SEEFFGS Post Processing with QGIS

Presented by

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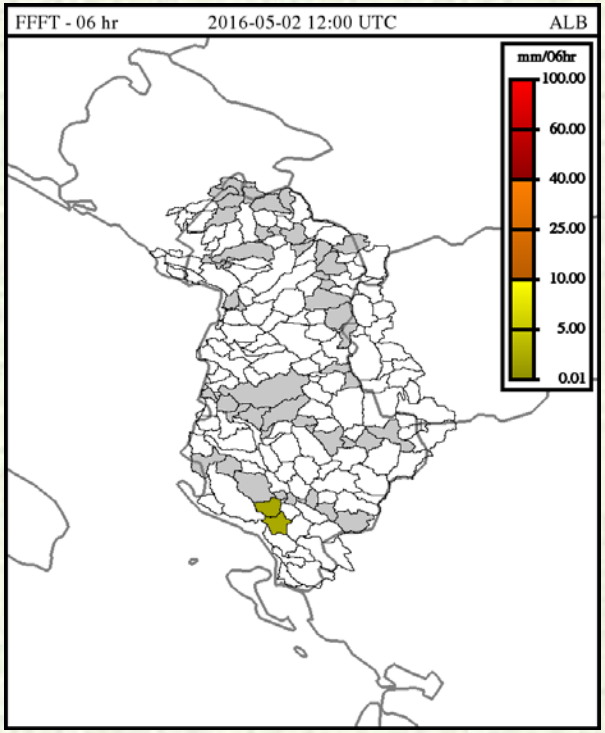
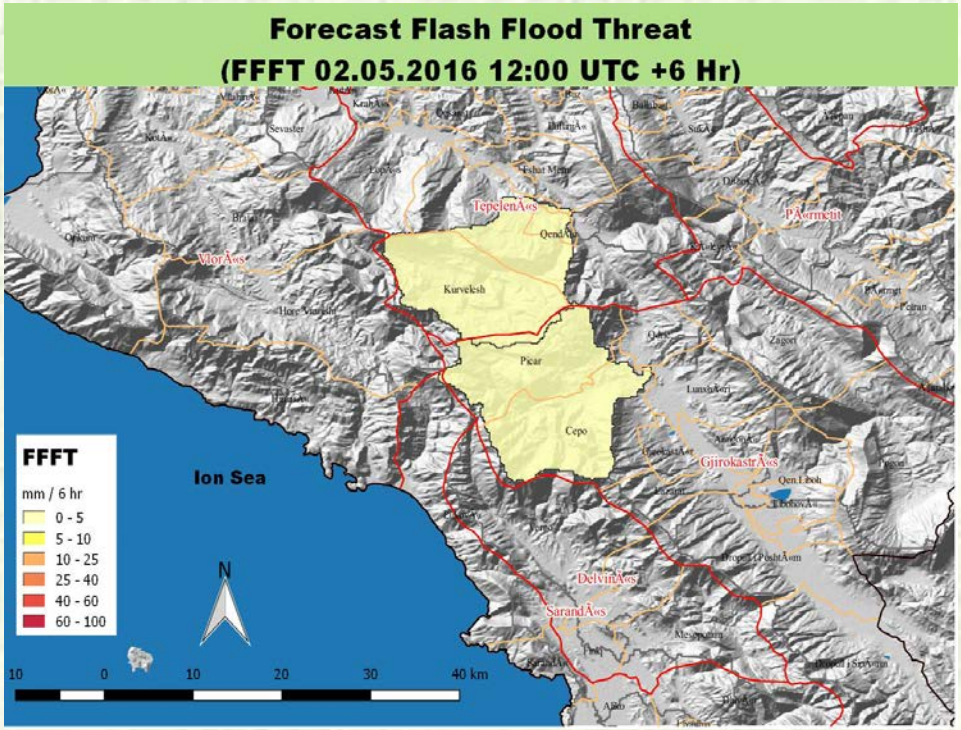
09-13 May 2016, Follow Up Operations Workshop
South East Europe Flash Flood Guidance (SEEFFG) System

World Meteorological Organization (WMO)
Hydrologic Research Center (HRC)
National Oceanic and Atmospheric Administration (NOAA)
U.S. Agency for International Development (USAID)

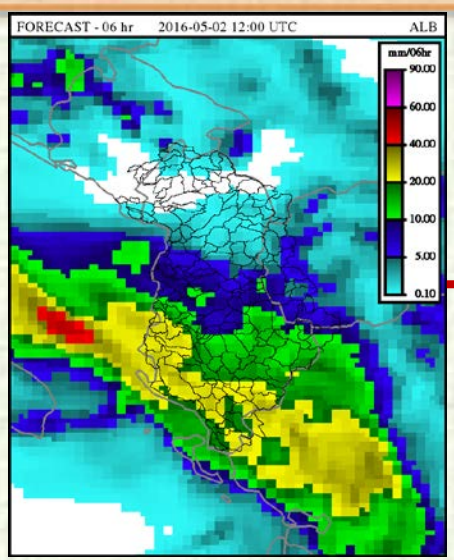
GOAL

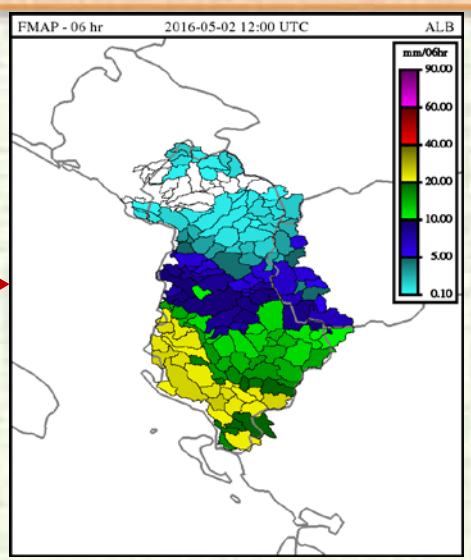


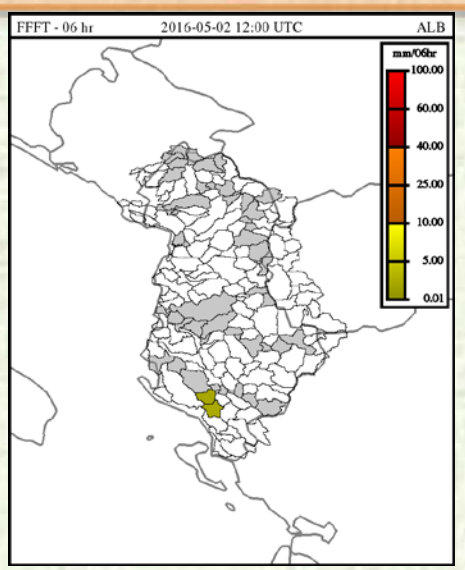


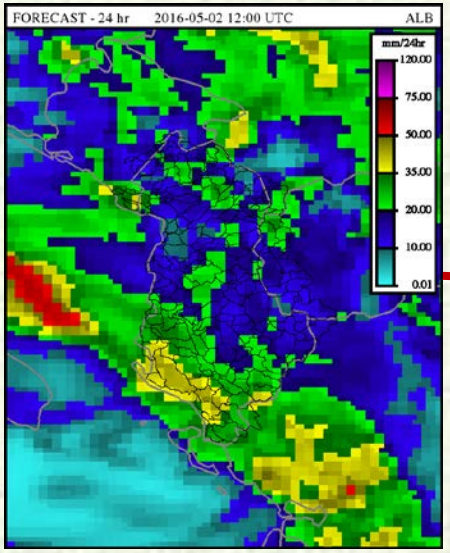
The goal of this study is to prepare maps for post processing of SEEFFGS products by using QGIS.

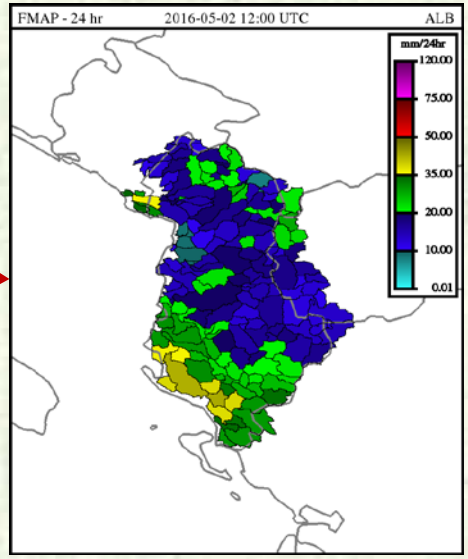
EVALUATION OF THE CURRENT SITUATION







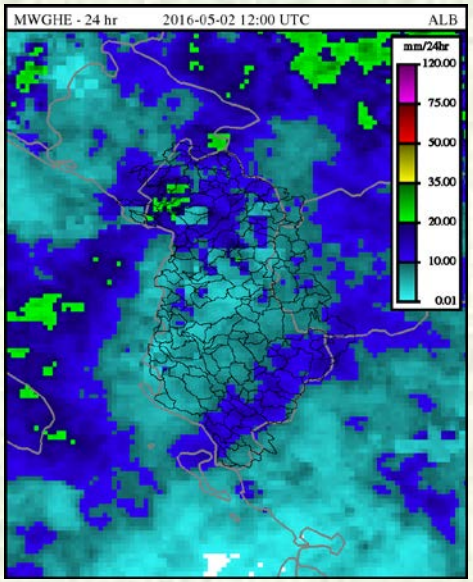


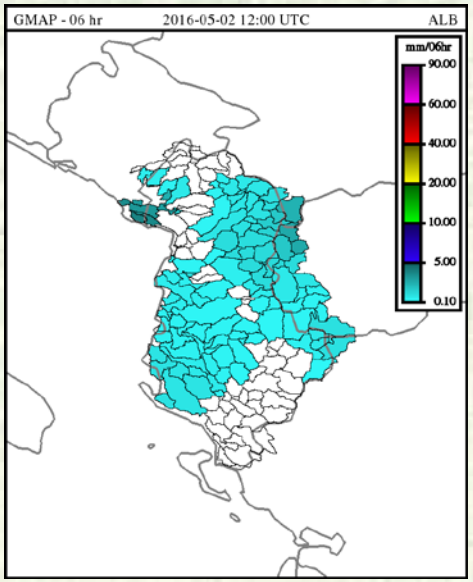


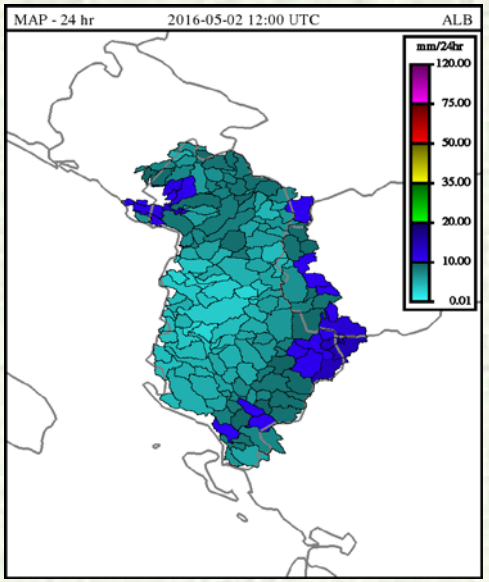
On the left side, the images provide 6-hour and 24-hour totals of forecast precipitation (mm) produced by using numerical forecasts from the Aladin Model. ALADIN forecast. They show heavy rainfall is expected over Albania. It is important to note that the majority of expected rainfall occcur in the first 6 hours. In particular, there is heavy rainfall prediction in the southern part.

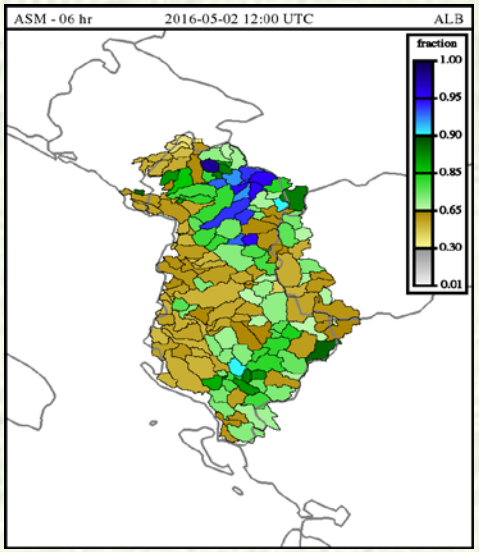
MEVCUT DURUM DEĞERLENDİRMESİ

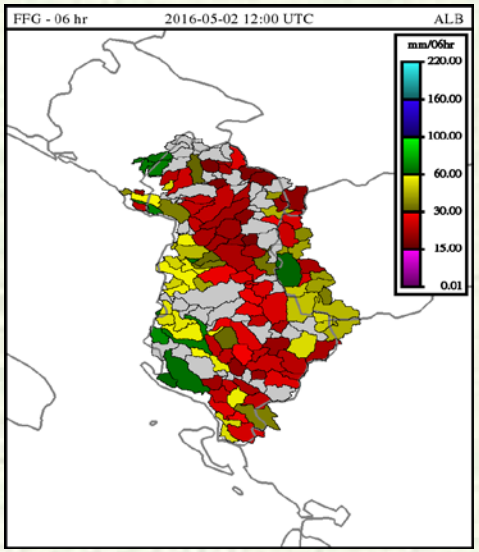
EVALUATION OF THE CURRENT SITUATION





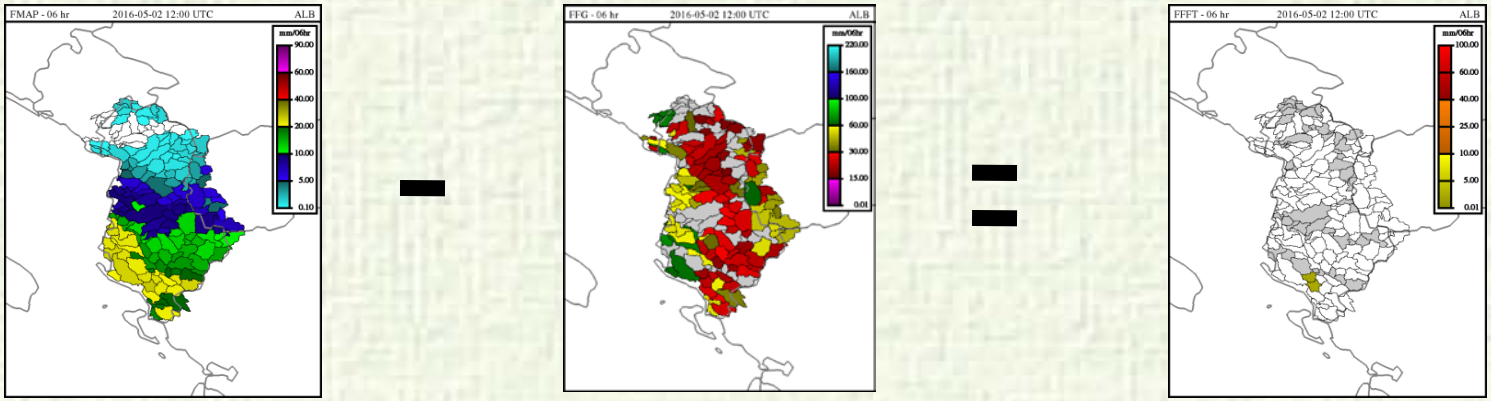






Albania received some precipitation in the last 24 hours from the gauge observation and satellite rainfall estimate maps. Accordingly, saturation of the soil moisture was increased while FFG threshold values were declined.

