




**B**

**Solution of the exercise**

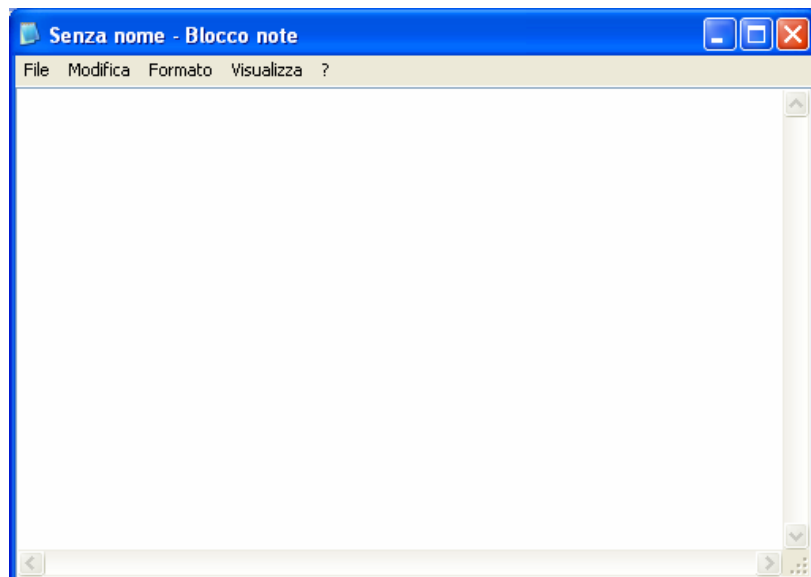
<b>Legend</b>	Red flash		indicates buttons to click
	Red frame		indicates data to input
	Green frame		indicates output data

**IMPORT CLIMATIC DATA FOR ET<sub>0</sub> CALCULATION**

- Open the Excel file with the climatic data.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1				n	Minurum T	Maximum T	Rainfall						
2	Day	Month	Year	hour/day	°C	°C	mm						
3	30	11	1996	9.37	6.4	15.5	0.1						
4	1	12	1996	9.52	6.7	22.0	0.1						
5	2	12	1996	9.78	4.5	21.5	0.2						
6	3	12	1996	8.13	4.2	20.4	0.2						
7	4	12	1996	3.68	9.0	18.2	10.0						
8	5	12	1996	6.70	6.9	15.8	17.0						
9	6	12	1996	5.55	7.1	13.8	2.0						
10	7	12	1996	5.37	6.1	13.5	3.7						
11	8	12	1996	8.19	6.4	14.7	3.0						
12	9	12	1996	4.01	8.0	15.5	1.4						
13	10	12	1996	9.22	8.2	17.4	0.0						
14	11	12	1996	3.62	10.0	21.5	0.0						
15	12	12	1996	8.29	10.4	23.4	0.0						
16	13	12	1996	6.79	70.0	22.5	37.0						
17	14	12	1996	0.18	10.4	18.5	4.5						
18	15	12	1996	0.51	14.9	19.3	2.7						
19	16	12	1996	0.41	13.6	20.0	1.9						
20	17	12	1996	6.40	14.6	23.0	2.5						
21	18	12	1996	0.00	14.0	18.3	30.6						
22	19	12	1996	5.76	13.5	18.3	0.0						
23	20	12	1996	7.50	12.6	19.5	32.0						
24	21	12	1996	0.00	11.5	16.5	35.1						
25	22	12	1996	0.20	11.8	14.9	21.0						
26	23	12	1996	5.31	12.0	17.7	8.4						
27	24	12	1996	0.84	12.7	16.6	9.7						
28	25	12	1996	6.82	9.9	17.5	0.1						

- Open a new text file (Start -> All programs -> Accessories -> Notepad)

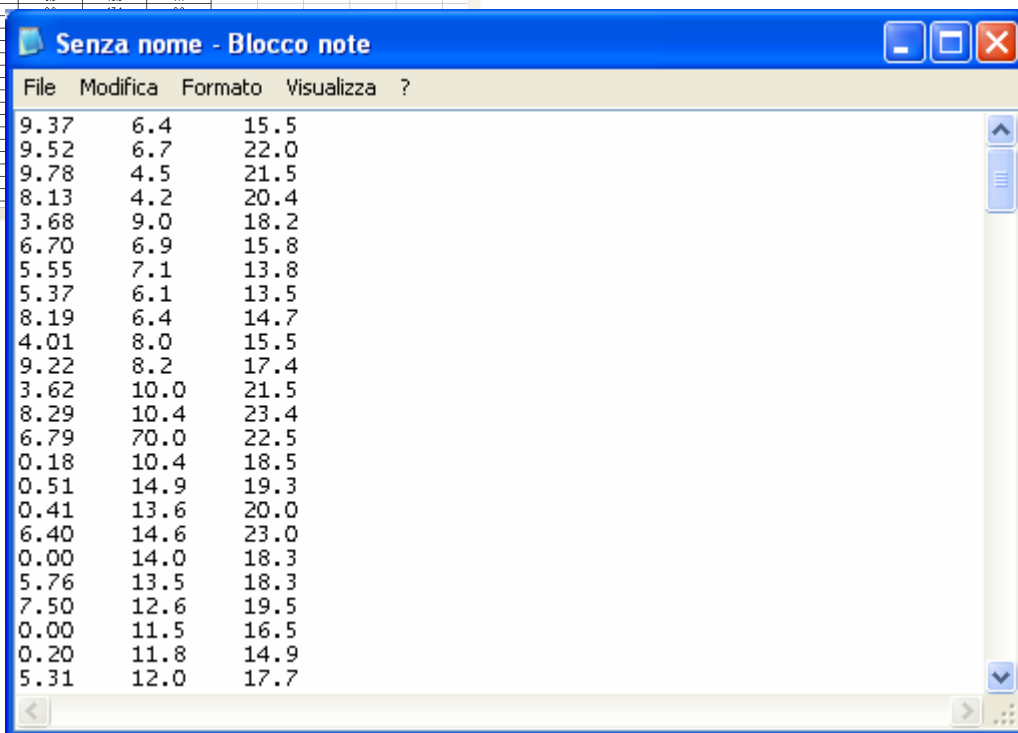


- Copy relevant climatic data for ETo calculation

Do not copy rainfall data.

Do not copy headings, unit of measurements, or dates.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Day	Month	Year	hour/day	Minimum T	Maximum T	Rainfall						
2	30	11	1996	9.37	6.4	15.5	0.1						
3	1	12	1996	9.52	6.7	22.0	0.1						
4	2	12	1996	9.78	4.5	21.5	0.2						
5	3	12	1996	8.13	4.2	20.4	0.2						
6	4	12	1996	3.68	9.0	18.2	10.0						
7	5	12	1996	6.70	6.9	15.8	17.0						
8	6	12	1996	5.55	7.1	13.8	2.0						
9	7	12	1996	5.37	6.1	13.5	3.7						
10	8	12	1996	8.19	6.4	14.7	3.0						
11	9	12	1996	4.01	8.0	15.5	1.4						
12	10	12	1996	9.22	8.2	17.4	0.0						
13	11	12	1996	3.62	10.0	21.5	0.0						
14	12	12	1996	8.29	10.4	23.4	0.0						
15	13	12	1996	6.79	70.0	22.5	0.0						
16	14	12	1996	0.18	10.4	18.5	0.0						
17	15	12	1996	0.51	14.9	19.3	0.0						
18	16	12	1996	0.41	13.6	20.0	0.0						
19	17	12	1996	6.40	14.6	23.0	0.0						
20	18	12	1996	0.00	14.0	18.3	0.0						
21	19	12	1996	5.76	13.5	18.3	0.0						
22	20	12	1996	7.50	12.6	19.5	0.0						
23	21	12	1996	0.00	11.5	16.5	0.0						
24	22	12	1996	0.20	11.8	14.9	0.0						
25	23	12	1996	5.31	12.0	17.7	0.0						
26	24	12	1996	0.04									
27	25	12	1996	6.52									
28	26	12	1996	0.00									
29	27	12	1996	0.00									
30	28	12	1996	0.00									

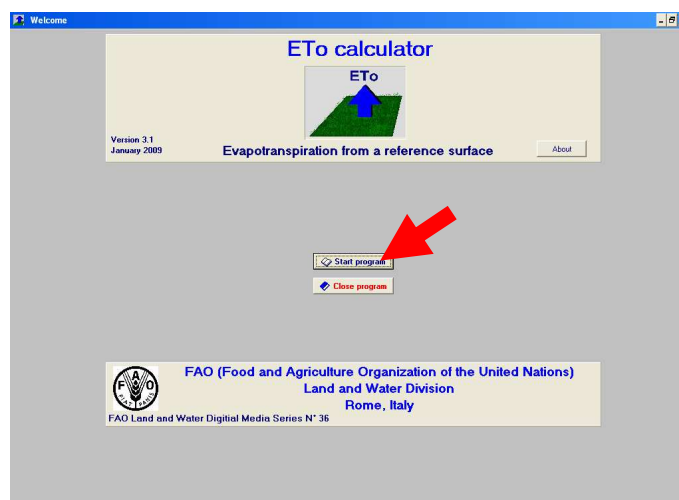


- Save the text file as “SidiBennour.CXT”, change the *Type of document* to *All documents*, and save the file following the suitable path:

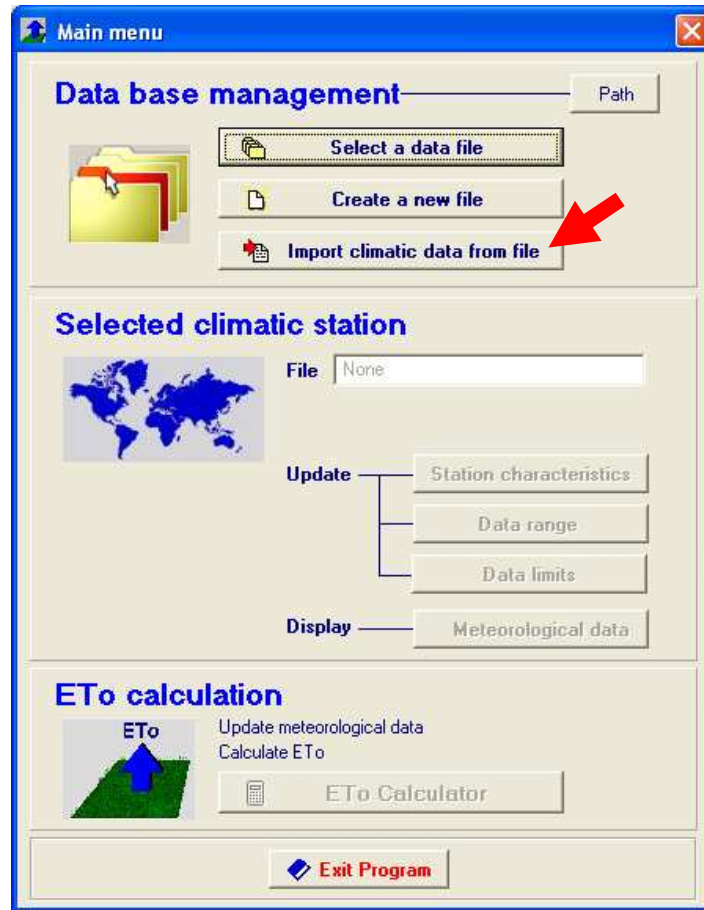
Default Path: C:\Program Files\FAO\EToCalc\IMPORT  
 Path (Windows Vista OS): C:\EToCalc\IMPORT

- Close ALL files and folders.

- Start program EToCalculator.

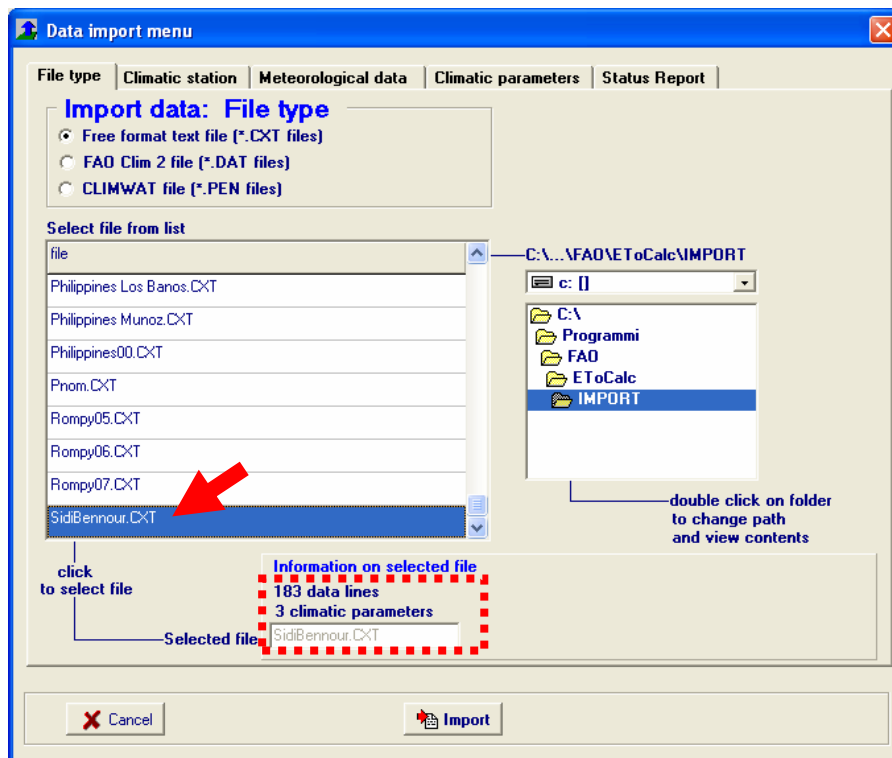


- In Data base management, Import climatic data from file.



