Food and Agriculture Organization of the United Nations

Module 5
Create project files (PRMs) and run simulations

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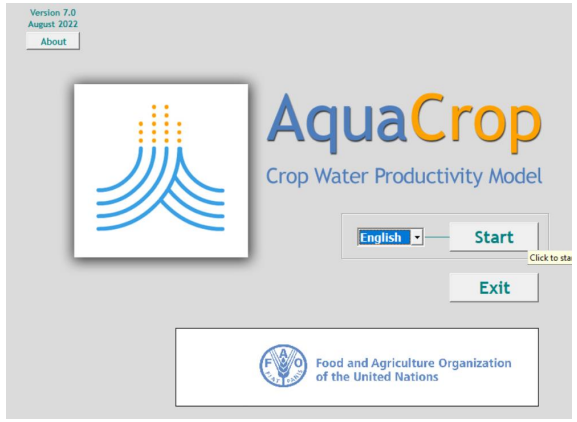
(2023)

Context

- You will create project files to run simulations for long time series (89 years).
- You will use the plug-in to run simulations for wheat in two locations (Multan and Badin) under 2 RCPs scenarios (RCP 4.5 and 8.5) for the 2010-2099 period.



Project files
(.PRMs or .PROs)

Output files (daily or seasonal)

Instruction-AquaCrop plug-in

- Paste this file into AquaCrop plug-in, folder SIMUL

LIST	17/08/2022 10:22	File folder	
OUTP	17/08/2022 10:22	File folder	
PARAM	17/08/2022 10:22	File folder	
SIMUL	22/11/2023 09:25	File folder	
aquacrop	22/11/2023 09:25	Application	1,741 KB
AUTHORS.md	22/11/2023 09:25	MD File	1 KB
LICENSE	22/11/2023 09:25	File	2 KB

Project file scheme

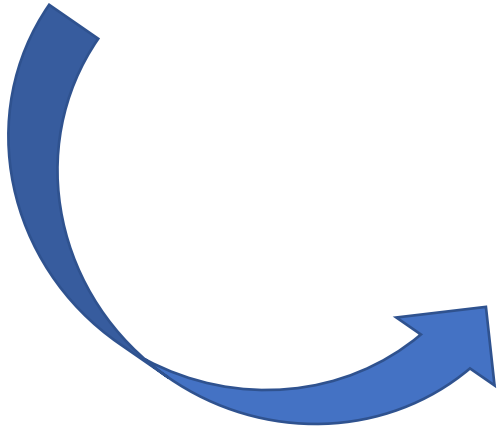
Crop_Location_SowingDate_Irrigation_RCP

Wheat_Badin_1Nov_7d11mm_45
Wheat_Badin_1Nov_7d11mm_85

Wheat_Multan_1Nov_7d13mm_45
Wheat_Multan_1Nov_7d13mm_85

1) Download the DATA folder from GitHub (if you have already downloaded the whole repo, simply navigate to material for training sessions/Crop_Module_5/DATA

2) Copy and paste the DATA folder content to your personal DATA folder



CTRL + C - CTRL + V

Personal DATA folder

OS (C:) › FAO › Pakistan › GUI_AC71 › AquaCropV71No13102023 › DATA

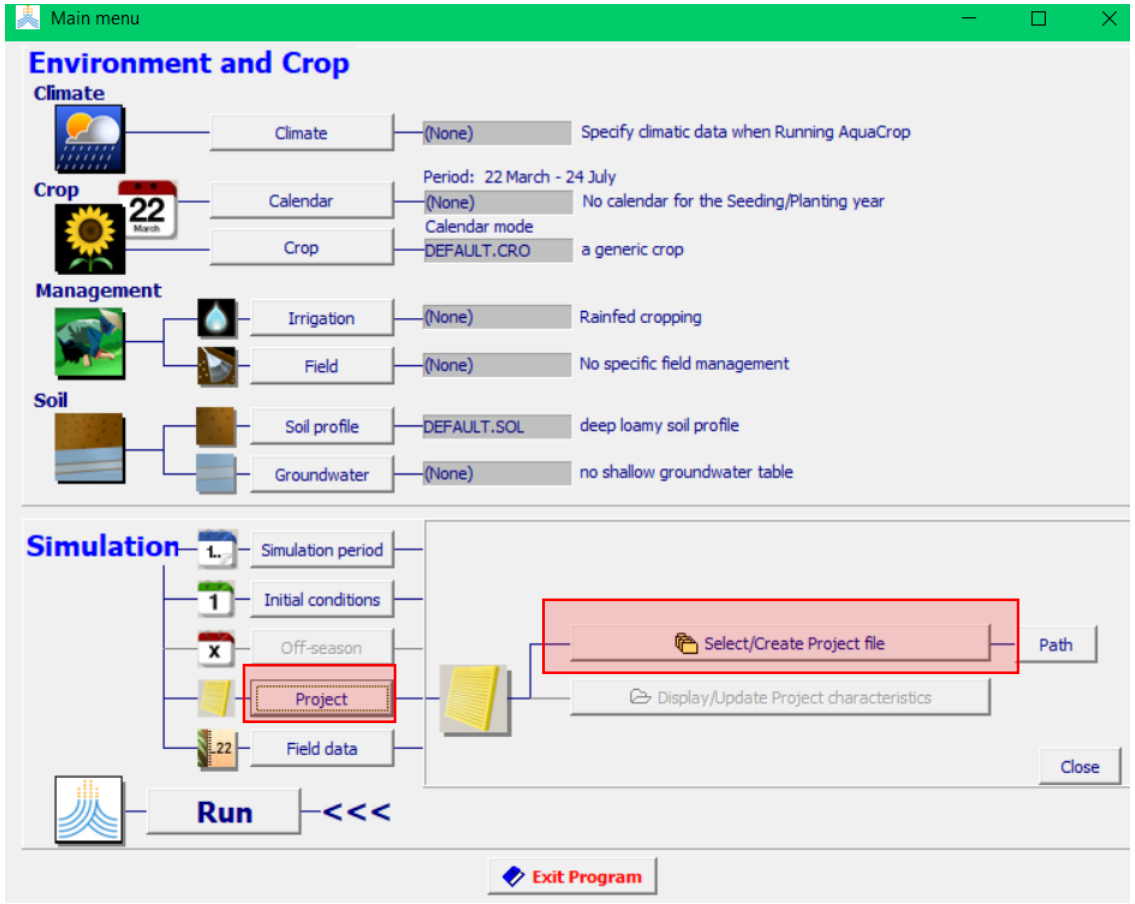
Nome	Ultima modifica	Tipo	Dimensione
1stNov.CAL	20/11/2023 15:26	File CAL	1 KB
Badin_RCP45.CLI	29/11/2023 10:56	File CLI	1 KB
Badin_RCP85.CLI	29/11/2023 10:57	File CLI	1 KB
Multan_RCP45.CLI	29/11/2023 10:58	File CLI	1 KB
Multan_RCP85.CLI	29/11/2023 10:59	File CLI	1 KB
RCP4-5.CO2	21/10/2022 16:02	File CO2	3 KB
RCP8-5.CO2	21/10/2022 16:02	File CO2	3 KB
wheatpakistan.CRO	24/11/2023 15:17	File CRO	7 KB
Badin_7d11mm.IRR	01/12/2023 17:55	File IRR	1 KB
Multan_7d13mm.IRR	01/12/2023 17:58	File IRR	1 KB
Bad85.PLU	08/11/2023 12:41	File PLU	386 KB
Badin_RCP45.PLU	20/11/2023 18:14	File PLU	386 KB
Multan_RCP45.PLU	21/11/2023 17:26	File PLU	386 KB
Multan_RCP85.PLU	21/11/2023 17:28	File PLU	386 KB
ClayLoam_Multan.SOL	21/11/2023 17:33	File SOL	1 KB
Loam_Badin.SOL	20/11/2023 18:43	File SOL	1 KB
Pakistan.SW0	24/11/2023 14:28	File SW0	1 KB
Bad85.Tnx	08/11/2023 12:41	File TNX	707 KB
Badin_RCP45.Tnx	20/11/2023 18:14	File TNX	707 KB
Multan_RCP45.Tnx	21/11/2023 17:26	File TNX	707 KB
Multan_RCP85.Tnx	21/11/2023 17:28	File TNX	707 KB
Bad85.ETo	08/11/2023 12:41	WPS Spreadsheets...	386 KB
Badin_RCP45.ETo	20/11/2023 18:14	WPS Spreadsheets...	386 KB
Multan_RCP45.ETo	21/11/2023 17:26	WPS Spreadsheets...	386 KB
Multan_RCP85.ETo	21/11/2023 17:28	WPS Spreadsheets...	386 KB

How to create the Project file: **Wheat_Badin_1Nov_7d11mm_45**

1) Open AquaCrop

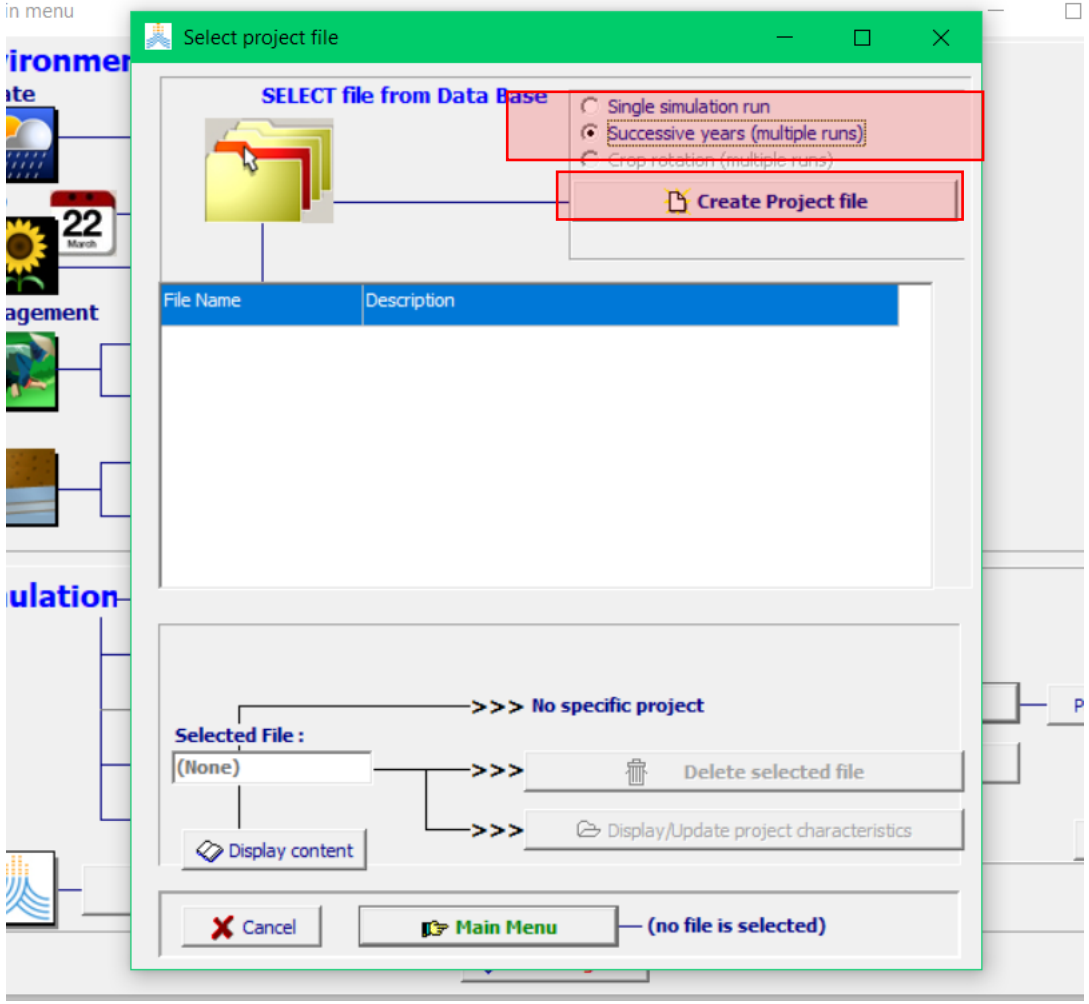
2) Select “Project”

3) Select “Select/Create Project file”

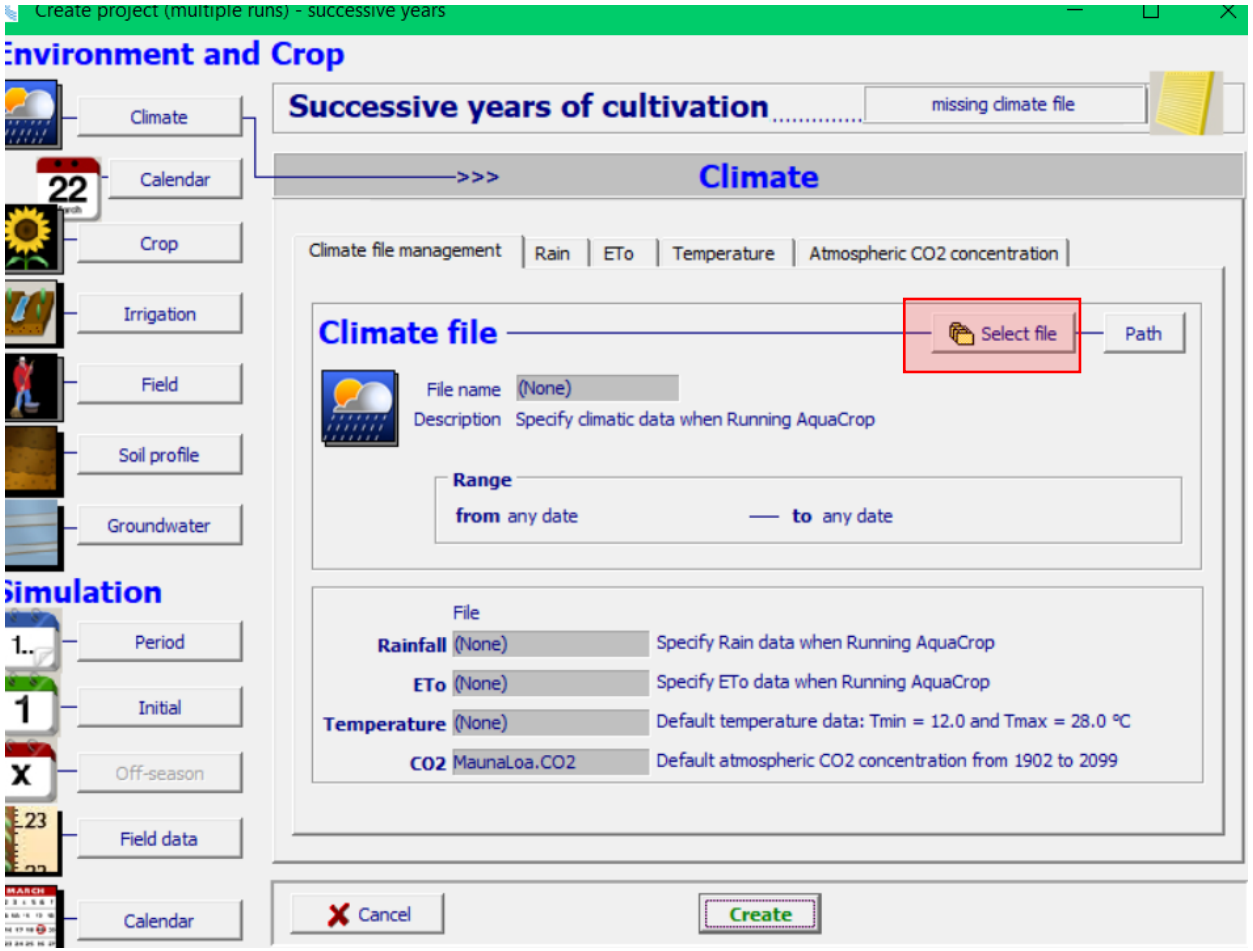


How to create the Project file: **Wheat_Badin_1Nov_7d11mm_45**

1) Select “Successive years (multiple runs)
2) Select “Create Project file”

