### Step 6

It will then prompt you to confirm that you allow the app to make changes to your device. Click on **Yes**.



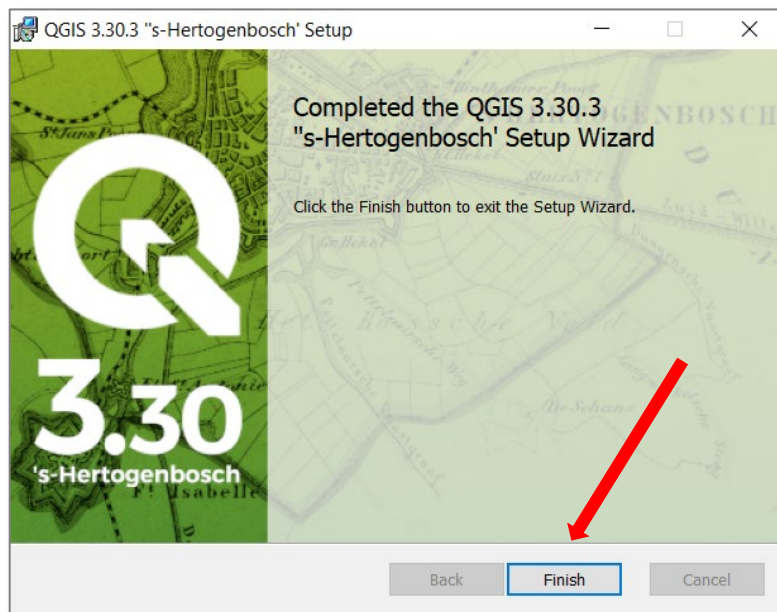
### Step 7

At this point, the installation process will start.

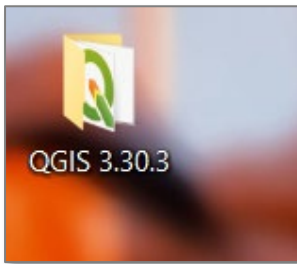


### Step 8

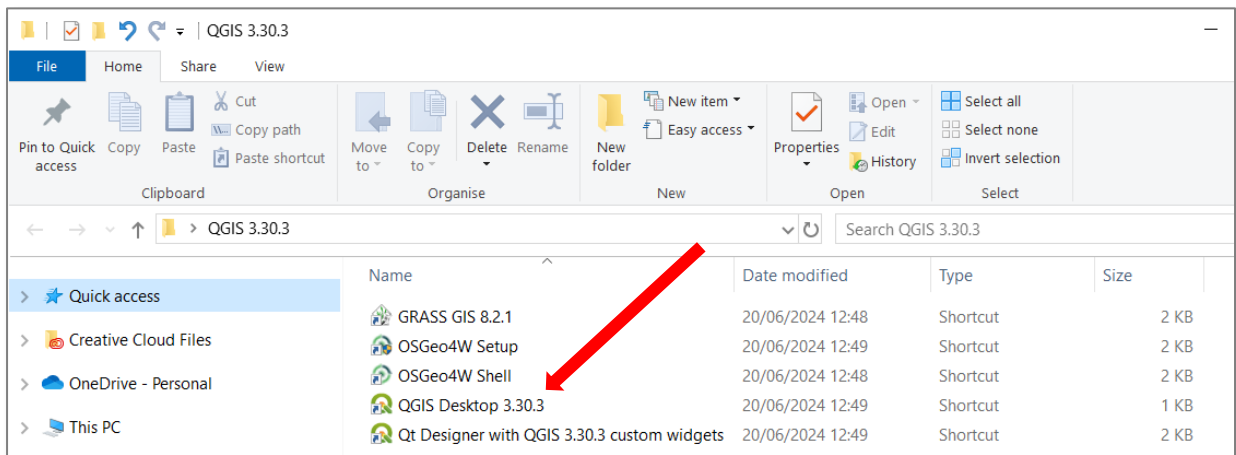
After the installation process is complete, click on the **Finish** button.



After the steps above, QGIS version 3.30 has been successfully installed on your system, and a folder will appear on your desktop:



Open the Desktop folder and launch QGIS 3.30 by clicking on the **QGIS Desktop 3.30.3**:



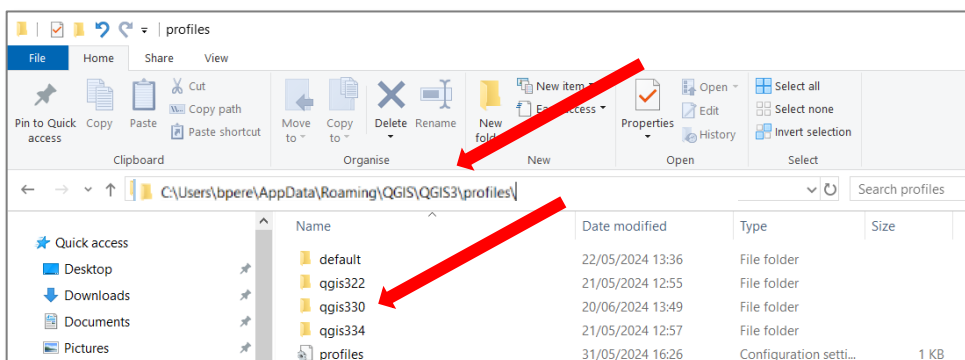
### Step 9

In this step, we will create a separate profile for the newly installed version of QGIS 3.30. This way, we will keep its configurations (e.g. user settings, plugins, and custom customisations) stored in a separate directory. By managing separate profiles, we ensure that different versions of QGIS (already installed on your computer or that you may install in the future) will use their own configuration directory, preventing conflicts and maintaining distinct settings.

**Close** QGIS 3.30, which you opened in Step 8.

In your File Explorer, **Copy and Paste** in the search bar the following location link "**C:\Users\<YourUser>\AppData\Roaming\QGIS\QGIS3\profiles\**" and **create a new folder** called "**qgis330**".