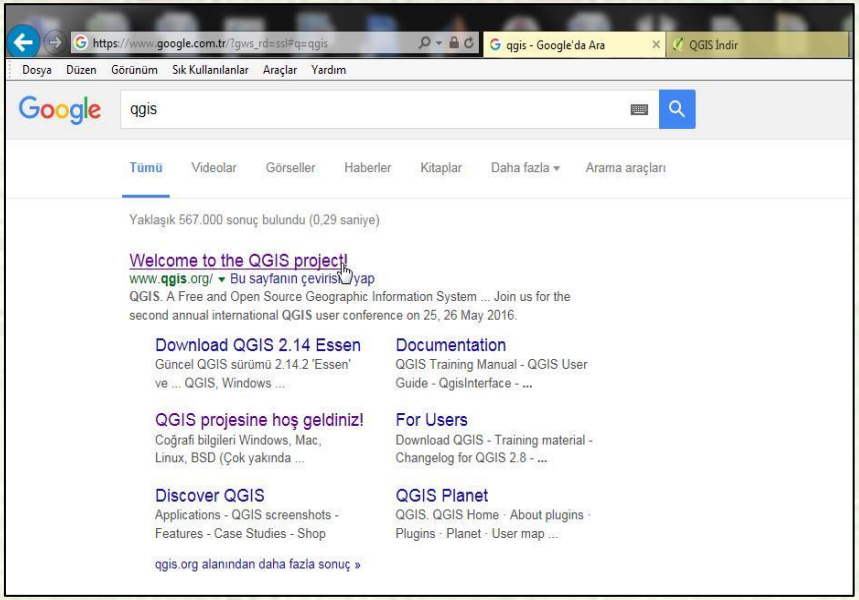
WARNING DECISION

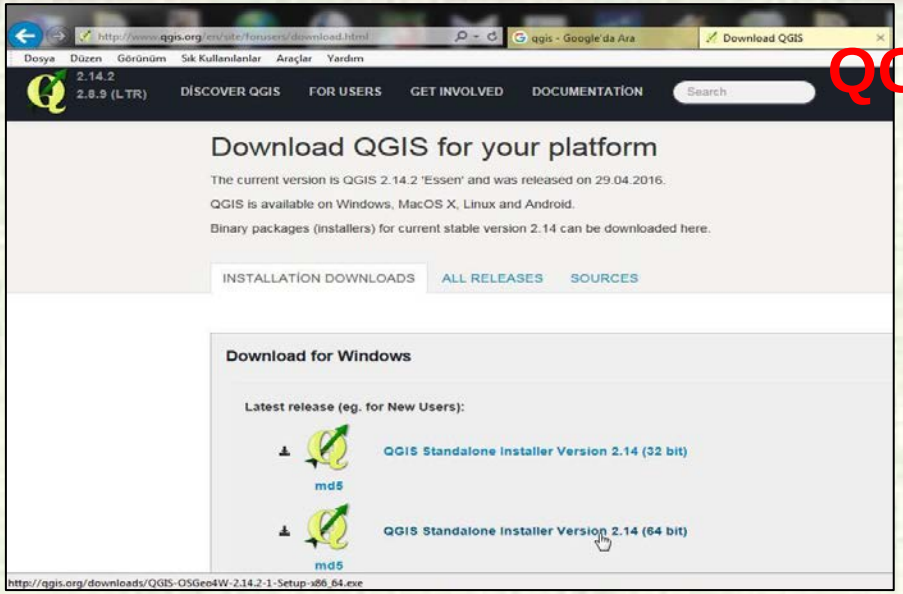


FMAP – FFG = FFFT

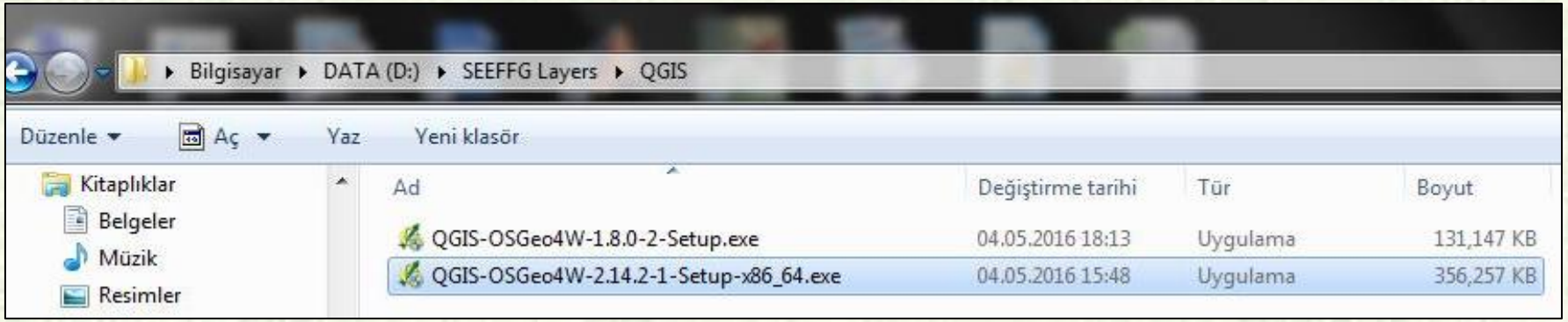
In the preparation phase of a flash Flood Early Warning Bulletin, One can consider looking at the values of FFFT product (Here, Forecast Flash Flood Threat is equal to FMAP minus FFG). If 1,3,6 hour FFFT maps results in colored sub-basin, it means flash Flood Hazard is highly expected within the next these hours.

DOWNLOADING AND INSTALLING QGIS



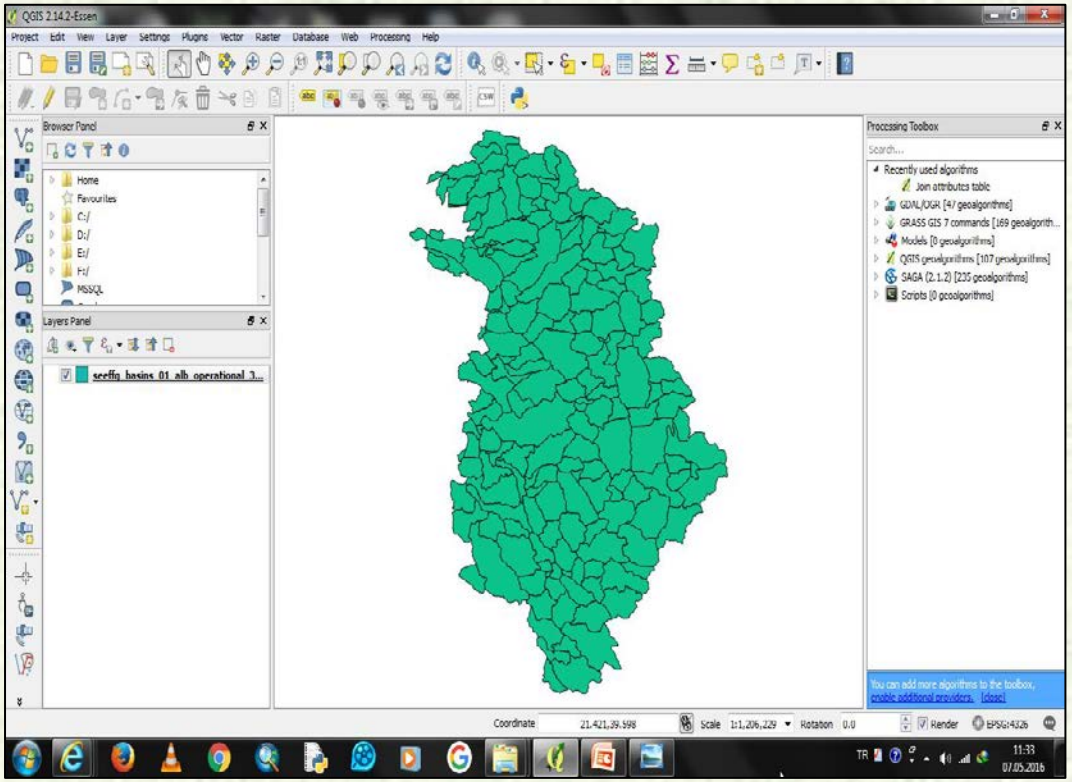


QGIS



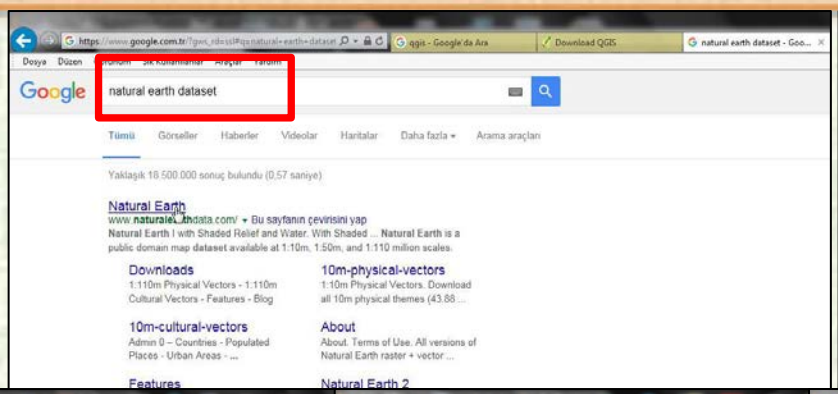
You can find QGIS v.1.8.0-2 at the bottom of Static Resources tab. QGIS installation is quite simple. After QGIS-OSGeo4W-2.14.2-1-Setup-x86_64.exe file is downloaded, it is installed by double-clicking on the next-next.

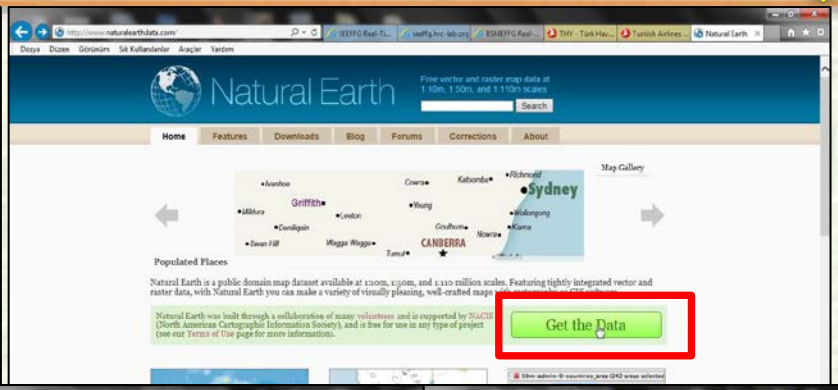
DOWNLOAD BOUNDRIES OF SUB BASIN

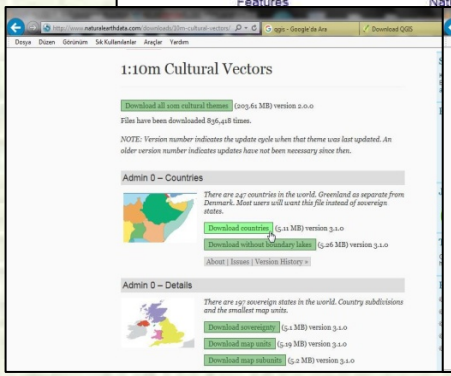


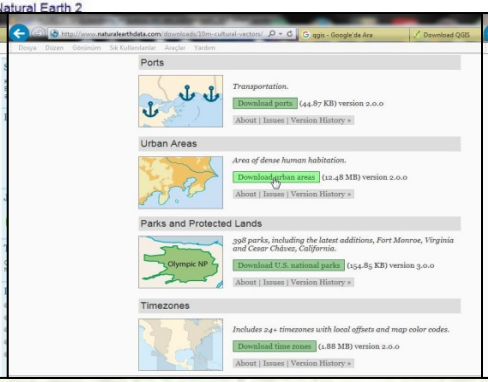
All countries involved in the project have sub-basin boundaries in the shapefile format under the “Static Resources” tab of SEEFFG interface. These files can be opened by GIS programs after unzipping them.