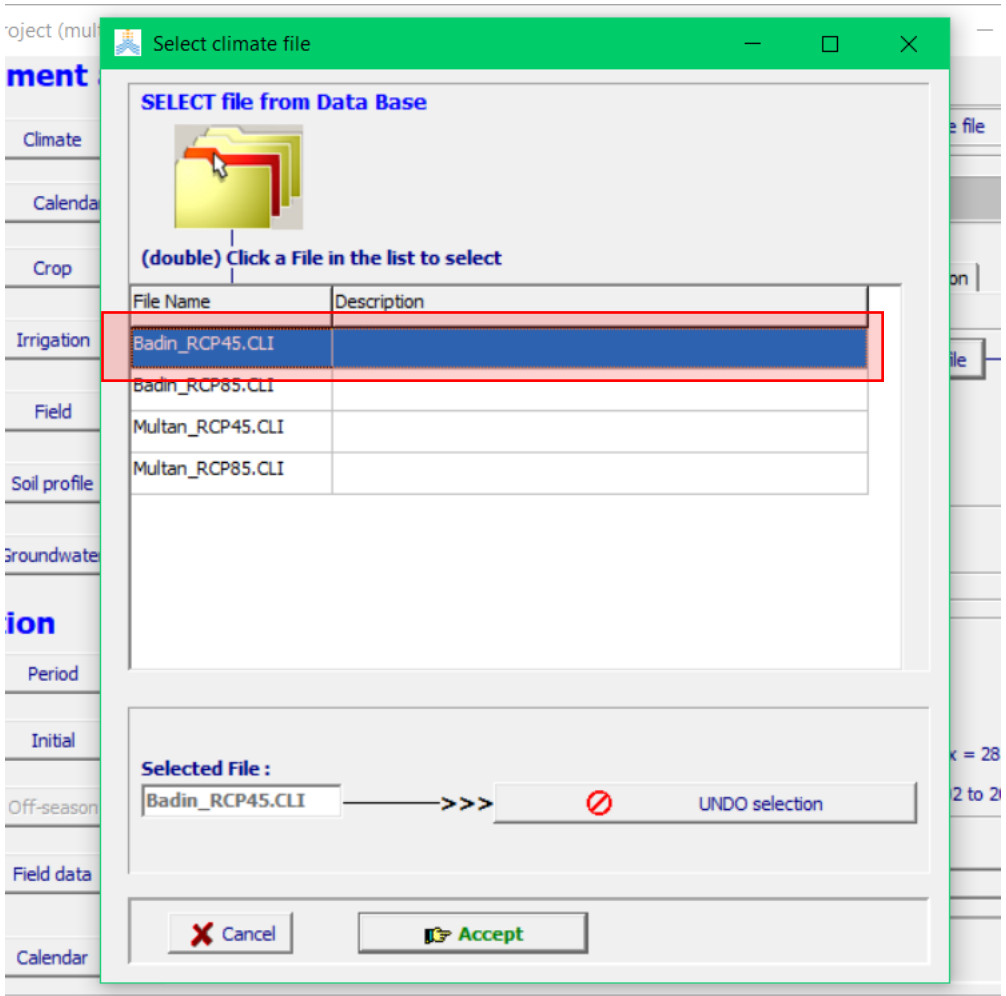


2) Click on “Select file” to select the CLIMATE file



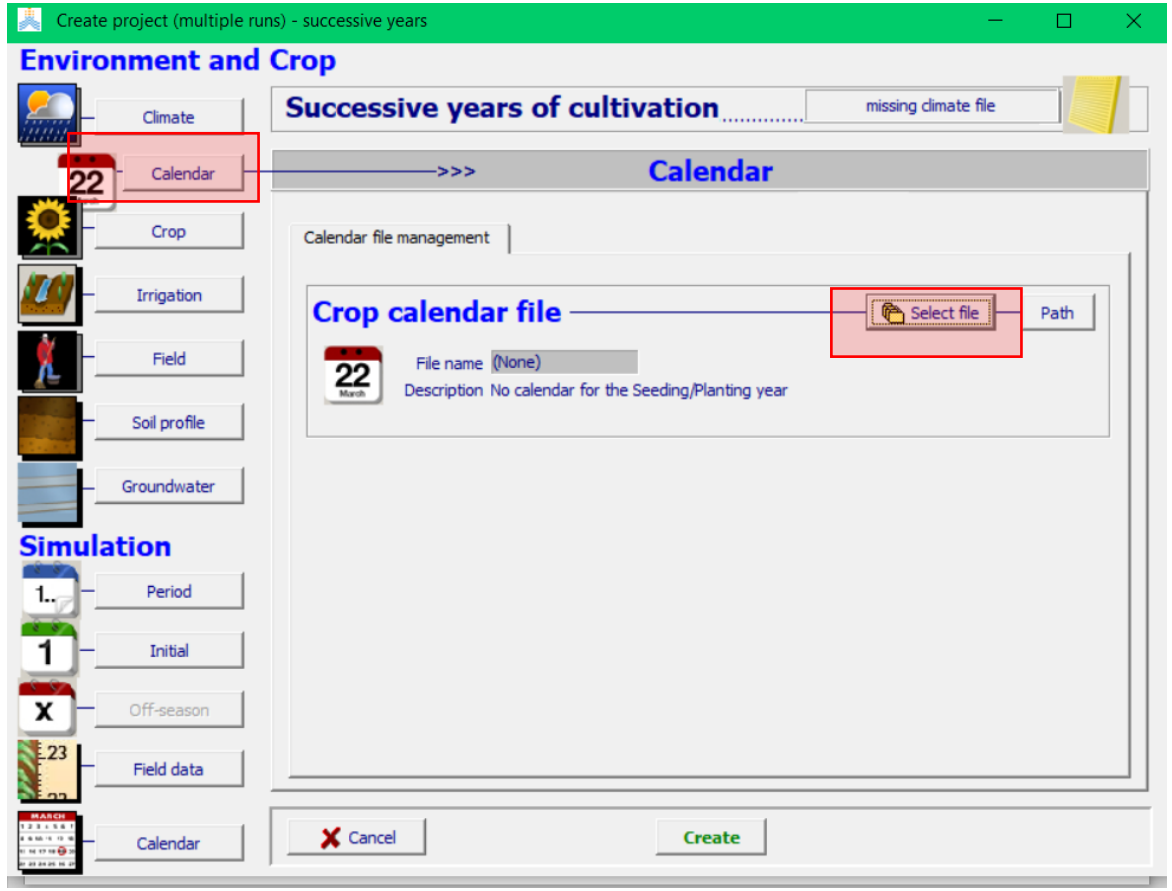
How to create the Project file: **Wheat_Badin_1Nov_7d11mm_45**

1) Select Badin_RCP45
2) Click on “Accept”

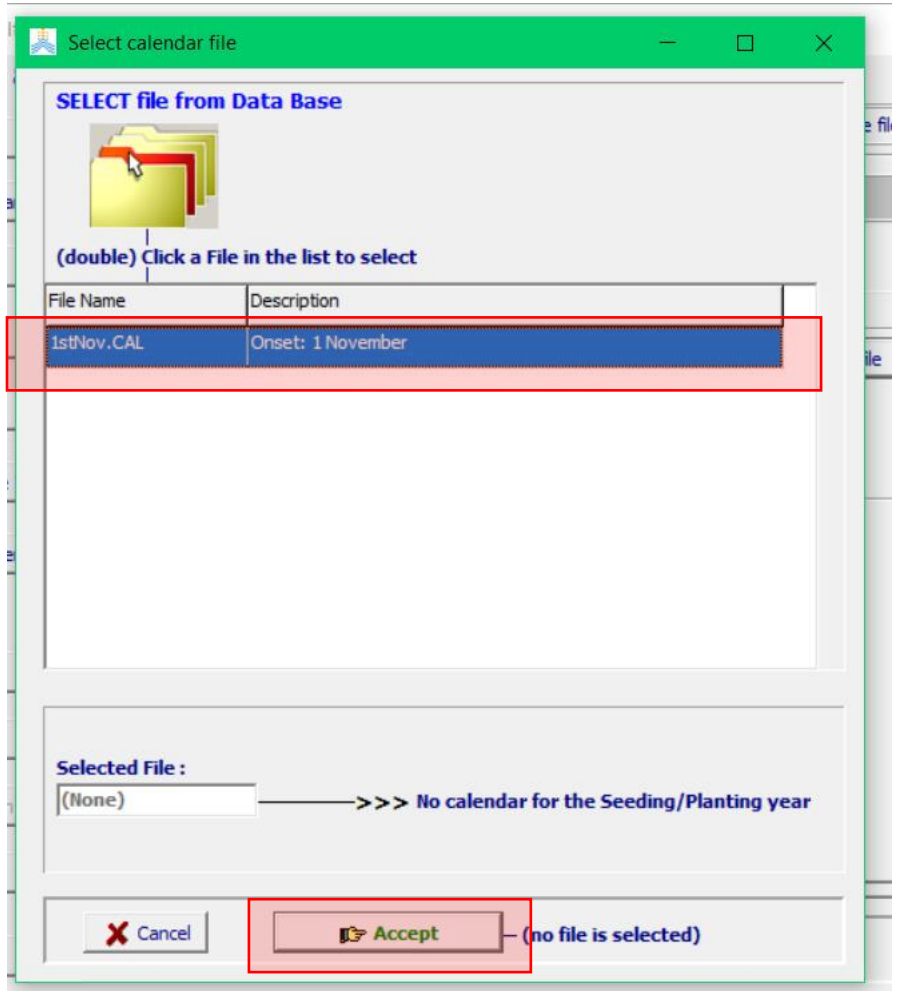


How to create the Project file: **Wheat_Badin_1Nov_7d11mm_45**

1) Select Calendar
2) Click on “Select file”

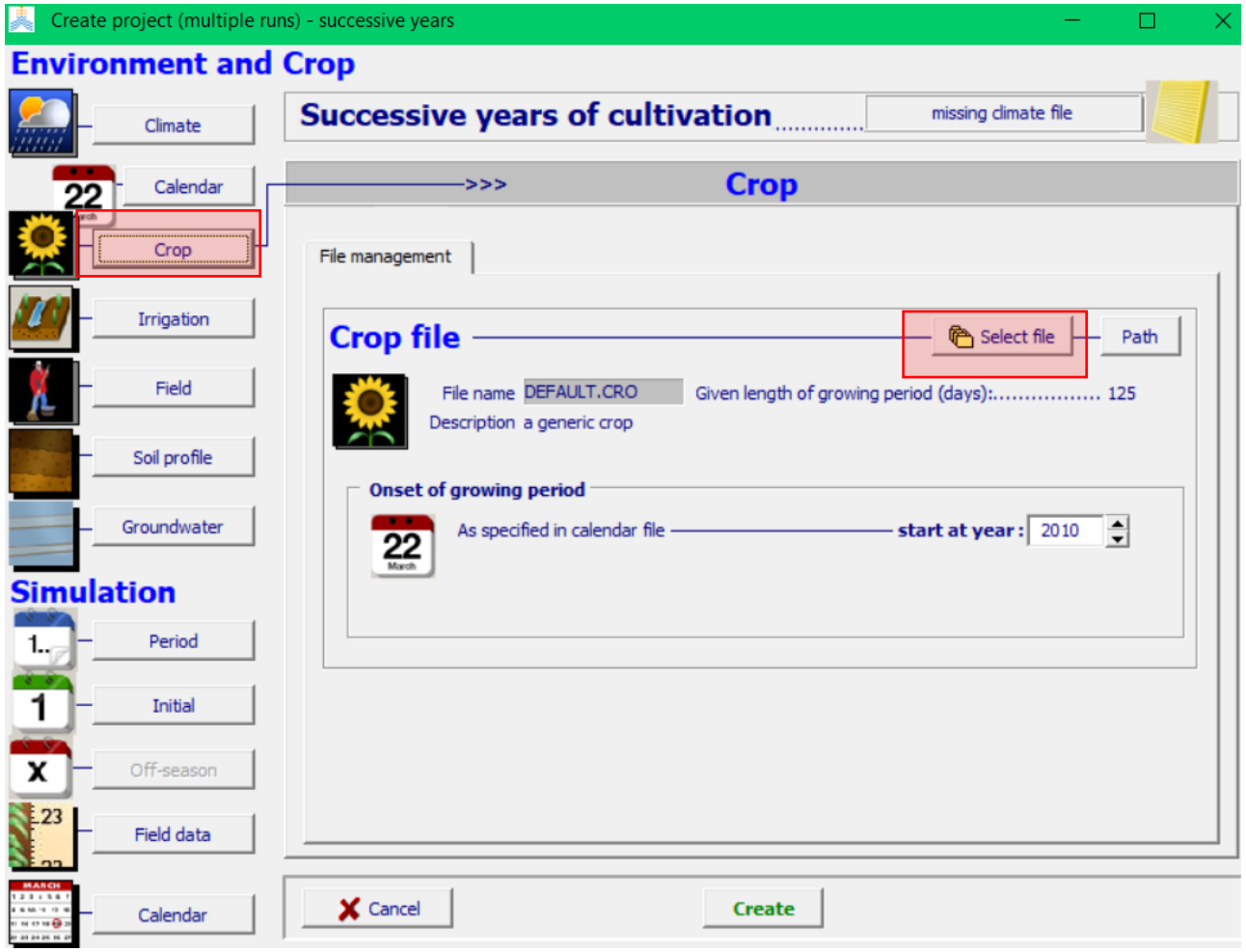


3) Select the 1st of November sowing date
4) Click on “Accept”



How to create the Project file: **Wheat_Badin_1Nov_7d11mm_45**

1) Select Crop
2) Click on “Select file”

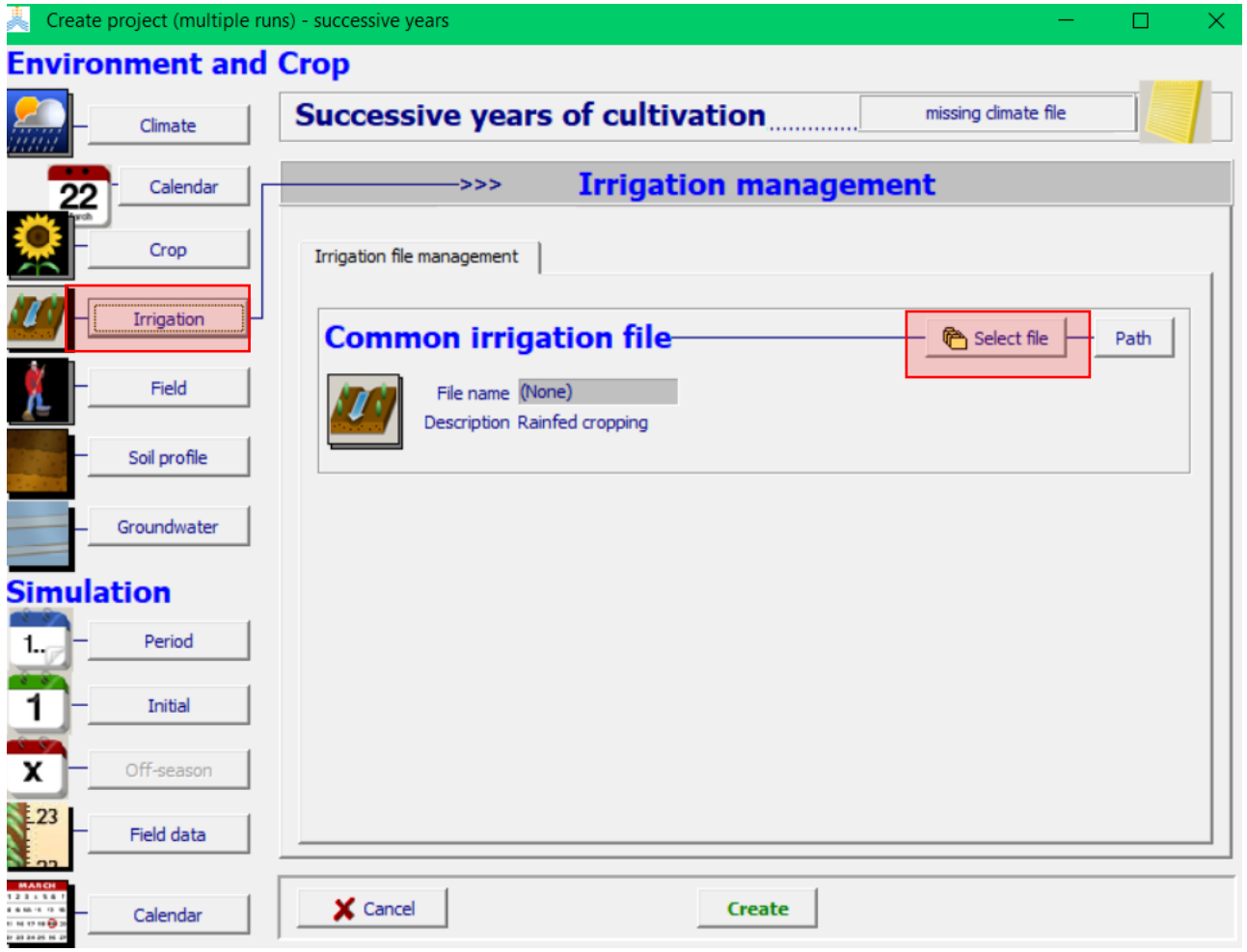


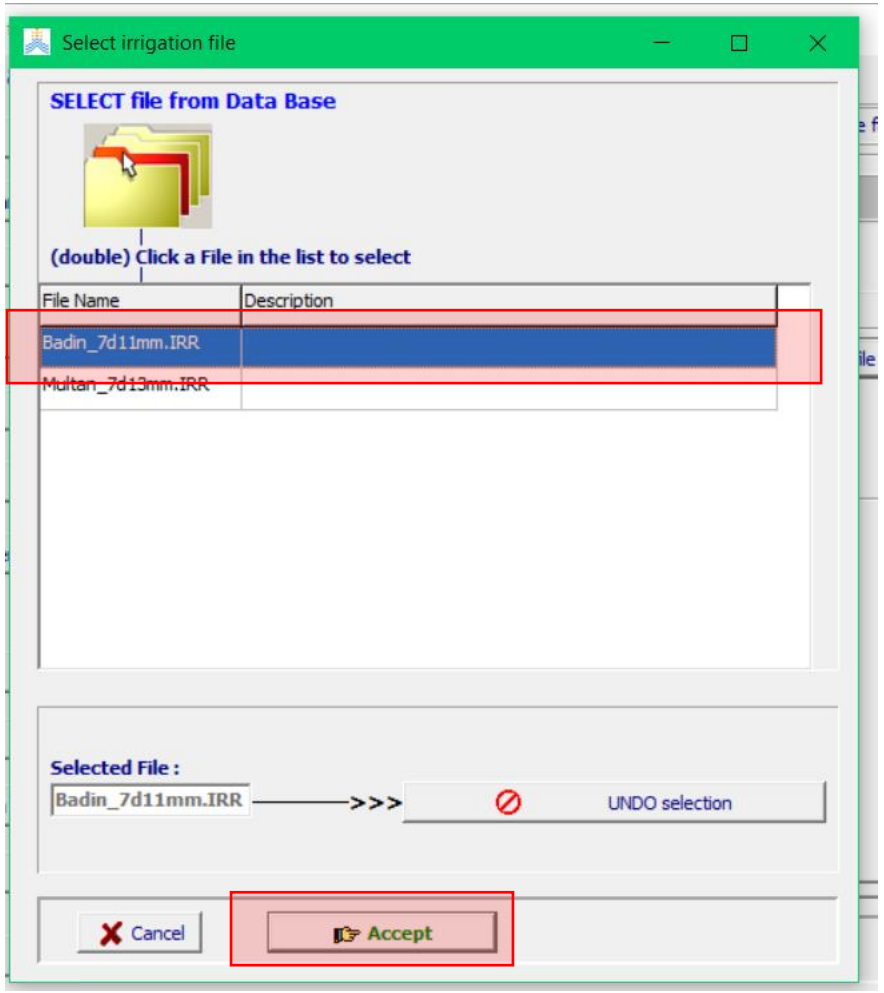
3) Select the “WheatPakistan” file
4) Click on “Accept”