*[replace <YourUserName> with your actual Windows username]*



### Step 10

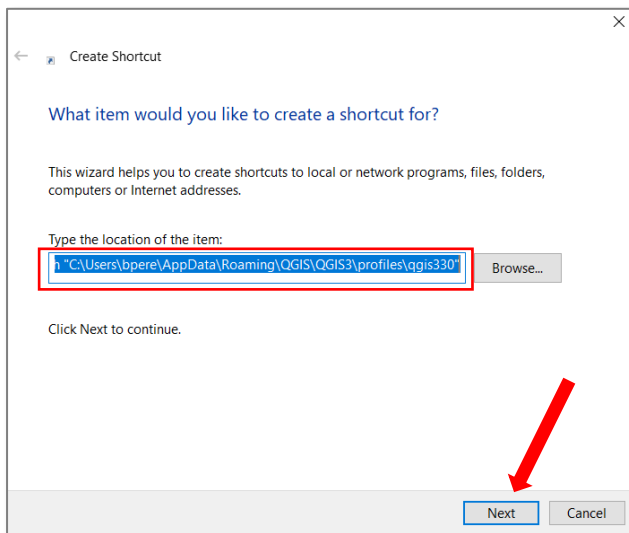
To launch QGIS 3.30 using the newly created profile, we will set up a Shortcut.

To create a Shortcut for QGIS 3.30, **right-click** on your desktop and select **New | Shortcut**.

In the location field, paste:

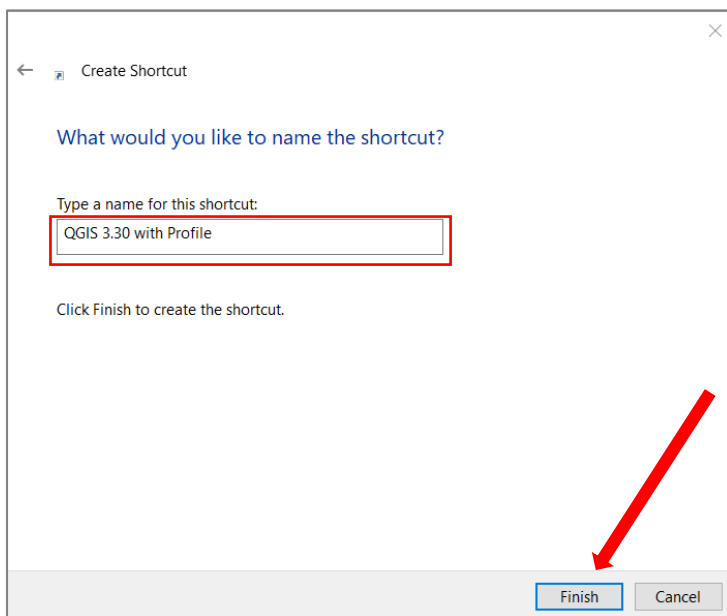
**"C:\Program Files\QGIS 3.30.3\bin\qgis-bin.exe" --profiles-path "C:\Users\<YourUserName>\AppData\Roaming\QGIS\QGIS3\profiles\qgis330"**

*[replace <YourUserName> with your actual Windows username]*



Click on **Next**.

In the next window, name the Shortcut **QGIS 3.30 with Profile** and click on **Finish**.



From now on, to open QGIS 3.30 with the specified profile, **double-click** the "QGIS 3.30 with Profile" shortcut you just created.

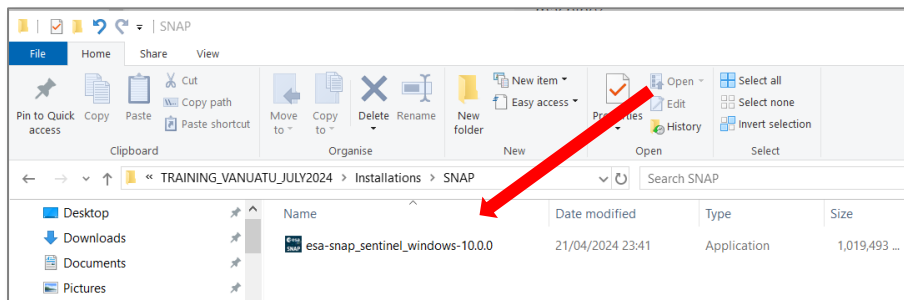


# How to install SNAP

To use one of the plugins during the training sessions, you need to install the SNAP software on your machine. Follow the steps below to install the SNAP software on your machine.

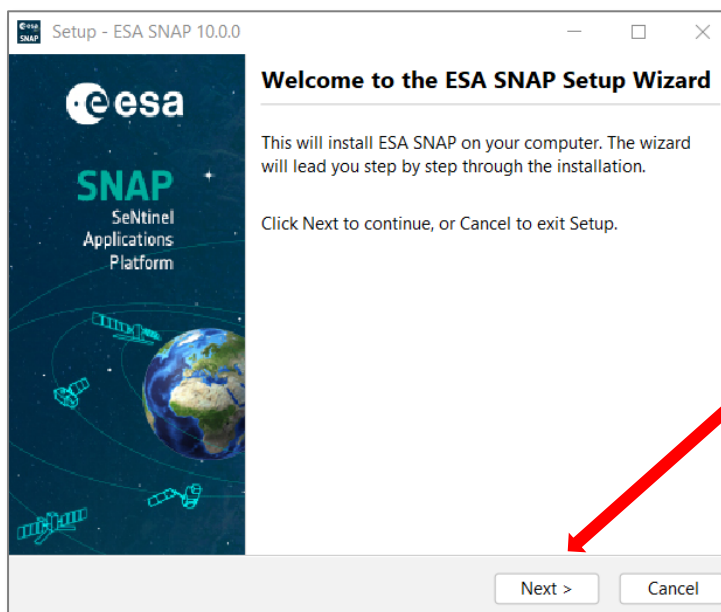
## Step 1

Go to the **Installations\SNAP** folder on your computer and find the executable file—**Double-click** on it to open it.



## Step 2

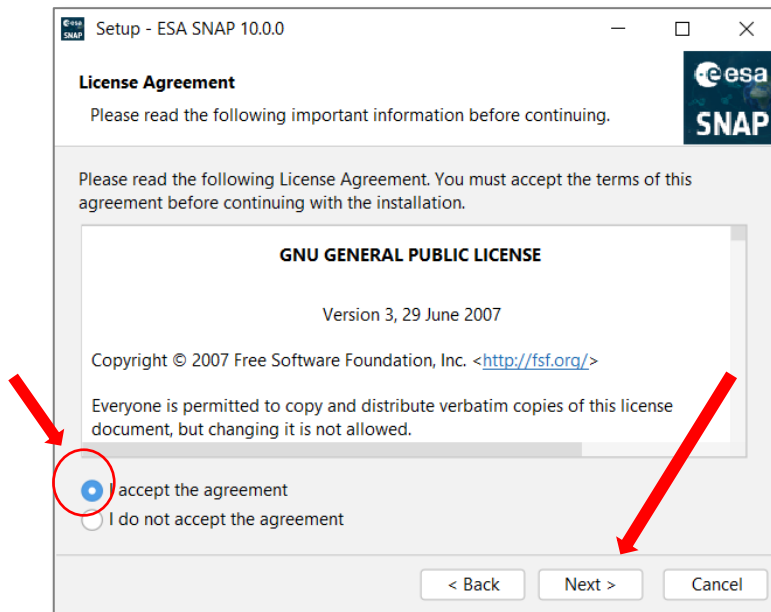
After double-clicking on it, the SNAP Setup Wizard will open. Click on the **Next** button.



