

2013

SAMARA V2

USER MANUAL



TABLE OF CONTENTS

INTERFACES	6
Main interface	7
Simulation creation Interface	8
Data input interface	9
Results interface	12
UTILITIES	13
Utility buttons	14
HOW TOs	16
How to create components for a simulation scenario	17
Accessing component tables	18
Creating a new entry on each component's table	19
Deletion of entries on a component table	20
Editing data on component tables	21
COMPONENT SPECIFIC INSTRUCTIONS	22
Plot and soil	22
Climatic zone	23
Cultures	24
Cultural practices	25

CREATION AND EXECUTION OF A SIMULATION SETUP	26
How to create a new simulation setup	26
How to run a simulation	27
Choosing variables	29
Graphing the results	30
DATA IMPORTATION	32
Creating a tab delimited file from MSExcel	33
Creation of a new station, country, or continent	35
Importing data into existing stations	38
DATE FORMAT CORRECTION	47
Determining an erroneous data format	48
Correcting the date format	50

INTERFACE

The Main Interface

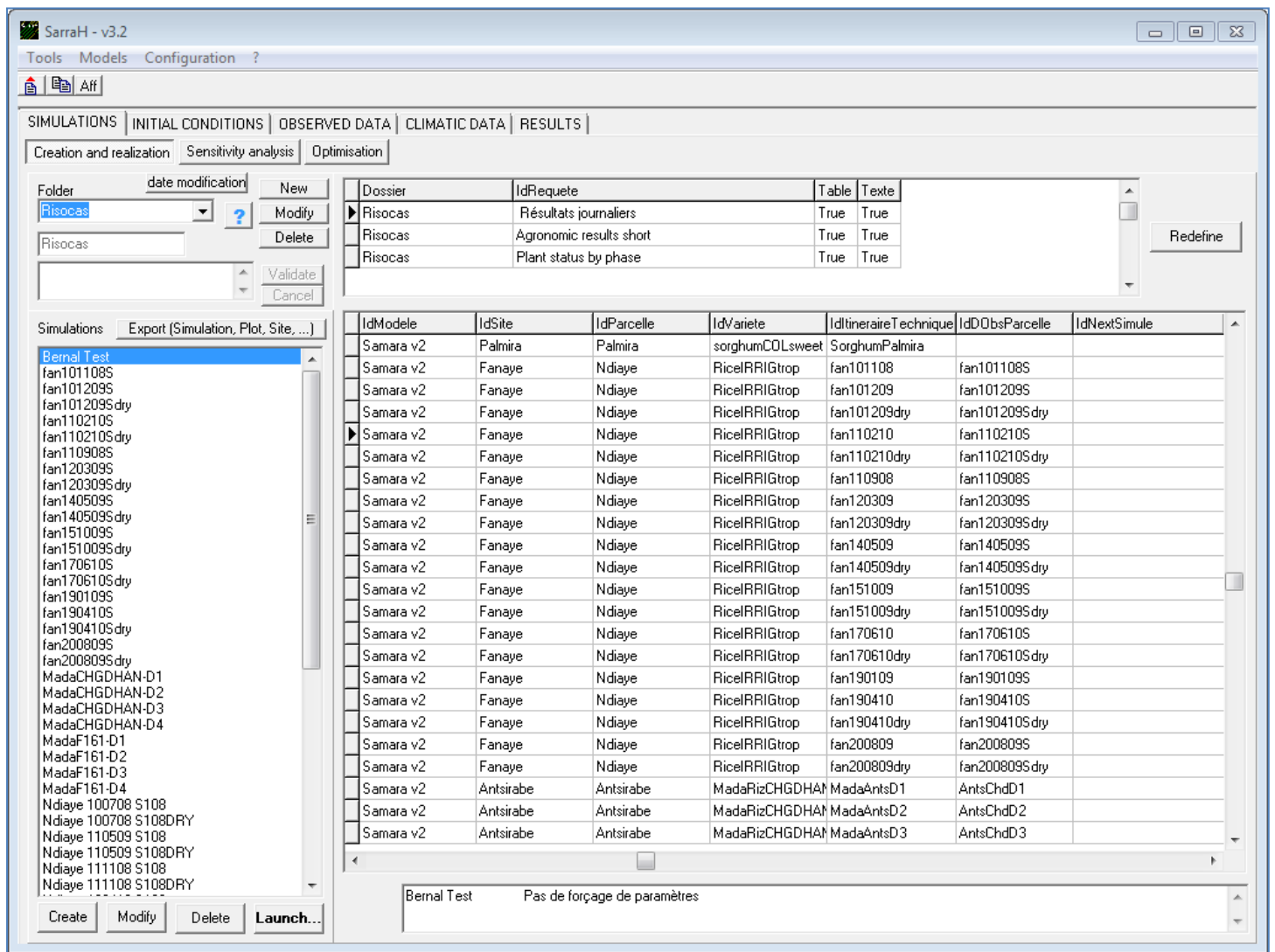


Figure 1 The Main Interface

The Simulation Creation / Modification Interface

Dossier	IdRequete	Table	Texte
Risocas	Résultats journaliers	True	True
Risocas	Agronomic results short	True	True
Risocas	Plant status by phase	True	True

IdModele	IdSite	IdParcelle	IdVariete	IdItineraireTechnique	IdDObsParcelle	IdNextSimule
Samara v2	Palmira	Palmira	sorghumCOLsweet	SorghumPalmira		
Samara v2	Fanaye	Ndiaye	RiceRRIGtrop	fan101108	fan101108S	
Samara v2	Fanaye	Ndiaye	RiceRRIGtrop	fan101209	fan101209S	
Samara v2	Fanaye	Ndiaye	RiceRRIGtrop	fan101209dry	fan101209Sdry	
Samara v2	Fanaye	Ndiaye	RiceRRIGtrop	fan110210	fan110210S	