How to create the Project file: **Wheat_Badin_1Nov_7d11mm_45**

1) Select Irrigation
2) Click on “Select file”

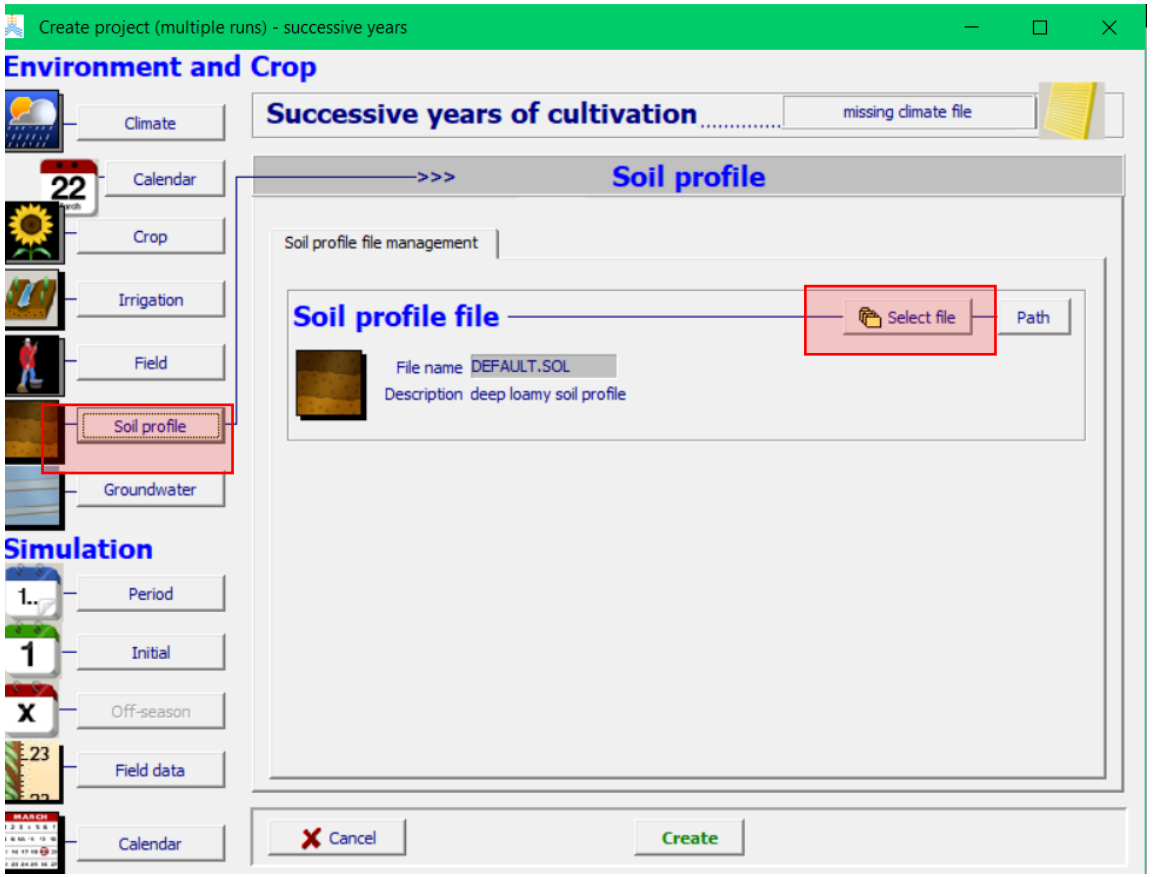
3) Select Badin_7d11mm.IRR
4) Click on “Accept”



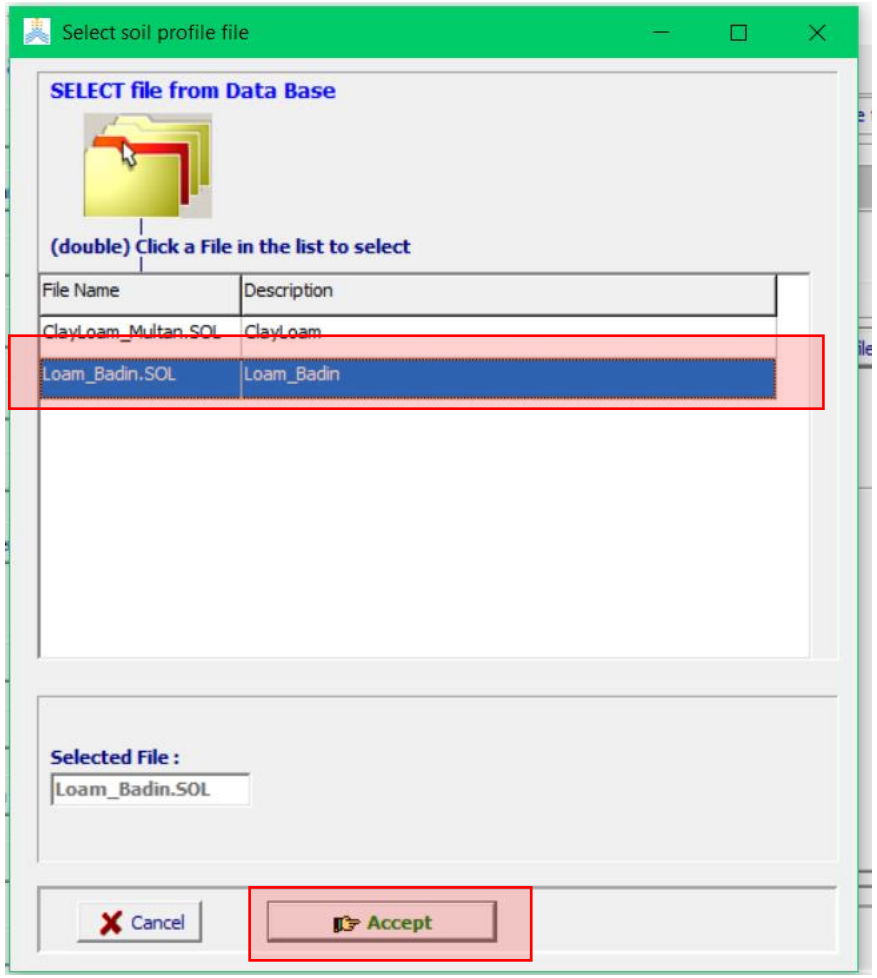


How to create the Project file: **Wheat_Badin_1Nov_7d11mm_45**

1) Select Soil
2) Click on “Select file”

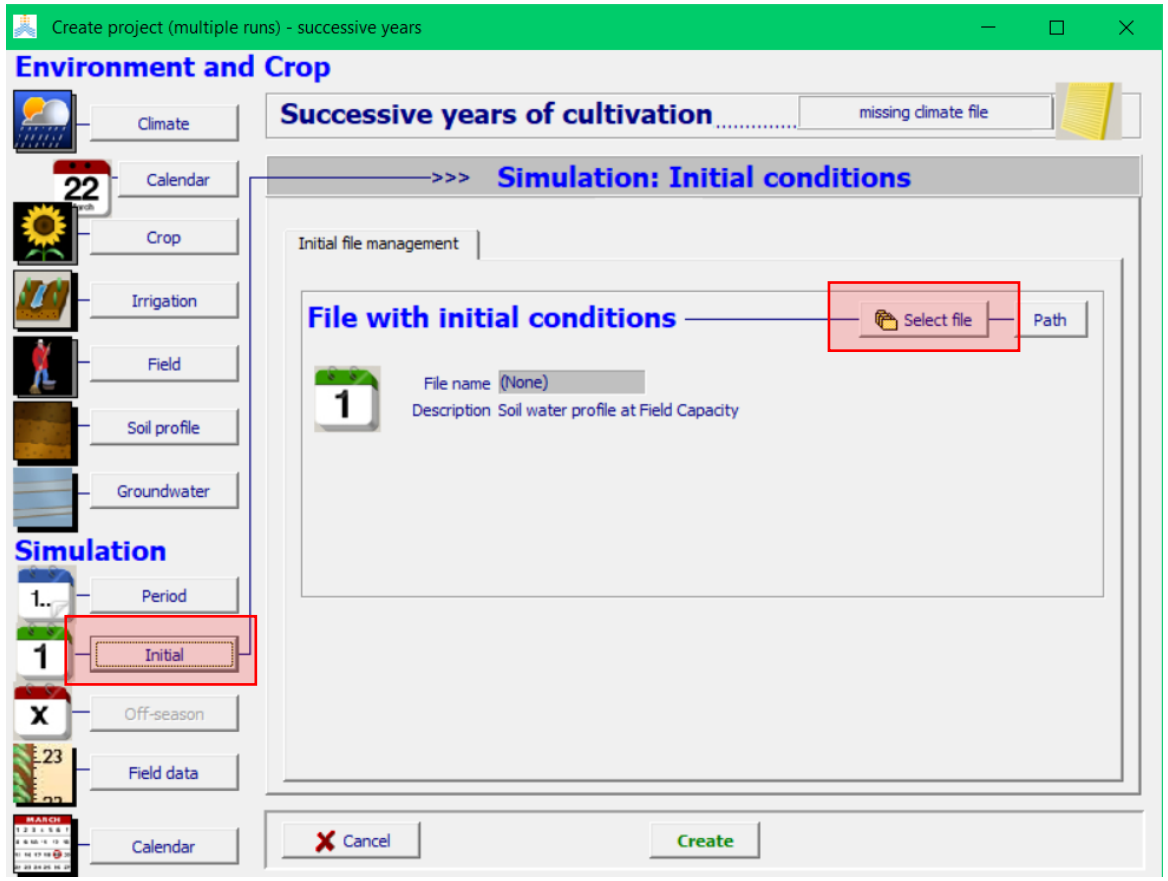


3) Select Loam_Badin
4) Click on “Accept”

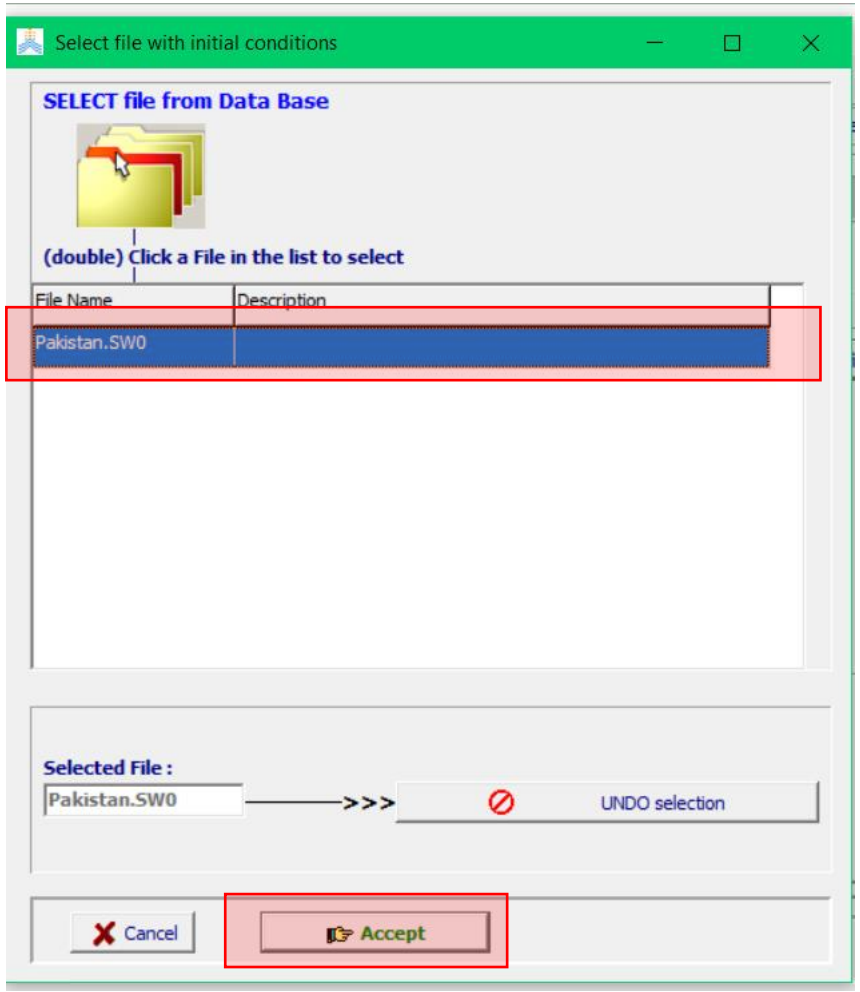


How to create the Project file: **Wheat_Badin_1Nov_7d11mm_45**

1) Select “Initial”
2) Click on “Select file”

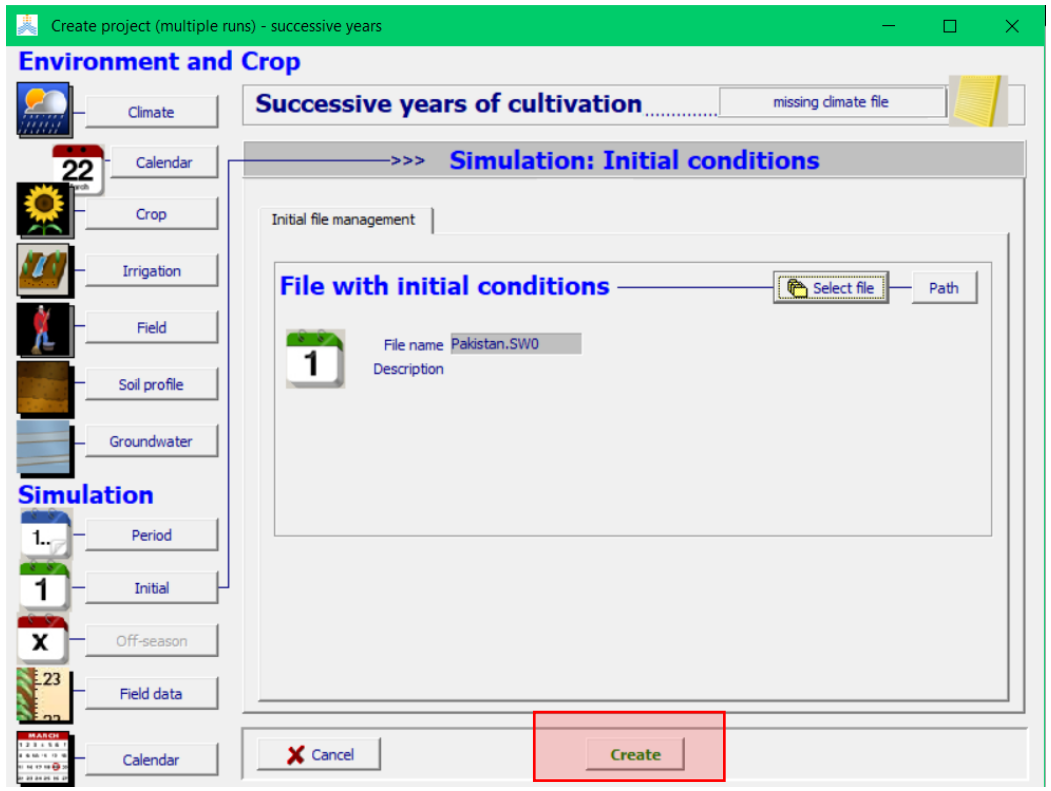


3) Select “Pakistan.SW0”
4) Click on “Accept”