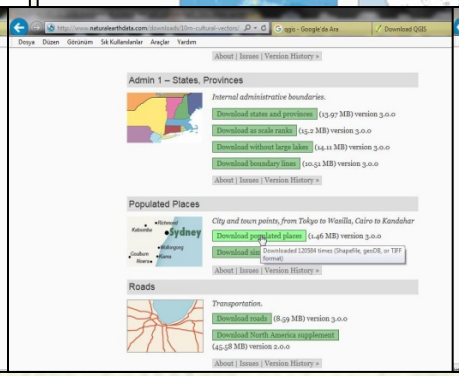
DOWNLOAD FREE GIS LAYERS

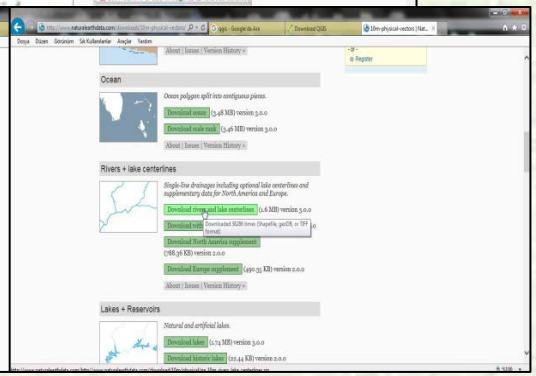






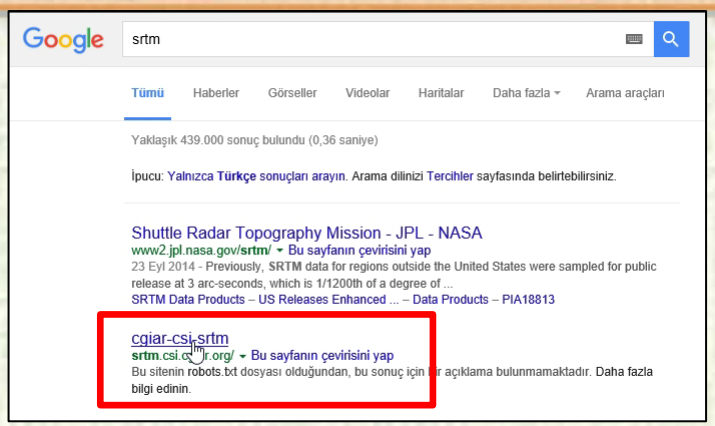


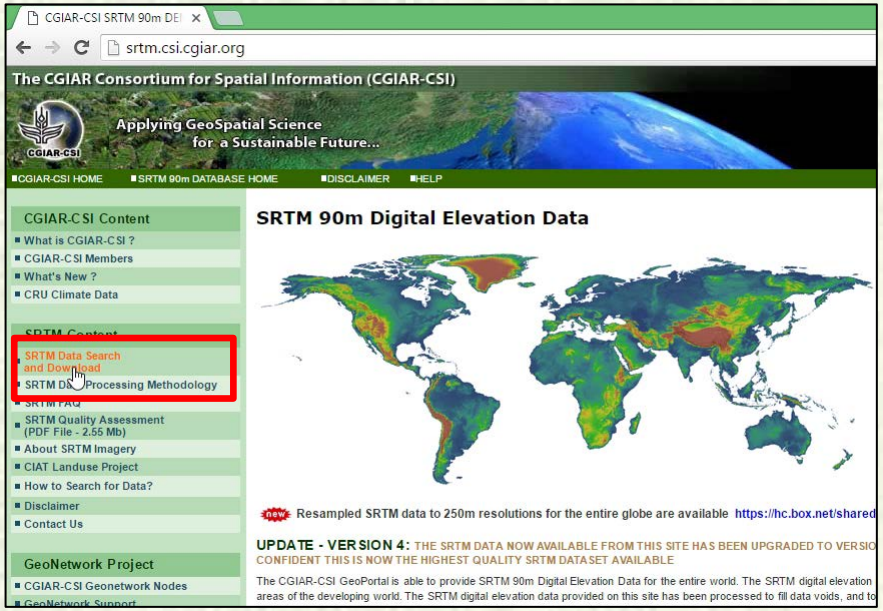


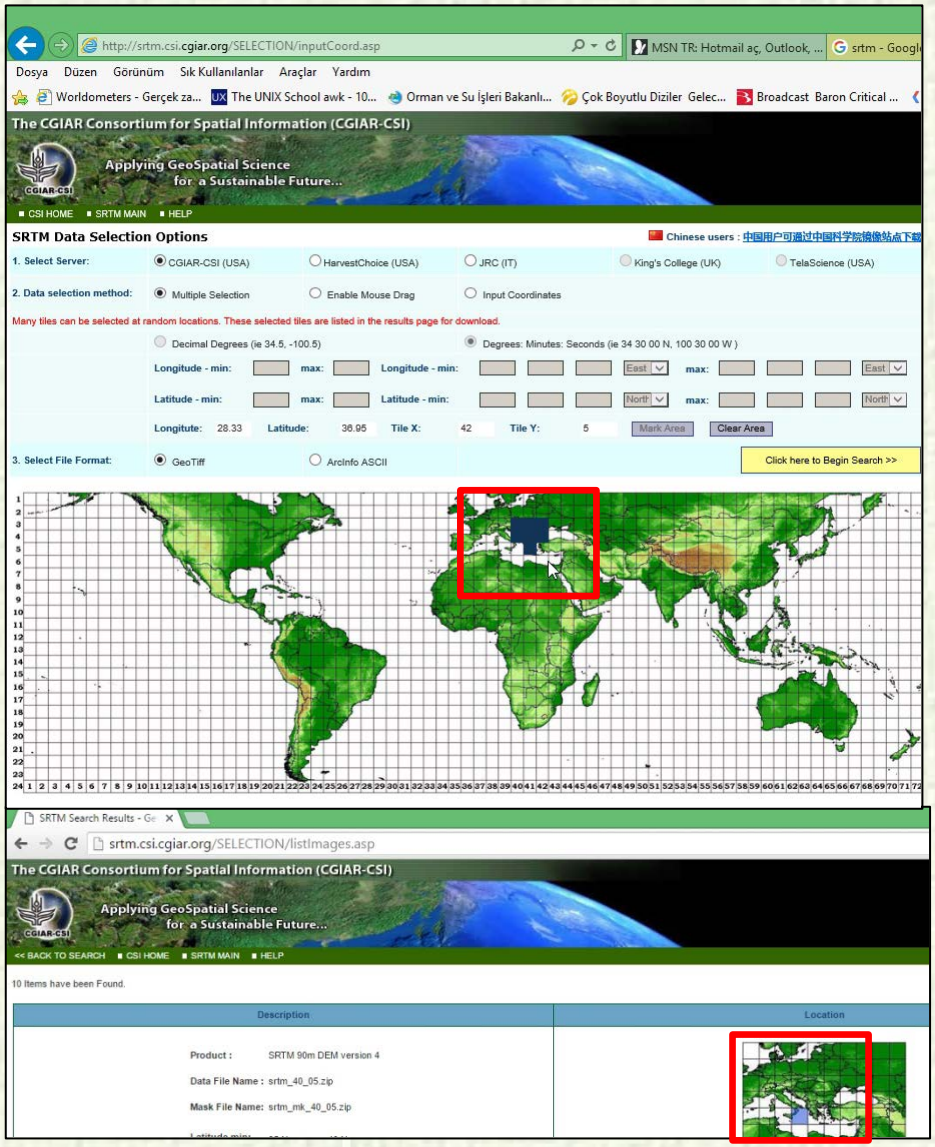


Many vector datasets can be downloaded from www.naturalearthdata.com address for free. There are many layers such as country borders, city centers and borders, such as rivers and lakes.

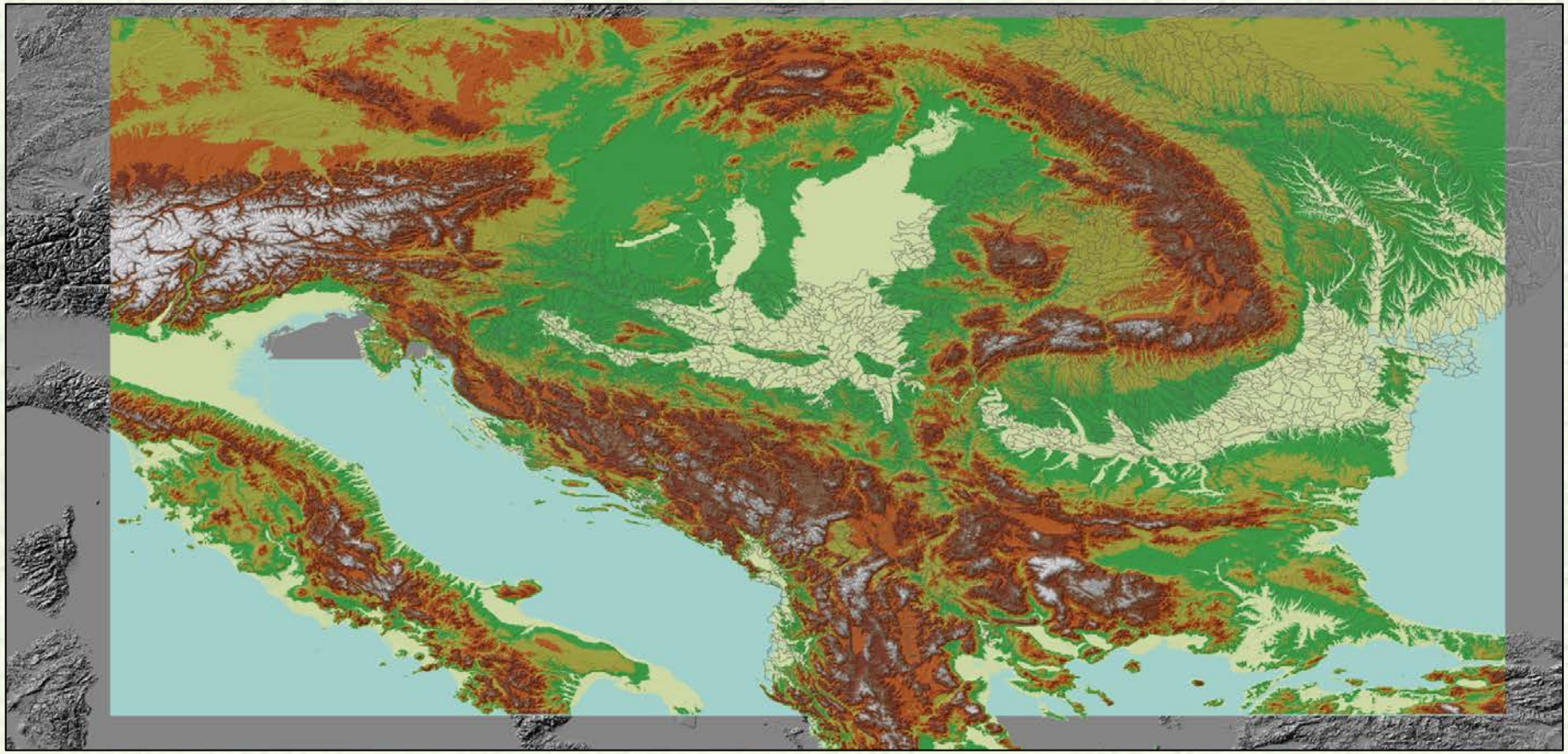
DOWNLOAD FREE GIS LAYERS





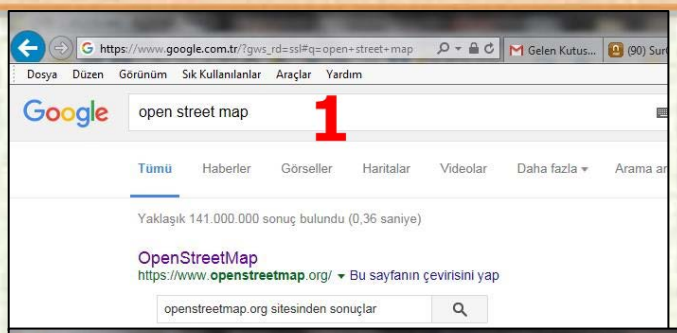


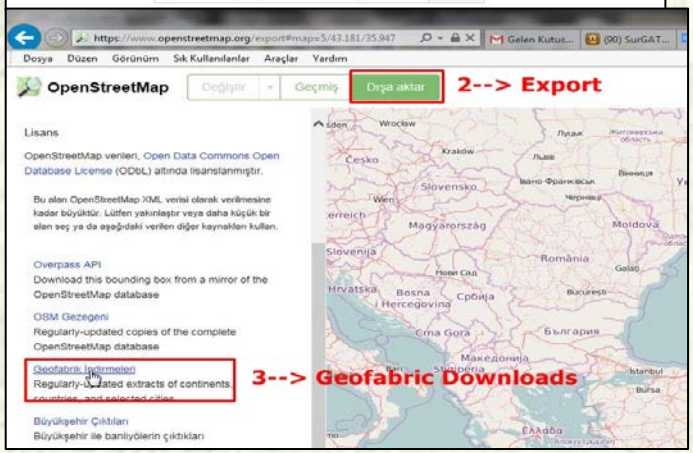
DOWNLOAD FREE GIS LAYERS

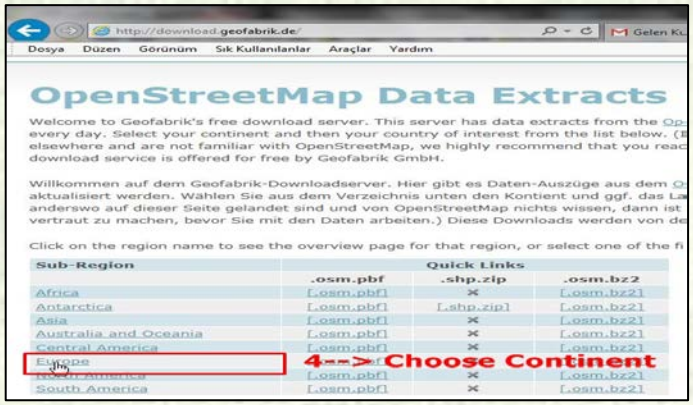


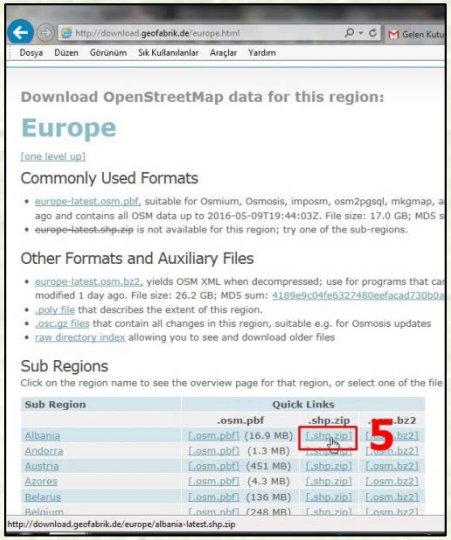
90 meter Digital Elevation Model (source:http://srtm.csi.cgiar.org/) with hillshade