Plot

- AAAAA
- Antsirabe
- Cinzana
- LaLibertad
- Mil2Sableux
- Ndiaye
- Palmira**
- Palmira a

Site

- ML_Segou/Cinzan
- ML_Sikasso
- ML_Sorobasso
- ML_Sotuba
- ML_Zandiela
- ndiaye
- Ouagadougou Aer
- Palmira**

Variety

- R_CIAT_Wab77597
- R_CIAT_xP
- RiceDemo
- RiceRRIGtrop
- RiceRRIGtrop
- RiceUPLtemp
- RiceUPLtrop
- sorghumCOL
- sorghumCOL sweet**

Technical Manage

- RiceDemo
- RiceRRndiayeCS
- RiceRRndiayeHS
- RiceRRndiayeWS
- RiceUPLAntsirab
- RiceUPLStaRosa
- SorghumCinzana
- SorghumPalmira**

Choice of evapotranspiration

- Eto**
- Etplmp - Données personnelles

Model

- Init
- Samara v1
- Samara v2**
- SARRAHMil2
- SarahV32
- SarahV32Test

Observed data (optional)

- 96ETMF2**
- 96PluieF2
- 96StressFloF2
- 97CFETMF2

Simulation dates

Year of the beginning first simulation: (format yyyy)

Year of the ending last simulation: (format yyyy)

Beginning of the culture period: (format dd/mm)

End the culture period: (format dd/mm)

Folder : Id :

Check the entities you want to see in the simulation name

Bernal Test	Pas de forçage de paramètres
-------------	------------------------------

Figure 2 The Creation / Modification interface, the only difference between the two is that the first does not have a defined ID yet but every field is set to default values

The Various Data Input / Modification Interfaces:

The data Input interfaces compose the bulk of SAMARA, these are mainly divided into 3 tabs indicating which data classification the fields belong to: **Initial Conditions**, **Observed Data**, and **Climatic Data**. These tabs have their own tabs too which present further sub-grouping.