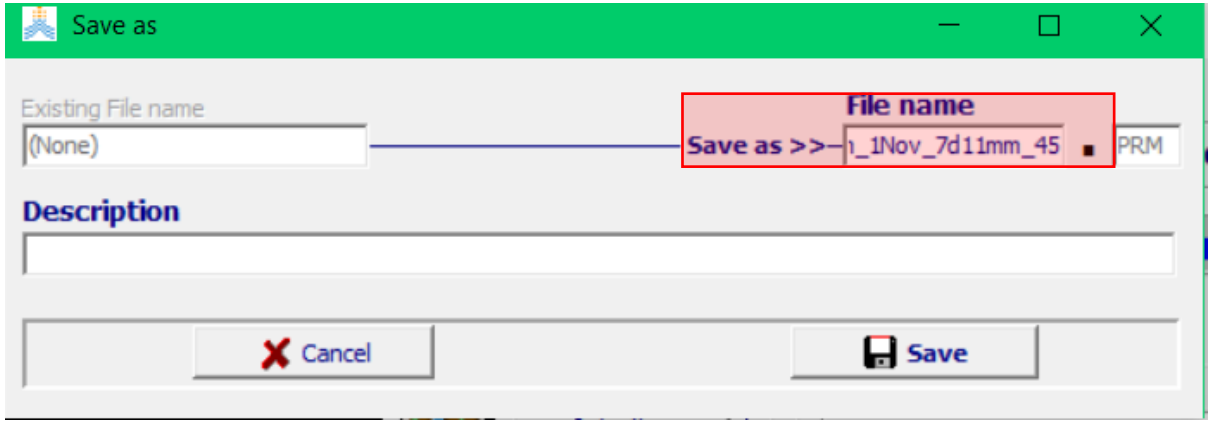


How to create the Project file: **Wheat_Badin_1Nov_7d11mm_45**

1) Select “Create”



3) Save this file as: **Wheat_Badin_1Nov_7d11mm_45**
4) Click on “Save”



Project file scheme

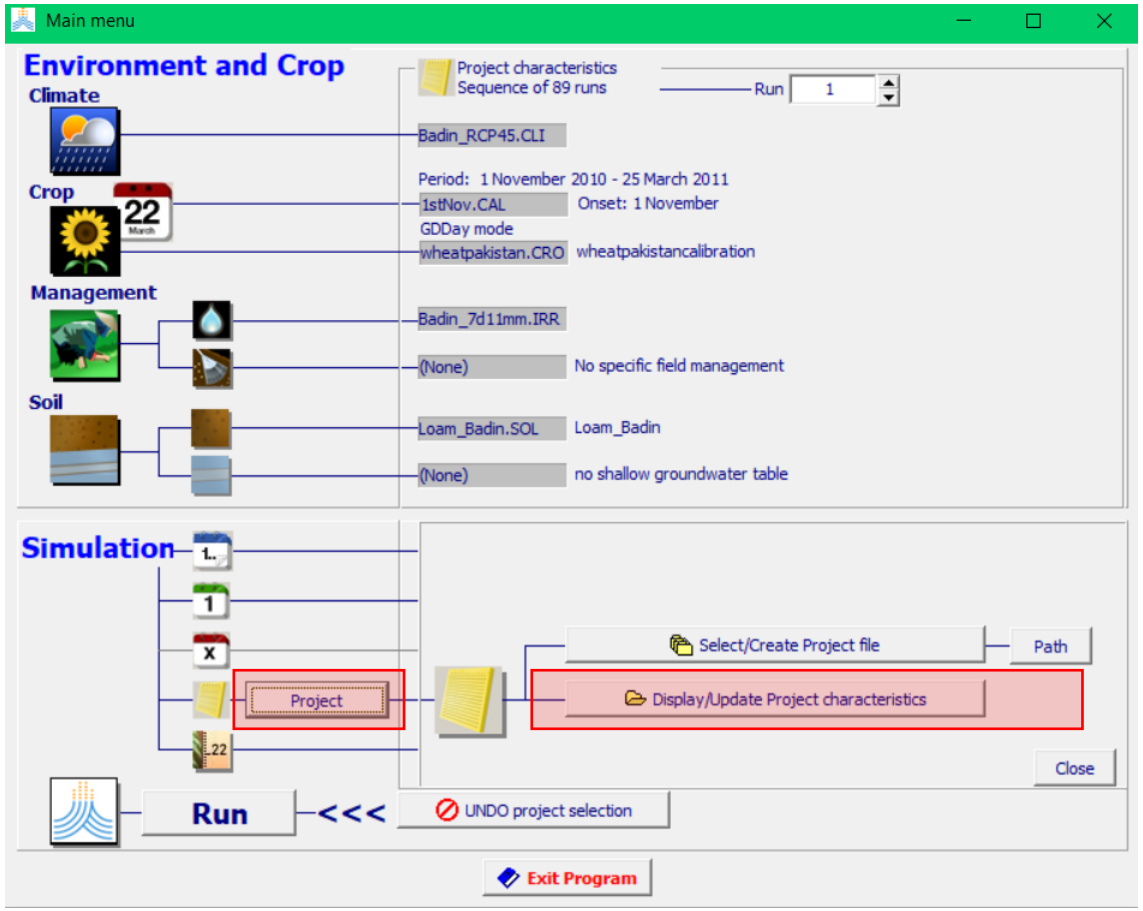
How to create the Project file: **Wheat_Badin_1Nov_7d11mm_85**

Crop_Location_SowingDate_Irrigation_RCP

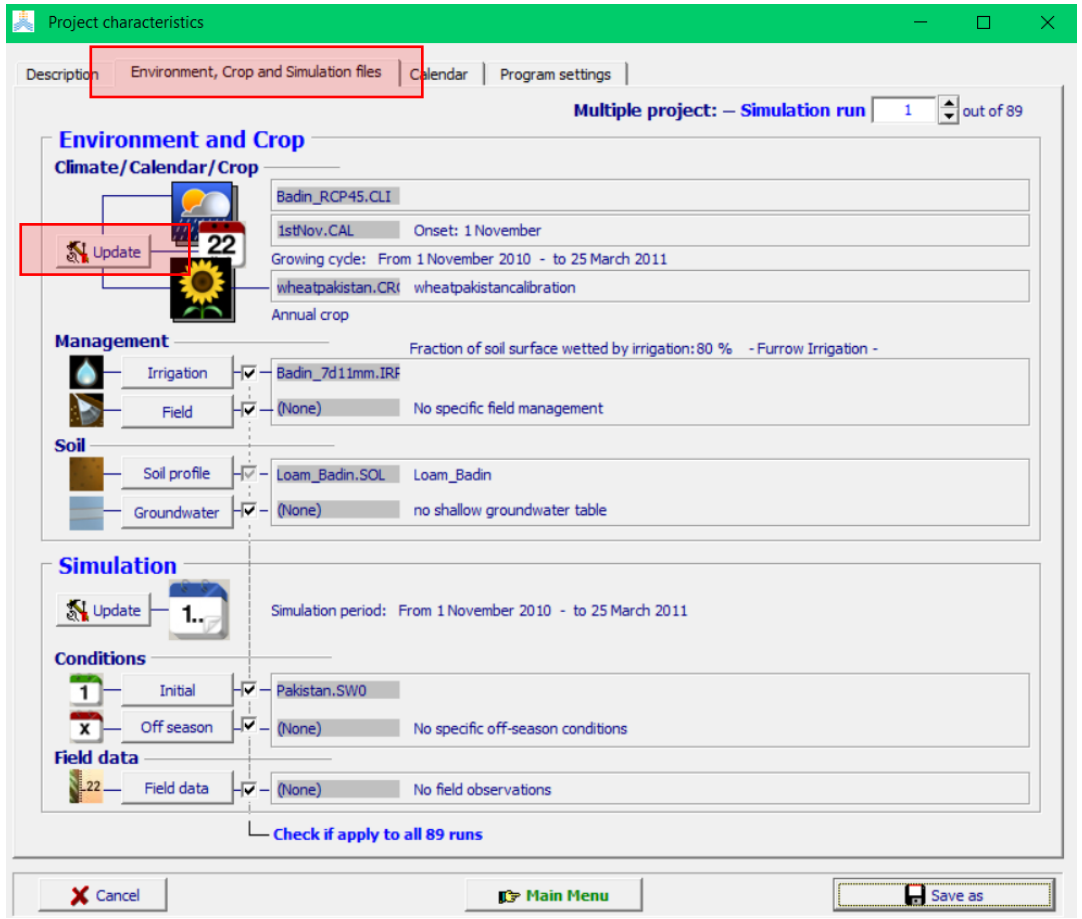
Wheat_Badin_1Nov_7d11mm_45	☒
Wheat_Badin_1Nov_7d11mm_85	☐
Wheat_Multan_1Nov_7d13mm_45	☐
Wheat_Multan_1Nov_7d13mm_85	☐

How to create the Project file: **Wheat_Badin_1Nov_7d11mm_85**

1) Make sure that the created project file is selected
2) Click on “Project”
3) Click on “Display/Update Project characteristic

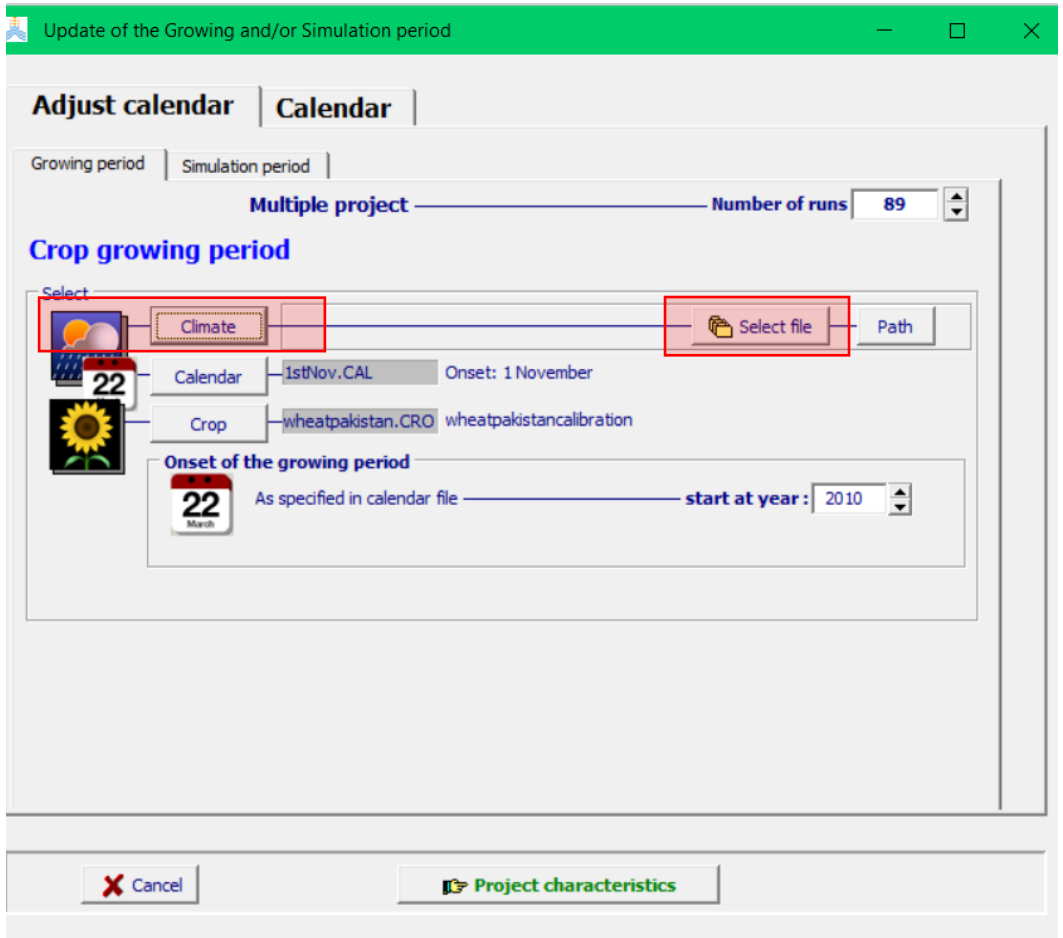


4) Select “Environment, Crop and Simulation files
5) Click on “Update”

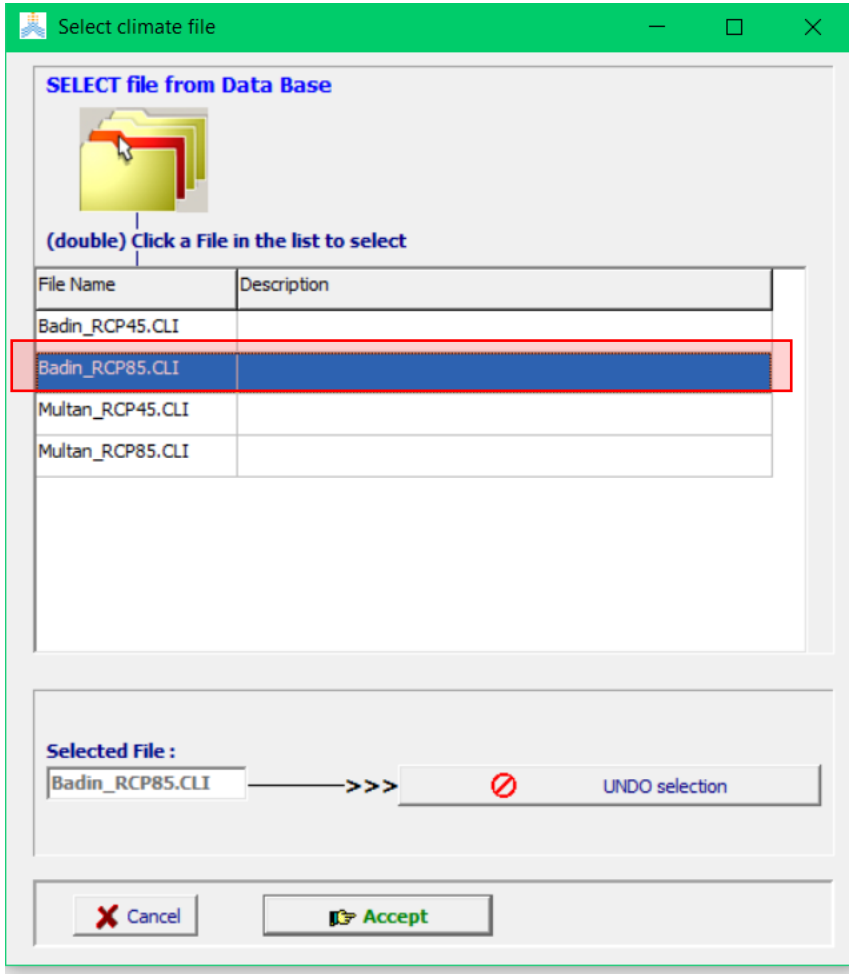


How to create the Project file: **Wheat_Badin_1Nov_7d11mm_85**

1) Click on “Climate”
2) Click on “Select file”

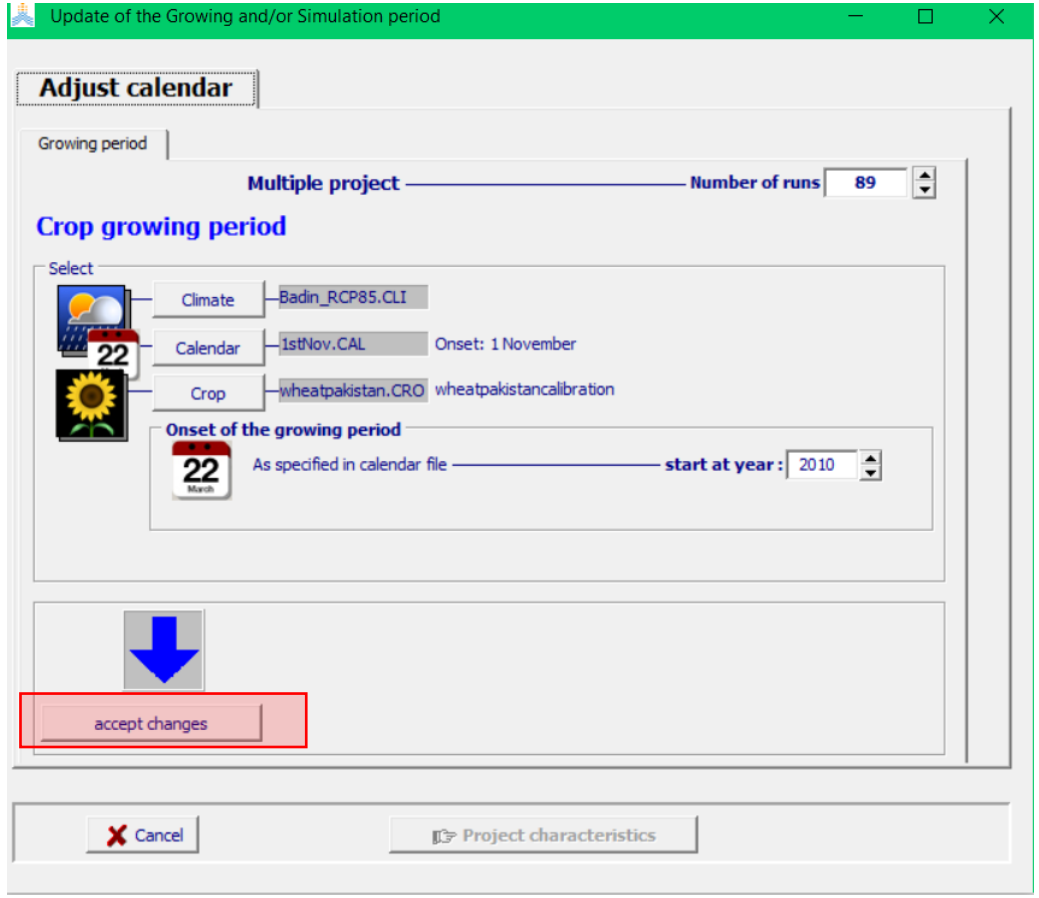


4) Select “Badin_RCP85”
5) Click on “Accept”