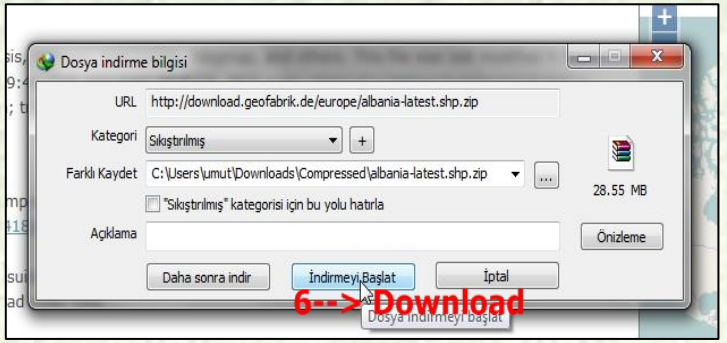
DOWNLOAD FREE GIS LAYERS

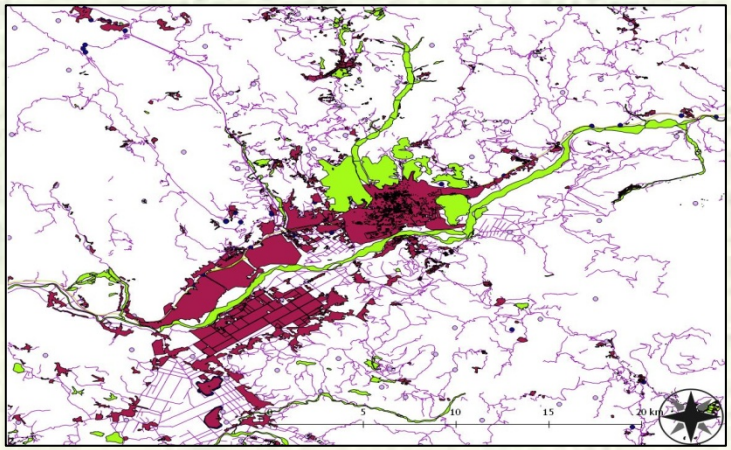






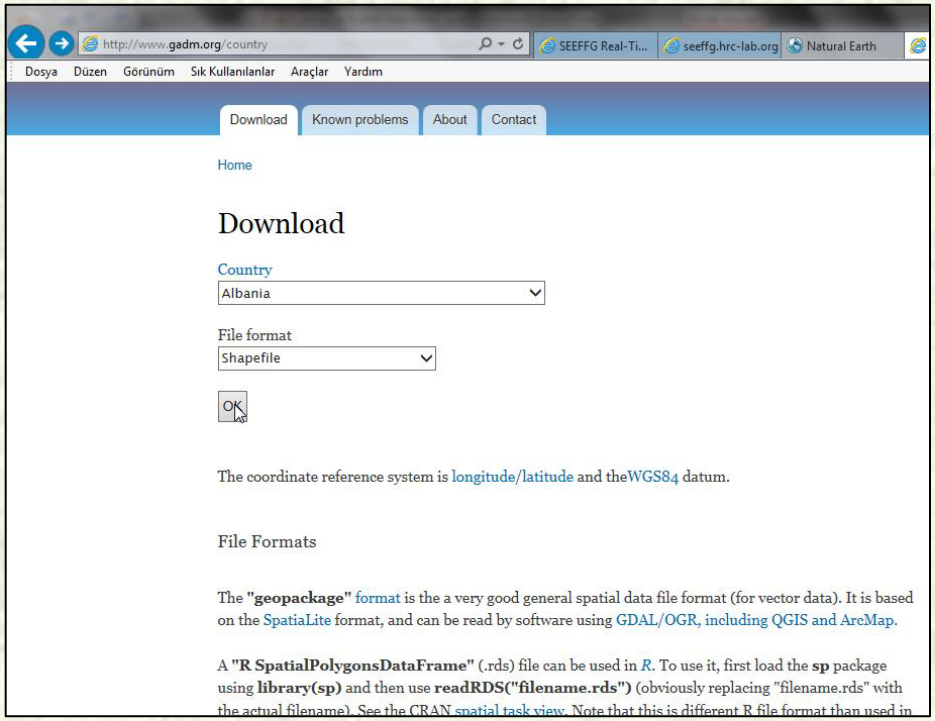


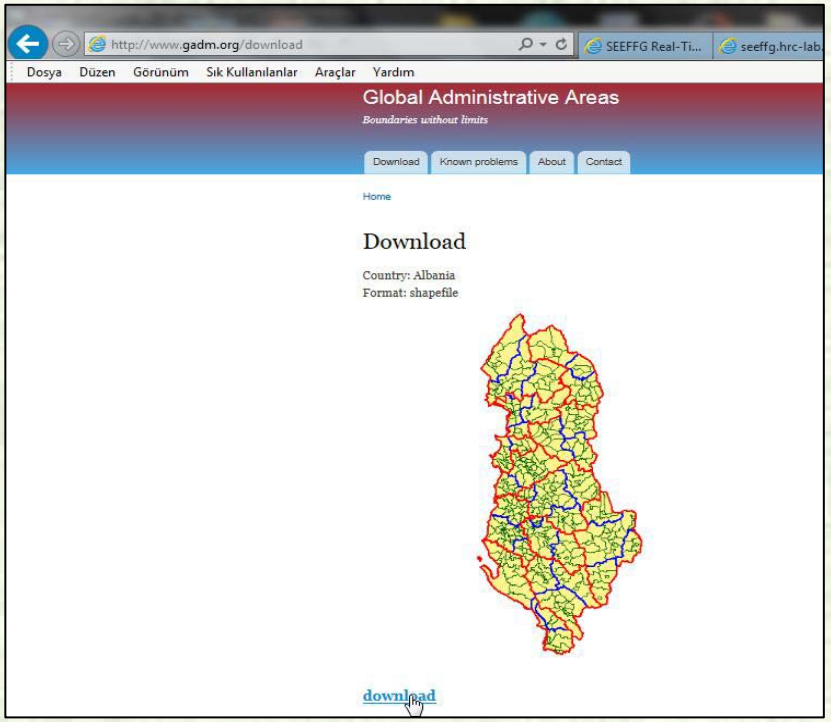




This data contains buildings, landuse, natural, places, points, railways, roads and waterways.

DOWNLOAD FREE GIS LAYERS





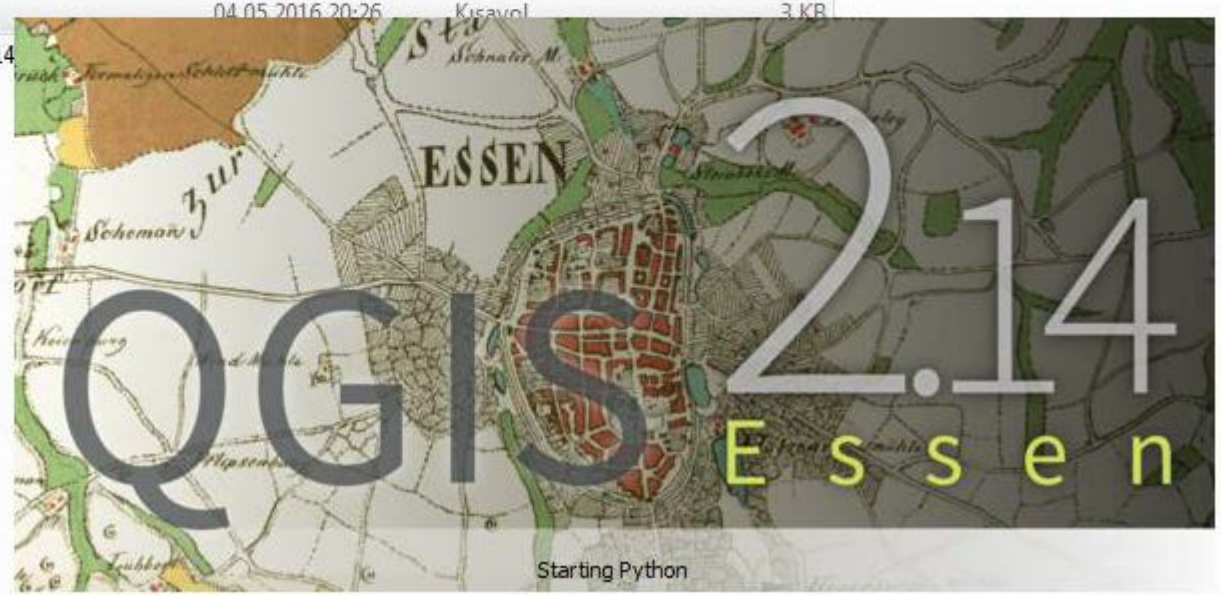
you can download from Global Administrative Areas (www.gadm.org) web address to see the country, provincial, district and town limits in shapefile format.

Republic of Turkey
The Ministry of Forestry and Water Affairs

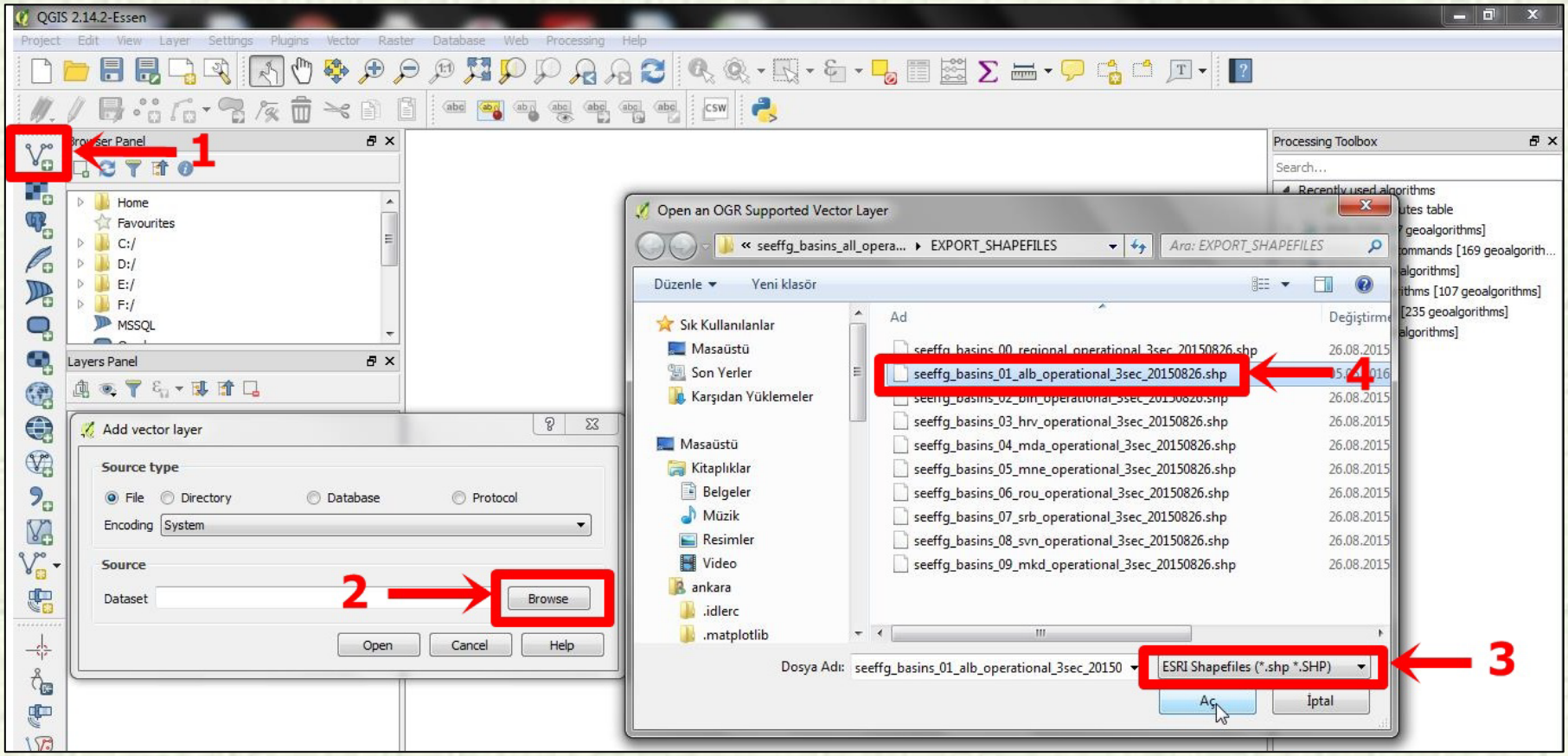
BEGINNING WORK WITH QGIS

METEOROLOJİ

Ad	Değiştirme tarihi	Tür	Boyut
GRASS GIS 7.0.3	04.05.2016 20:23	Kısayol	2 KB
OSGeo4W Shell	04.05.2016 20:26	Kısayol	2 KB
QGIS Browser 2.14.2 with GRASS 7.0.3	04.05.2016 20:26	Kısayol	3 KB
QGIS Browser 2.14.2	04.05.2016 20:26	Kısayol	3 KB
QGIS Desktop 2.14.2 with GRASS 7.0.3	04.05.2016 20:26	Kısayol	3 KB
QGIS Desktop 2.14.2	04.05.2016 20:26	Kısayol	3 KB
Qt Designer with QGIS 2.14			
SAGA GIS (2.1.2)			