SIMULATIONS INITIAL CONDITIONS OBSERVED DATA CLIMATIC DATA RESULTS											
Plot and soil		Climatic zone		Cultures		Cultural practices					
Id	Nom	StockIniSurf (mm)	StockIniProf (mm)	EpaisseurSurf (mm)	EpaisseurProf (mm)	Ref_id	TypeSol				
AAAAA											
Antsirabe	Antsirabe	10.00	10.00	100	800	Antsirabe					
Cinzana	Cinzana	10.00	10.00	100	1100	VxD205					
LaLibertad	LaLibertad	10.00	10.00	100	1200	Ndiaye					
Mil2Sableux	Mil2Sableux	0.00	0.00	200	1100	Sableux					
Ndiaye	Ndiaye	10.00	10.00	100	150	Ndiaye					
▶ Palmira	Palmira	10.00	10.00	100	1200	Palmira					
PalmiraLa	Palmira	10.00	10.00	100	1200	Palmira					
RiceDemo	RiceDemo	10.00	10.00	100	700	VxD205					
Santa Rosa	Santa Rosa	10.00	10.00	100	600	Sableux					
Sotuba	Sotuba	10.00	10.00	100	1400	VxD205					
Id	SeuilRuiiss (mm)	PourcRuiiss (%)	Ru	HumCR	HumPF (m3/m3)	HumFC (m3/m3)	HumSat (m3/m3)	PEvap (Coeff x)	PercolationMax (mm)	Edit	
Antsirabe	20	30	150	0.15	0.02	0.25	0.3	0.2	5	-1	
LaLibertad	20	30	150	0.15	0.05	0.25	0.3	0.2	5	-1	
Ndiaye	20	30	150	0.15	0.05	0.2	0.22	0.2	3	-1	
▶ Palmira	20	30	120	0.15	0.05	0.25	0.3	0.2	5	-1	
Sableux	20	10	100	0.15	0.02	0.12	0.18	0.2	10	-1	
VxD205	20	10	100	0.15	0.02	0.12	0.18	0.2	10	-1	

Figure 3 The Initial Conditions interface, this includes parameters concerning soil, climatic zones and cultural practices

SIMULATIONS | INITIAL CONDITIONS | OBSERVED DATA | CLIMATIC DATA | RESULTS |

ETP data | Observed data

Saisissez dans cette fenêtre les données observées en rapport avec la simulation. Vous pourrez ainsi comparer les résultats simulés avec les résultats observés dans l'outil "Graphique" en mettant en relation les données issues de la table Resjour (données simulées) avec ceux de la table ObsParcelle (données observées saisies ci-dessous)

Display all the data

Id	Jour	ApexHeight	BiomasseAerienne	BiomasseFeuilles	BiomasseRacinaire	BiomasseTiges	BiomasseTotale	CulmsPerHill	CulmsPerPlant	CumWReceived	CumWUse	Di
96ETMF2	1996-06-28											
96ETMF2	1996-07-19											
96ETMF2	1996-07-26			0								
96ETMF2	1996-08-01			0								
96ETMF2	1996-08-06			0								
96ETMF2	1996-08-08			71.42	50.37							
96ETMF2	1996-08-16			346.48	239.69							
96ETMF2	1996-08-22			1373.86	794.85							
96ETMF2	1996-08-29			4097.53	1686.57							
96ETMF2	1996-09-05			5580	1535.8							
96ETMF2	1996-09-12			7566.82	1558.18							
96ETMF2	1996-09-19			10291.98	1645.68							
96ETMF2	1996-09-26			10954.32	1487							
96ETMF2	1996-10-03			9634.57	1351.85							
96PluieF2	1996-06-28											
96PluieF2	1996-07-19											
96PluieF2	1996-07-26			0								
96PluieF2	1996-08-01			0								
96PluieF2	1996-08-06			0								
96PluieF2	1996-08-08			83.95	60.03							
96PluieF2	1996-08-16			389.51	270.06							
96PluieF2	1996-08-22			1612.04	979.01							
96PluieF2	1996-08-29			4006.17	1638.89							
96PluieF2	1996-09-05			5260.49	1363.89							
96PluieF2	1996-09-12			7499.54	1305.56							
96PluieF2	1996-09-19			8105.56	1548.77							