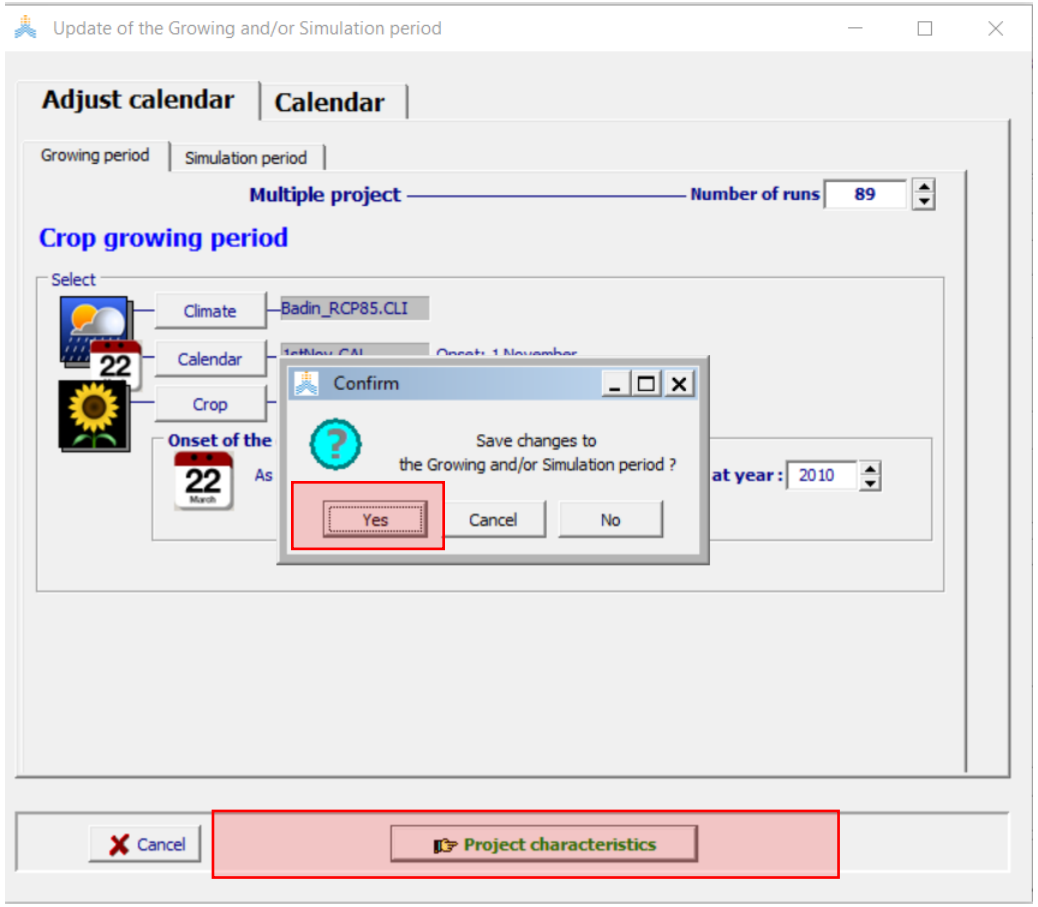


How to create the Project file: **Wheat_Badin_1Nov_7d11mm_85**

1) Click on “Accept changes”



2) Select “Project characteristic”
3) Save changes clicking on “Yes”

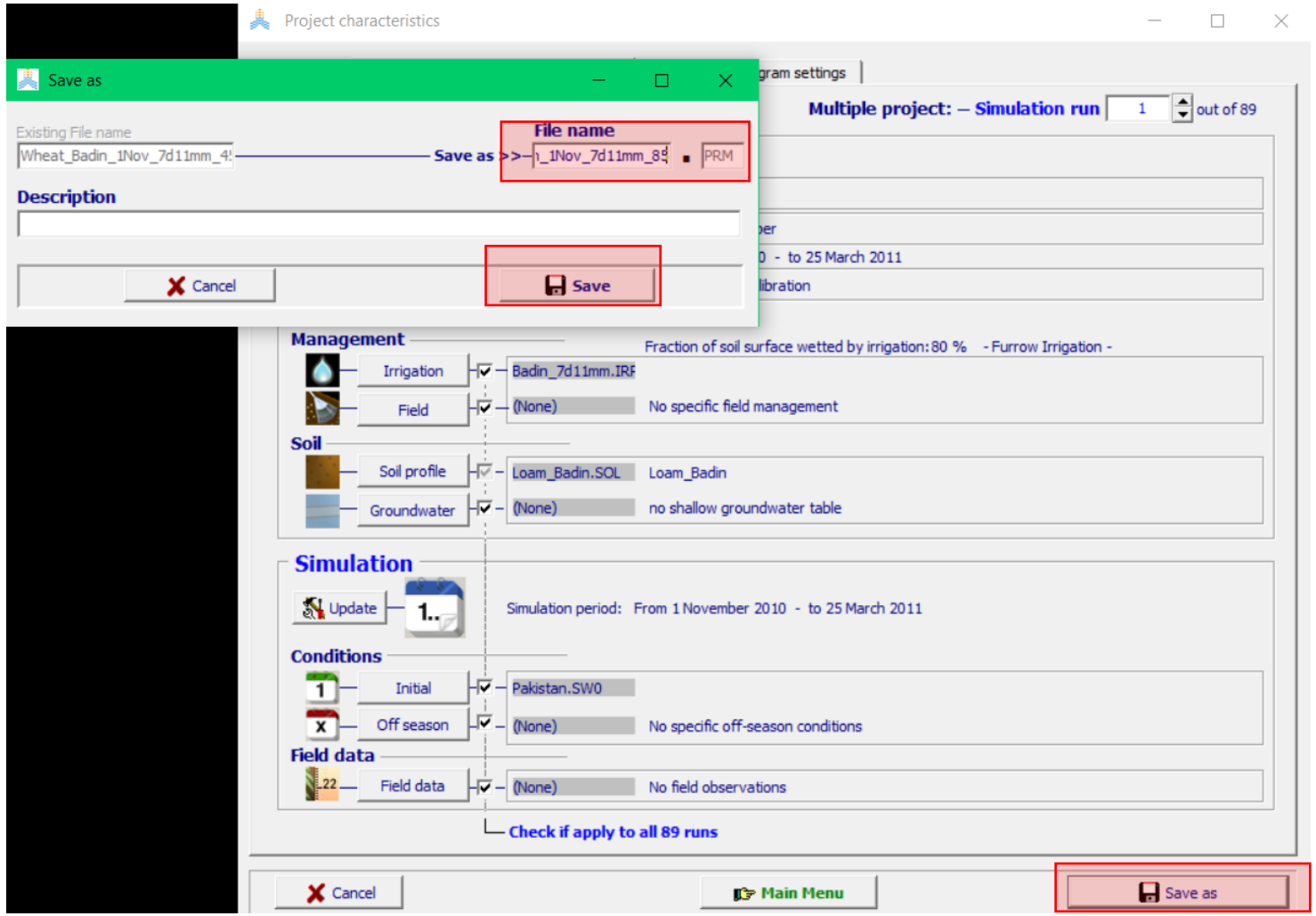


How to create the Project file: **Wheat_Badin_1Nov_7d11mm_85**

1) Click on “Save as” (right bottom corner)

2) Name the file as: **Wheat_Badin_1Nov_7d11mm_85**

3) Save changes clicking on “Save”



Project file scheme

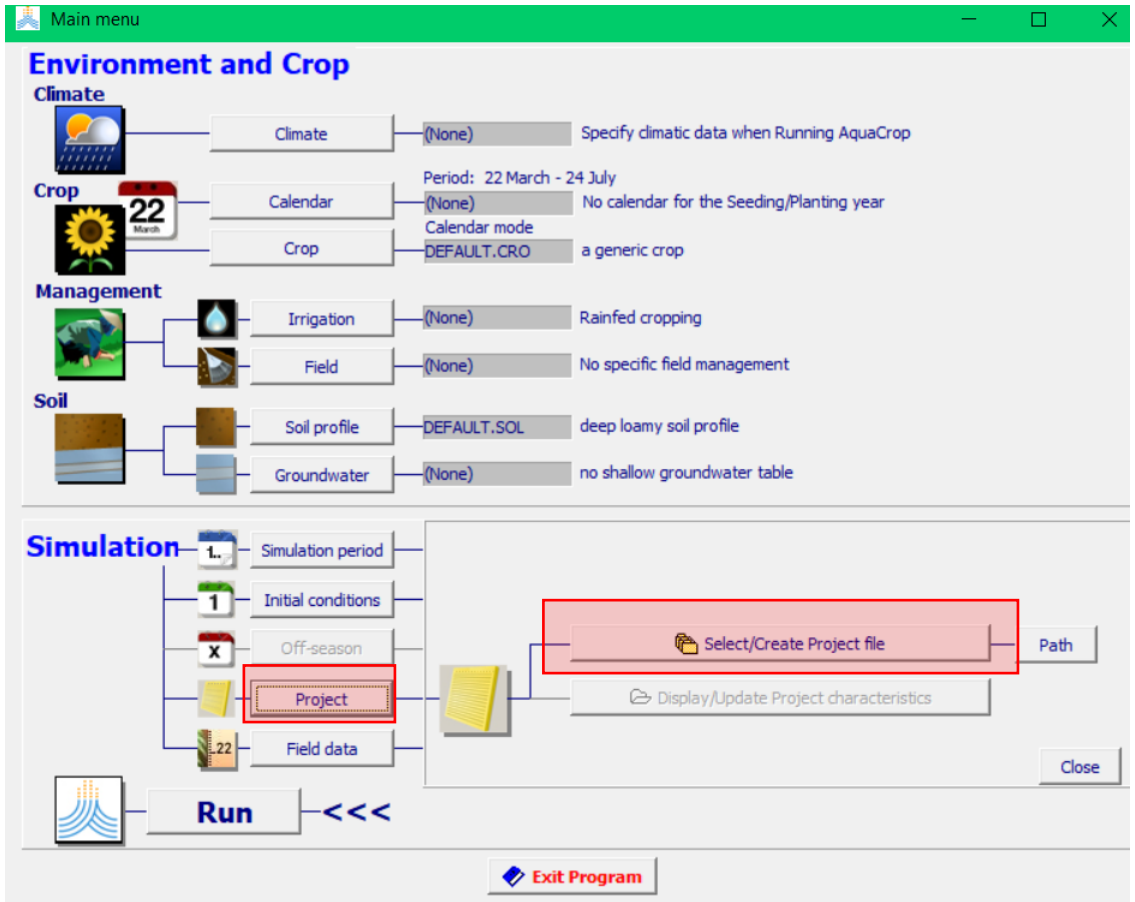
How to create the Project file: **Wheat_Multan_1Nov_7d13mm_45**

Crop_Location_SowingDate_Irrigation_RCP

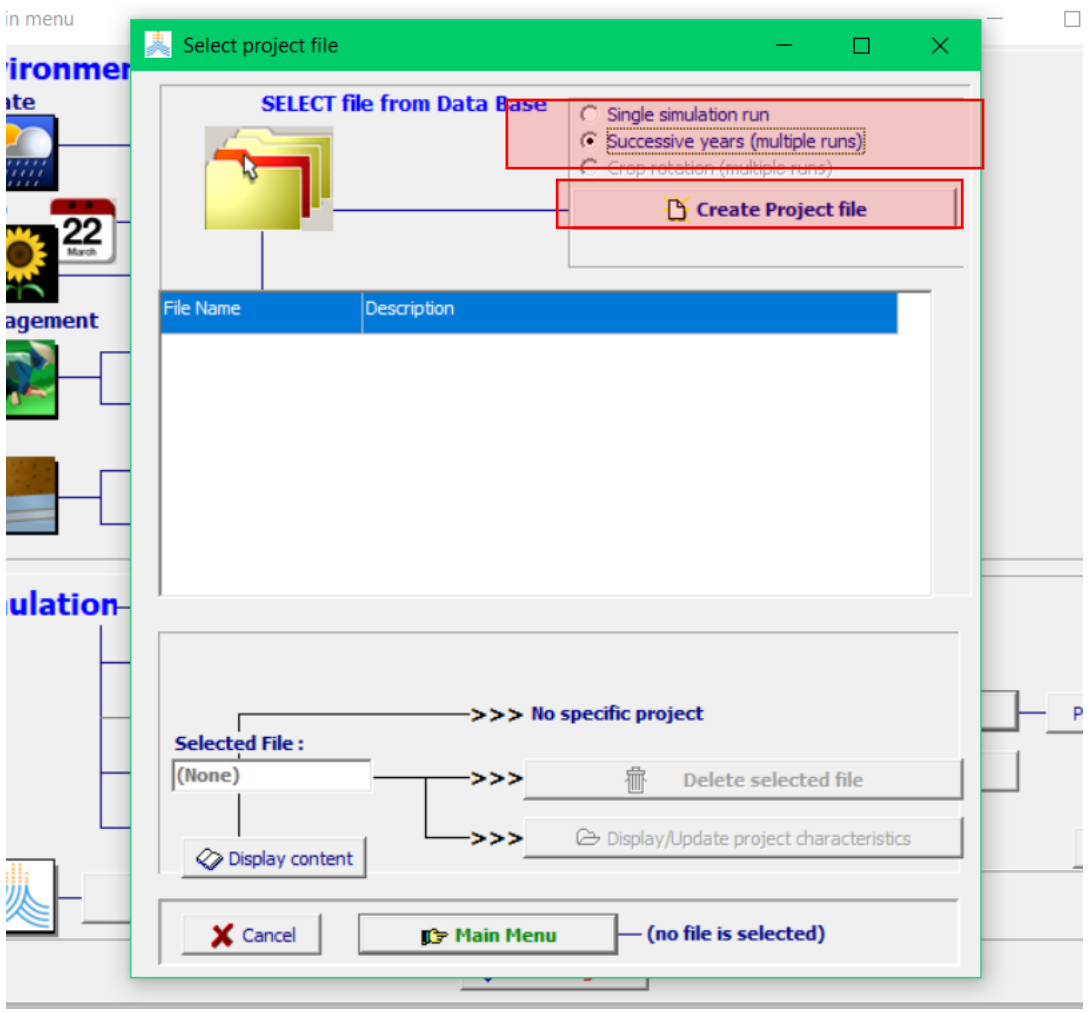
Wheat_Badin_1Nov_7d11mm_45	☒
Wheat_Badin_1Nov_7d11mm_85	☒
Wheat_Multan_1Nov_7d13mm_45	☐
Wheat_Multan_1Nov_7d13mm_85	☐

How to create the Project file: **Wheat_Multan_1Nov_7d13mm_45**

1) Select “Project”
2) Click on “Select/create Project file”

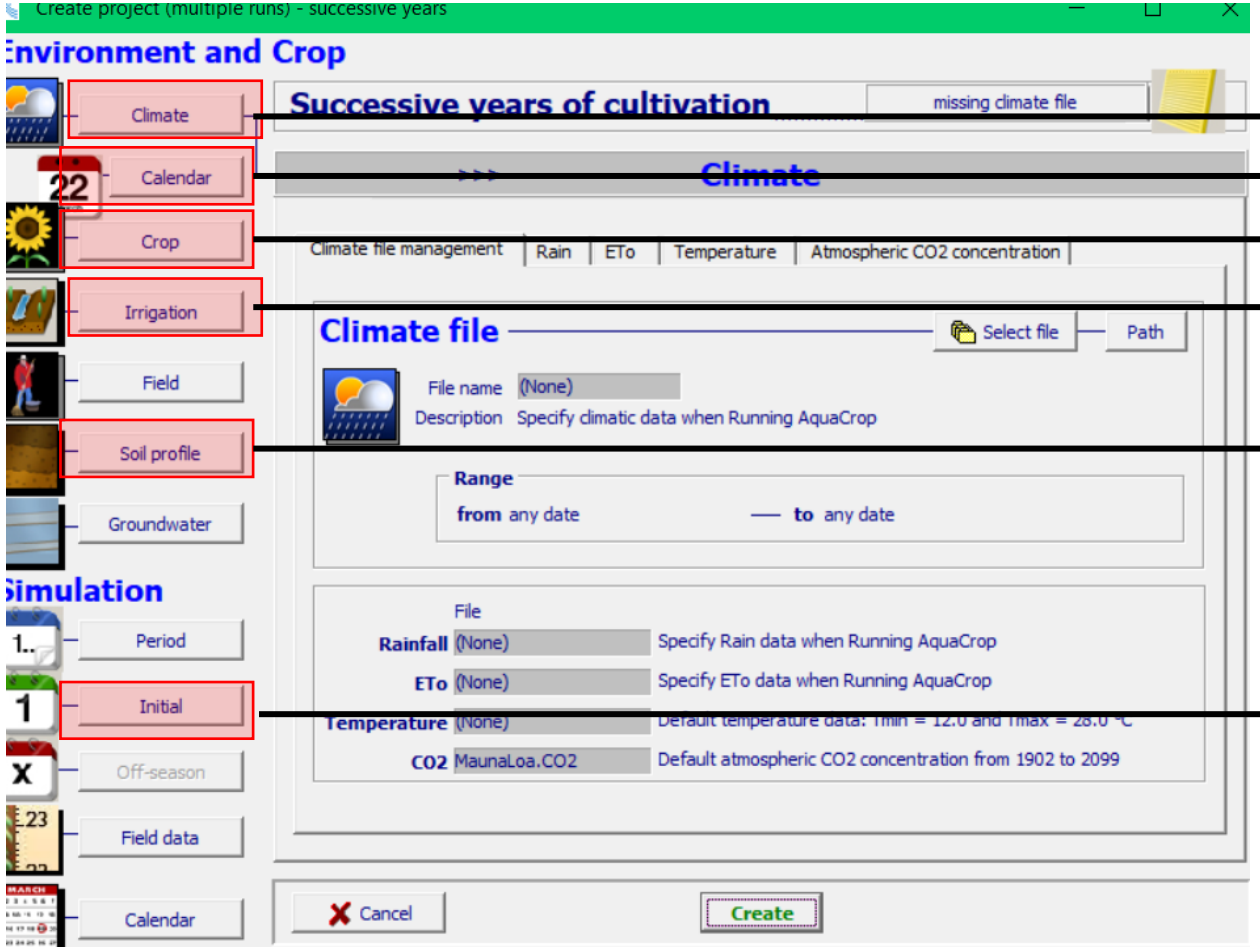


3) Select “Successive years (multiple runs)”
4) Click on “Create project file”