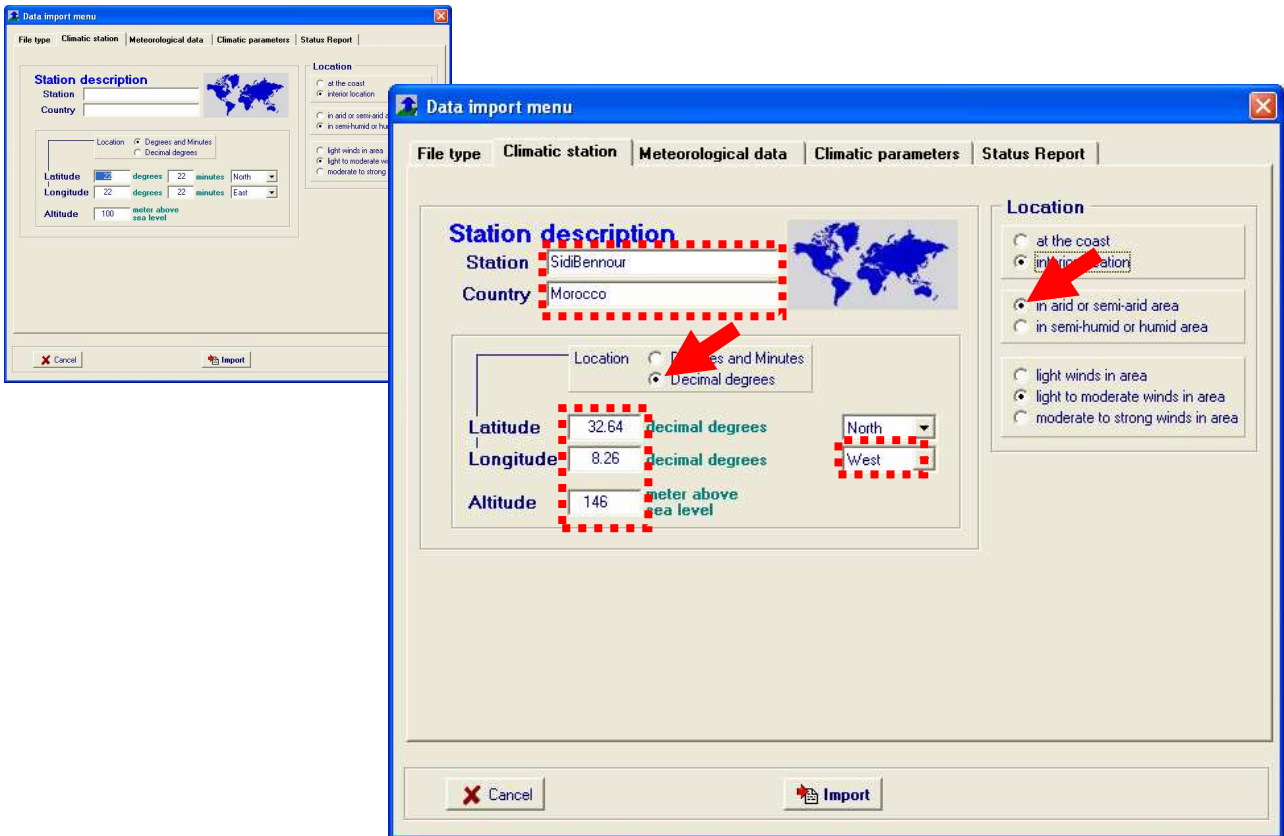
- Select file from list.

Verify that no warning message is displayed in *Information of selected file*.

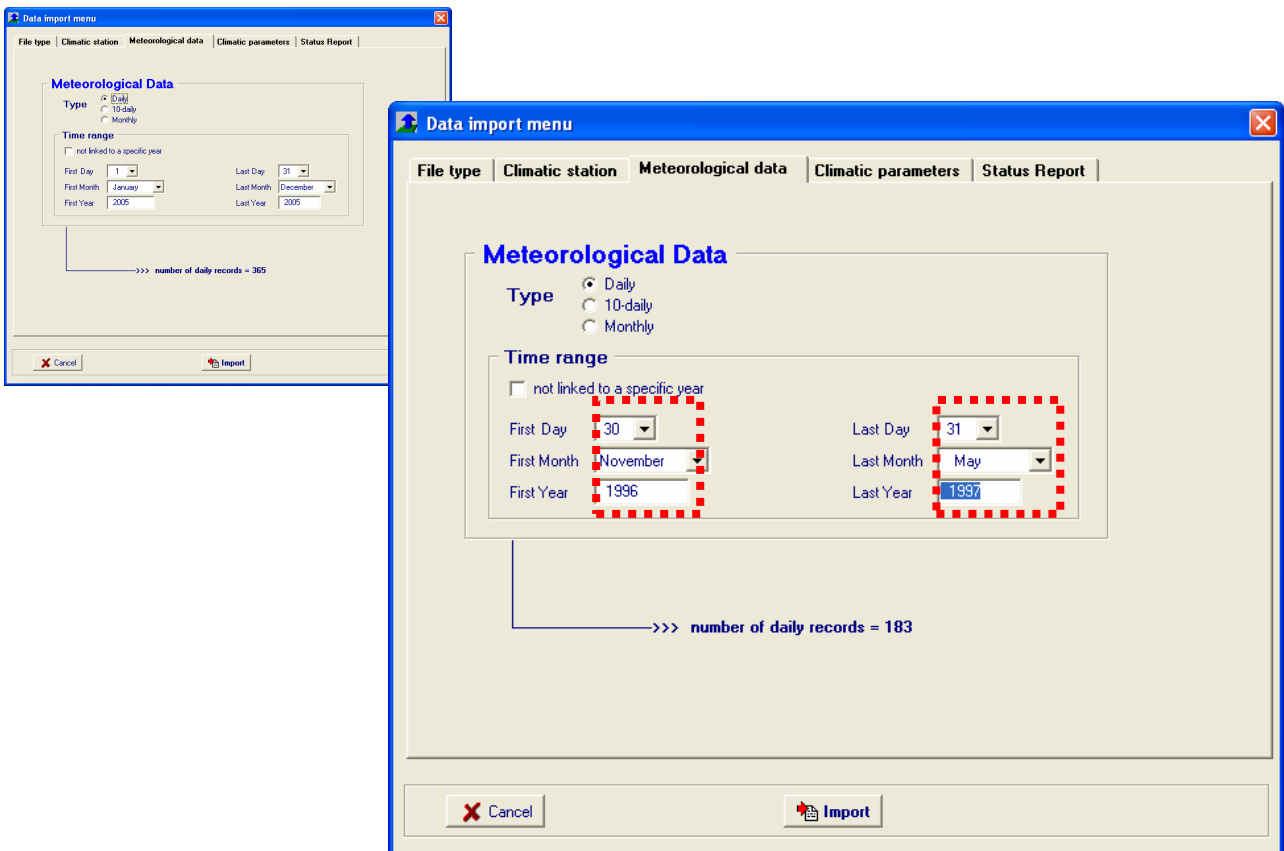


**- Describe the climatic station.**

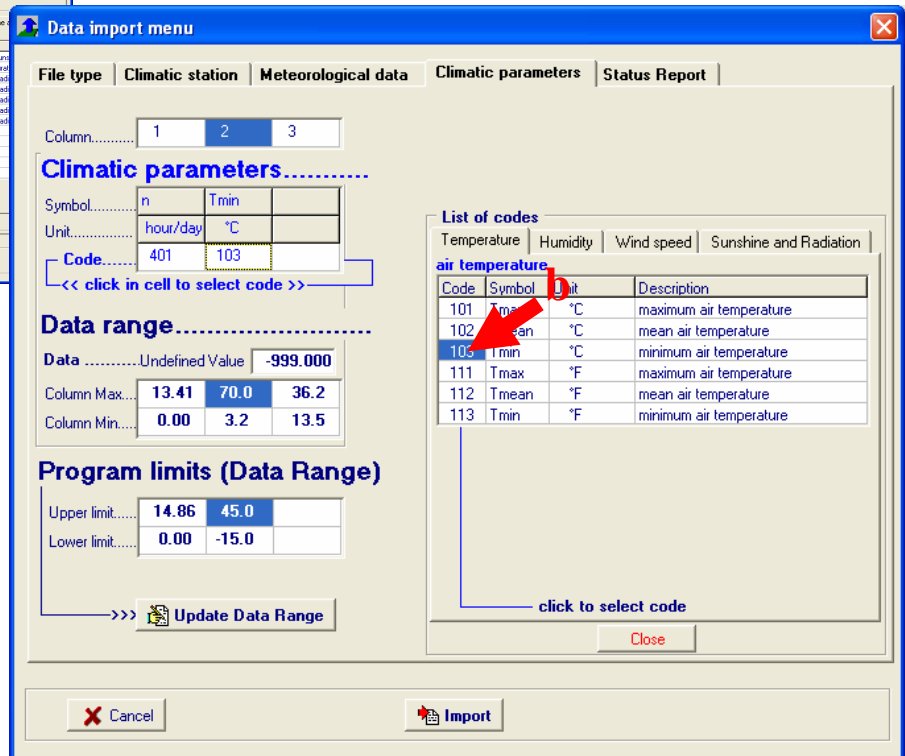
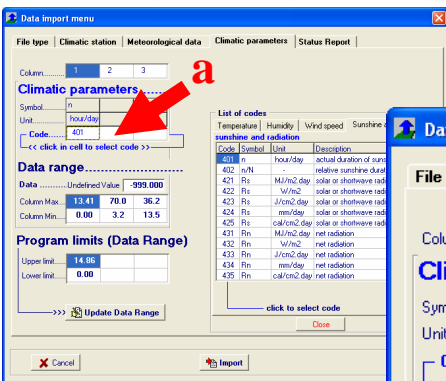
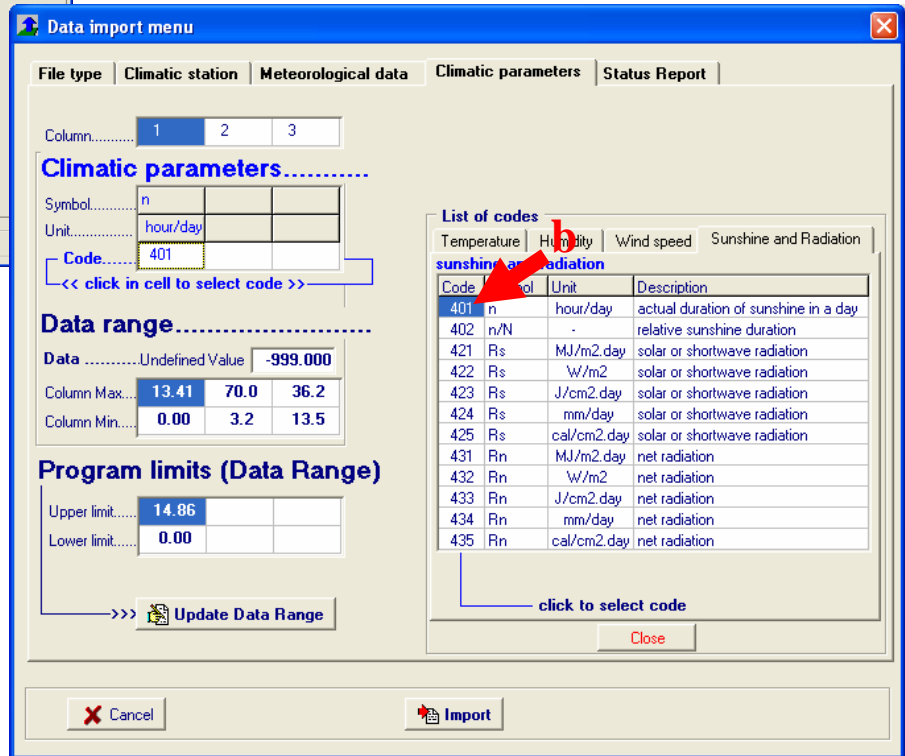
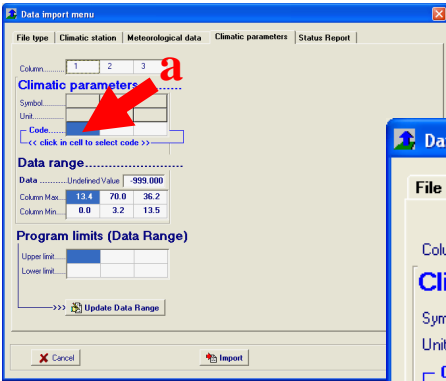
When describing the location, switch from *Degree and Minutes* to *Decimal degrees*.