Figure 4 the Observed Data Interface

SIMULATIONS | INITIAL CONDITIONS | OBSERVED DATA | CLIMATIC DATA | RESULTS

Continent: Amérique | Cour: Colombie | Changer de station: Palmira | Filtering the y: [] | Filter

Rainfall | Meteorology | Selected station : Palmira

CodeStation	Jour	Pluie (mm)	CodeStation	Jour	TMax (°C)	TMin (°C)	TMoy (°C)	HMax (%)	HMin (%)	HMoy (%)	Vt (m/s)	Ins (heure(dec))	Rg (MJ/m²/j)
Palmir	2010-01-01	0	Palmir	2010-01-01	31.5	17.2	23.6	95	39	71	0.81		
Palmir	2010-01-02	0	Palmir	2010-01-02	31.6	17.3	23.4	94	41	72	0.97		
Palmir	2010-01-03	0	Palmir	2010-01-03	31.6	17.7	23.3	94	35	72	0.88		
Palmir	2010-01-04	0	Palmir	2010-01-04	31	17.6	23.4	91	37	70	1.04		
Palmir	2010-01-05	0	Palmir	2010-01-05	31.4	18.7	23.3	91	34	67	0.67		
Palmir	2010-01-06	0	Palmir	2010-01-06	31.1	17	22.8	93	38	72	0.88		
Palmir	2010-01-07	0	Palmir	2010-01-07	31.5	17.6	23.7	95	42	72	1.17		
Palmir	2010-01-08	0.5	Palmir	2010-01-08	31.2	19.3	24	98	49	79	0.76		
Palmir	2010-01-09	0.1	Palmir	2010-01-09	30.8	17.4	23.9	99	48	76	0.91		
Palmir	2010-01-10	0.4	Palmir	2010-01-10	29.7	20.6	24.2	97	53	76	0.81		
Palmir	2010-01-11	0	Palmir	2010-01-11	31.1	20	24	100	39	79	0.56		
Palmir	2010-01-12	0	Palmir	2010-01-12	31.1	20.1	24	93	45	73	0.58		
Palmir	2010-01-13	0	Palmir	2010-01-13	31.8	18.6	24.1	95	38	72	0.63		
Palmir	2010-01-14	0	Palmir	2010-01-14	31.2	18.5	23.6	92	43	72	1.1		
Palmir	2010-01-15	0	Palmir	2010-01-15	31.2	17.7	23.9	92	43	72	1		
Palmir	2010-01-16	0	Palmir	2010-01-16	31.2	18.4	24	97	45	75	0.53		
Palmir	2010-01-17	0	Palmir	2010-01-17	31.8	19.3	24.5	95	46	76	0.81		
Palmir	2010-01-18	0	Palmir	2010-01-18	32.4	19.3	24.8	93	41	73	0.53		
Palmir	2010-01-19	0	Palmir	2010-01-19	31.3	20	24.5	92	48	74	0.73		
Palmir	2010-01-20	0	Palmir	2010-01-20	32.9	19.9	24.7	96	40	74	0.58		
Palmir	2010-01-21	0	Palmir	2010-01-21	32.4	19.2	24.6	89	35	69	0.91		
Palmir	2010-01-22	0	Palmir	2010-01-22	29	19.1	23.6	95	57	76	0.67		
Palmir	2010-01-23	2	Palmir	2010-01-23	31.6	19	23.3	97	42	79	0.82		
Palmir	2010-01-24	9.2	Palmir	2010-01-24	32.4	17.8	22.4	98	40	83	0.82		
Palmir	2010-01-25	1.8	Palmir	2010-01-25	28.2	19.7	22.7	99	58	85	0.84		
Palmir	2010-01-26	0.3											
Palmir	2010-01-27	0											
Palmir	2010-01-28	0											
Palmir	2010-01-29	0.1											

ETo for ...
 the meteorology
 the rainfall
 both

Passer en modification | Chart ...