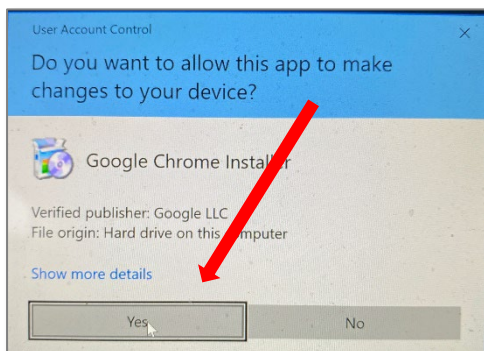


### Step 3

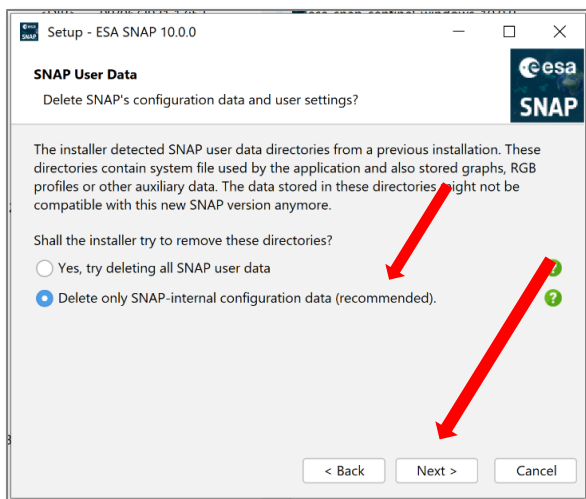
The next screen is about the License Agreement. **Select** to accept the agreement and then click on the **Next** button.



When prompted to allow the app to make changes on your computer, click on **Yes**.

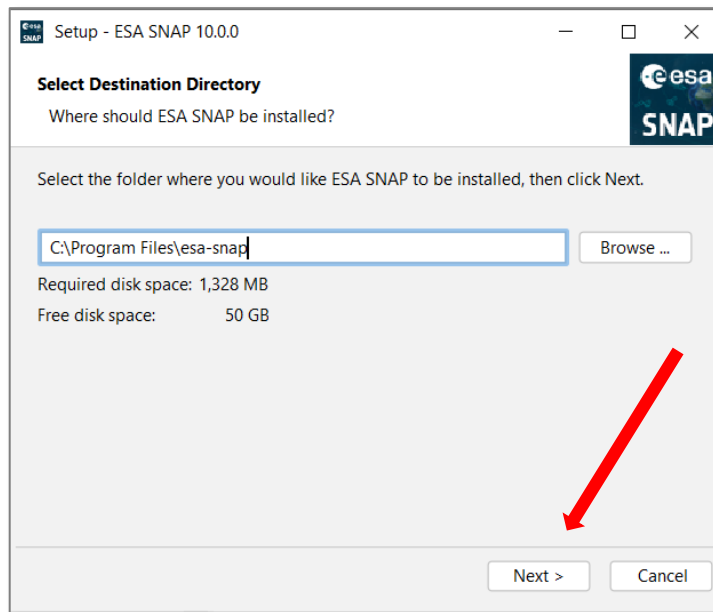


**\*\*If you have an existing version of SNAP, you will be prompted to delete SNAP User Data. **Keep** the recommended option and click on **Next**.**



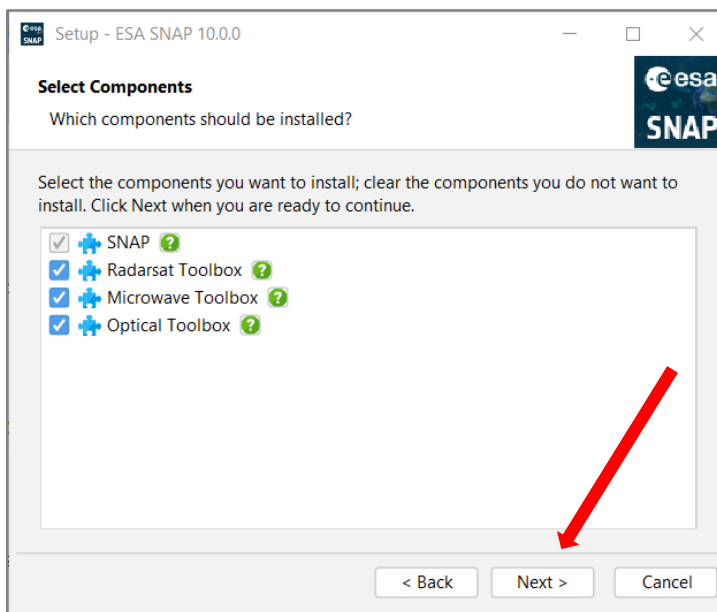
#### Step 4

The next screen is about the installation location. It is recommended that you use the suggested location. Then click on the **Next** button.



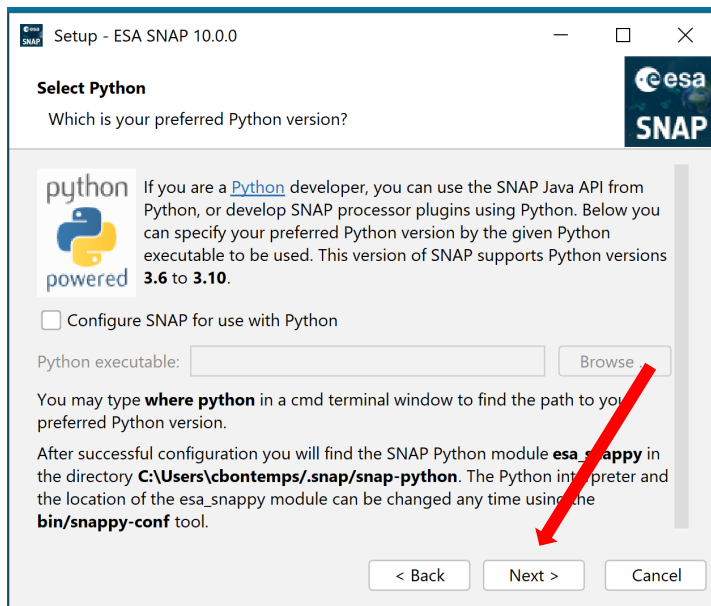
#### Step 5

In the next screen, leave the default components to install and click on the **Next** button.