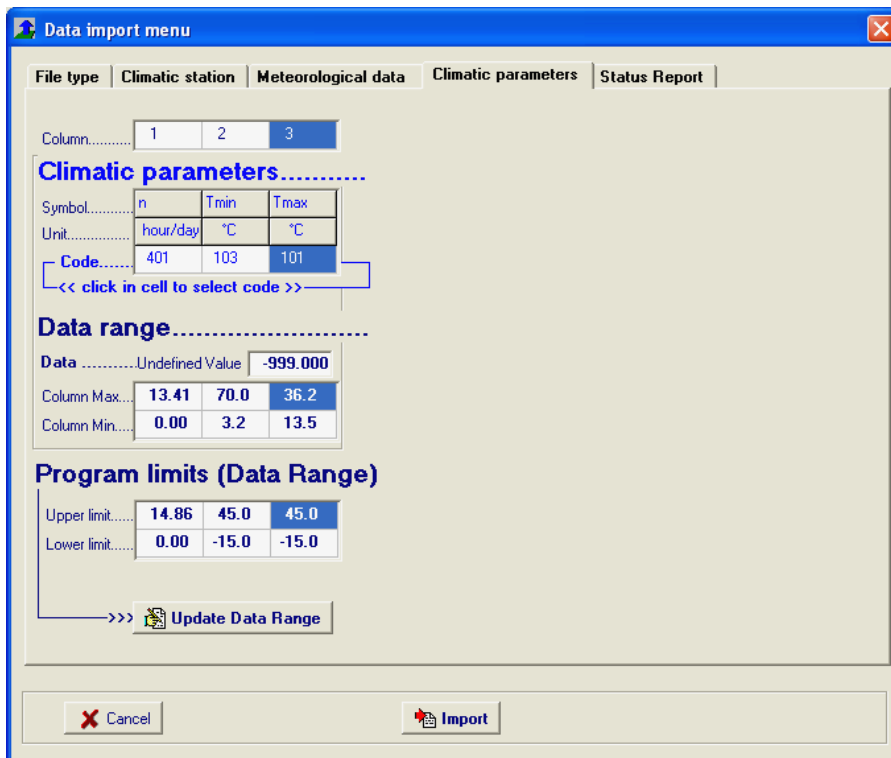
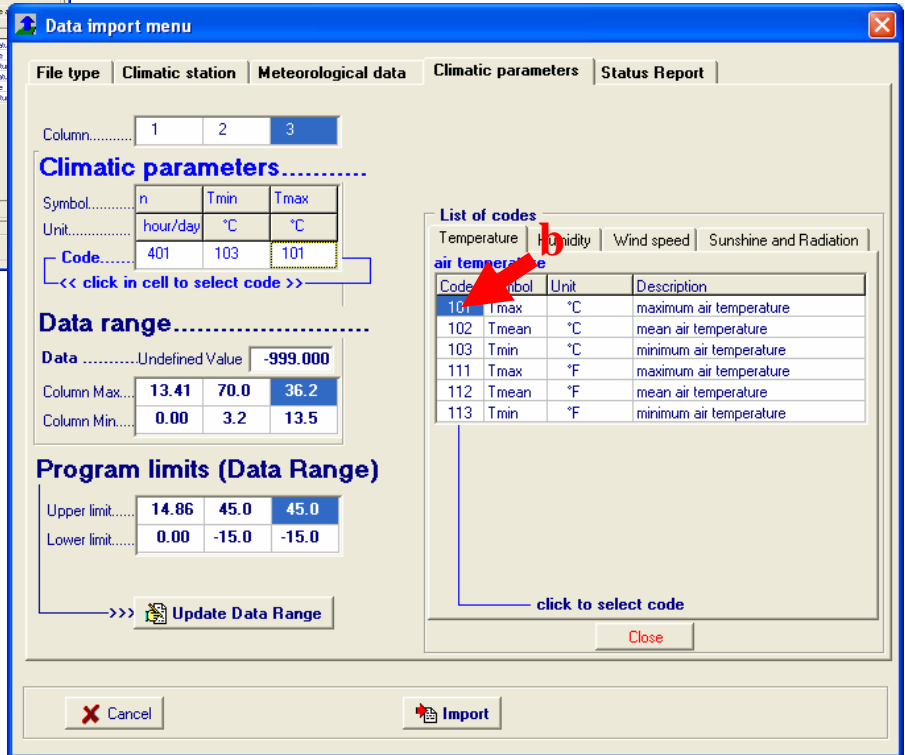
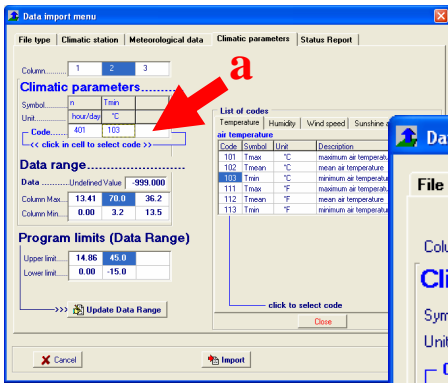


**- Describe the meteorological data.**



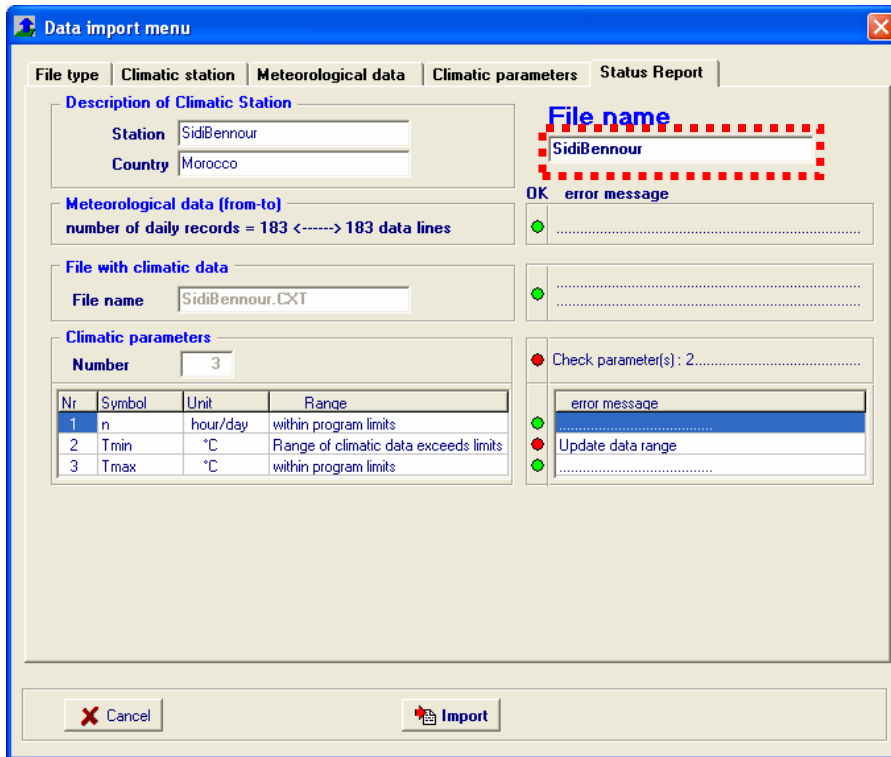
- Describe the climatic parameters by clicking in cell (a) to select appropriate code (b).





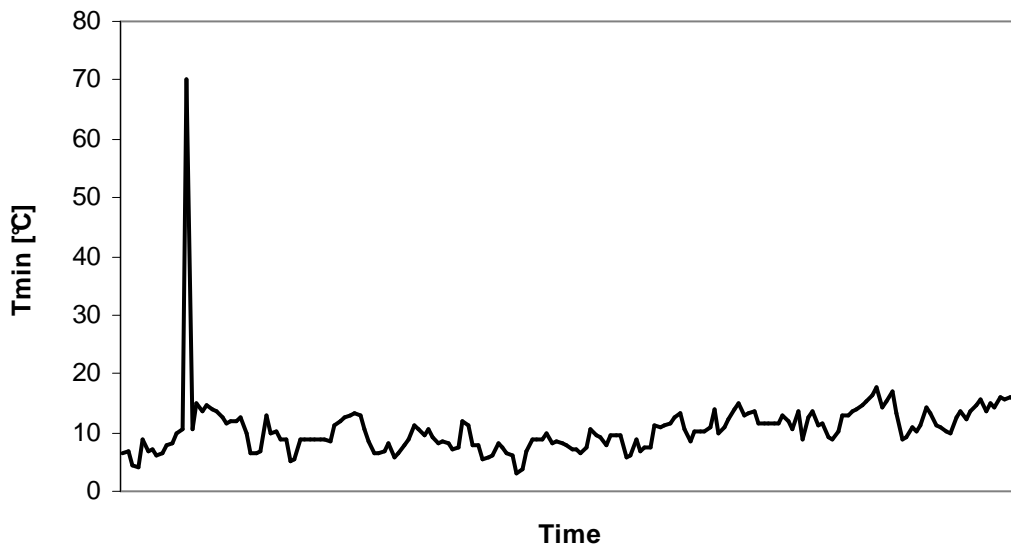
**- Input File name.**

In case error messages are displayed (red signals), take appropriate actions before importing.



**- Exit from EToCalculator by clicking *Cancel* and *Exit Program*.**

**- Open the Excel sheet with the original data to find out the value(s) of Minimum Temperature out of range, by plotting Tmin in a graph.**



**- Correct the value out of scale, i.e. changing it with the average of Tmin of the day before and of the day after.**

**Repeat the whole process to IMPORT CLIMATIC DATA FOR ETo CALCULATION**

- Open a new text file (Start -> All programs -> Accessories -> Notepad)

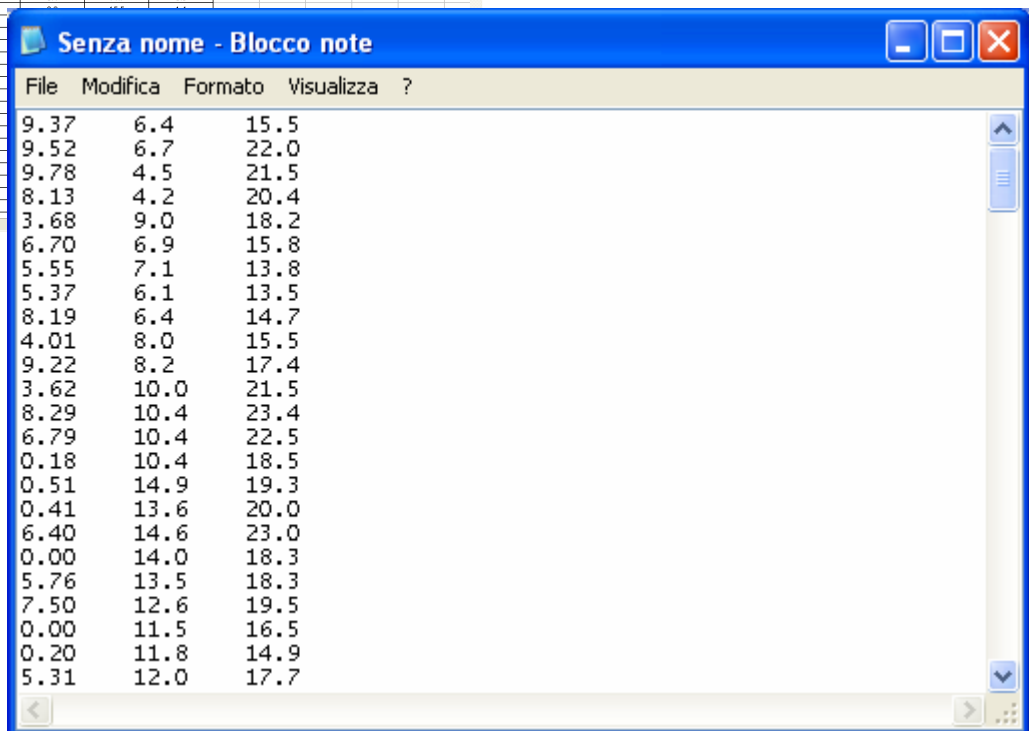


- Copy relevant climatic data for ETo calculation

Do not copy rainfall data.

Do not copy headings, unit of measurements, or dates.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Day	Month	Year	hour day	Minimum T	Maximum T	Rainfall						
2				°C	°C	mm							
3	30	11	1996	9.37	6.4	15.5	0.1						
4	1	12	1996	9.52	6.7	22.0	0.1						
5	2	12	1996	9.78	4.5	21.5	0.2						
6	3	12	1996	8.13	4.2	20.4	0.2						
7	4	12	1996	3.68	9.0	18.2	10.0						
8	5	12	1996	6.70	6.9	15.8	17.0						
9	6	12	1996	5.55	7.1	13.8	2.0						
10	7	12	1996	5.37	6.1	13.5	3.7						
11	8	12	1996	8.19	6.4	14.7	3.0						
12	9	12	1996	4.01	8.0	15.5							
13	10	12	1996	9.22	8.2	17.4							
14	11	12	1996	3.62	10.0	21.5							
15	12	12	1996	8.29	10.4	23.4							
16	13	12	1996	6.79	10.4	22.5							
17	14	12	1996	0.18	10.4	18.5							
18	15	12	1996	0.51	14.9	19.3							
19	16	12	1996	0.41	13.6	20.0							
20	17	12	1996	6.40	14.6	23.0							
21	18	12	1996	0.00	14.0	18.3							
22	19	12	1996	5.76	13.5	18.3							
23	20	12	1996	7.50	12.6	19.5							
24	21	12	1996	0.00	11.5	16.5							
25	22	12	1996	0.20	11.8	14.9							
26	23	12	1996	5.31	12.0	17.7							
27	24	12	1996	0.04									
28	25	12	1996	6.82									
29	26	12	1996	0.00									

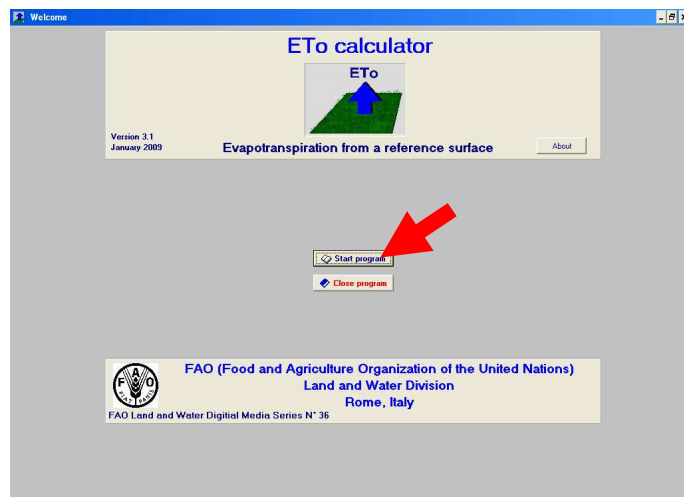


- Save the text file as “SidiBennour.CXT”, change the *Type of document* to *All documents*, and save the file following the suitable path, rewriting on the previous CXT file:

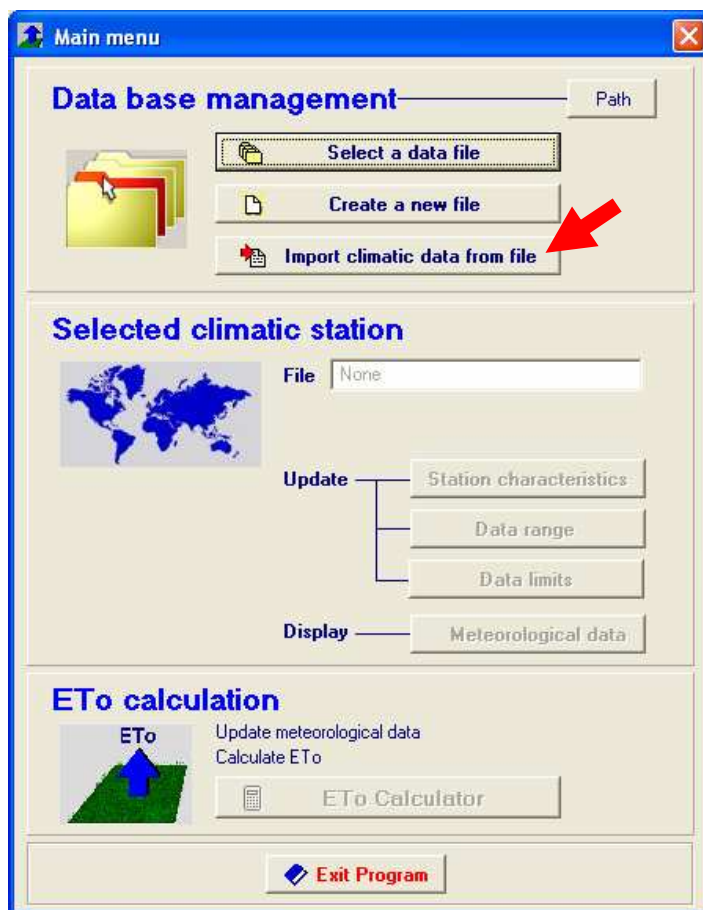
Default Path: C:\Program Files\FAO\EToCalc\IMPORT

Path (Windows Vista OS): C:\EToCalc\IMPORT

- Close ALL files and folders.
- Start program EToCalculator.