Figure 5 the Climatic Data Interface

The Results Interface:

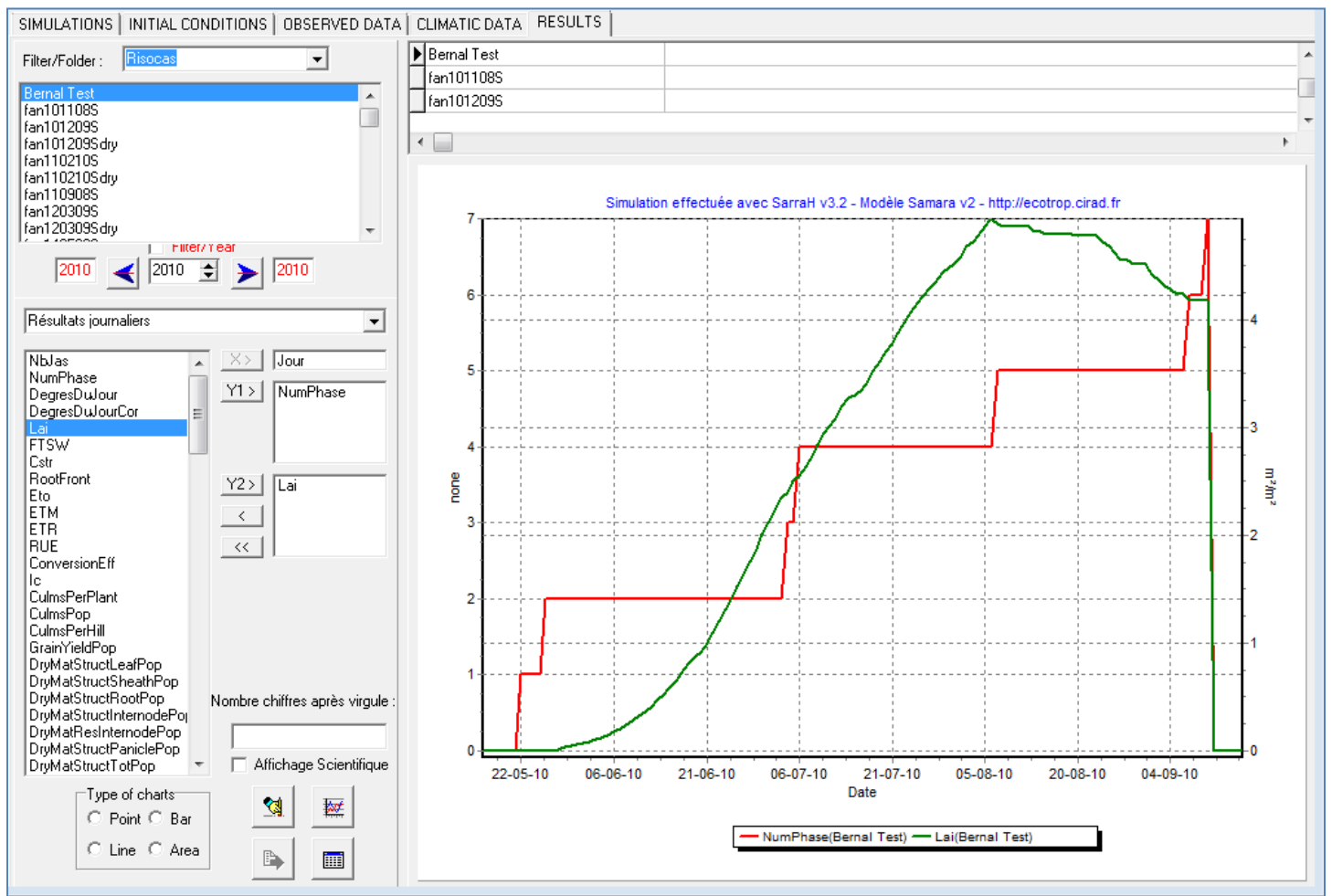


Figure 6 The Results Interface showing a sample of the results done from the simulation run