How to create the Project file: **Wheat_Multan_1Nov_7d13mm_45**

1) Step by step select the following files



Multan_RCP45

1stNovember

WheatPakistan

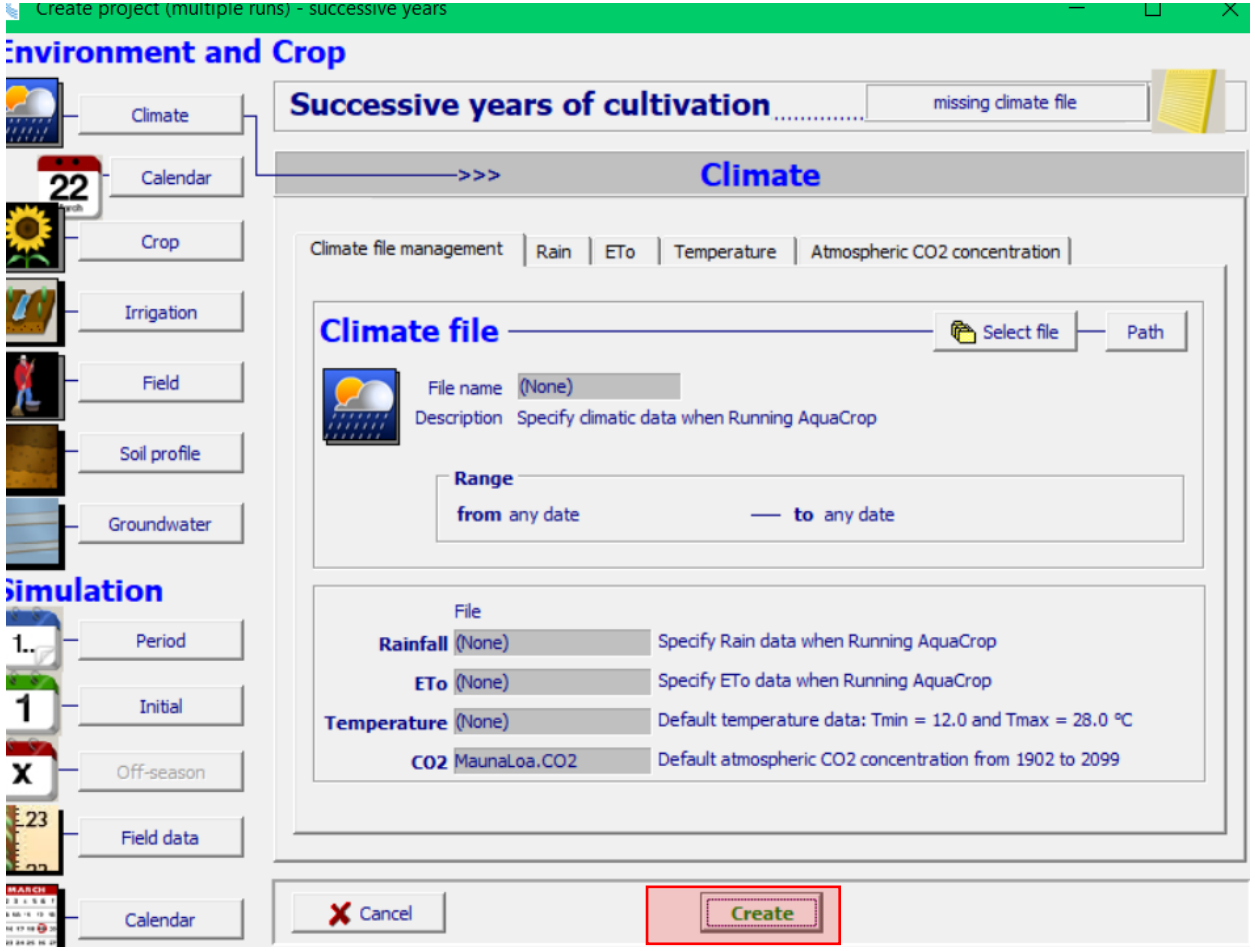
Multan_7d13mm

ClayLoam_Multan

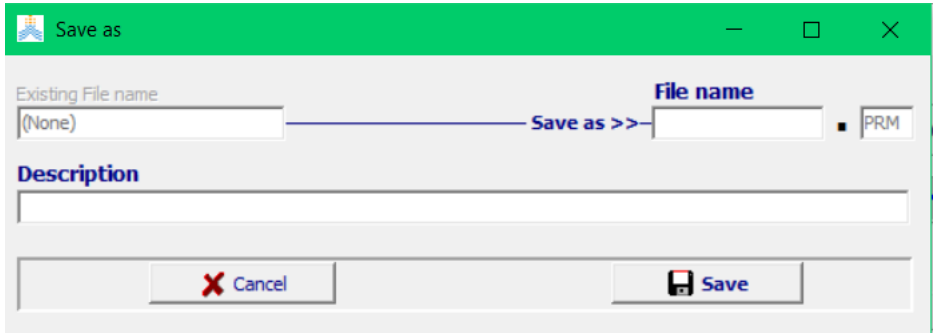
Pakistan

How to create the Project file: **Wheat_Multan_1Nov_7d13mm_45**

1) After selecting all the files, click on “Create”



1) Save the file as “**Wheat_Multan_1Nov_7d13mm_45**”



Project file scheme

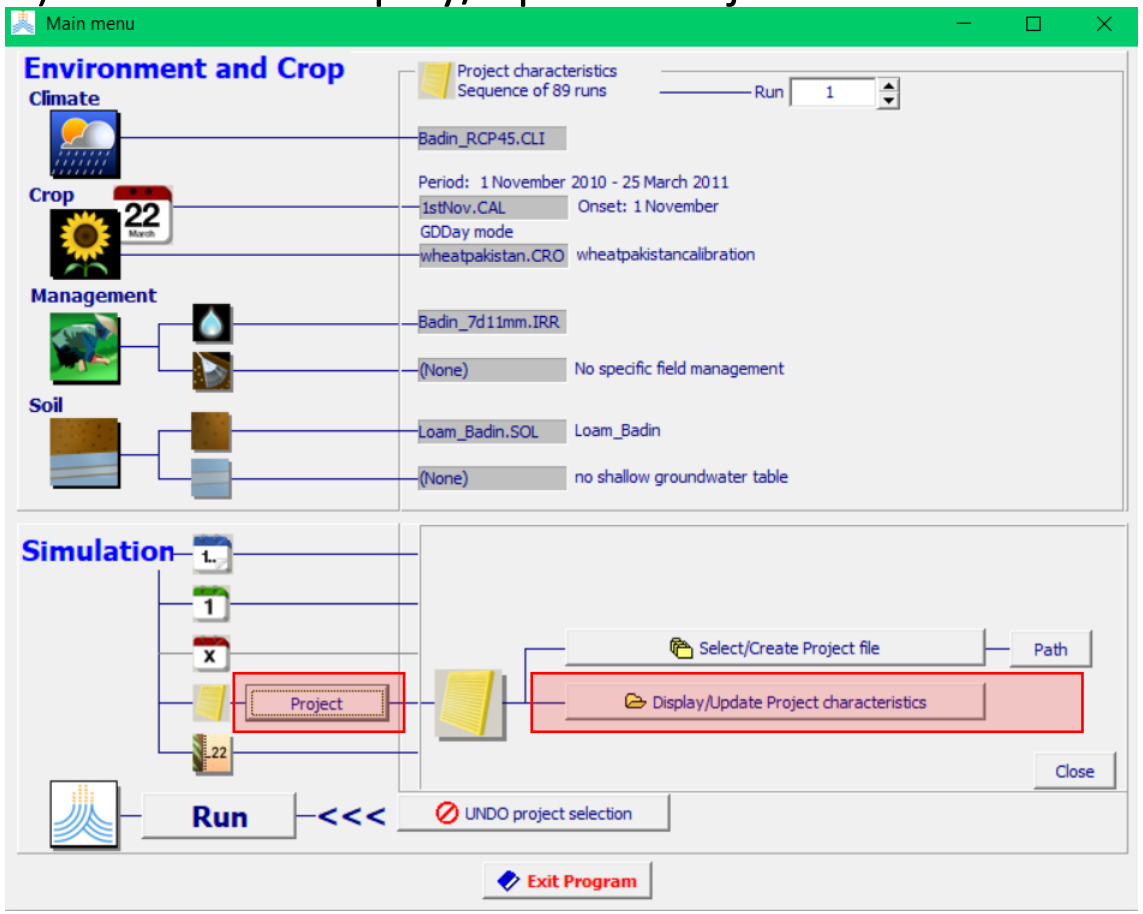
How to create the Project file: **Wheat_Multan_1Nov_7d13mm_85**

Crop_Location_SowingDate_Irrigation_RCP

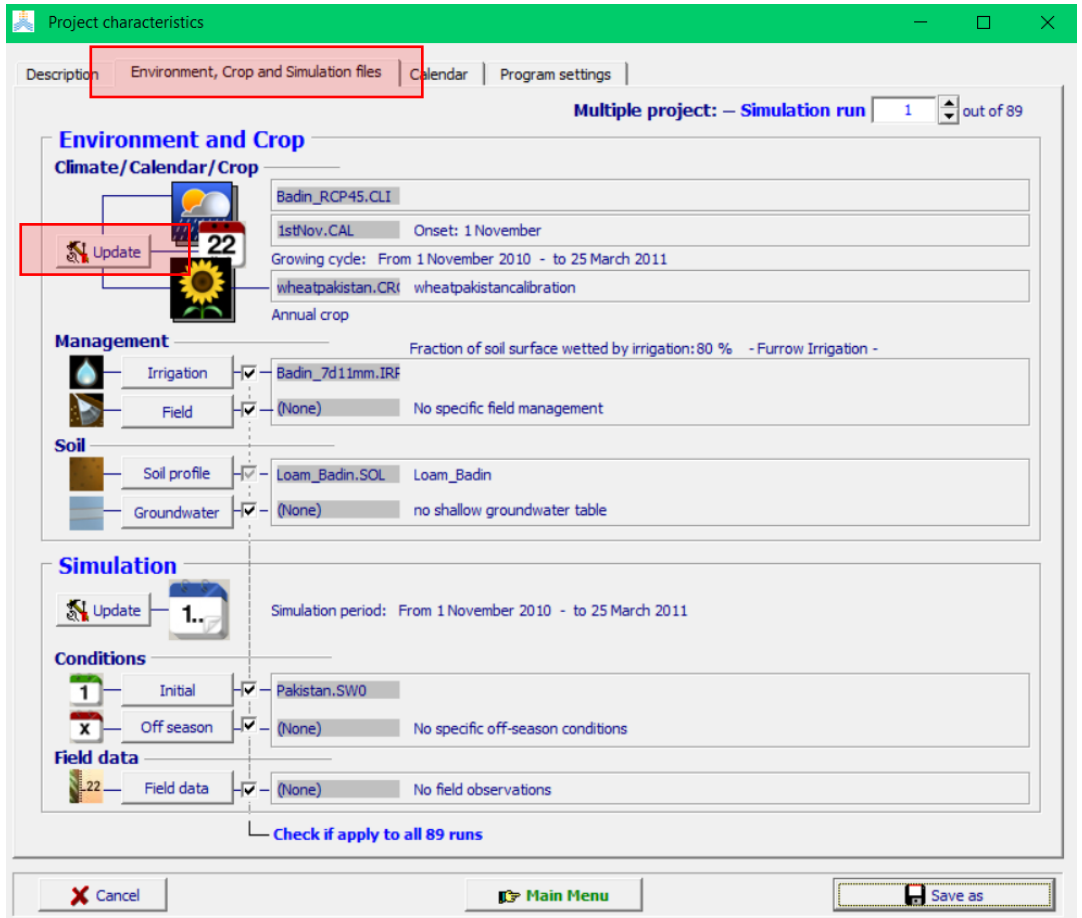
Wheat_Badin_1Nov_7d11mm_45	☒
Wheat_Badin_1Nov_7d11mm_85	☒
Wheat_Multan_1Nov_7d13mm_45	☒
Wheat_Multan_1Nov_7d13mm_85	☐

How to create the Project file: **Wheat_Multan_1Nov_7d13mm_85**

1) Make sure that the created project file for Multan RCP45 is selected
2) Click on “Project”
3) Click on “Display/Update Project characteristic

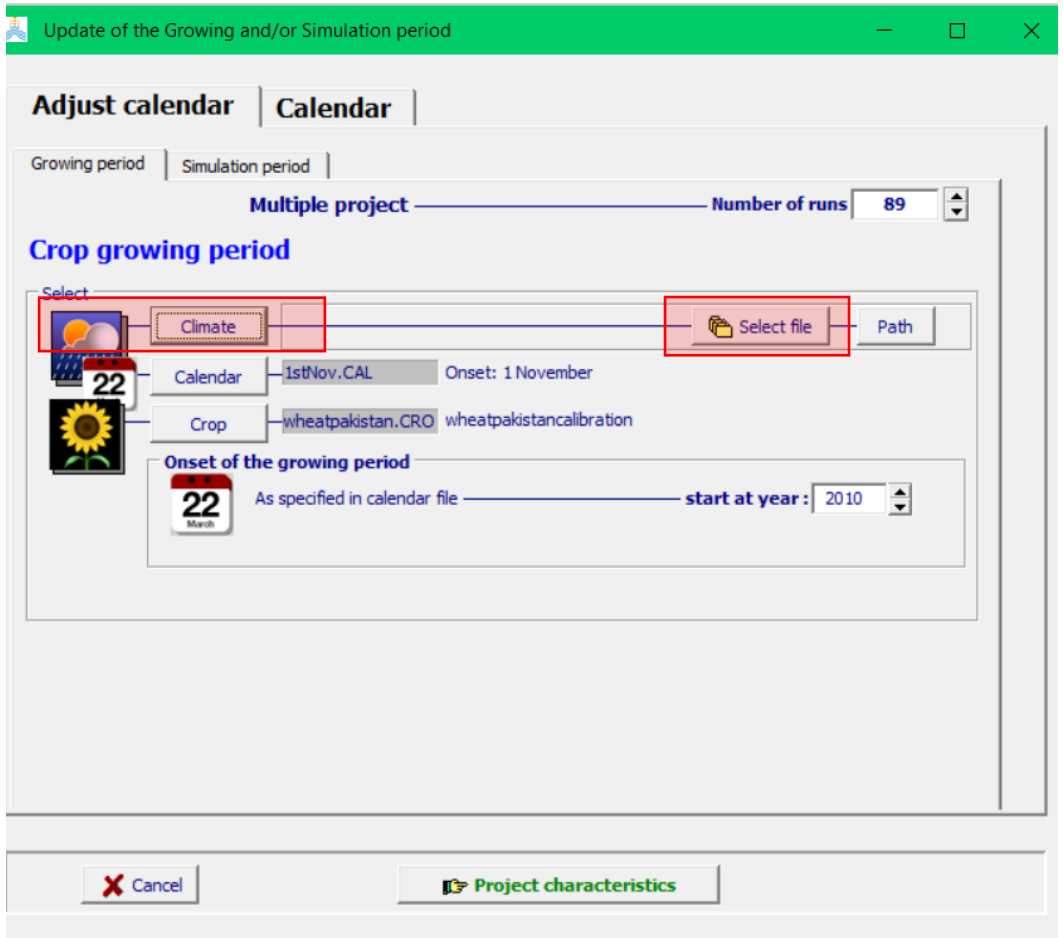


4) Select “Environment, Crop and Simulation files
5) Click on “Update”