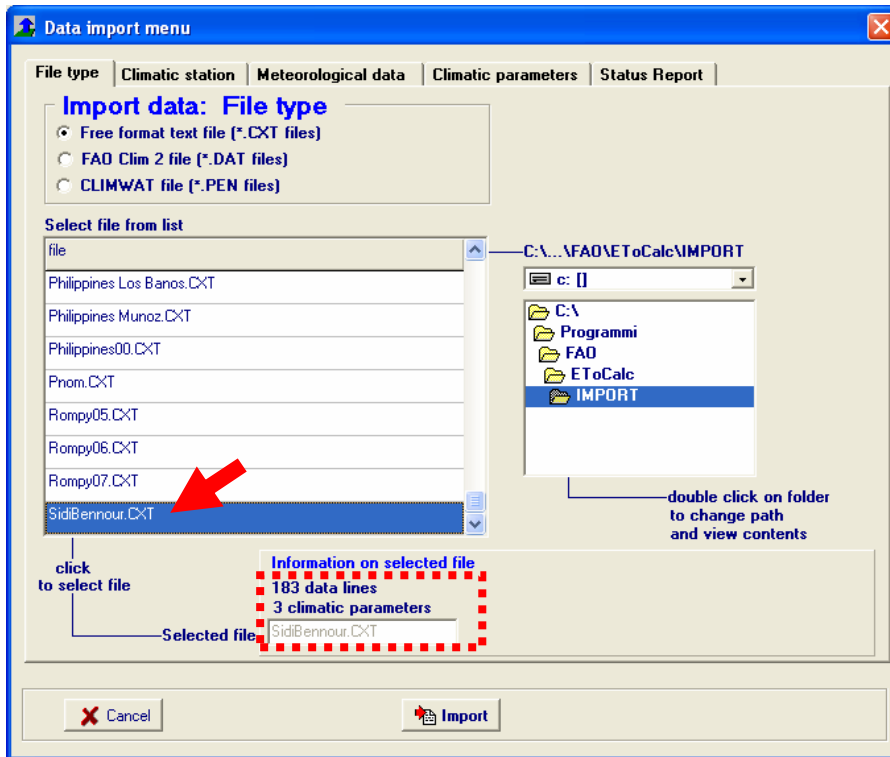


- In Data base management, Import climatic data from file.



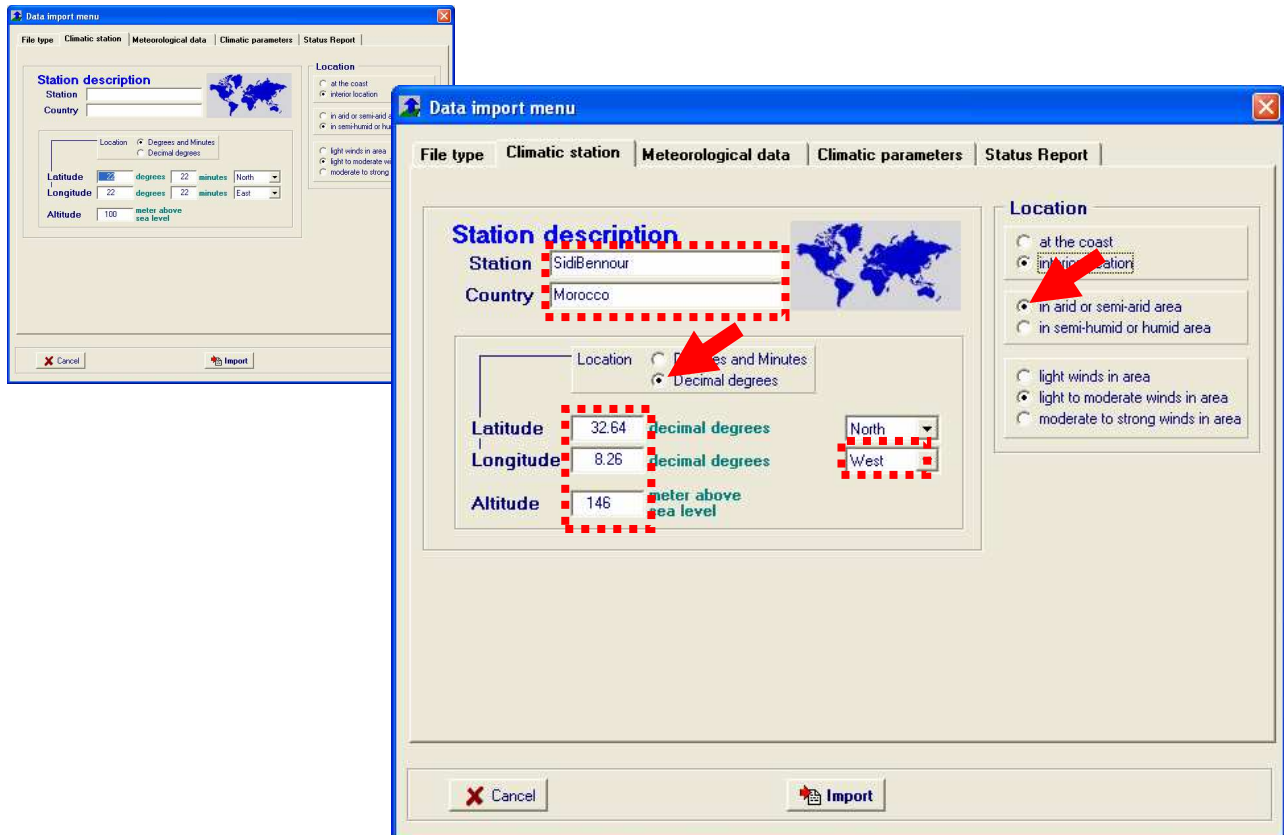
**- Select file from list.**

Verify that no warning message is displayed in *Information of selected file*.

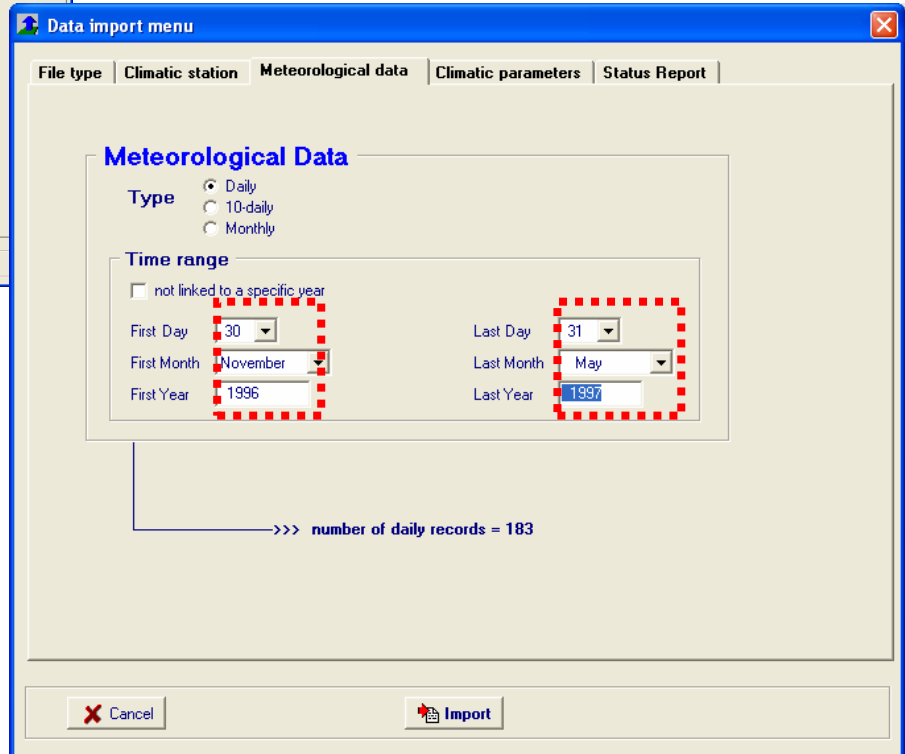
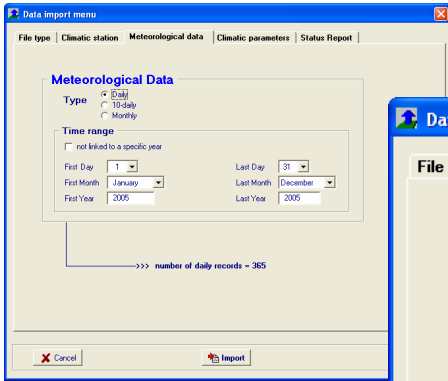


**- Describe the climatic station.**

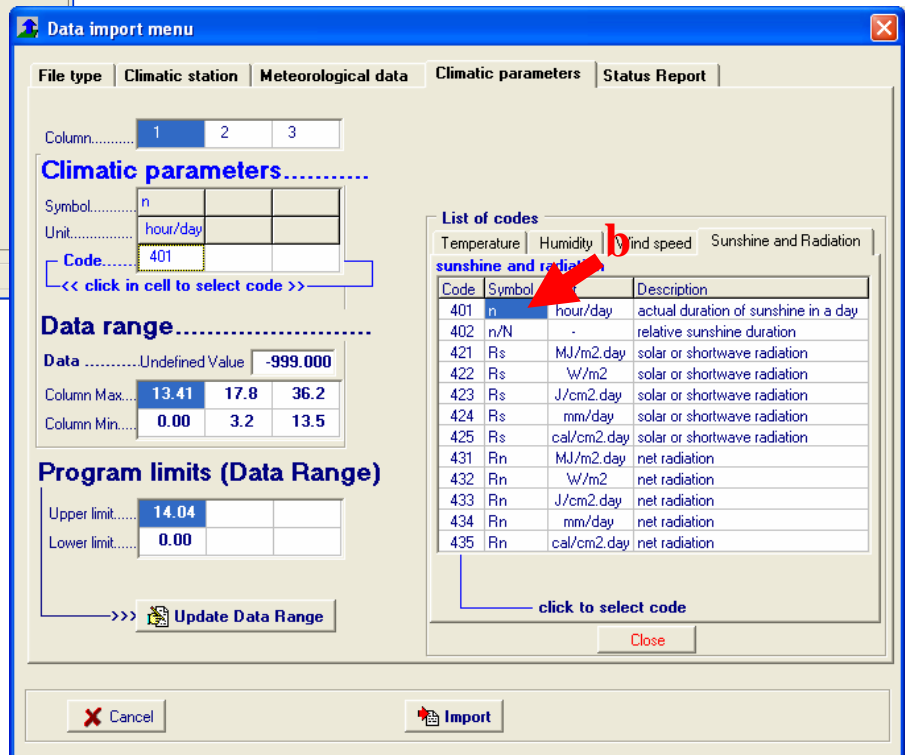
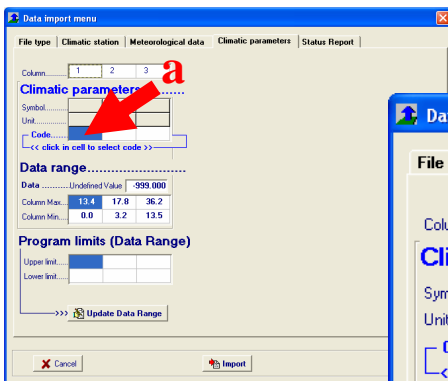
When describing the location, switch from *Degree and Minutes* to *Decimal degrees*.