UTILITIES

Utility Buttons

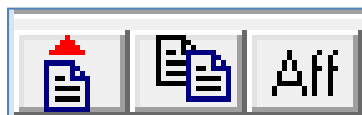

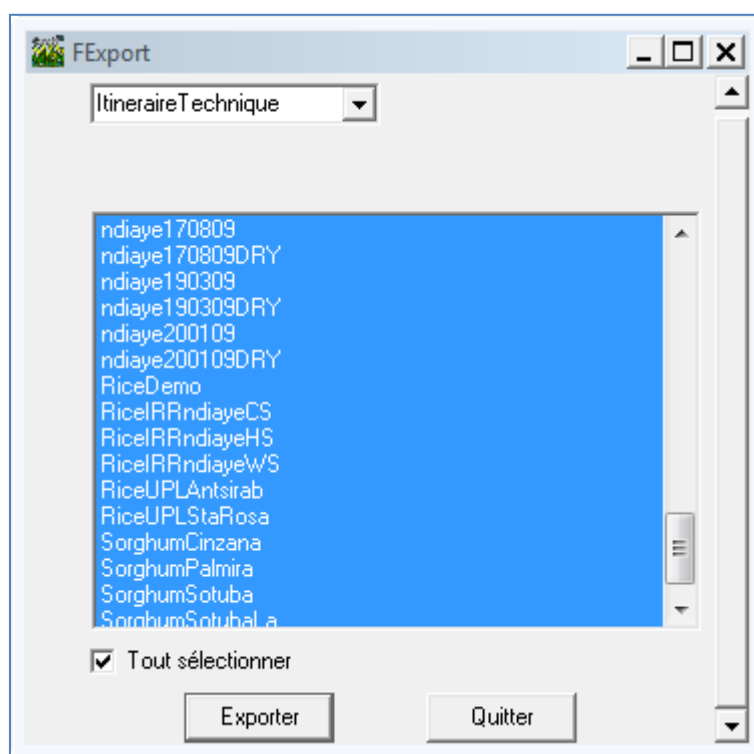



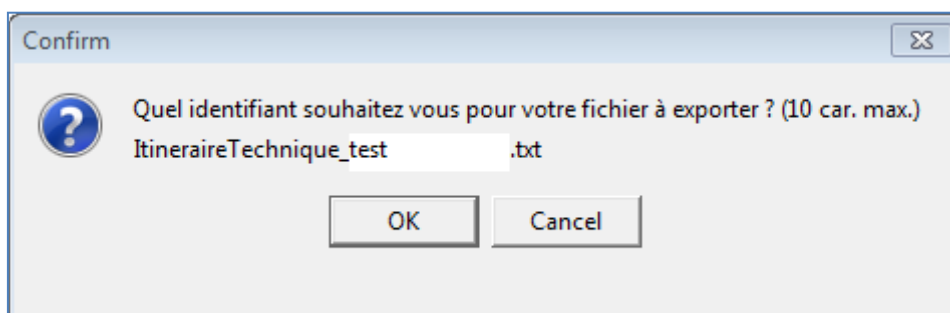
Figure 7 the utility buttons (L-R) Export, Duplicate Row, Toggle Display



A group of three buttons are situated at the top left corner of the main interface, these are the utility buttons; detailed below are the functions of each:

- a.  is for exporting the currently displayed table, a popup window specifying the ID of which rows to import will appear. by default all rows are to be imported




after clicking on , another window prompting for a filename prefixed with the data type will appear, clicking ok will export the data into the specified file



- b.  is for duplicating a highlighted row in the currently displayed table, this includes all fields in the source row. Take precaution in ensuring that a duplicated row will always have a unique ID assigned to it, otherwise an error may appear.
- c.  is used for choosing which columns will be shown on the currently displayed table, clicking on it will bring up a popup window showing which columns are shown (highlighted) and which ones are hidden (no highlights)



To add highlighted rows, simply press and hold down **CTRL** then press the **LEFT MOUSE BUTTON**, if you wish to show all columns, simply check the  checkbox

HOW TOs

How to create and execute a simulation scenario

Creation and execution of a new simulation scenario has two phases:

Phase I: Create New Scenario

A simulation scenario has 6 components:

COMPONENT NAME	Created / Modified In
Plot	Initial conditions → Plot and Soil
Site	Initial conditions → Climatic Zone
Variety	Initial conditions → Cultures
Technical Management	Initial conditions → Cultural Practices
Model	Source Built-in - Cannot Be Modified
Observed data	Observed Data Tab

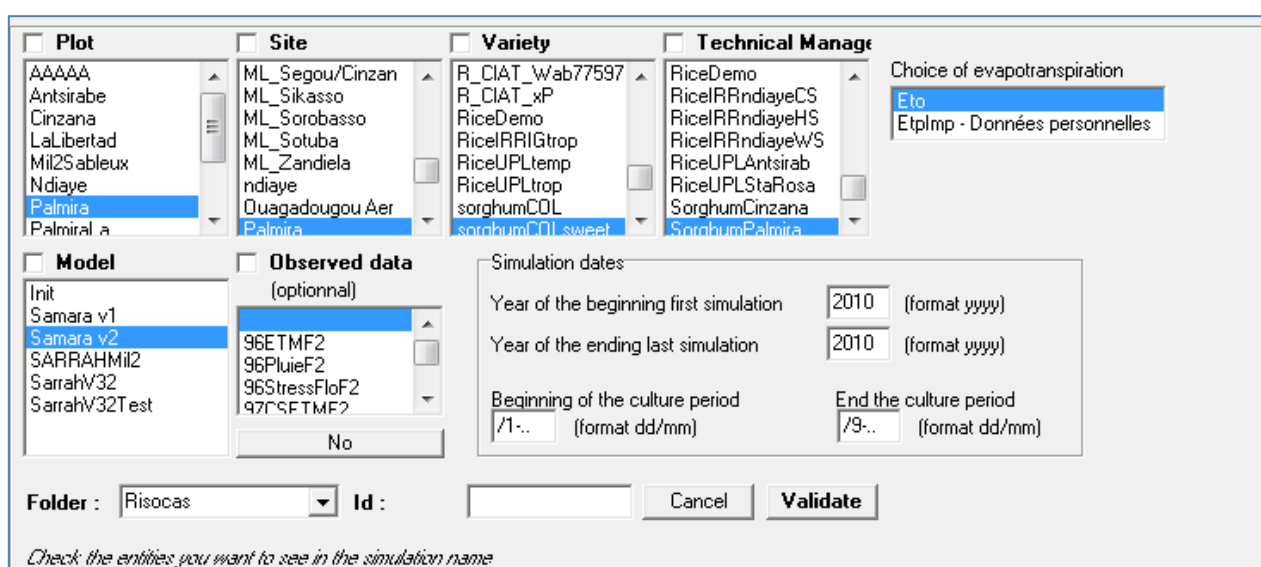


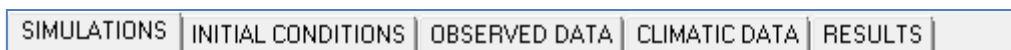
Figure 8 Simulation creation interface

While creating a simulation scenario you have different options to choose from among the existing entries which were previously saved under each component. You can create a new entry with characteristics of your interest under each component. This is important while creating a new simulation scenario for absolutely fresh conditions.

The following general steps explain how to create a new entry under each component.

Note : The same steps will work for entry into other components, but for demo purposes we will use the Plot component.

1. Hit the button labeled **'Initial Conditions'** near the top left of the interface:



2. And then below, click on **'Plot and Soil'**



3. You should see the following window appear below in the interface, here you can see the previous entries from where you can choose from in the simulation creation interface

Id	Nom	StockIniSurf (mm)	StockIniProf (mm)	EpaisseurSurf (mm)	EpaisseurProf (mm)	Ref_idTypeSol
AAAAA						
Antsirabe	Antsirabe	10.00	10.00	100	800	Antsirabe
Cinzana	Cinzana	10.00	10.00	100	1100	VxD205
LaLibertad	LaLibertad	10.00	10.00	100	1200	Ndiaye
Mil2Sableux	Mil2Sableux	0.00	0.00	200	1100	Sableux
Ndiaye	Ndiaye	10.00	10.00	100	150	Ndiaye
▶ Palmira	Palmira	10.00	10.00	100	1200	Palmira
PalmiraLa	Palmira	10.00	10.00	100	1200	Palmira
RiceDemo	RiceDemo	10.00	10.00	100	700	VxD205
Santa Rosa	Santa Rosa	10.00	10.00	100	600	Sableux
Sotuba	Sotuba	10.00	10.00	100	1400	VxD205