ADD VECTOR DATA ON THE QGIS

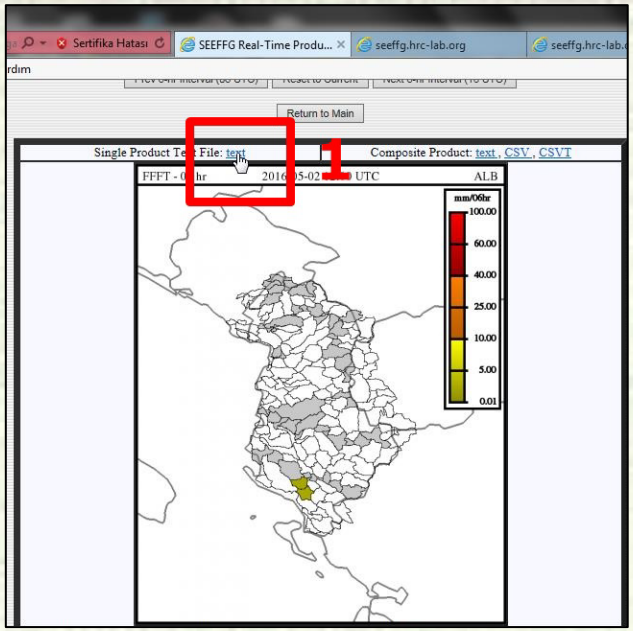


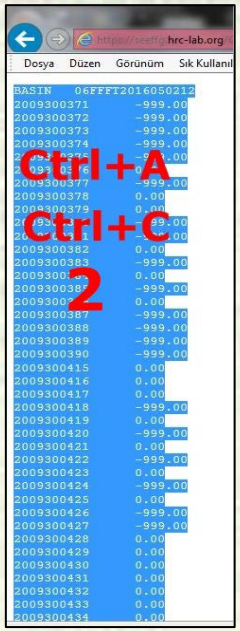
PRODUCT TABLE

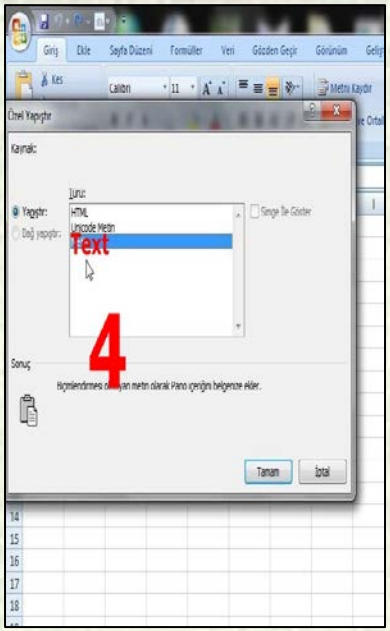
Images of existing products in the modem interface, updated times and data types are summarized in the table below.

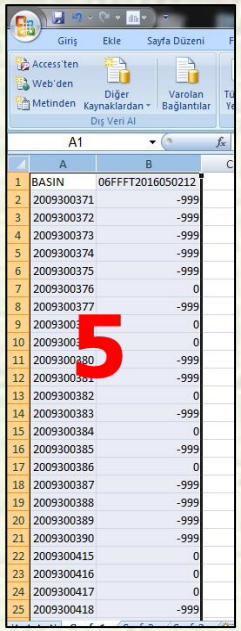
Product's Name	01 hr	03 hr	6 hr	24 hr	4 hr	Numerical Data
RADAR Precipitation						
MWGHE Precipitation	+	+	+	+		+
GHE Precipitation	+	+	+	+		+
Gauge MAP			+	+		+
Merged MAP	+	+	+	+		+
ASM			+			+
FFG	+	+	+			+
IFFT	+	+	+			+
PFFT	+	+	+			+
ALADIN Forecast	+	+	+	+		
FMAP	+	+	+	+		+
FFFT	+	+	+			+
Gauge MAT			+			+
Latest IMS SCA				+		+
SWE			+			+
Melt				+	+	+

SEEFFGS VERİLERİNİ EXCELE AKTARMAK
SEEFFGS's TRANSFER DATA TO EXCEL



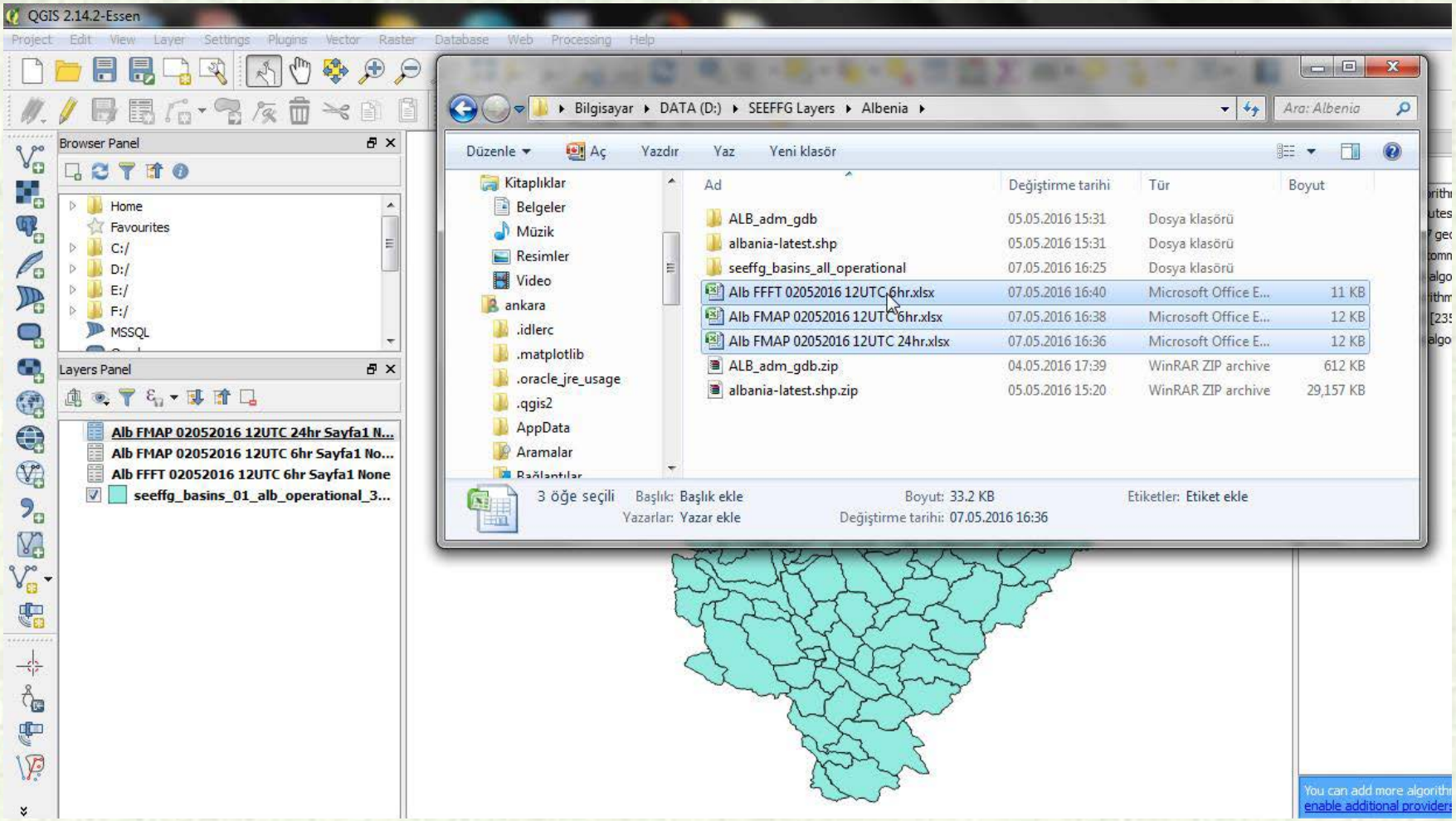






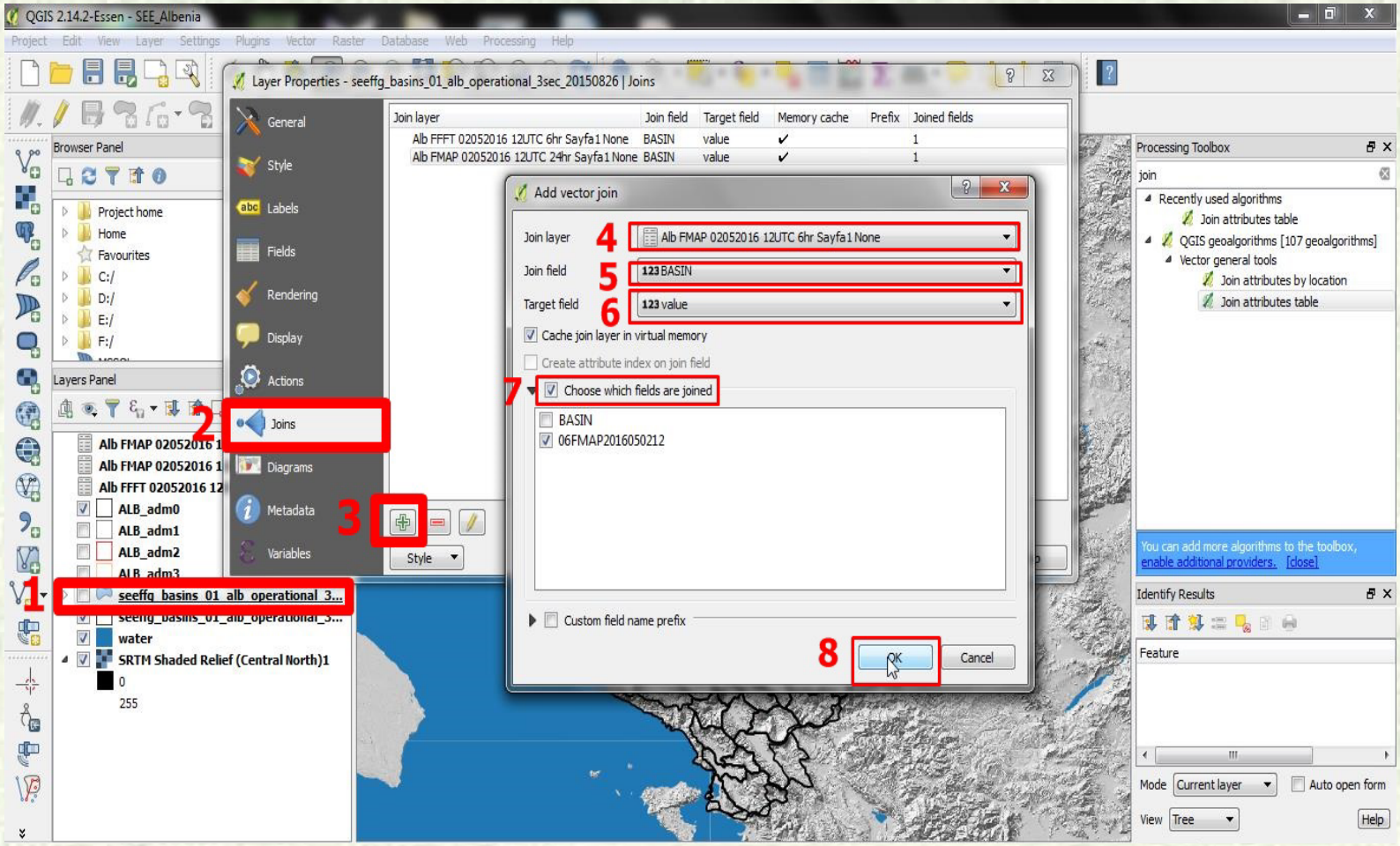
To transfer the data of SEEFFGS products into the excel file ;

1. Click on product blue txt
2. On the following page, copy data by pressing Ctrl +A and Ctrl +C
3. Right-click on the excel file to copy data with special paste,
4- select Text to paste it.
5. At the end of this process, we have two columns of data (BASIN, data)