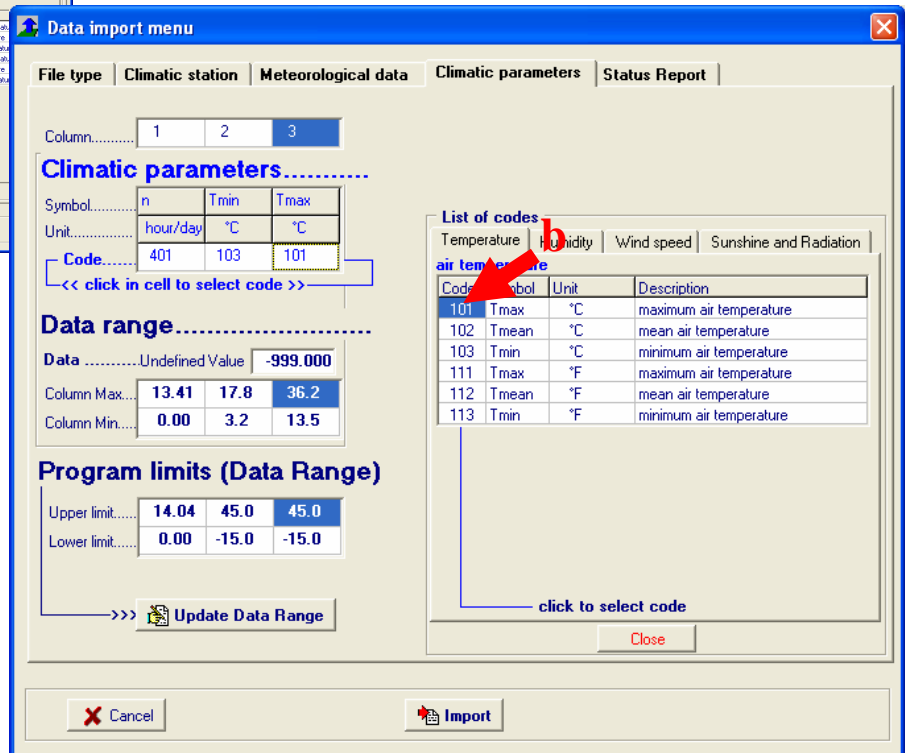
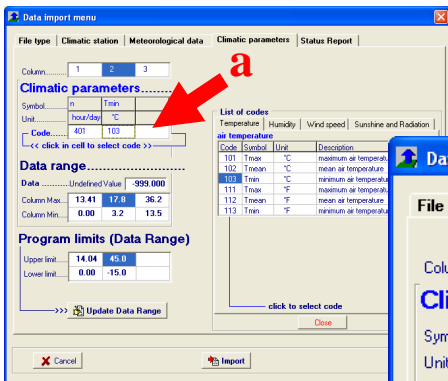
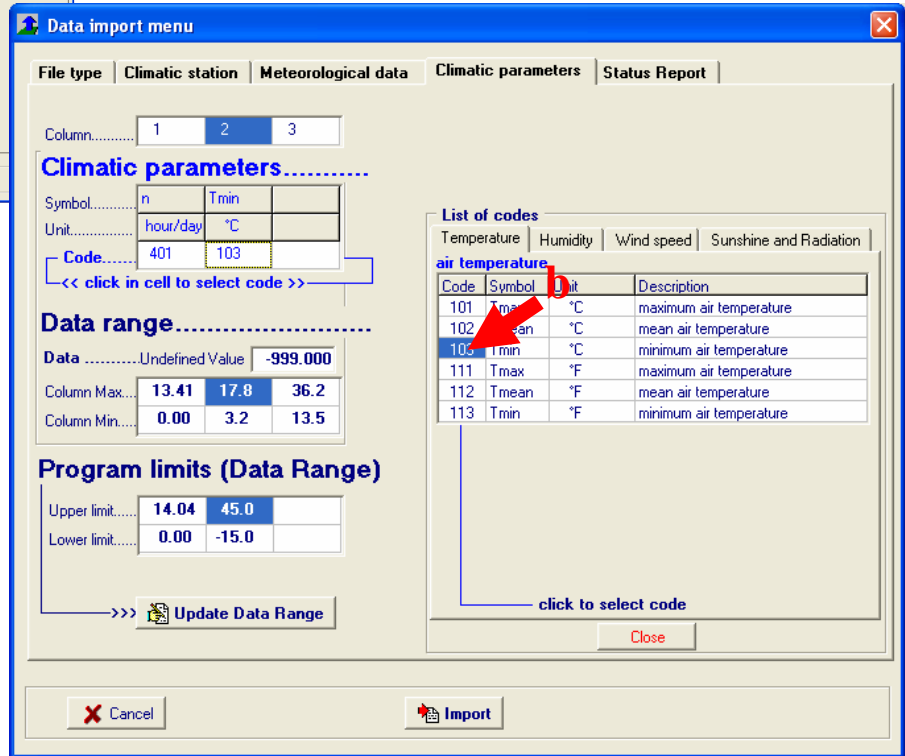
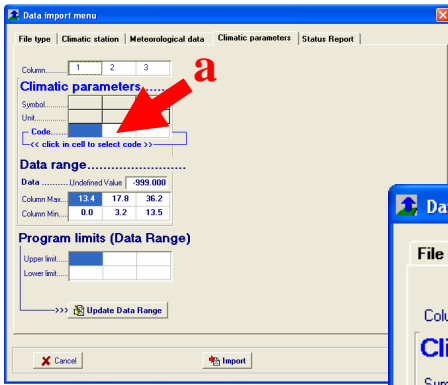


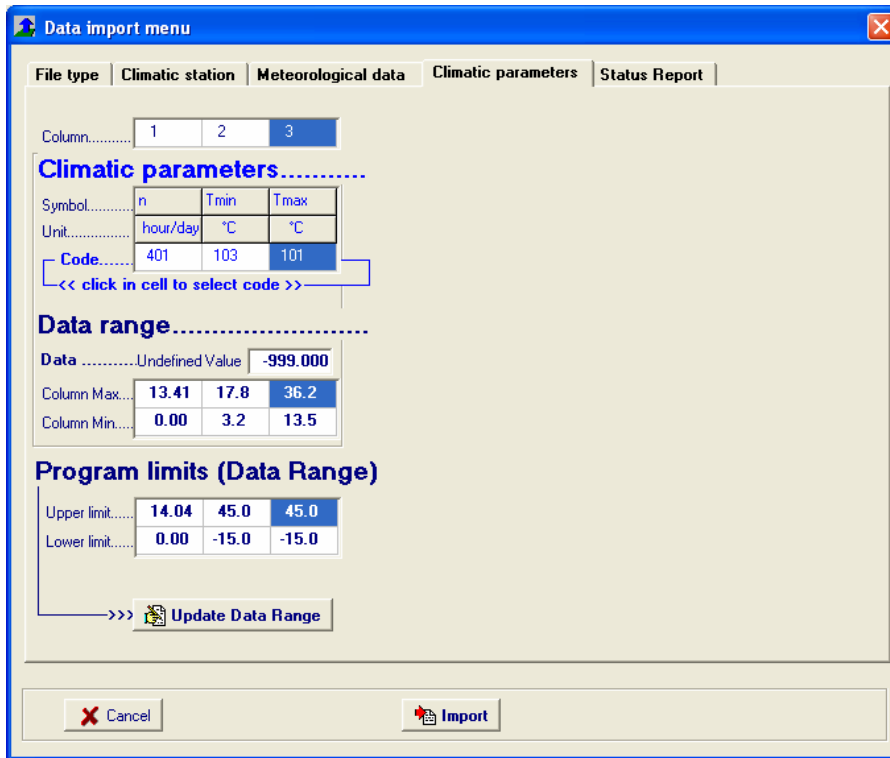
- Describe the meteorological data.



- Describe the climatic parameters by clicking in cell (a) to select appropriate code (b).

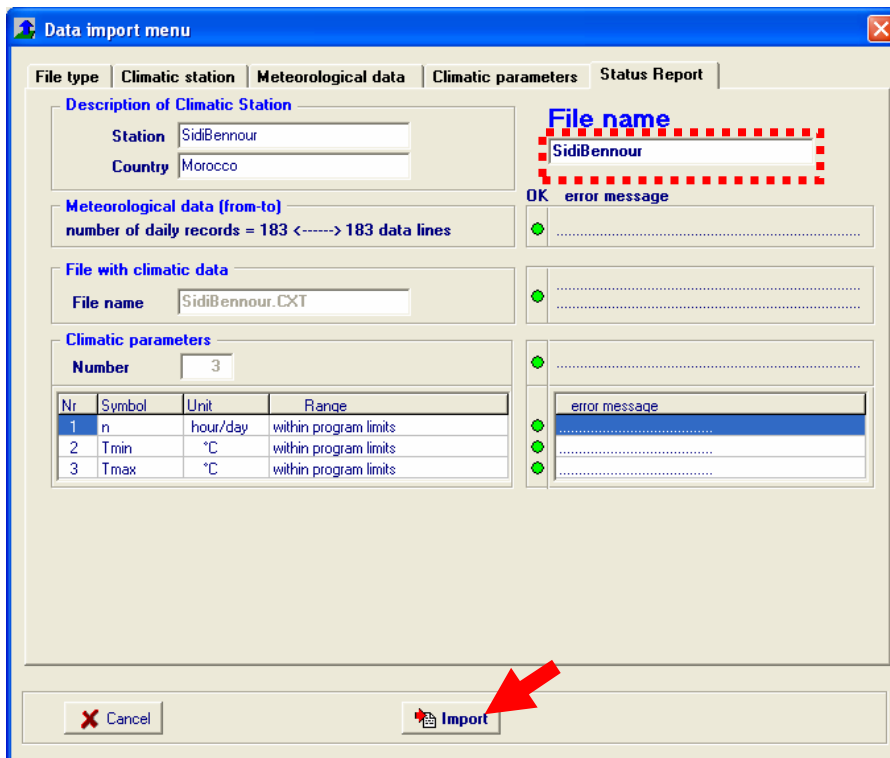




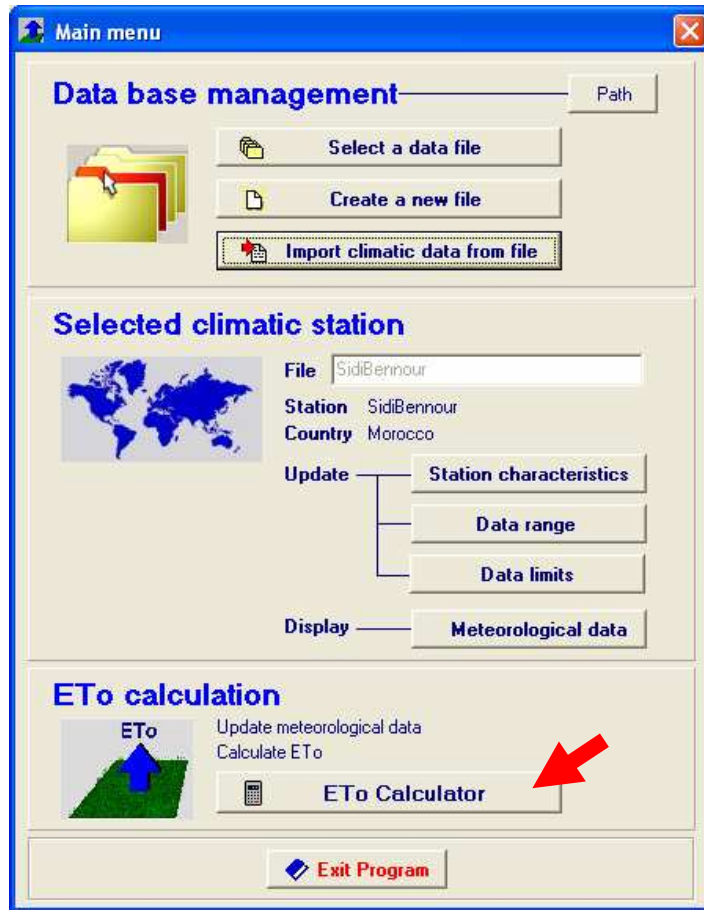


**- Input File name and Import.**

In case error messages are displayed (red signals), take appropriate actions before importing.

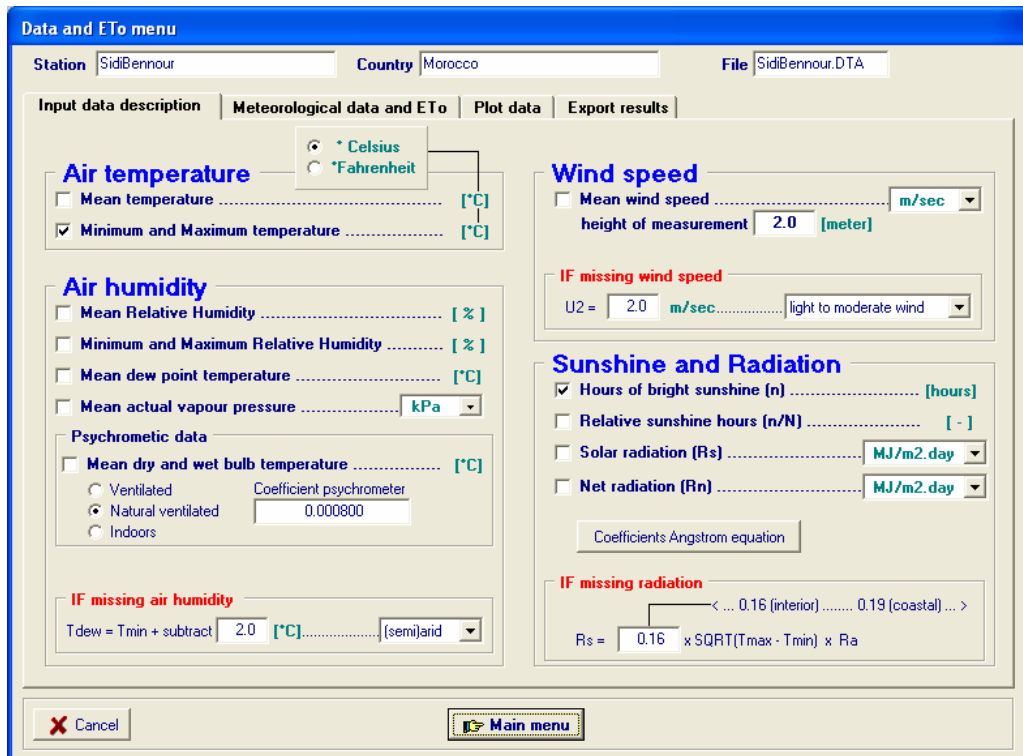


- In ETo calculation, click ETo Calculator.



**CREATE REFERENCE EVAPOTRANSPIRATION (ETo) AND TEMPERATURE FILES**

- In *Input data description* verify the meteorological parameters selected.



- In *Meteorological data and ETo* verify the meteorological data and visualize ETo as a result.