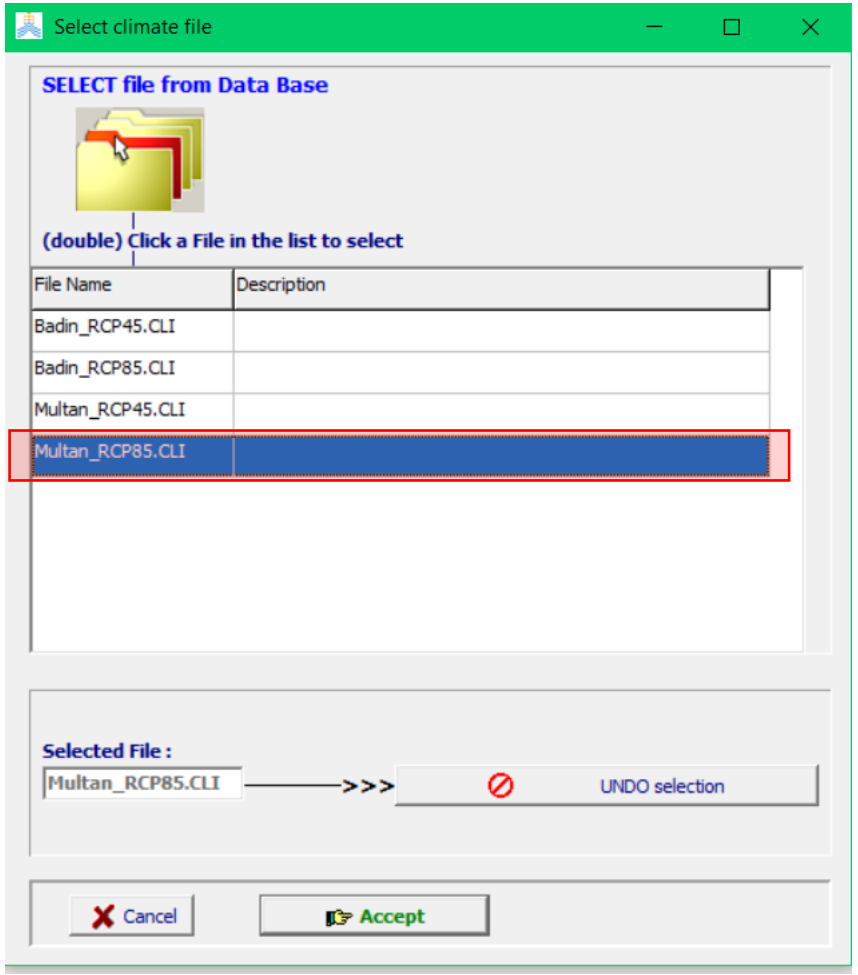


How to create the Project file: **Wheat_Multan_1Nov_7d13mm_85**

1) Click on “Climate”
2) Click on “Select file”

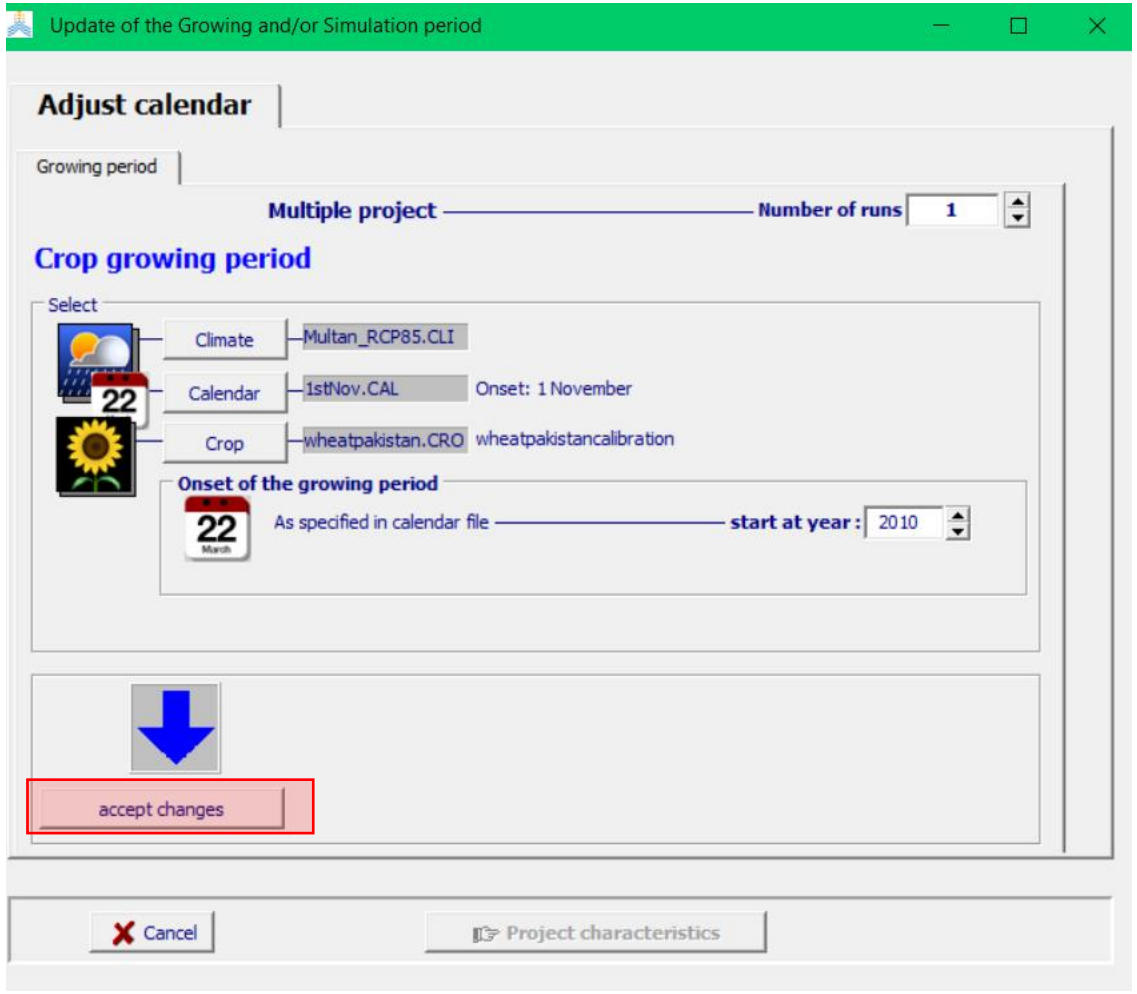


4) Select “Multan_RCP85”
5) Click on “Accept”

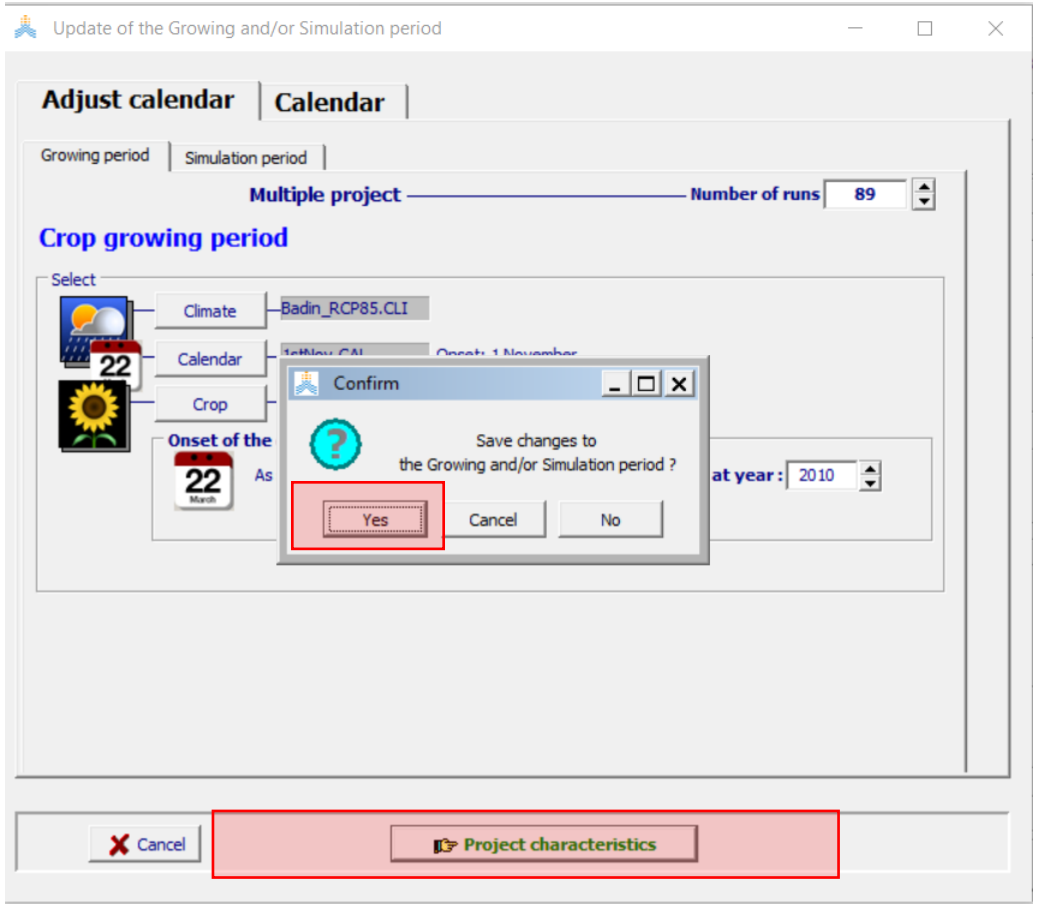


How to create the Project file: **Wheat_Multan_1Nov_7d13mm_85**

1) Click on “Accept changes”



2) Select “Project characteristic”
3) Save changes clicking on “Yes”

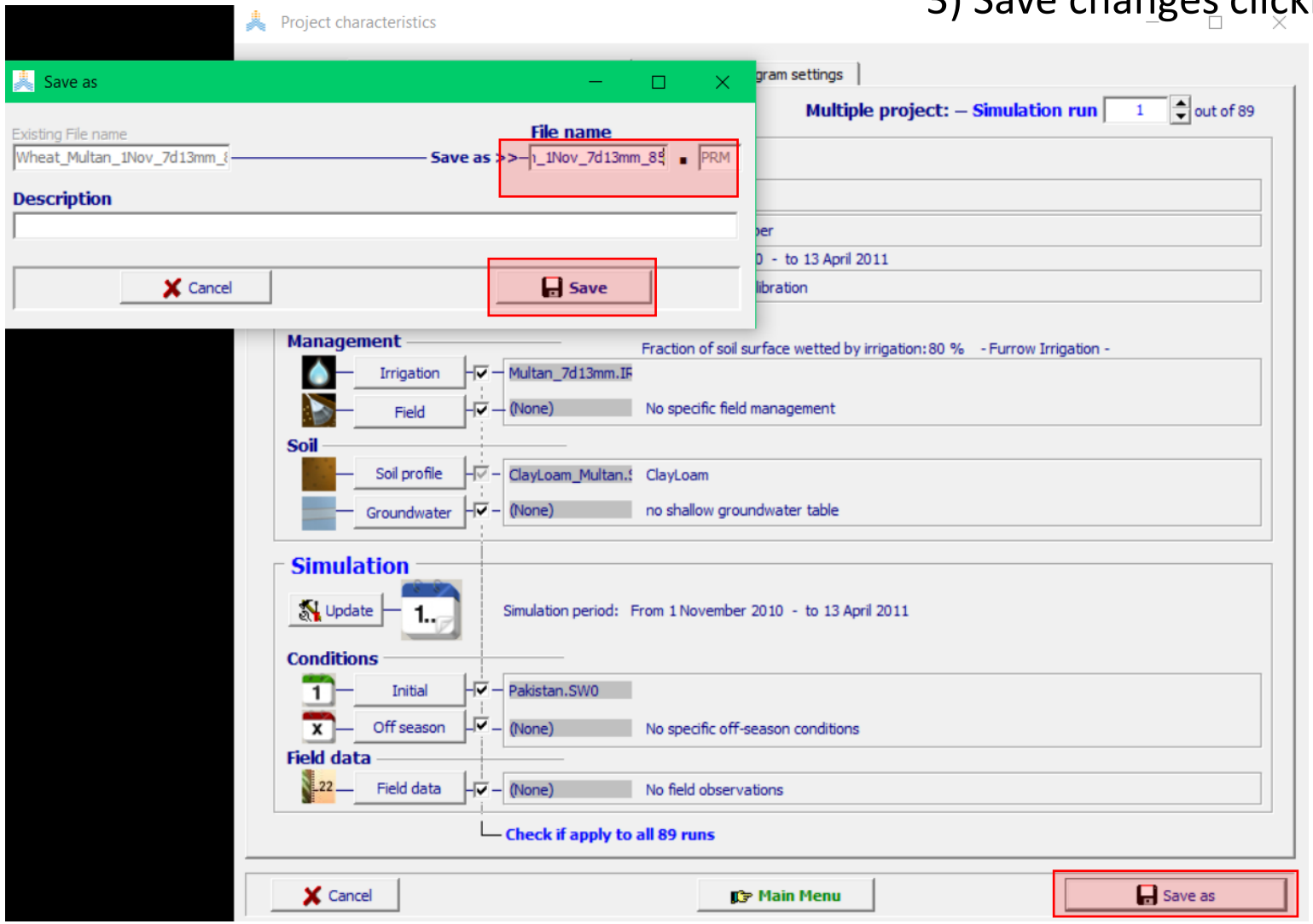


How to create the Project file: **Wheat_Multan_1Nov_7d13mm_85**

1) Click on “Save as” (right bottom corner)

2) Name the file as: **Wheat_Multan_1Nov_7d13mm_85**

3) Save changes clicking on “Save”



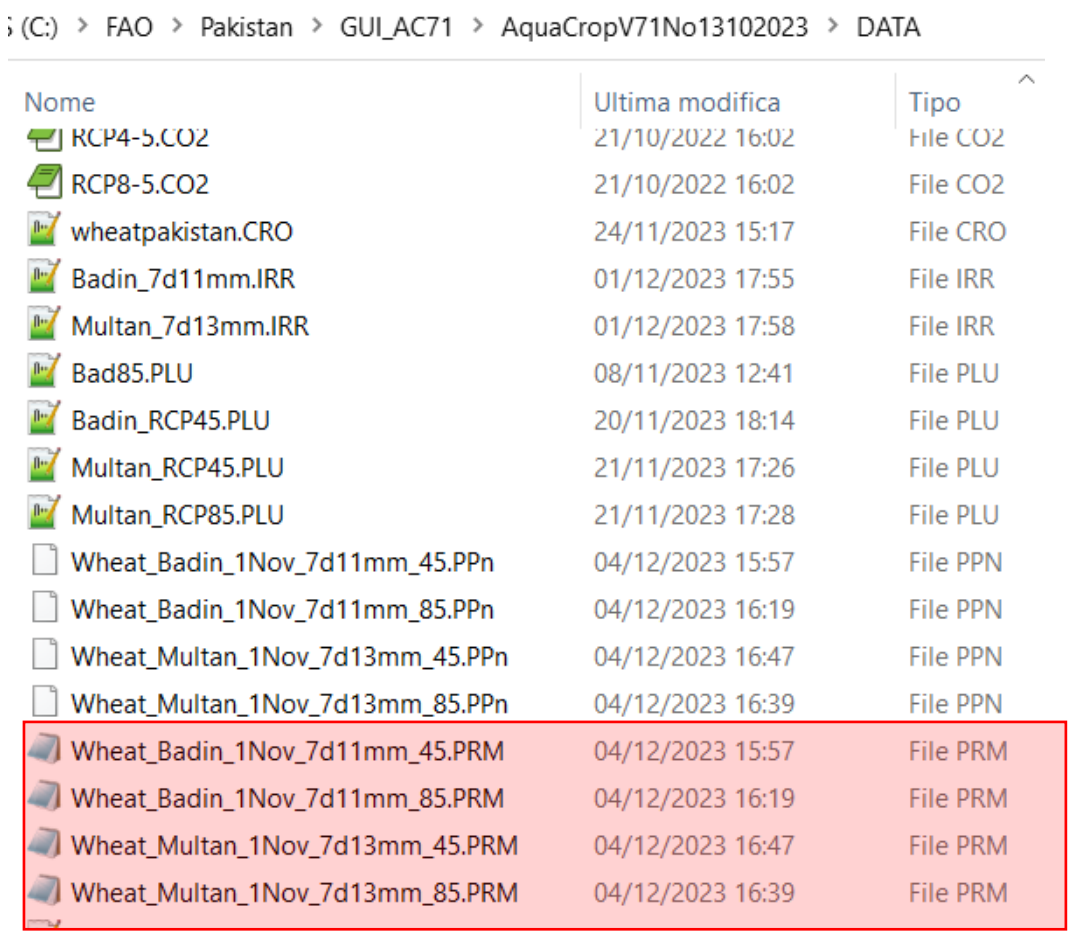
Project file scheme

All the project files are created, you can find them in the DATA folder of AquaCrop