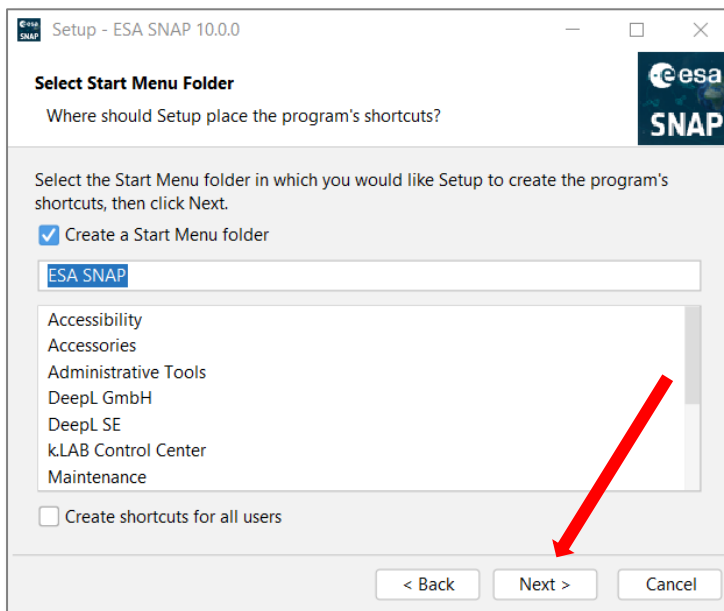
### Step 6

In the next screen, **keep unchecked** the option to Configure SNAP for use with Python and then click on the **Next** button.



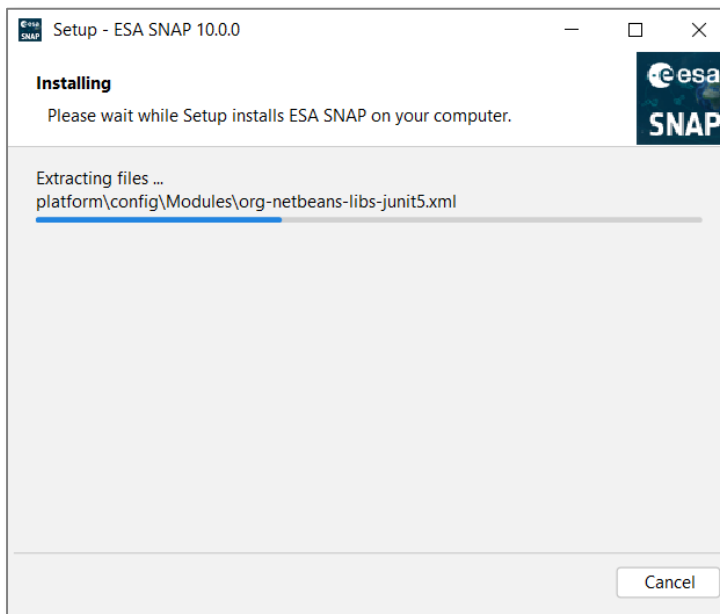
### Step 7

Leave the default Start Menu folder and then click on the **Next** button.



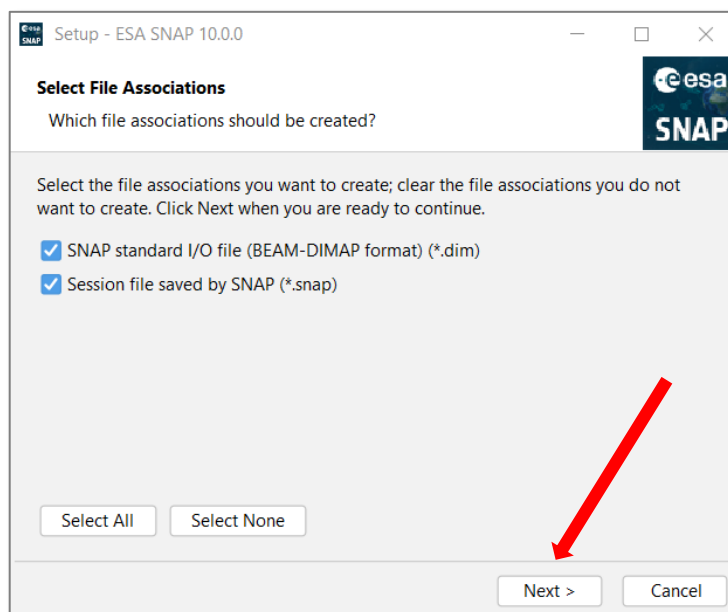
### Step 8

In the next screen, click on the **Next** button to start the installation.



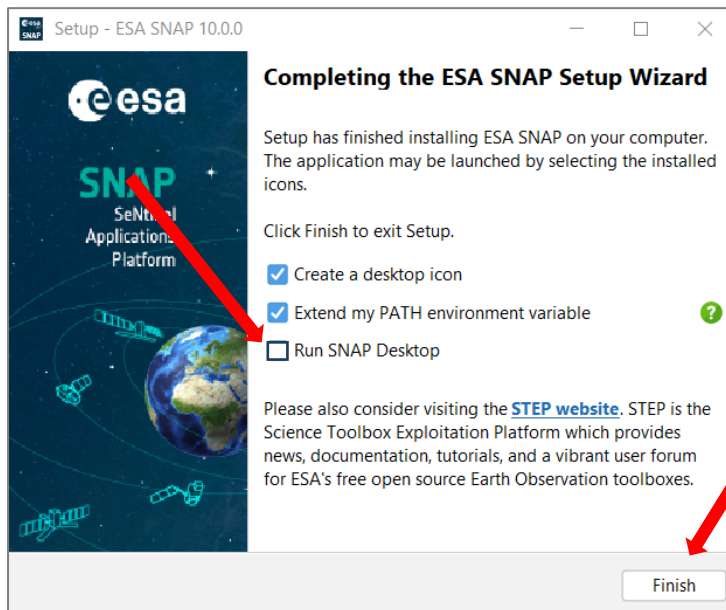
### Step 9

Leave the default file associations and click on the **Next** button.