**Data and ETo menu**

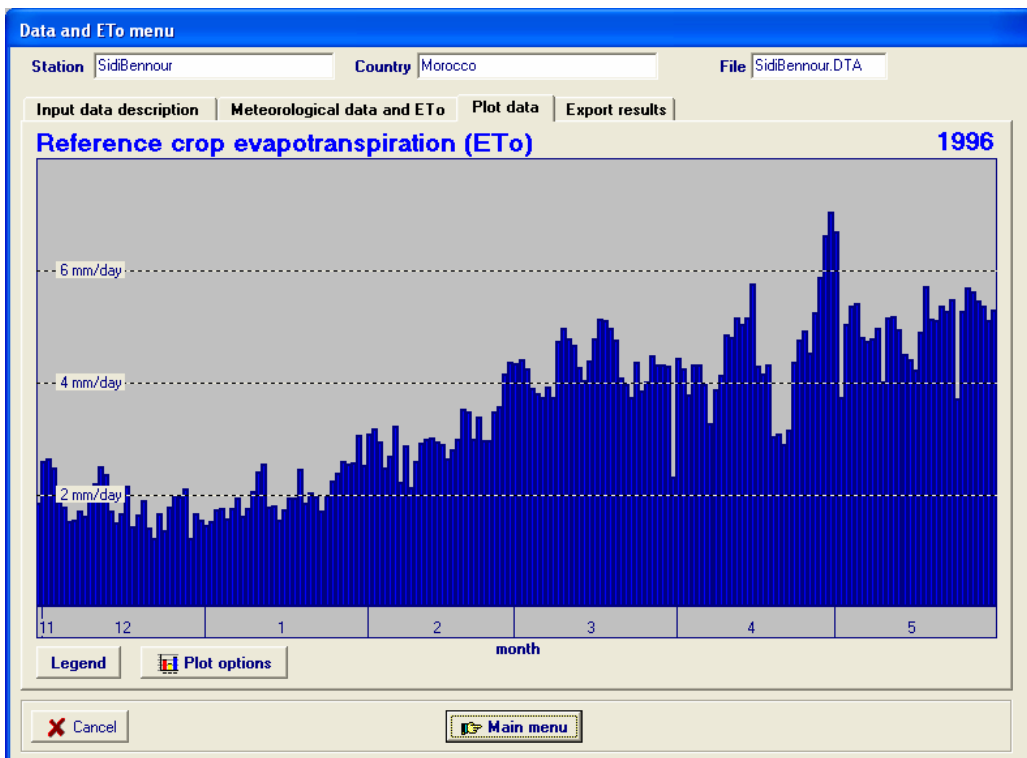
Station: SidBennour    Country: Morocco    File: SidBennour.DTA

Input data description    **Meteorological data and ETo**    Plot data    Export results

Day		30	1	2	3	4	5	6
Month		November	December	December	December	December	December	December
Year		1996	1996	1996	1996	1996	1996	1996
Tmax	°C	15.5	22.0	21.5	20.4	18.2	15.8	13.8
Tmin	°C	6.4	6.7	4.5	4.2	9.0	6.9	7.1
n	hour/day	9.37	9.52	9.78	8.13	3.68	6.70	5.55
ETo	mm/day	1.8	2.6	2.6	2.5	1.9	1.8	1.5

Buttons: Symbols, Switch Units, Data Limits, Save data, Cancel, Main menu

- In *Plot data* visualize ETo on graph.

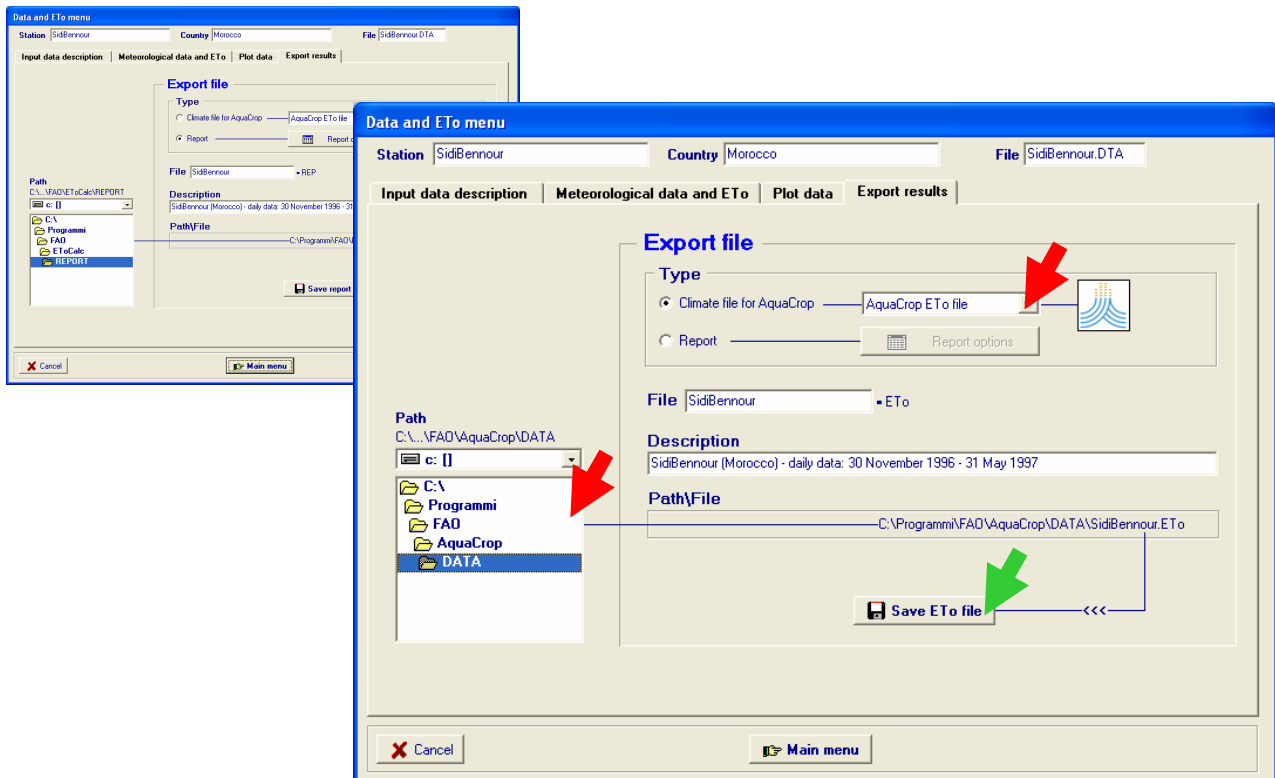


- In *Export results* select the *Type* of file to export (*Climate file for AquaCrop, AquaCrop ETo file*), select the suitable *Path*:

Default Path: C:\Program Files\FAO\AquaCrop\DATA

Path (Windows Vista OS): C:\AquaCrop\DATA

and *Save ETo file*.

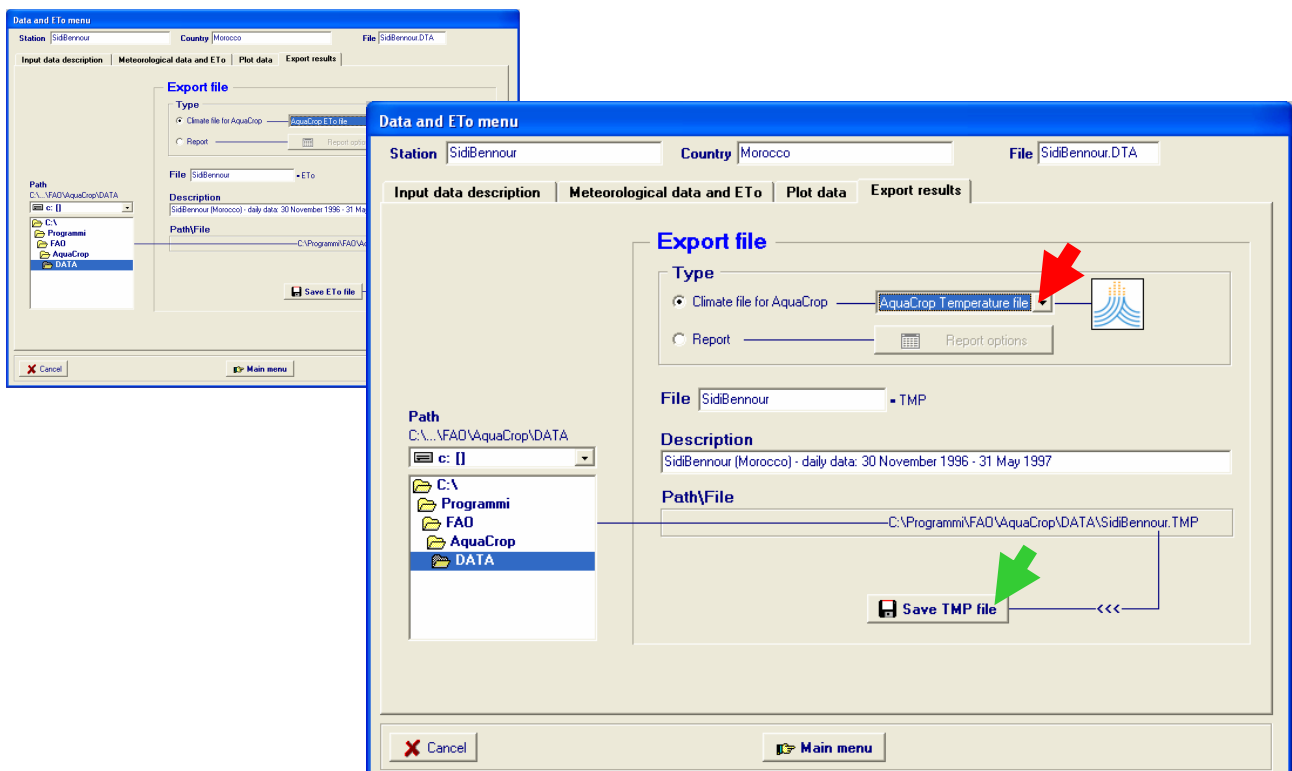


- In *Export results* select the *Type* of file to export (*Climate file for AquaCrop, AquaCrop Temperature file*), check the *Path* :

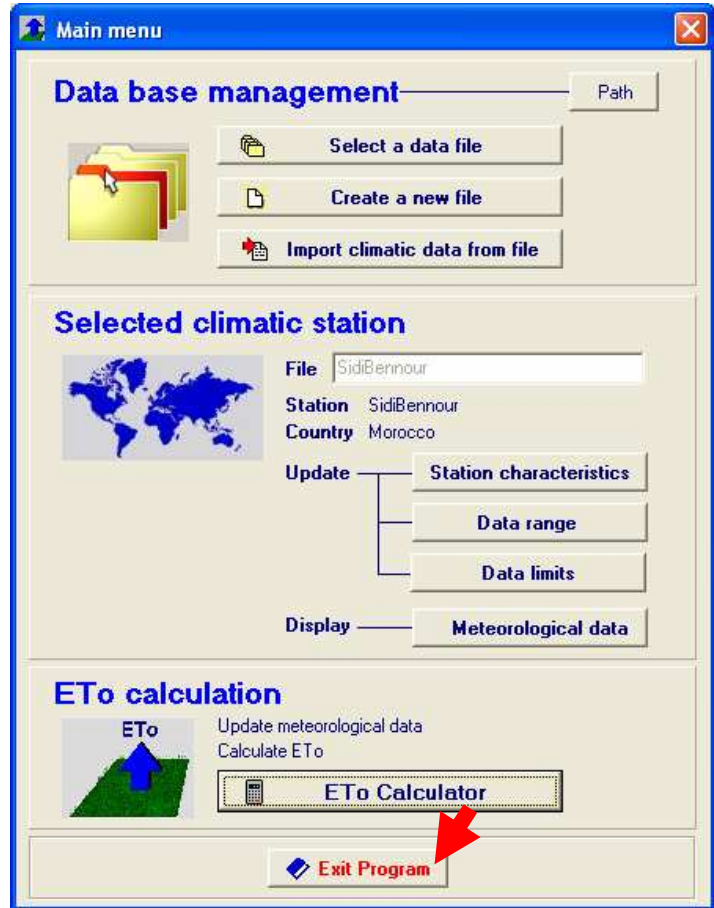
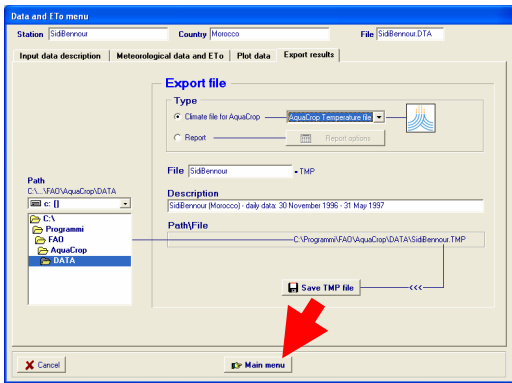
Default Path: C:\Program Files\FAO\AquaCrop\DATA

Path (Windows Vista OS): C:\AquaCrop\DATA

and *Save TMP file*.



- Click **Main menu**, then **Exit program**.