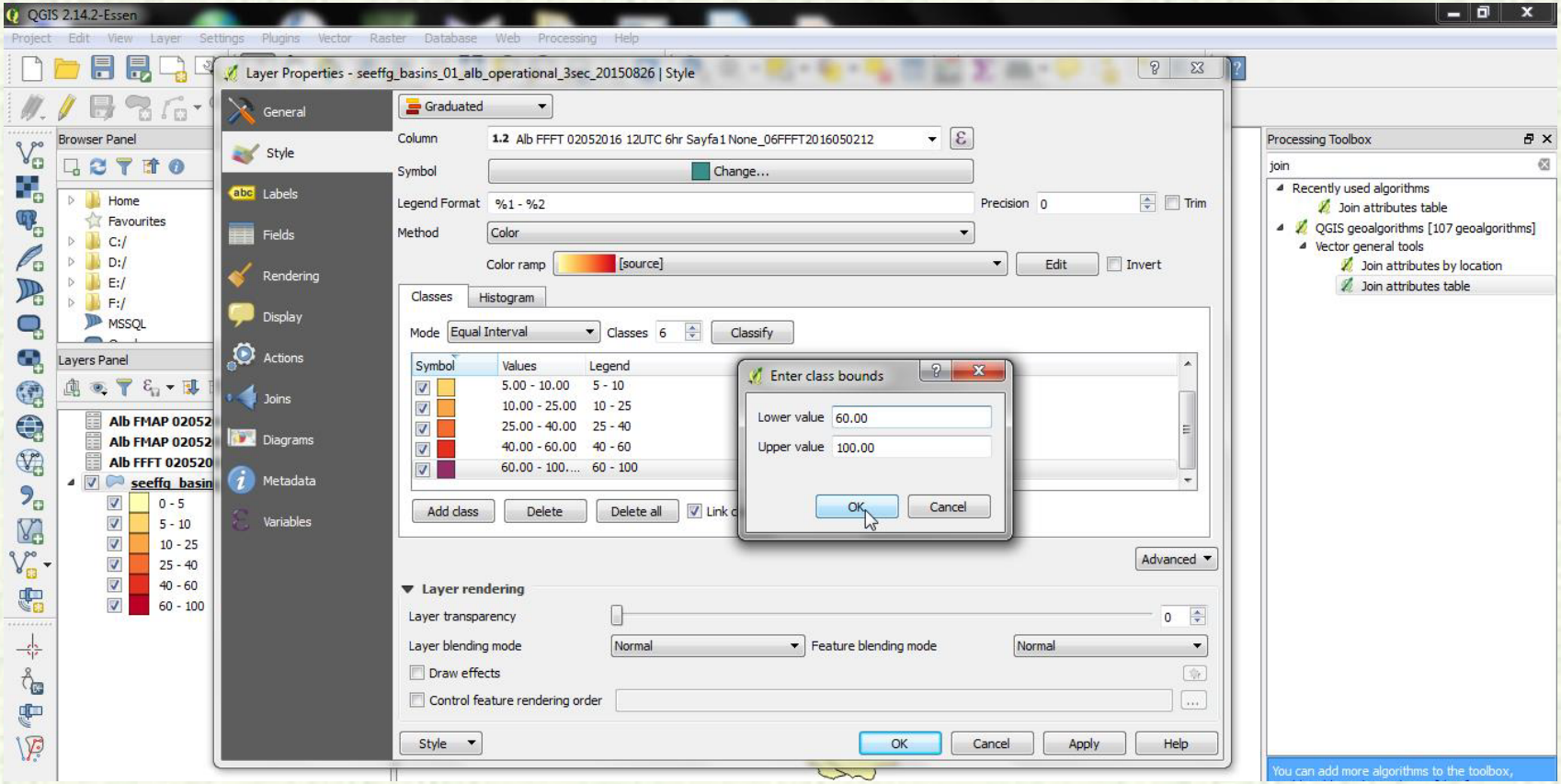
Select some Excel files then, hold and drag over QGIS interface.

HOW TO JOIN EXCEL DATA TO A SHAPEFILE ?



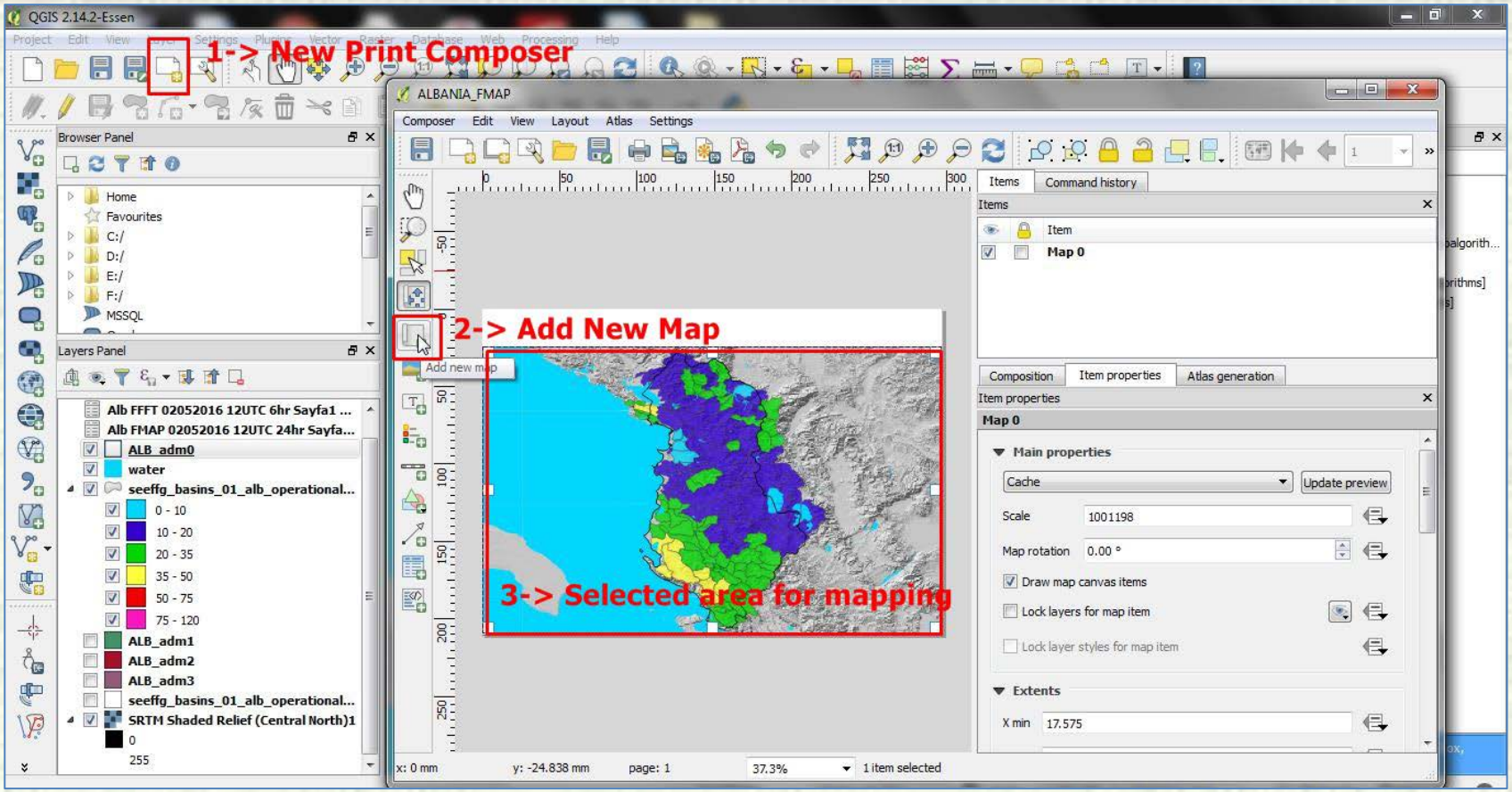
In the Add vector join dialog, select the Join layer. Next we have to select the field with unique ids in both the shapefile and the csv or excell. Select the Join field and Target field respectively. Click OK

HOW TO SET STYLE ?

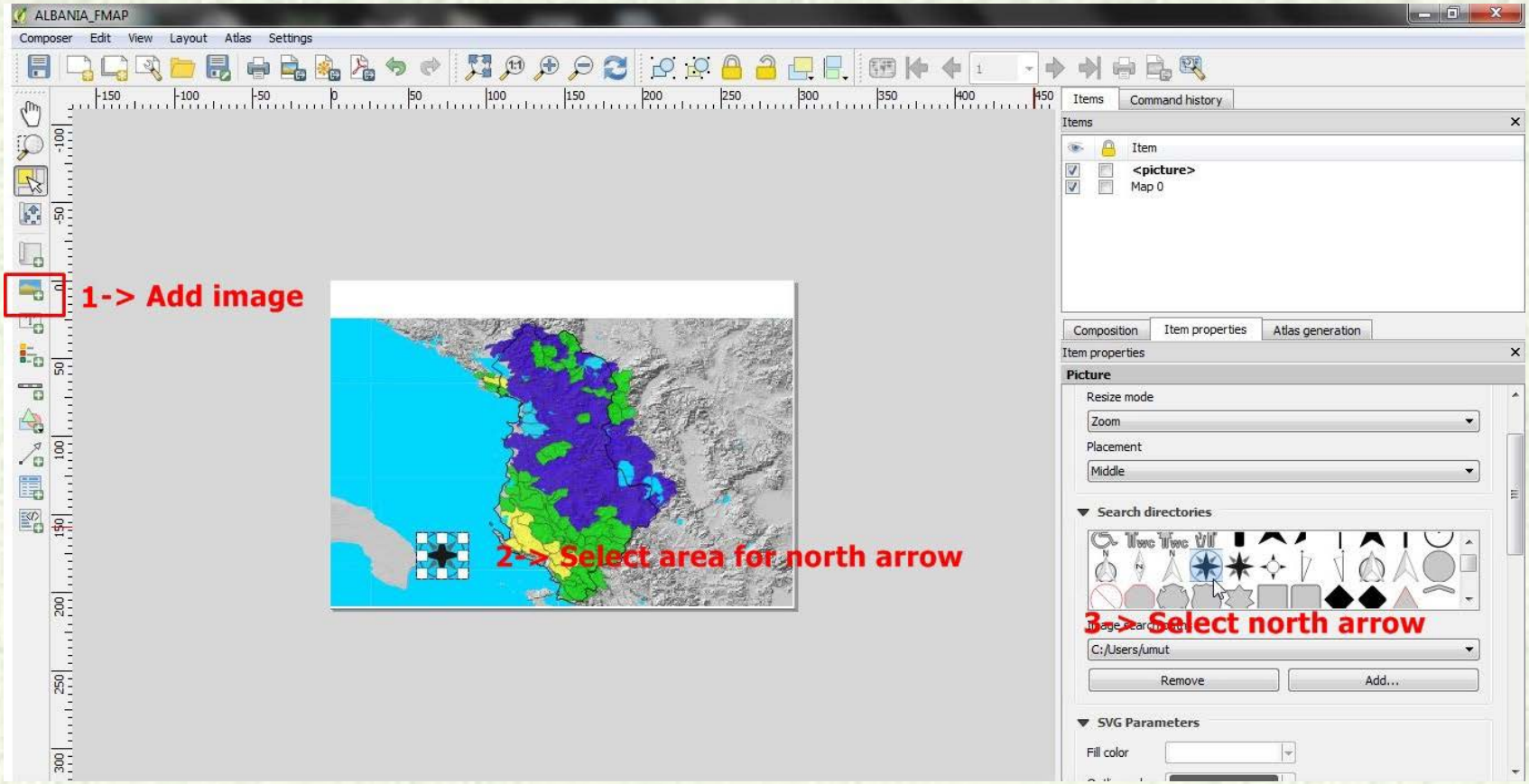


In QGIS, double click on the layer you are dealing with. Then go to the Style menu. In the Style menu, set your classification to “Graduated”. After you can set class bounds and colours.