### Step 10

Once the installation is complete, uncheck “Run SNAP Desktop” and then click on the **Finish** button to close the Setup Wizard.



# How to install the SAGA plugin manually

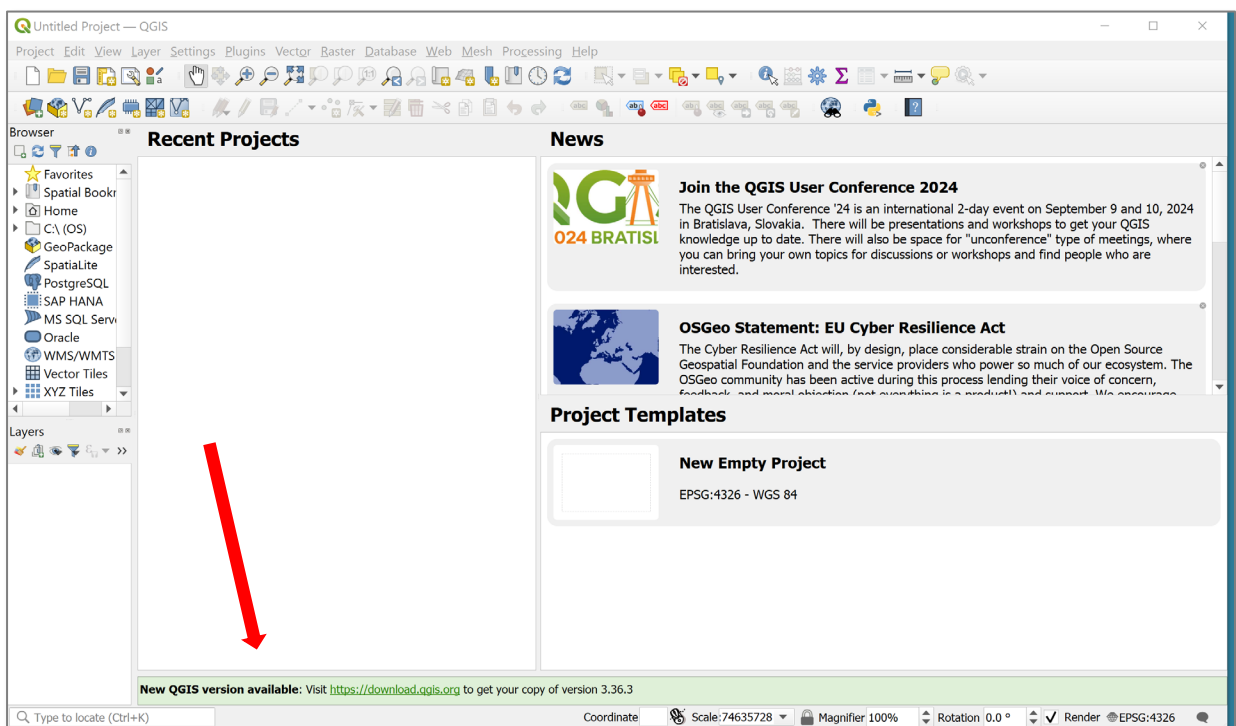
The following instructions will allow us to use SAGA GIS tools within QGIS.

## Step 1

**Double-click** the Shortcut “QGIS 3.30 with Profile” to launch QGIS:



In the QGIS 3.30 window you may see a message above the Status bar stating that a new QGIS version is available.