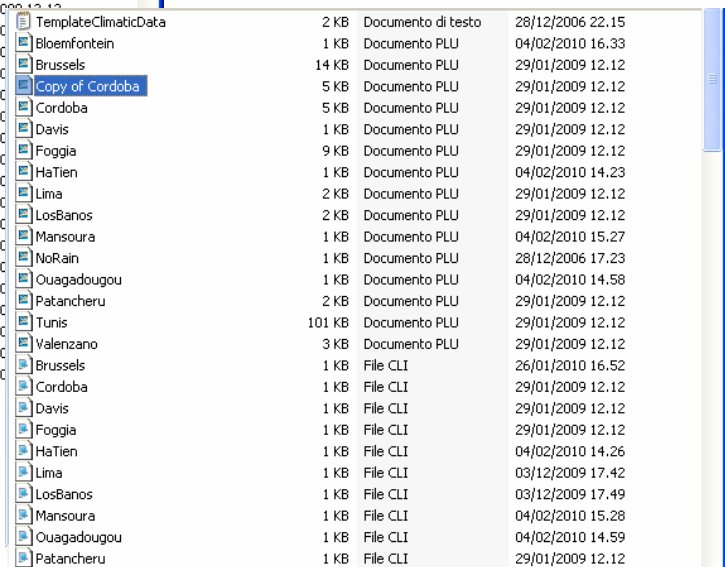
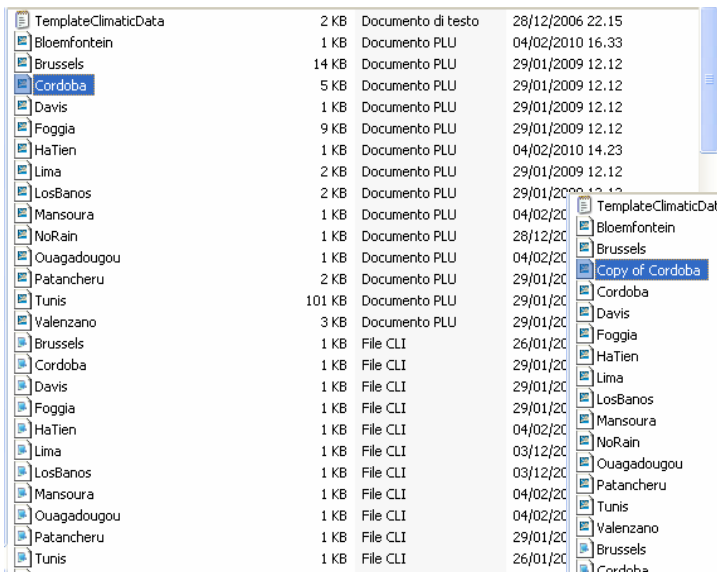
### CREATE PRECIPITATION FILE

EToCalculator and AquaCrop should be closed.

- Copy and paste an existing \*.PLU file in:

**Default Path:** C:\Program Files\FAO\AquaCrop\DATA

**Path (Windows Vista OS):** C:\AquaCrop\DATA

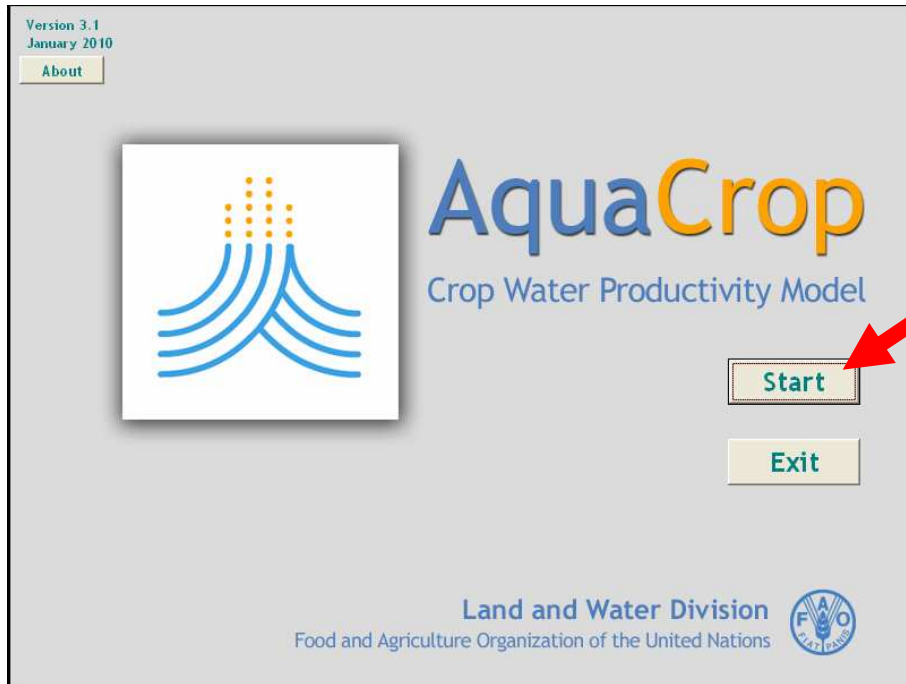




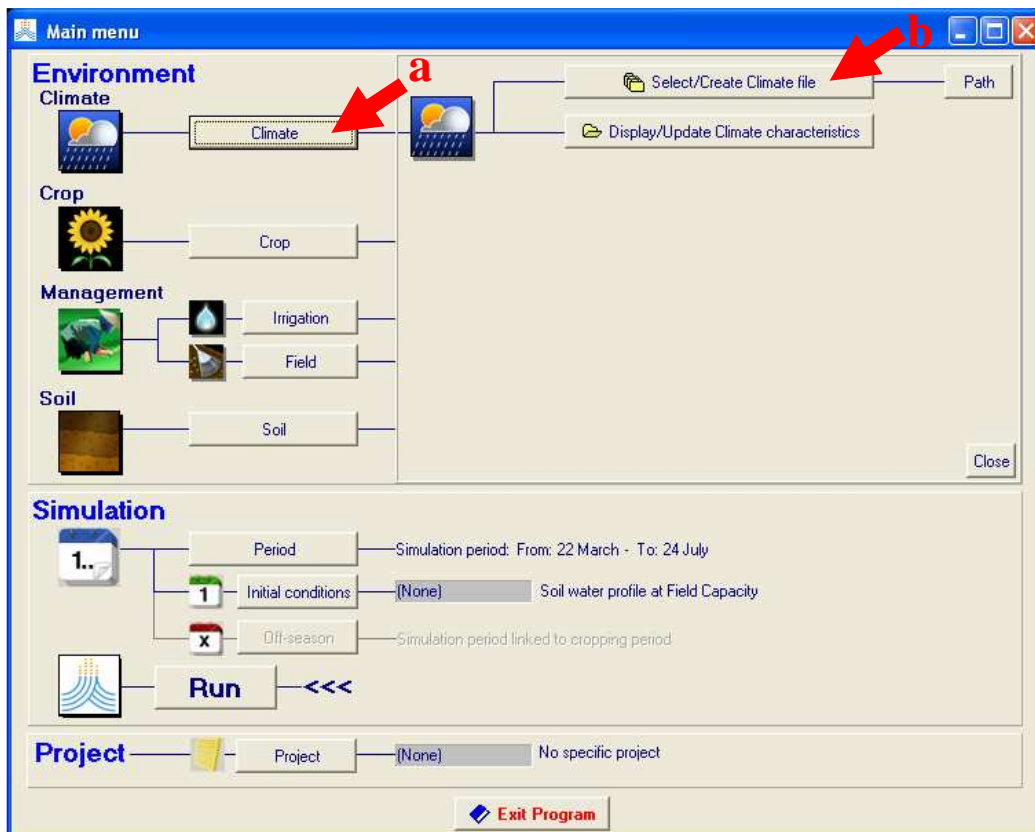


# CREATE CLIMATE FILE

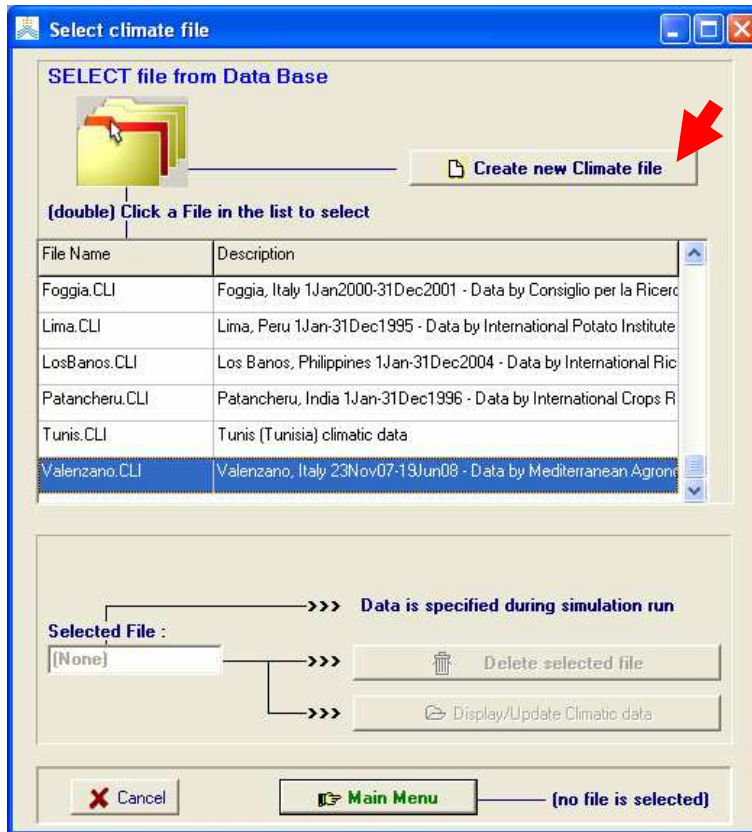
- Start AquaCrop.



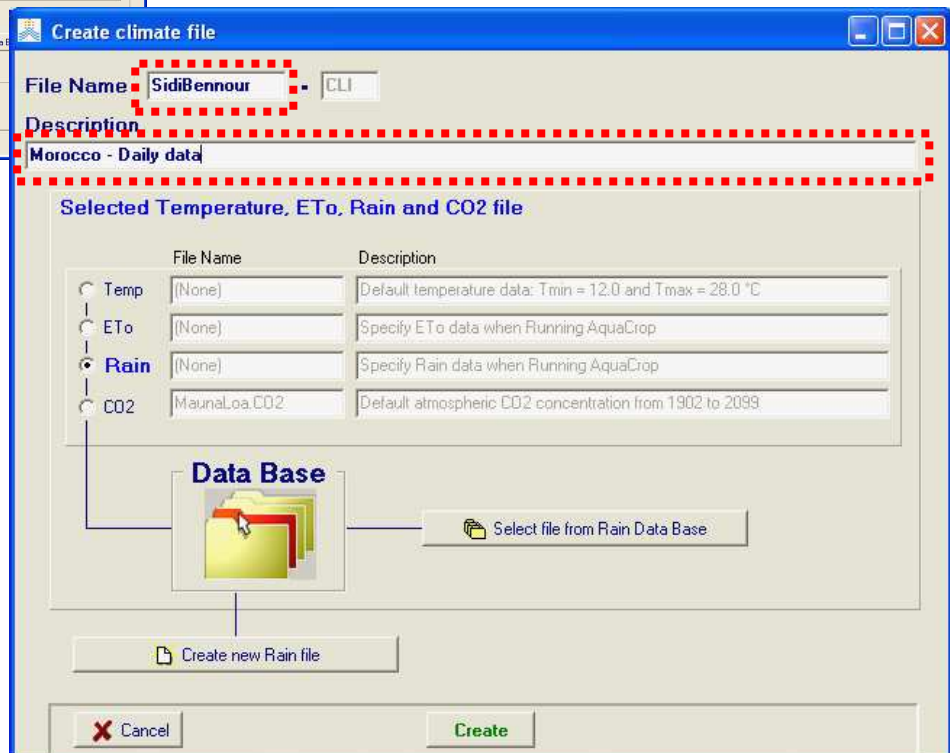
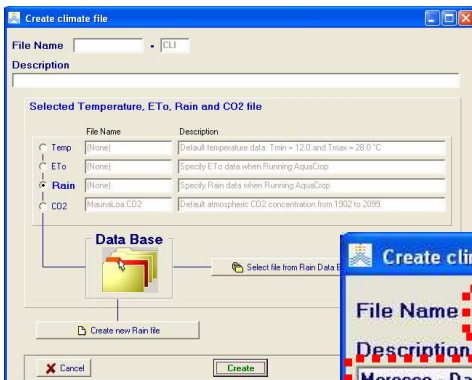
- In Climate (a), Select/Create Climate file (b).



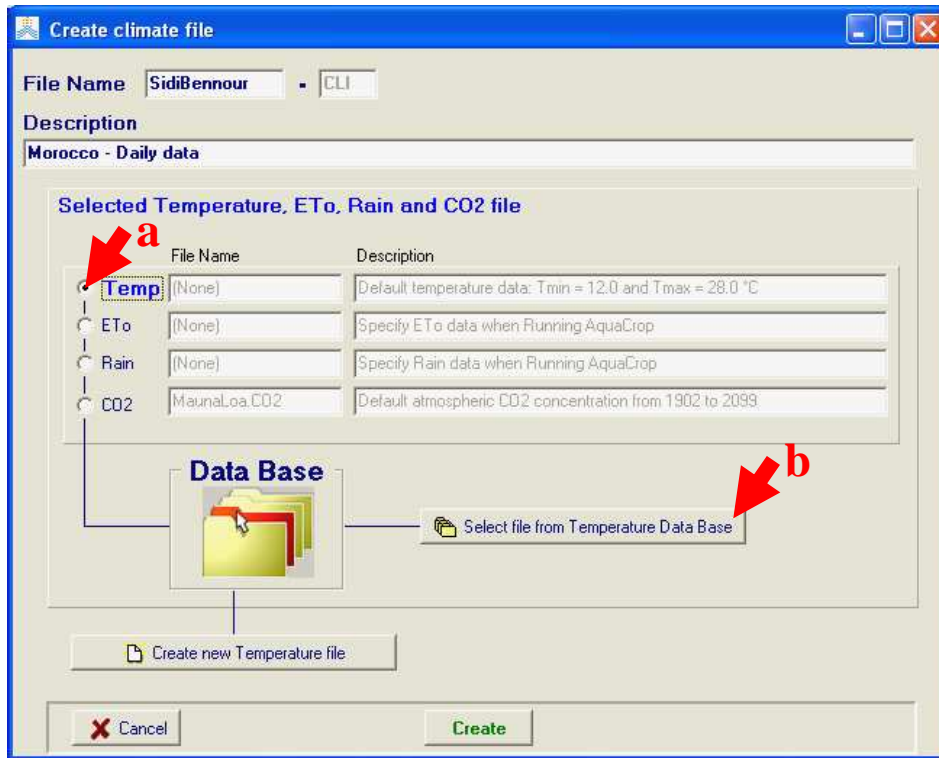
- Create new Climate file.