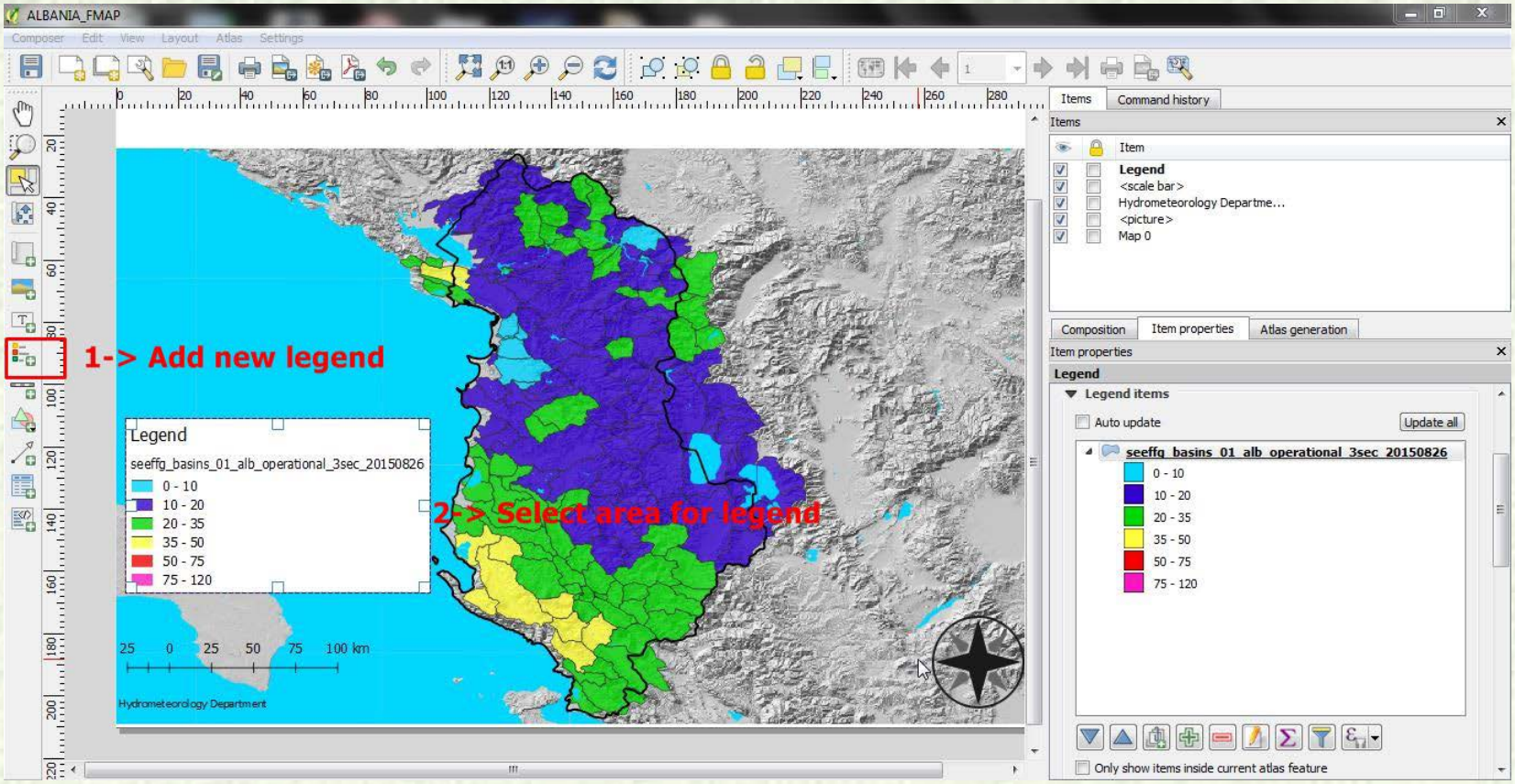
EDITING THE MAP OUT



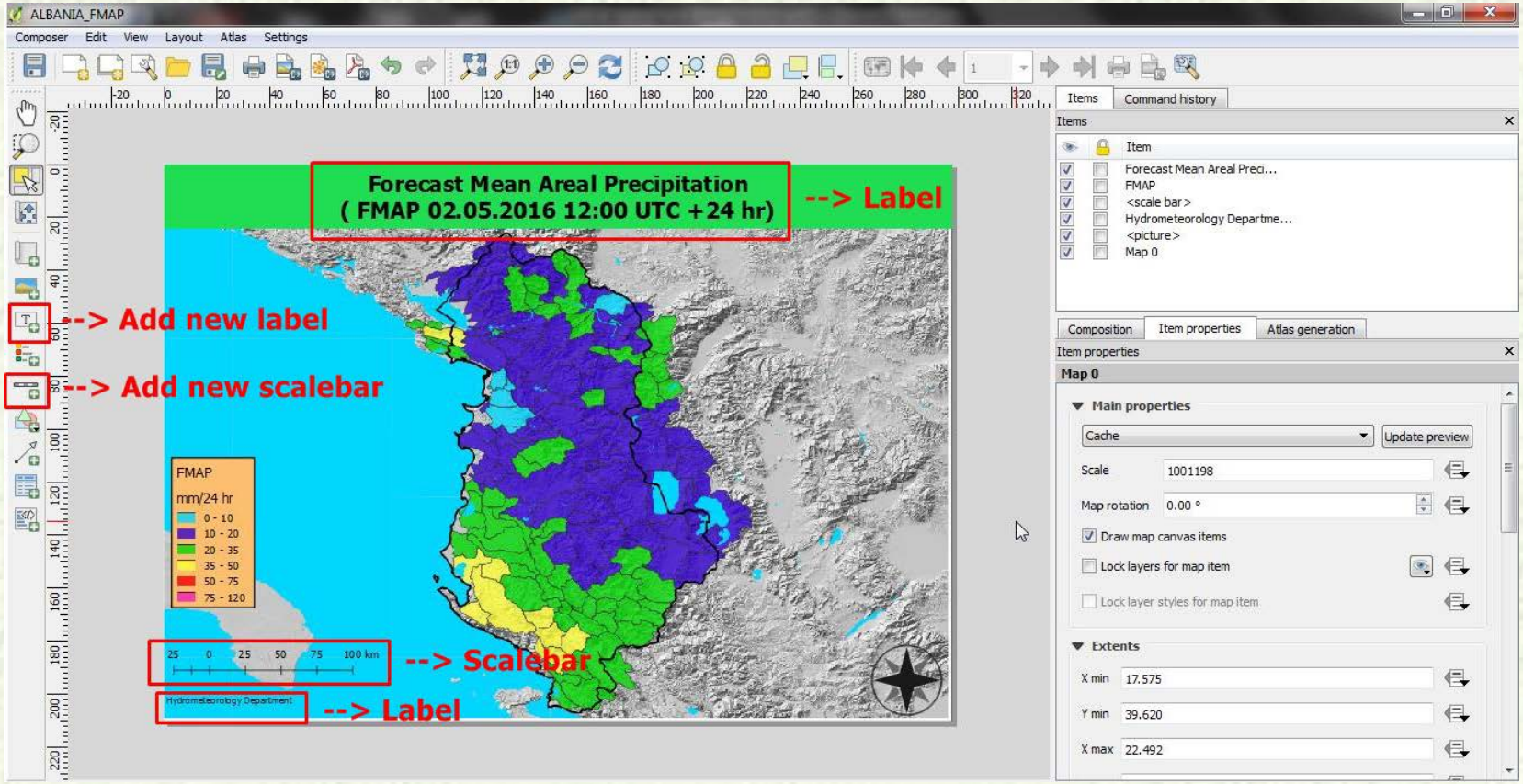
EDITING THE MAP OUT



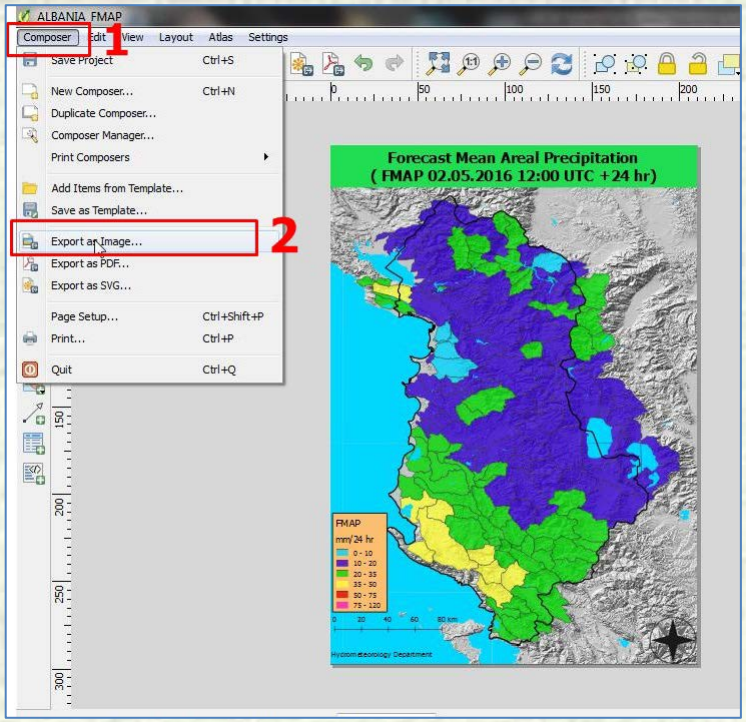
EDITING THE MAP OUT

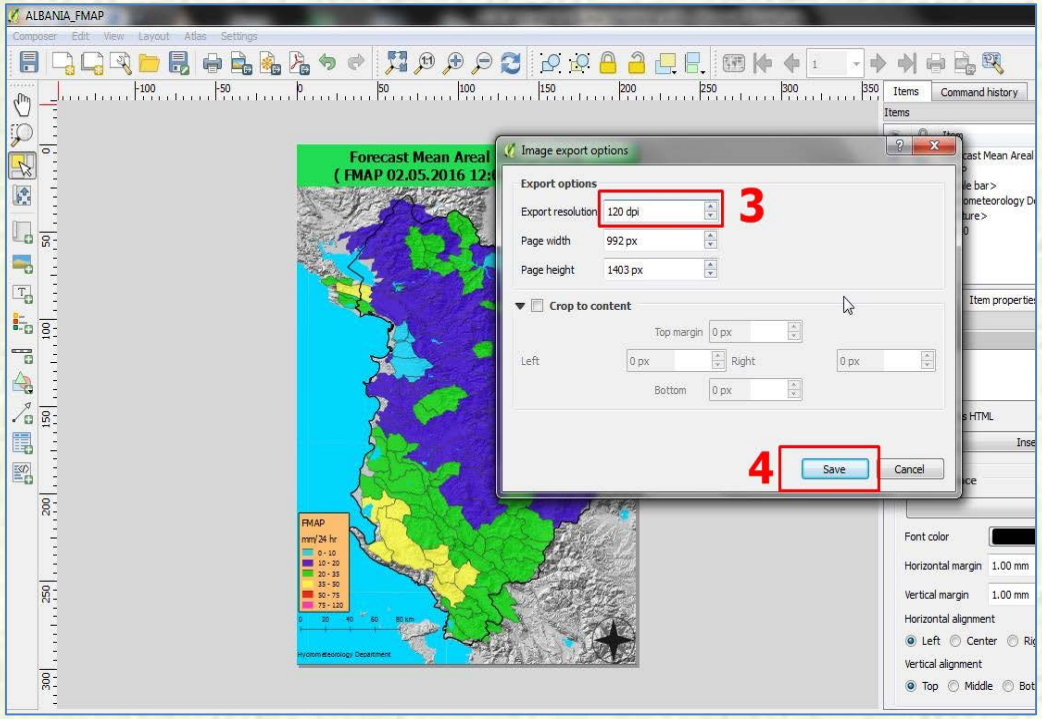


EDITING THE MAP OUT



EXPORT THE MAP





Republic of Turkey
The Ministry of
Forestry and Water
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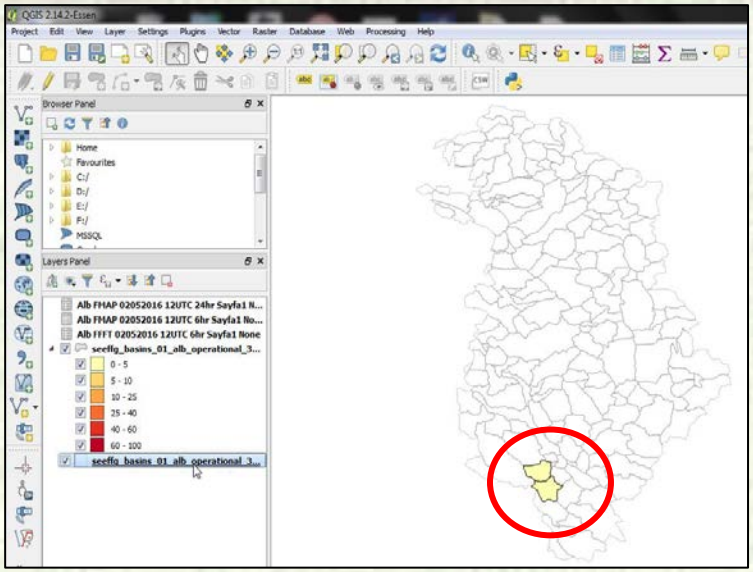
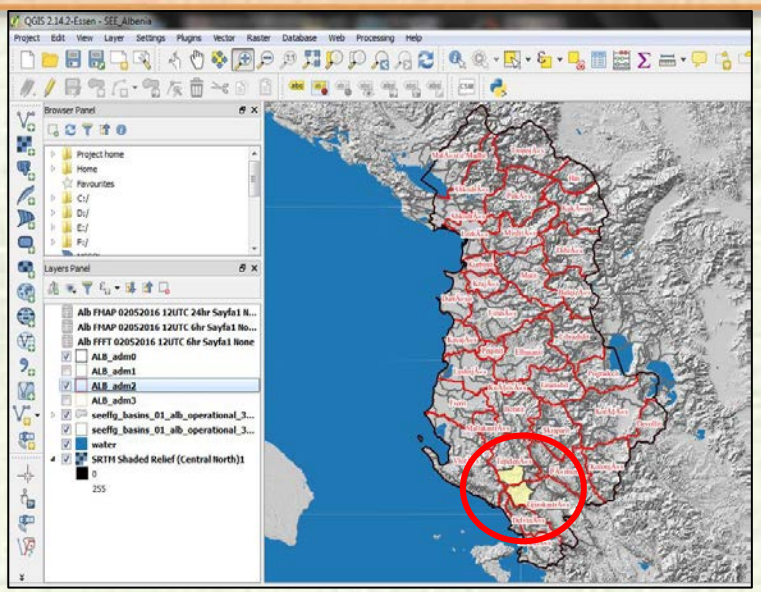
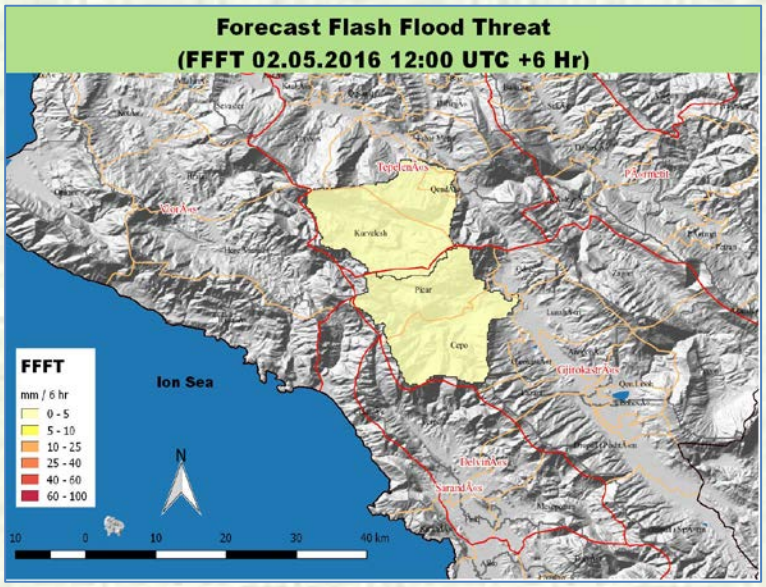
ZOOM TO THREAT AREA