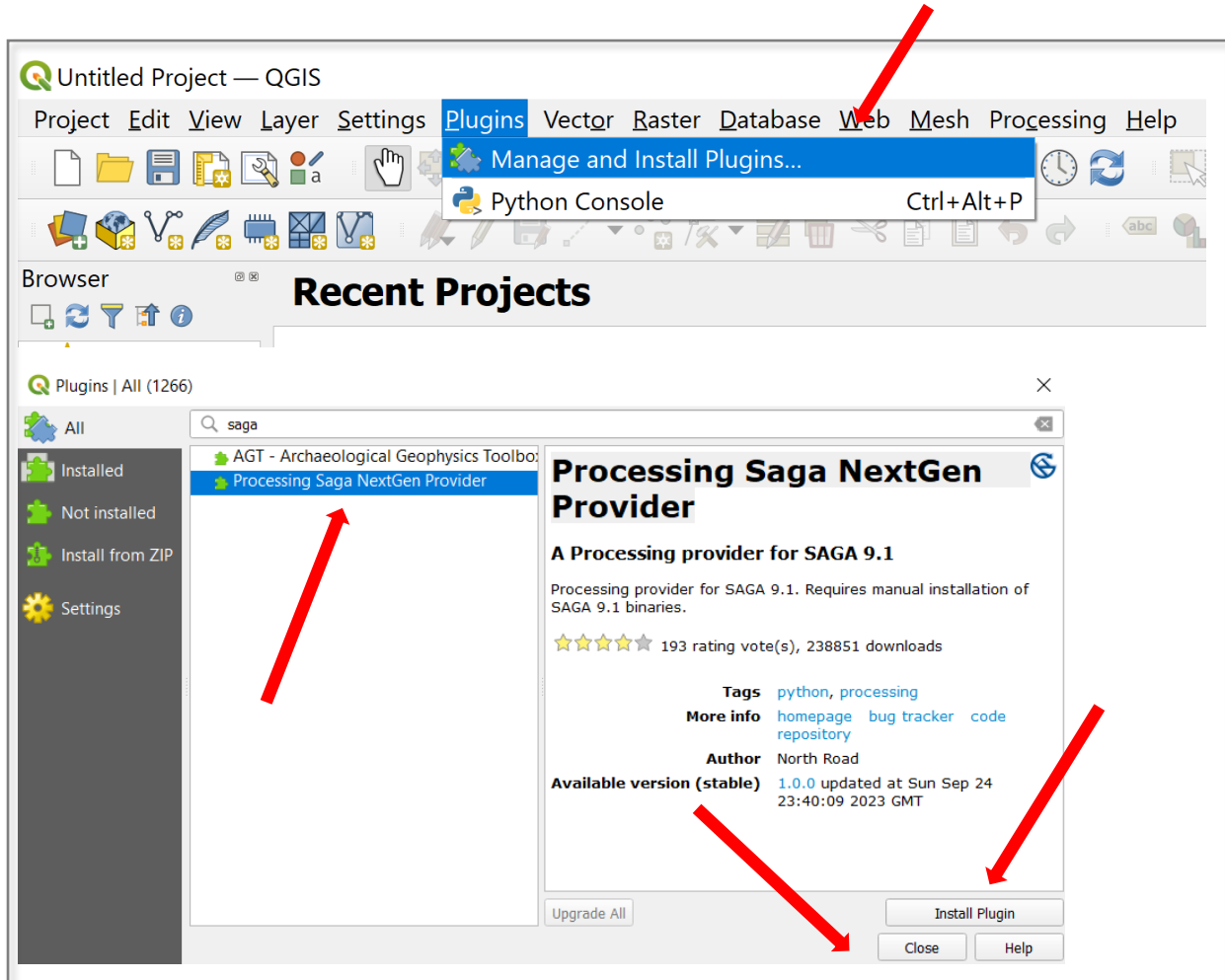


Please ignore this message as QGIS 3.30 is the version we will use during the training sessions.

## Step 2

Install the SAGA provider plugin in QGIS by **clicking** on **Plugins | Manage and Install Plugins** and type **saga** in the search box. **Highlight** the “Processing Saga NextGen Provider” plugin and click on the **Install Plugin** button.

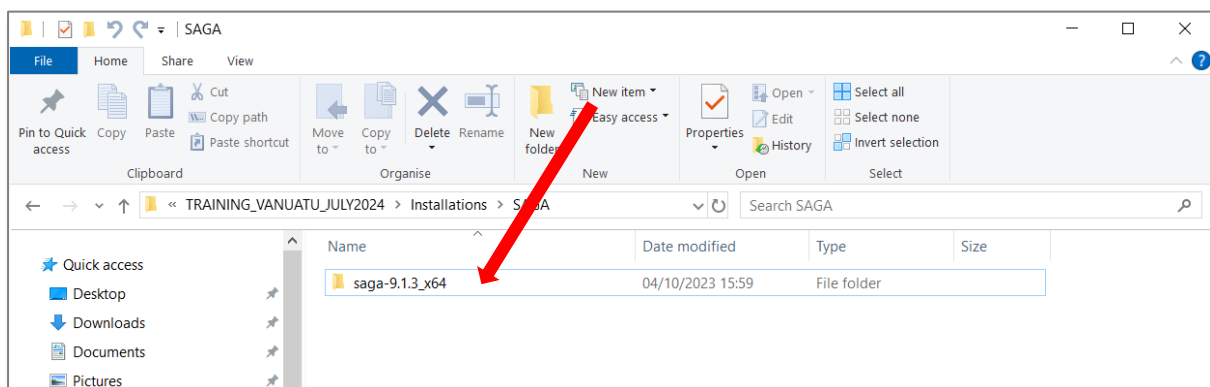
After the plugin has been installed, click on the **Close** button.



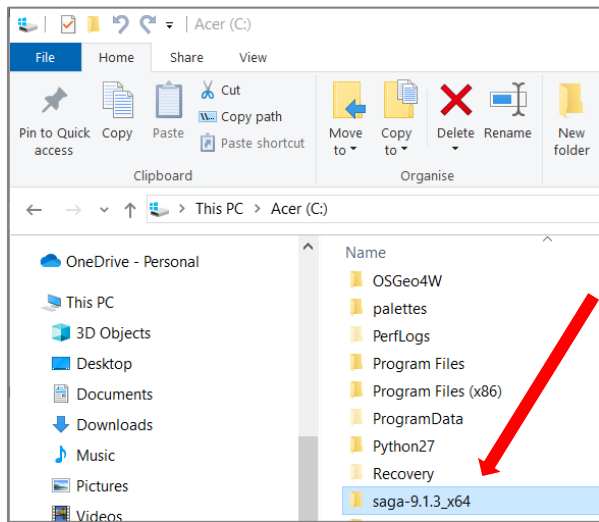
## Step 3

As shown in the figure above, the processing provider requires manual installation of the SAGA 9.1 binaries.

Go to the **Installations\SAGA** folder in your computer and find the “saga-9.1.3\_x64” folder.