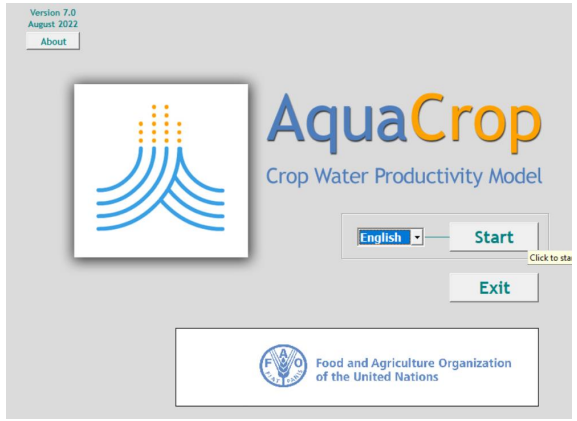
Crop_Location_SowingDate_Irrigation_RCP

Wheat_Badin_1Nov_7d11mm_45 ☒
Wheat_Badin_1Nov_7d11mm_85 ☒

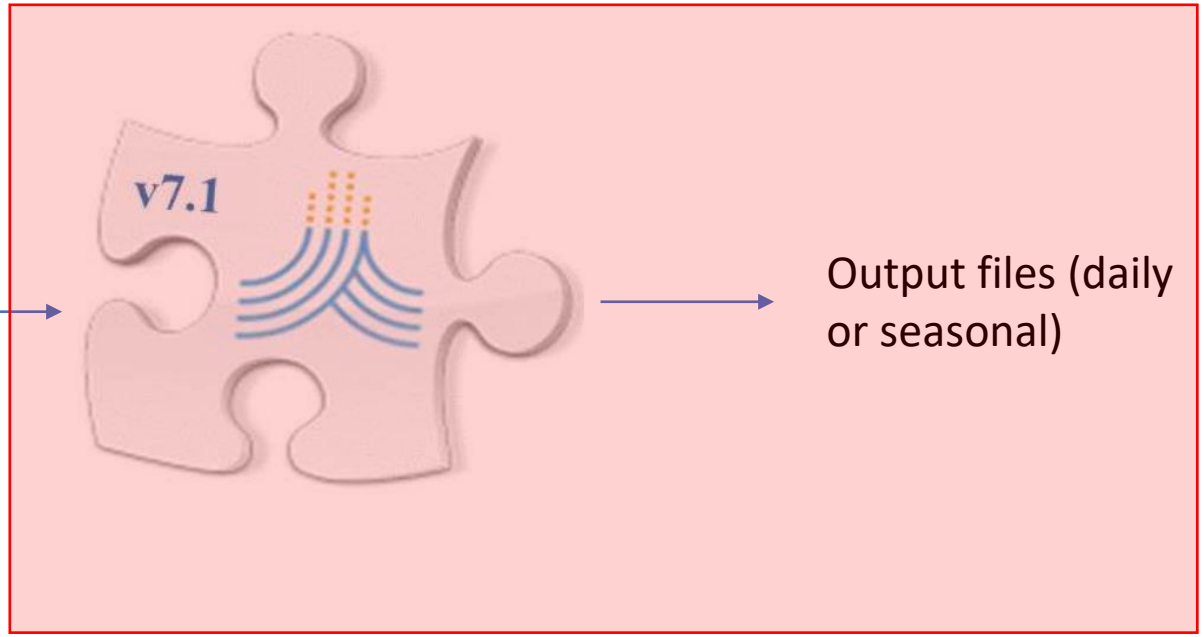
Wheat_Multan_1Nov_7d13mm_45 ☒
Wheat_Multan_1Nov_7d13mm_85 ☒



Use of the Plug-in



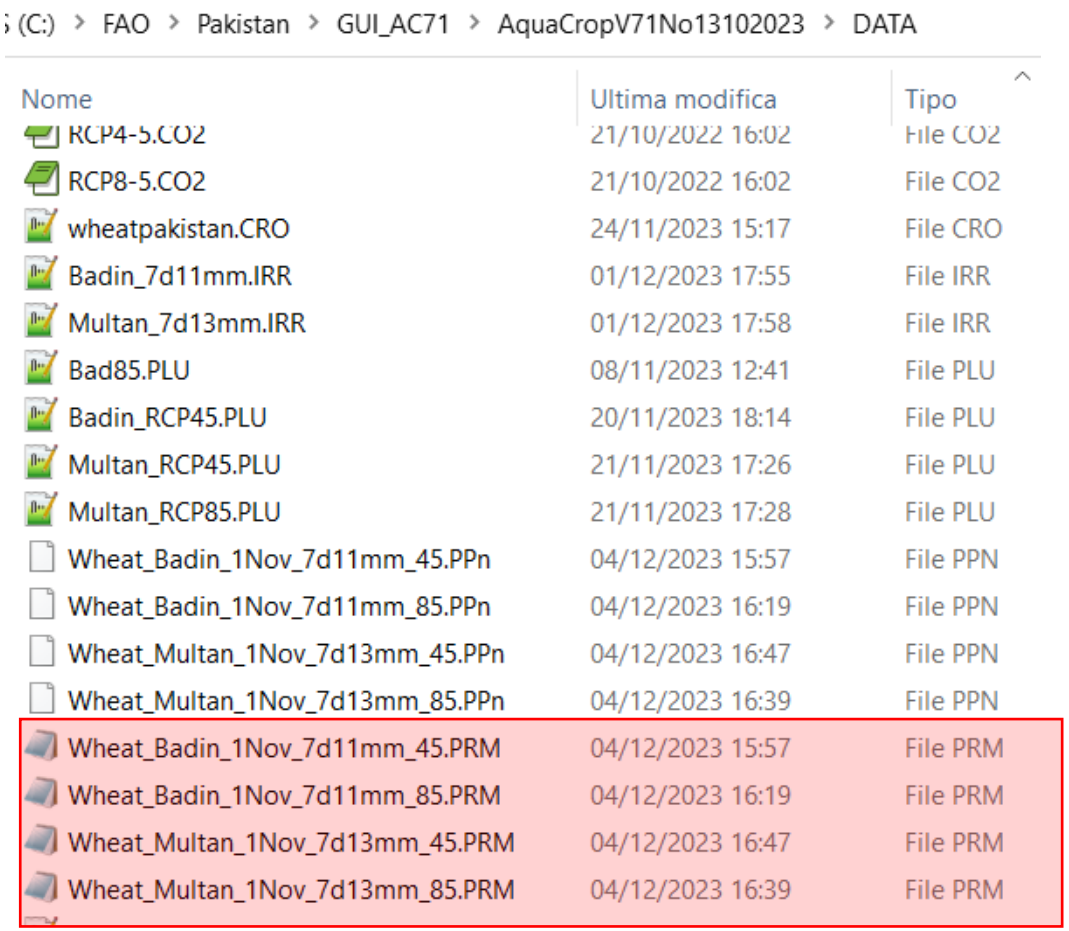
Project files
(.PRMs or .PROs)

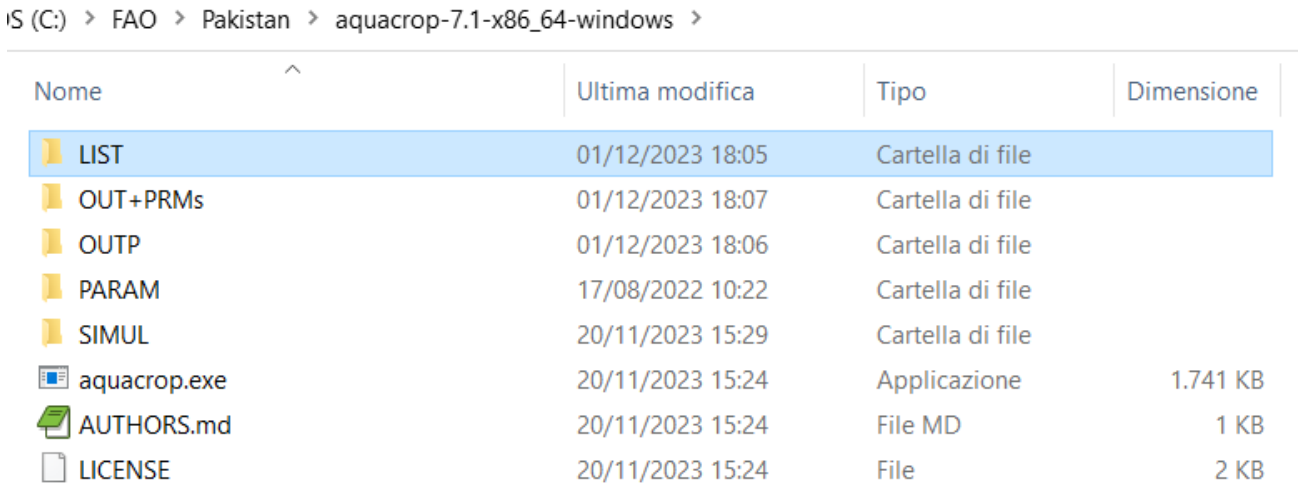


Output files (daily or seasonal)

Use of the Plugin

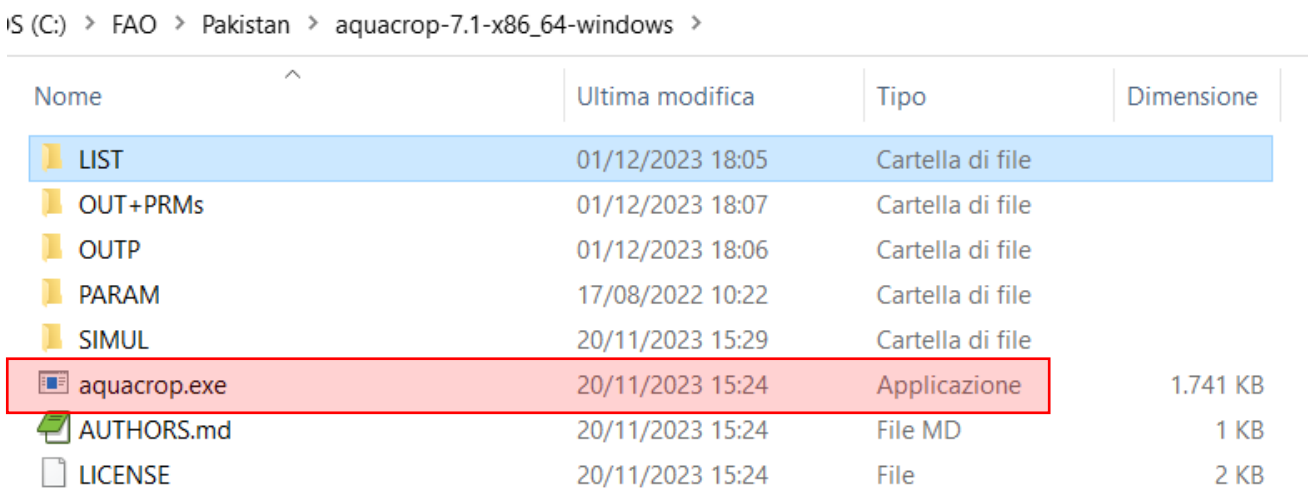
Copy and paste the PRM files from the DATA folder of GUI_AC71 to the LIST folder of the PLUGIN



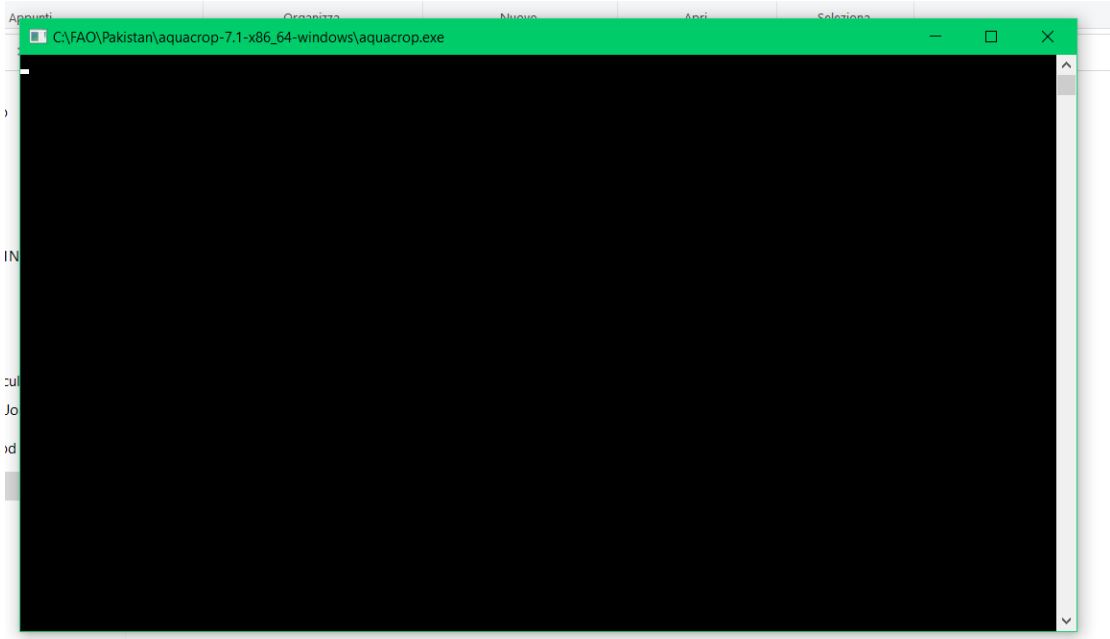


Use of the Plugin

Double click on the .exe file to run the plugin

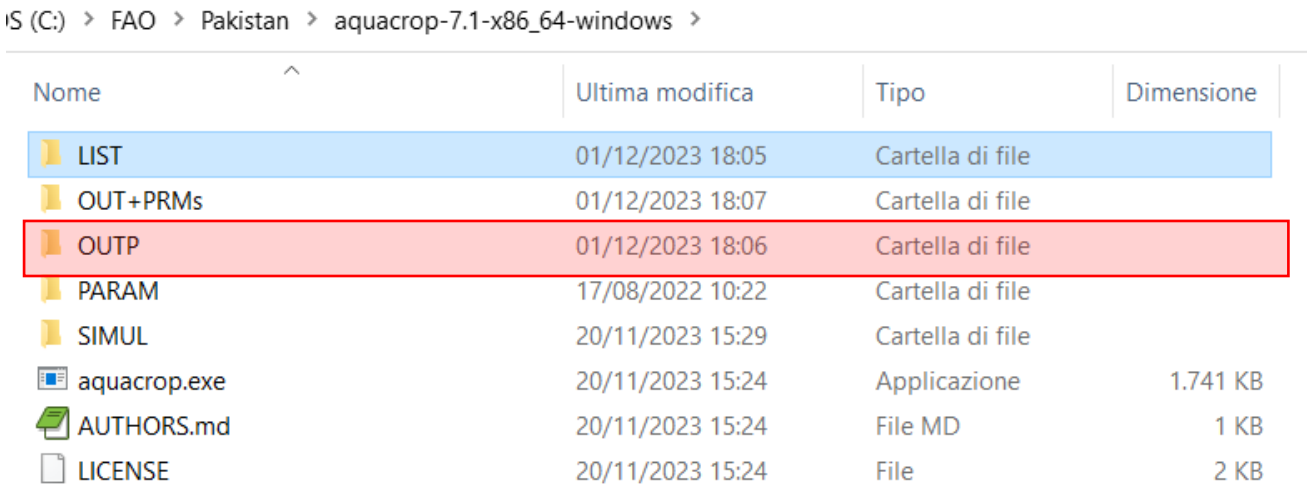


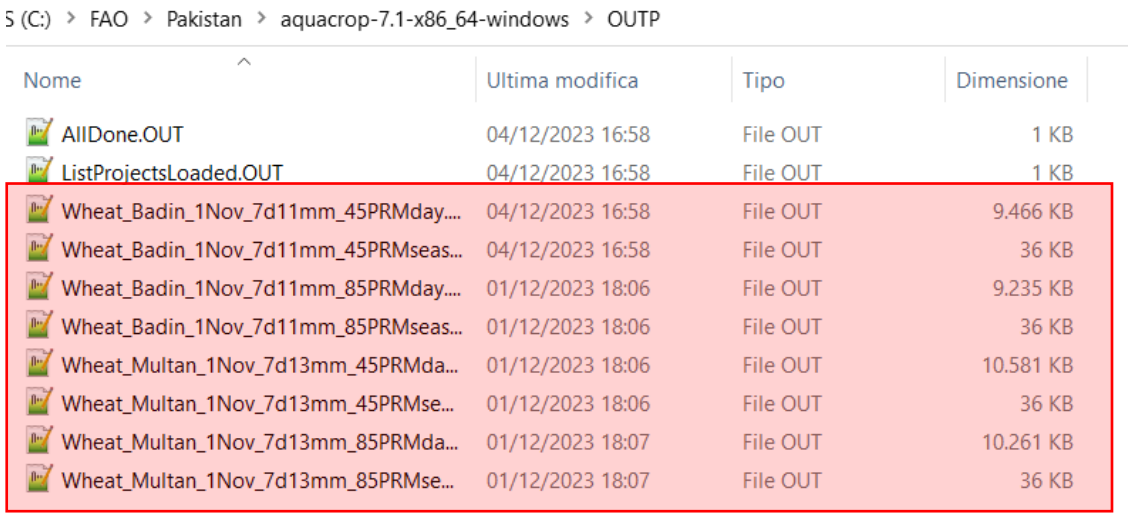
The plugin does not have an interface, wait until this black window closes.



Use of the Plugin

You can find the OUTPUT data in the OUT folder: the plugin produces two OUT files per PRM: daily and seasonal files.





Thank you!

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riccardo.soldan@fao.org