

Hands-on Exercises on WaPOR

Case study: Miandoab Irrigation scheme, Iran

This exercise goes through all the basic tools of the WaPOR web portal (https://wapor.apps.fao.org/home/WAPOR_2/1)

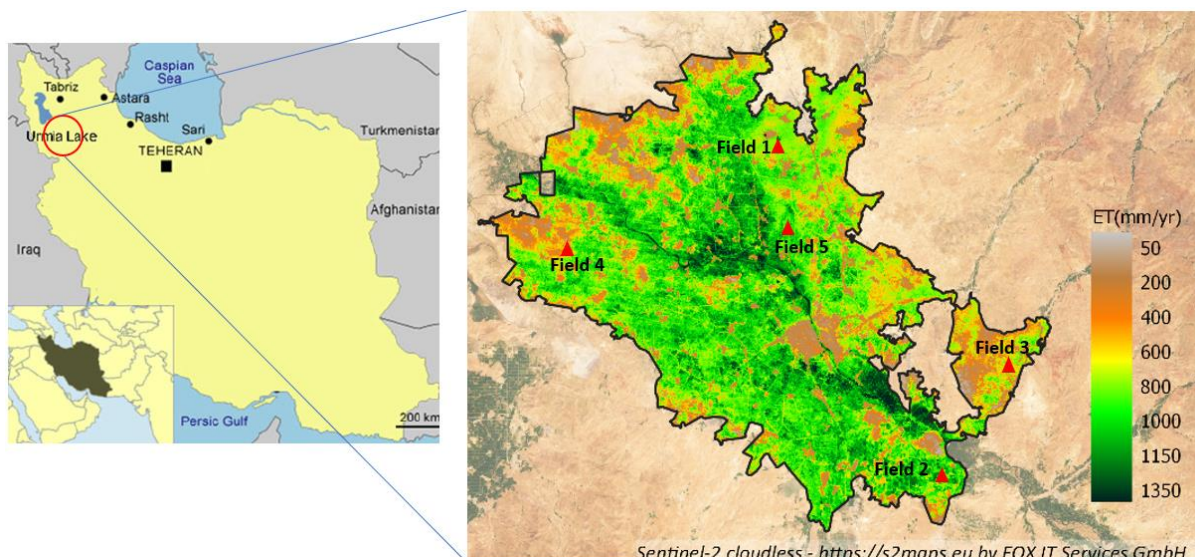


Figure 1: Study area – Miandoab Irrigation System in Iran

Table 1: Field locations for analysis

Fields	Coordinates (Lat, Lon)	Season
Crop field1 – Grapes	(37.13099,46.08110)	September to October
Crop field2 – Alfalfa	(36.85262,46.24200)	September to October
Crop field3 – Wheat	(36.93917,46.30073)	October to June
Crop field4 – Wheat	(37.02990,45.85714)	October to June
Crop field5 – Wheat	(37.05734,46.08556)	October to June

Exercise 1: Actual ET, NPP and PCP over agriculture area

Retrieve time-series actual evapotranspiration on selected points over agricultural area in Miandoab irrigation scheme

STEP 1:

- >> Click on the WaPOR level, the highest spatial resolution for the study area: CONTINENTAL (250m), NATIONAL (100m), SUB-NATIONAL (30m)
- >> Note that for Iran, only Continental level data is available in WaPOR

STEP 2:

- >> Click the **LAYERS** button and select the **THEME** Actual Evapotranspiration (Dekadal)

STEP 3:

Click the **ANALYSIS** button and

- Select the operation (**Point time Series**)
- Select the Point, define **New POINT** (add a POINT COORDINATES: lat, lon). For crop field#1-1 the coordinate is 37.13099,46.08110 see the table 1.
- Select the TIME PERIOD: (i) FROM (01/01/2009) TO (31/10/2020), or (ii) FROM (01/09/2018) TO (30/10/2019).
- Click on the **Run Operation** to get point time series of evapotranspiration. You will get a graph similar to the one below (Figure 2). If you are interested in keeping the graph you can Download as png or jpeg image. If you are interested in keeping the values you can download as **CSV or XLS, and continue calculations in Excel**. If you download as CSV you can convert the text to data using the 'Text to Columns' tool in Excel.

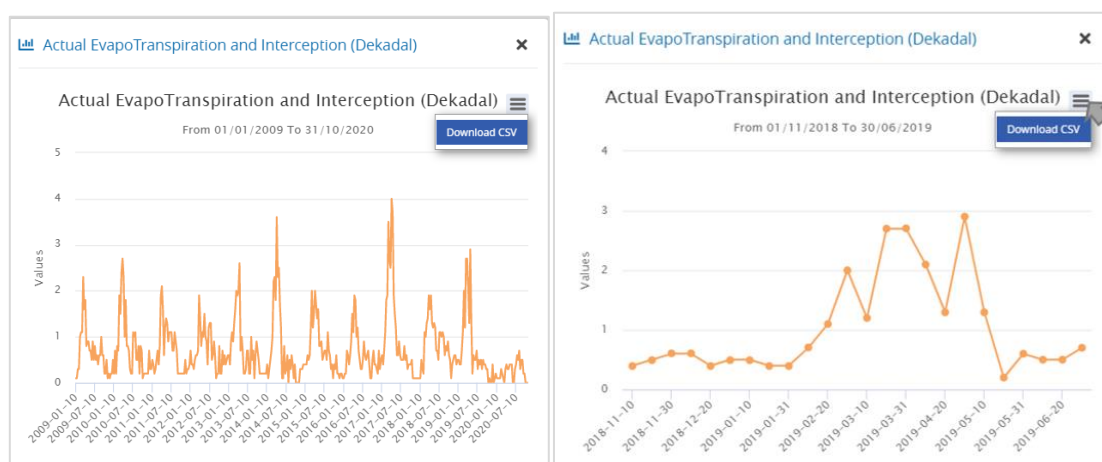


Figure 2. Time series of decadal actual evapotranspiration and interception from 01/01/2009-30/10/2020 (left) and from 01/11/2018-30/06/2019 (right)

STEP 4:

Repeat the steps 1 – 3 for Dekadal NPP, Ta and PCP.

Discussion 1:

- i. Does the area have one/two cropping season/s? [Hint: time series T, ETa, Precipitation, NPP]
- ii. Does the annual ETa time series show an influence in water availability (dry/wet year)?
- iii. What is the source of water for the crop production in the area: rain plus irrigation? Rainfed? Support your answer with analysis from WaPOR

Annex:

A: Crop calendar in Miandoab

Crops	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Winter														
Wheat		→												
Barley		→												
Summer														
Sugarbeet														
Mellon														
Watermellon														
Cucumber														
Corn														
Sunflower														
Onion														
All year														
Alfa-Alfa	→													
Graps	→													
Orchards	→													