**Right-click** on the folder and **Copy** and **Paste** it in the C: directory in your computer.

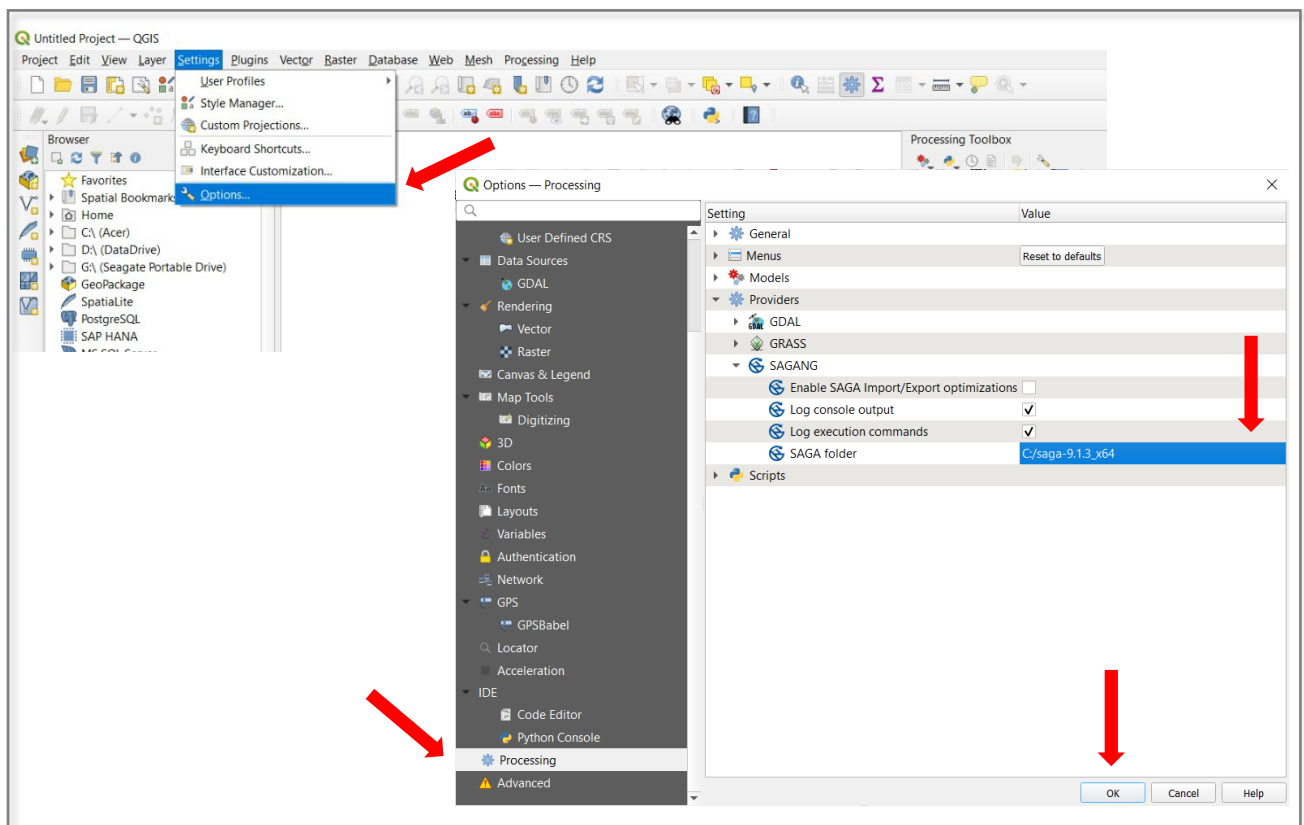


#### Step 4

Go back to QGIS, and from the **Settings** menu, go to **Options | Processing**. You will see the provider SAGANG because you installed the plugin in Step 2 above.

**Double-click** on the white box next to the “SAGA folder” to access the “...” button. **Click on** the button to select the SAGA folder “saga-9.1.3\_x64” that you placed in the C: drive in Step 3 above.

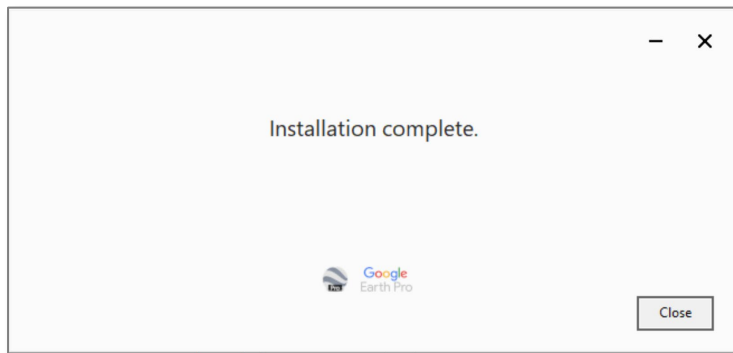
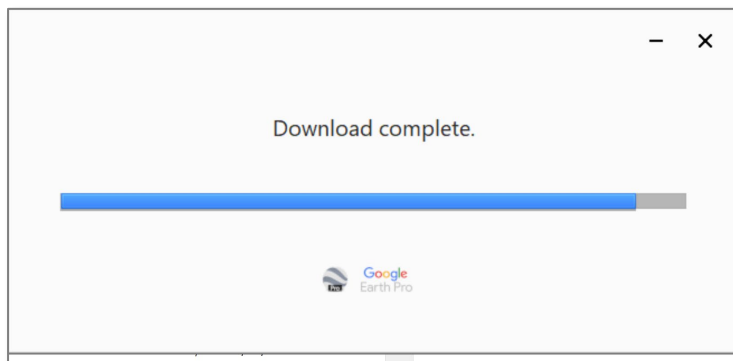
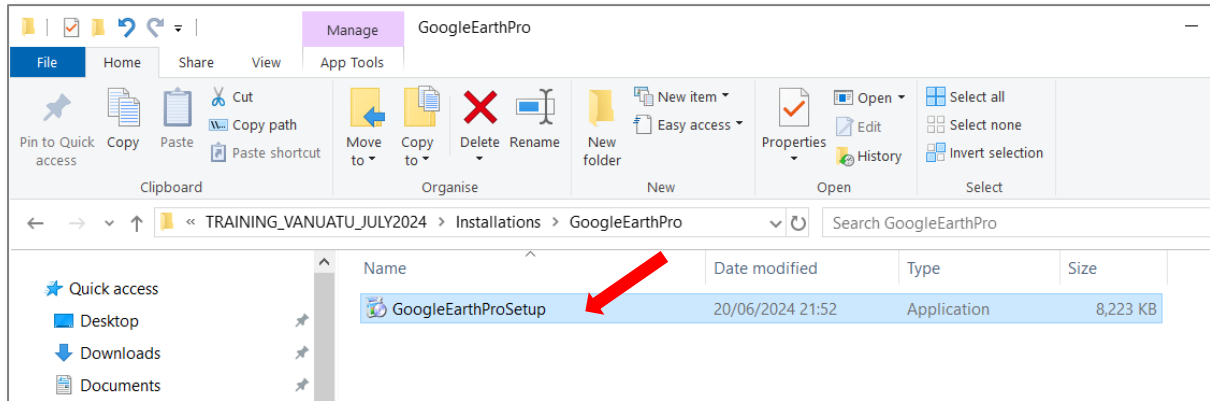
Finally, **click on** the OK button.





## How to install Google Earth Pro

Go to the **Installations\ GoogleEarthPro** folder in your computer and find the executable file. **Double-click** on it to install the application.



After the installation is complete, a new shortcut will appear on your desktop.



# Google Earth Engine (GEE)

## Google Account

A Google account is required to access Google Colab, Google Drive, and Google Earth Engine. If you don't already have a Google Account, please create one before proceeding.

## GEE Registration and GEE Project

To authenticate and initialize GEE within this notebook, you need to:

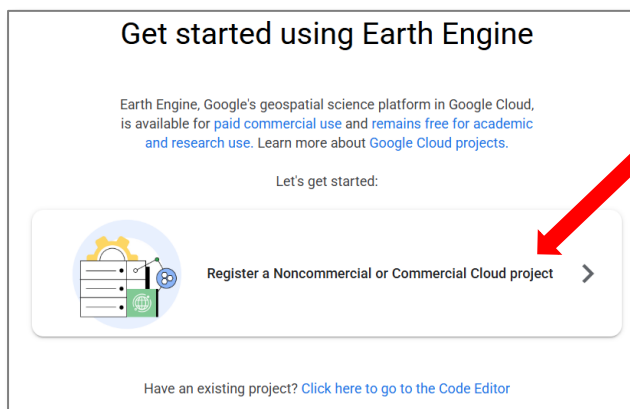
- Register for Google Earth Engine (GEE).
- Set up a GEE project.