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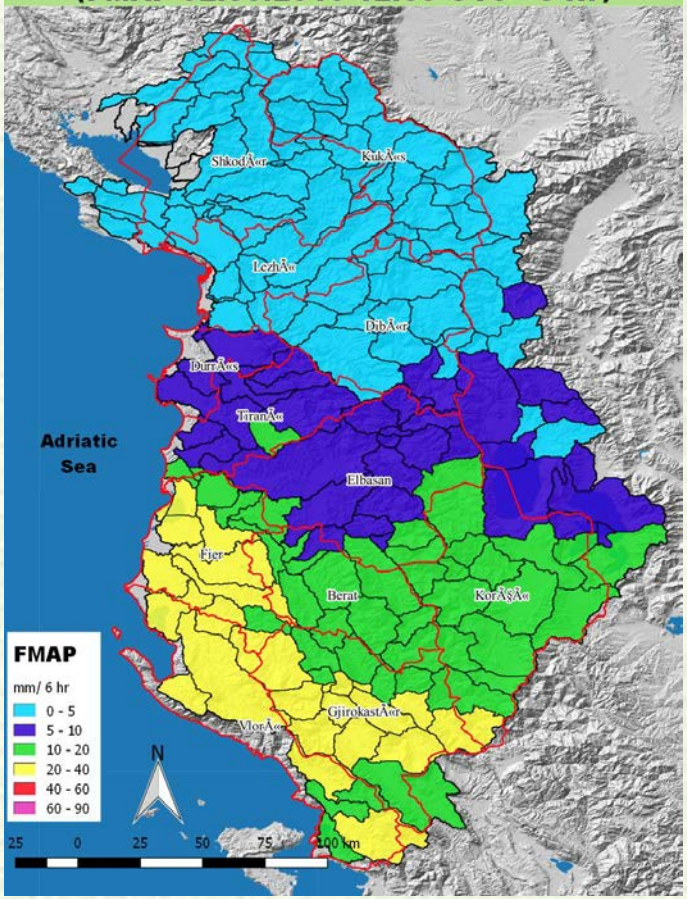
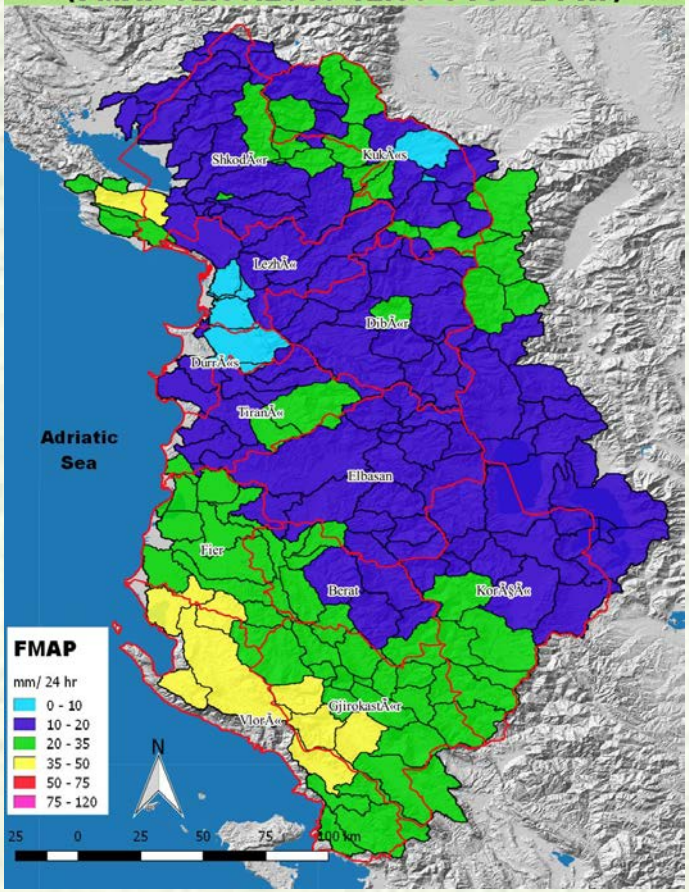
OTHER MAPS

Forecast Mean Areal Precipitation
(FMAP 02.05.2016 12:00 UTC +6 Hr)



Forecast Mean Areal Precipitation
(FMAP 02.05.2016 12:00 UTC +24 Hr)



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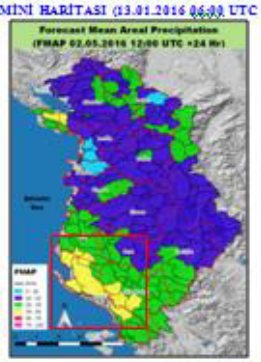
FLASH FLOOD GUIDANCE BULLETIN

METEOROLOJİ

T.C.
ORMAN VE SU İŞLERİ BAKANLIĞI
METEOROLOJİ GENEL MÜDÜRLÜĞÜ

FLASH FLOOD GUIDANCE BULLETIN
02 MAY 2016
(12:00 UTC)

ANİ TAŞKIN ERKEN UYARI MODELİ 24 SAATLİK ORTALAMA ALANSAL YAĞIŞ TAHMİNİ HARİTASI (13.01.2016 06.00 UTC – 24 SAAT)



Ani Taşkın Erken Uyarı Modelinin alansal yağış verilerine göre önümüzdeki 24 saat içinde Manisa, Kütahya, Eskişehir ve Bilecik illerimizde devam eden ve beklenen yağışların yer yer çok kuvvetli olması beklendiğinden bu bilgilerin dikkatle takip edilmesi gerekmektedir.

Ani Taşkın Erken Uyarı Modelliyle yapılan ANİ TAŞKIN tahminlerine göre önümüzdeki 6 saat içinde Manisa ilinin Gördes, Selendi, Demirci ilçeleri, Kütahya ilinin Tavşanlı, Simav ilçeleri, Eskişehir ili, Mahşapaşa ve Mihalıççık ilçesinde devam eden ve beklenen çok kuvvetli yağışlardan dolayı bu bilgilerdeki akarsu ve derelerde Ani Taşkın beklendiğinden bu bilgilerin dikkatle takip edilmesi gerekmektedir.

Ani Taşkın Erken Uyarı Modelinin alansal yağış verilerine göre önümüzdeki 24 saat içinde Kütahya ilinin ilçelerinde yer yer çok kuvvetli olması beklenen yağışlardan dolayı bu bilgilerdeki akarsu ve derelerin olası Ani Taşkın riskine karşı dikkatle takip edilmesi gerekmektedir.

GENEL DEĞERLENDİRME
(13.01.2016 06.00 UTC – 6 SAAT)

Ani Taşkın Erken Uyarı Modelliyle yapılan ANİ TAŞKIN tahminlerine göre önümüzdeki 6 saat içinde Manisa ilinin Gördes, Selendi, Demirci ilçeleri, Kütahya ilinin Tavşanlı, Simav ilçeleri, Eskişehir Merkezi ve Mihalıççık ilçesinde devam eden ve beklenen çok kuvvetli yağışlardan dolayı bu bilgilerdeki akarsu ve derelerde Ani Taşkın beklendiğinden bu bilgilerin dikkatle takip edilmesi gerekmektedir.

(13.01.2016 06.00 UTC – 24 SAAT)

Ani Taşkın Erken Uyarı Modelinin alansal yağış verilerine göre önümüzdeki 24 saat içinde Kütahya ilinin Tavşanlı, Emet, Hisarcık ilçeleri, Eskişehir ilinin Mihalgazi, Alpu, İnönü ilçelerinde Manisa ilinin Demirci ilçesinde ve Bilecik ilinin Pazaryeri, Söğüt, Bozüyük, İnhisar ilçelerinde yer yer çok kuvvetli olması beklenen yağışlardan dolayı bu bilgilerdeki akarsu ve derelerin olası Ani Taşkın riskine karşı dikkatle takip edilmesi gerekmektedir.

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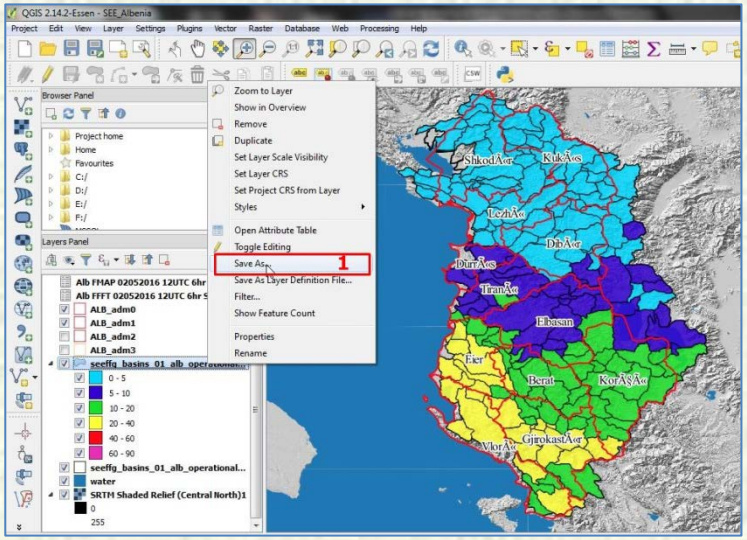
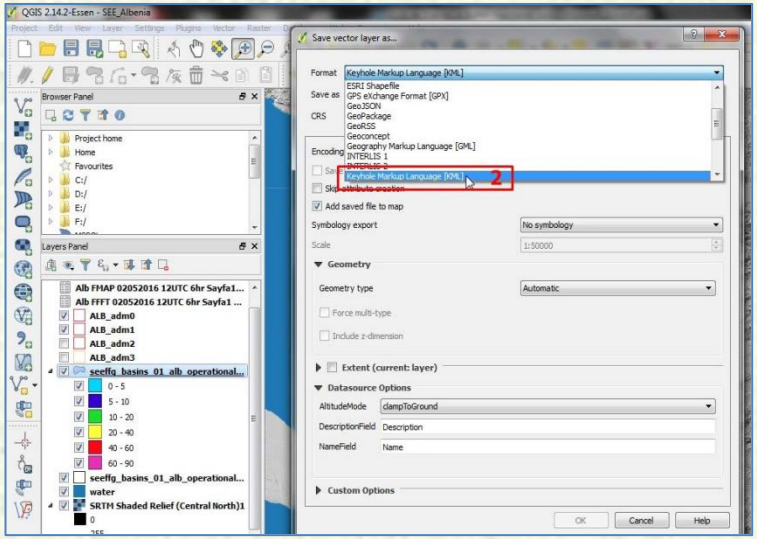
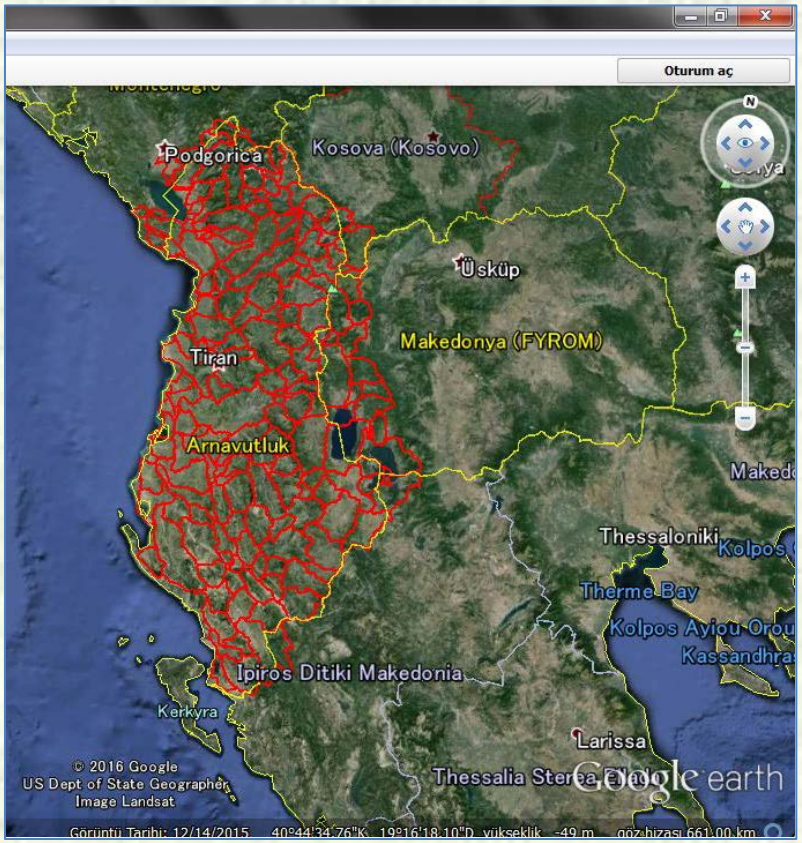
SHAPE TO KML







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Thank you for your attentetion