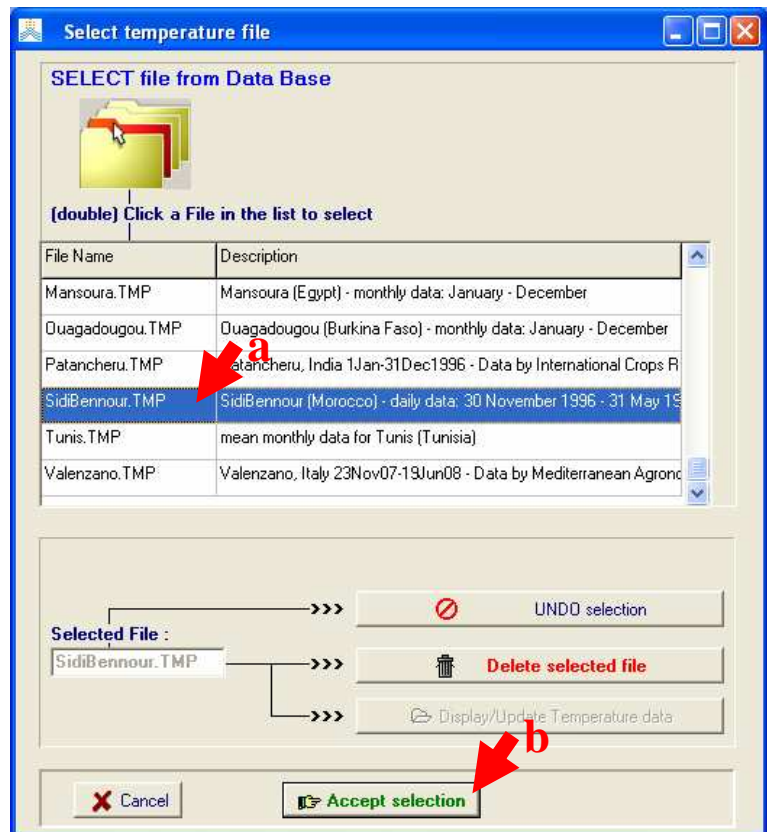
- Provide File Name and Description (optional).



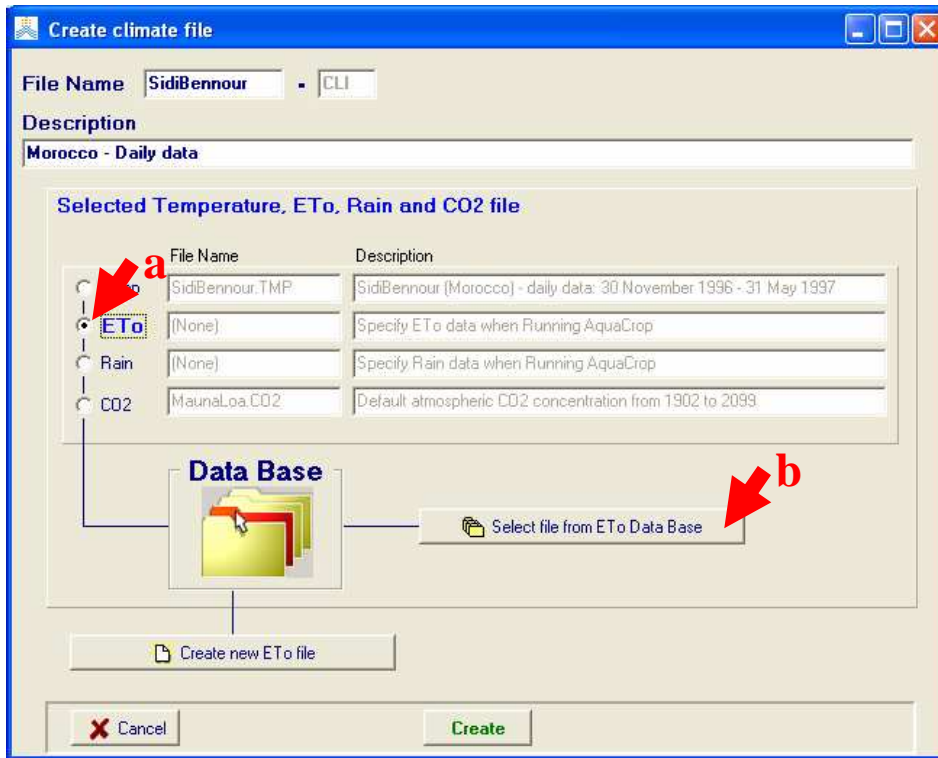
- Select *Temperature* radio button (a), then *Select file from Temperature Data Base* (b).



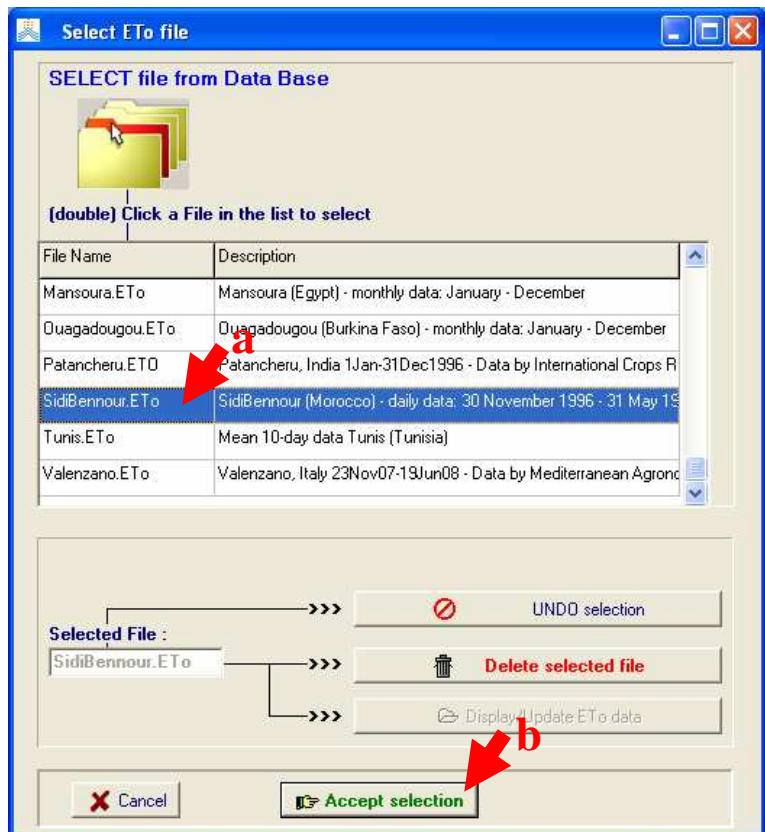
- Select the *Temperature* file by double clicking the file name (a), then *Accept selection* (b).



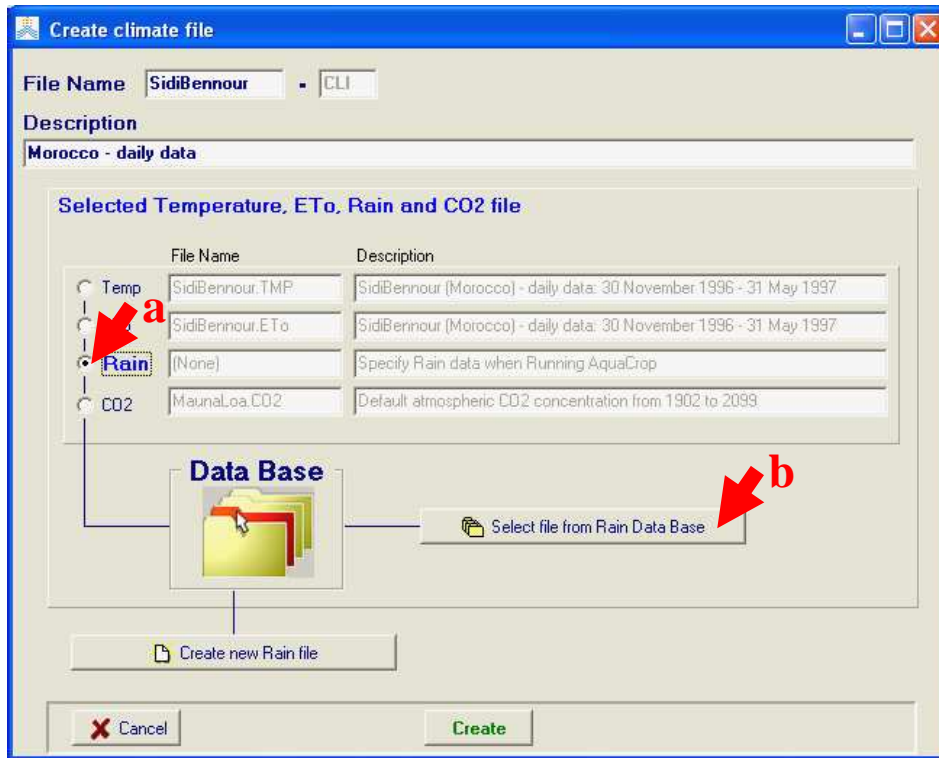
- Select *ETo* radio button (a), then Select file from *ETo* Data Base (b).



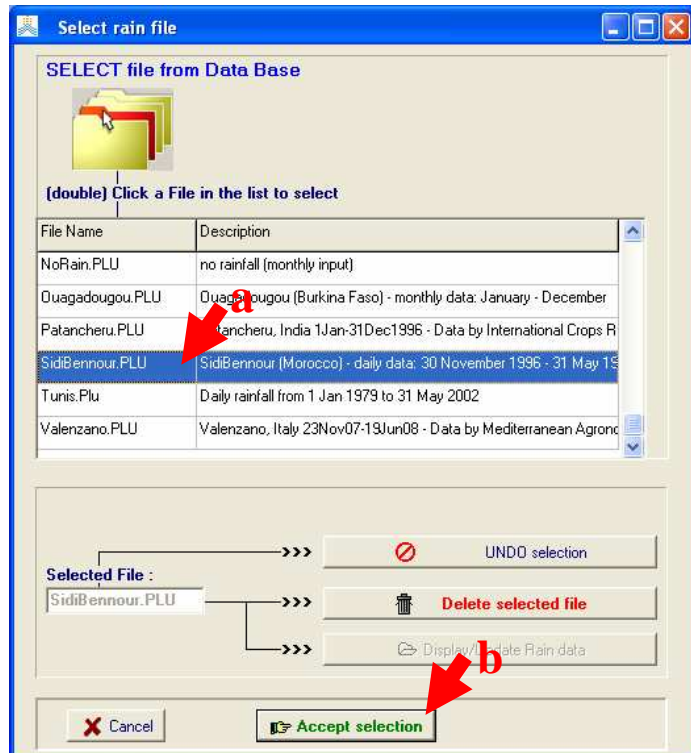
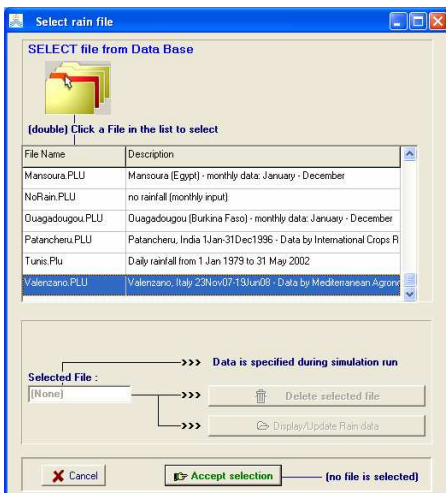
- Select the *ETo* file by double clicking the file name (a), then *Accept selection* (b).



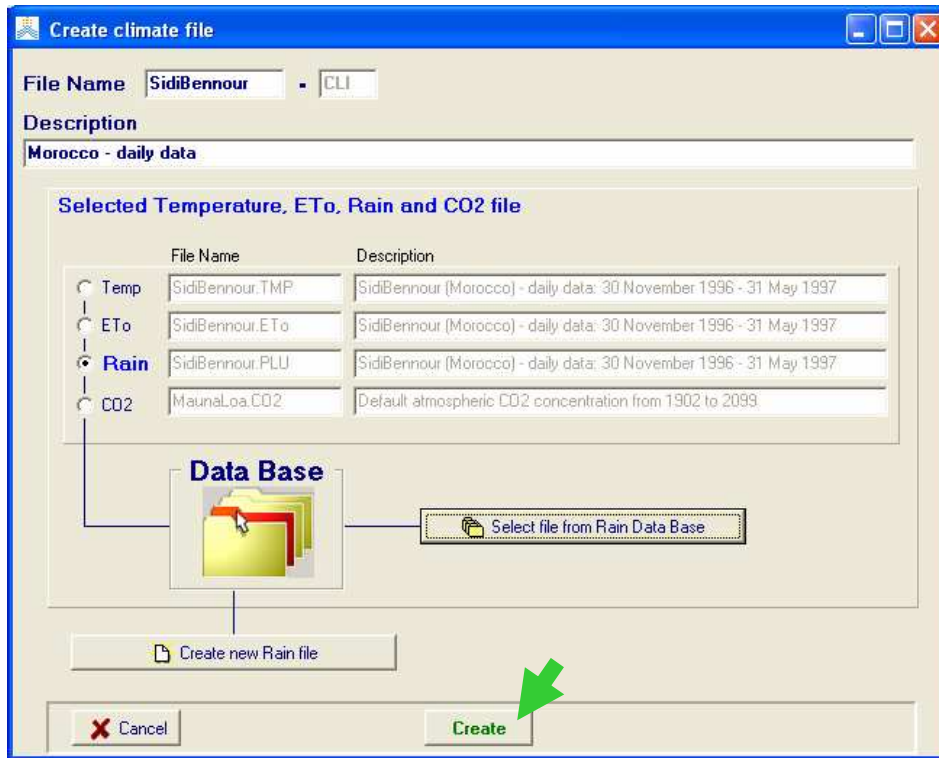
- Select *Rain* radio button (a), then *Select file from Rain Data Base* (b).



- Select *Rain* file by double clicking the file name (a), then *Accept selection* (b).



- Create climate file.



- In Climate (a), Display/Update Climate characteristics (b).



- Display climate data.