**If you are not yet registered, follow these steps:**

### Step 1

Go to the GEE registration page: <https://code.earthengine.google.com/register>

Click on '**Register a Noncommercial or Commercial Cloud project**'.



### Step 2

In the next window, select **Unpaid usage** and select **Trainer & trainees** as Project type.

Click on **Next**.

### Step 3

For 'Project-ID', **type** vanproj + your initials. For example, if your initials are bpl, your 'Project-ID' will be 'vanprojbpl'.

For 'Project Name' **type** 'VANproj' and click on **CONTINUE WITH REGISTRATION**.

Create or choose a Cloud Project to register

Create a new project in Google Cloud, or choose one you are authorized to access to enable the API:

☒ Create a new Google Cloud Project

Organization

Project-ID\*

vanprojbpl

Choose a unique ID. This cannot be changed later.

Project Name (optional)

VANproj

Choose a name to help you identify the Cloud Project.

☐ Choose an existing Google Cloud Project

[BACK](#) [CONTINUE WITH REGISTRATION](#)

### Step 4

Confirm the Cloud Project information by clicking on **CONFIRM**.

Confirm your Cloud Project information

**Project usage**

Trainer & trainees

**Project info**

vanprojbpl

VANproj

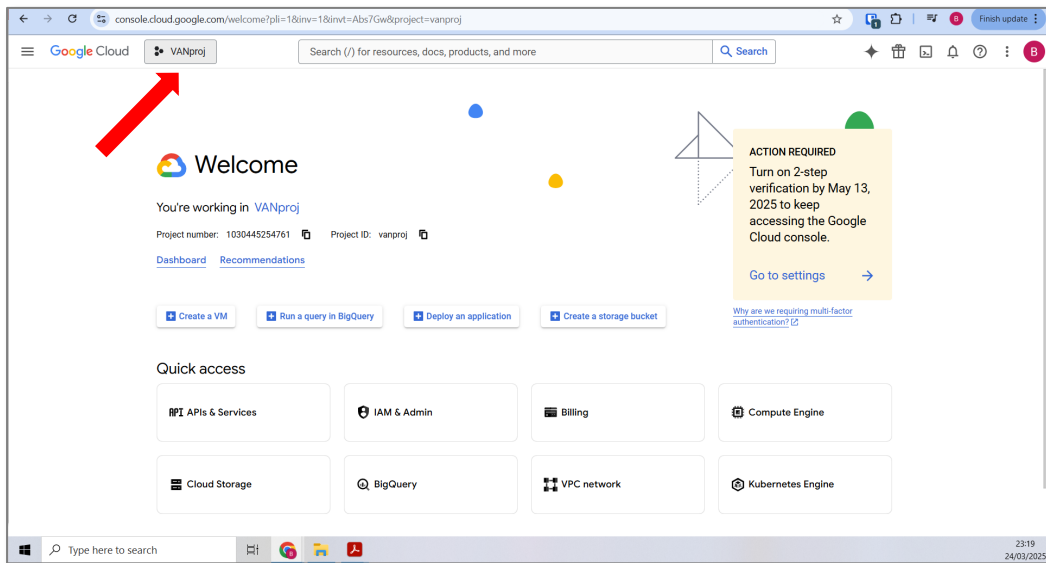
[BACK](#) [CONFIRM](#)

Project information cannot be changed later

**If you are already registered, follow these steps:**

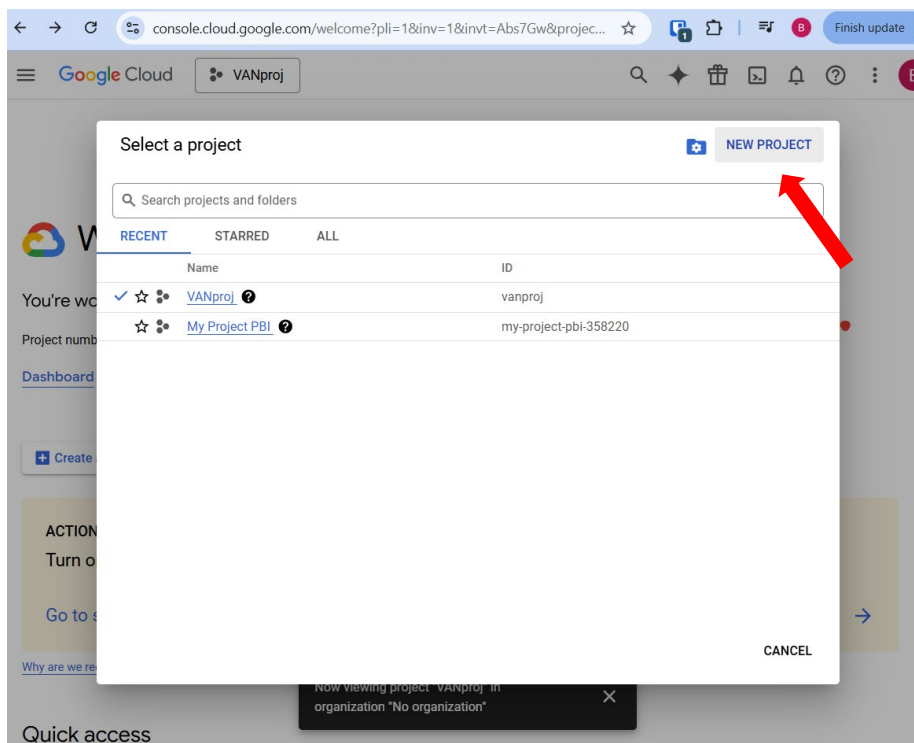
### **Step 1**

Go to the GCP (Google Cloud Platform) console: <https://console.cloud.google.com/> and **click** on the top-left button to open the '**Select a project**' dialogue



### **Step 2**

Click on the top-right button and on **NEW PROJECT**. For 'Project Name' type: **VANproj**



## Google Drive Folders

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The Python notebook we will be using in the training will export some processed data to Google Drive. Please create the following folders in your Google Drive:

- GEE\_exports\_COMPONENT\_1
- GEE\_exports\_COMPONENT\_2
- GEE\_exports\_COMPONENT\_3