Id	SeuilRuiiss (mm)	PourcRuiiss (%)	Ru	HumCR	HumPF (m3/m3)	HumFC (m3/m3)	HumSat (m3/m3)	PEvap (Coeff x)	PercolationMax (mm)	Edit
Antsirabe	20	30	150	0.15	0.02	0.25	0.3	0.2	5	-1
LaLibertad	20	30	150	0.15	0.05	0.25	0.3	0.2	5	-1
Ndiaye	20	30	150	0.15	0.05	0.2	0.22	0.2	3	-1
▶ Palmira	20	30	120	0.15	0.05	0.25	0.3	0.2	5	-1
Sableux	20	10	100	0.15	0.02	0.12	0.18	0.2	10	-1
VxD205	20	10	100	0.15	0.02	0.12	0.18	0.2	10	-1

To create new plot and soil characteristics:

Note : These are general instructions to add rows of data, the same set of steps will also work for all other tables that accept additional entries.

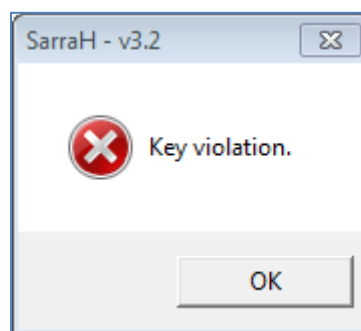
- a. Go to end of the table, click the bottom row like so

Ndiaye	Ndiaye	10.00	10.00	100	150	Ndiaye
Palmira	Palmira	10.00	10.00	100	1200	Palmira
PalmiraLa	Palmira	10.00	10.00	100	1200	Palmira
RiceDemo	RiceDemo	10.00	10.00	100	700	VxD205
Santa Rosa	Santa Rosa	10.00	10.00	100	600	Sableux
Sotuba	Sotuba	10.00	10.00	100	1400	VxD205

- b. And then press the down arrow on the keyboard, a new blank row should appear; this is where you will fill in the data according to the column names;

Ndiaye	Ndiaye	10.00	10.00	100	150	Ndiaye
Palmira	Palmira	10.00	10.00	100	1200	Palmira
PalmiraLa	Palmira	10.00	10.00	100	1200	Palmira
RiceDemo	RiceDemo	10.00	10.00	100	700	VxD205
Santa Rosa	Santa Rosa	10.00	10.00	100	600	Sableux
Sotuba	Sotuba	10.00	10.00	100	1400	VxD205
*						

- c. Make sure to provide a **unique ID** to each row you will add to avoid the **key violation error** – this simply means that a duplicate ID has been found



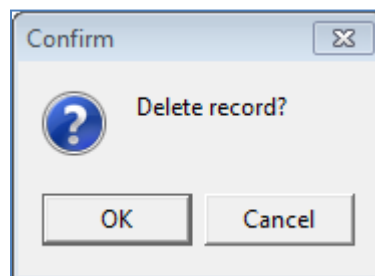
To Delete Rows of Data from the Table:

Note : These are general instructions to delete rows of data, the same set of steps will also work for all other tables that allow deletion of data.

- a. Select the row you want to delete

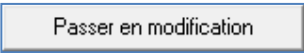
<input type="checkbox"/>	Sotuba	Sotuba	10.00	10.00	100	1400	VxD205
<input checked="" type="checkbox"/>	Sotube	Sotuba	10.00		100	1000	

- b. Then press **CTRL and DELETE** simultaneously on the keyboard, this should bring up a confirmation message



- c. Once you press **OK**, the selected row will be deleted, please keep in mind that deletion of data is permanent

To Edit Data on the tables

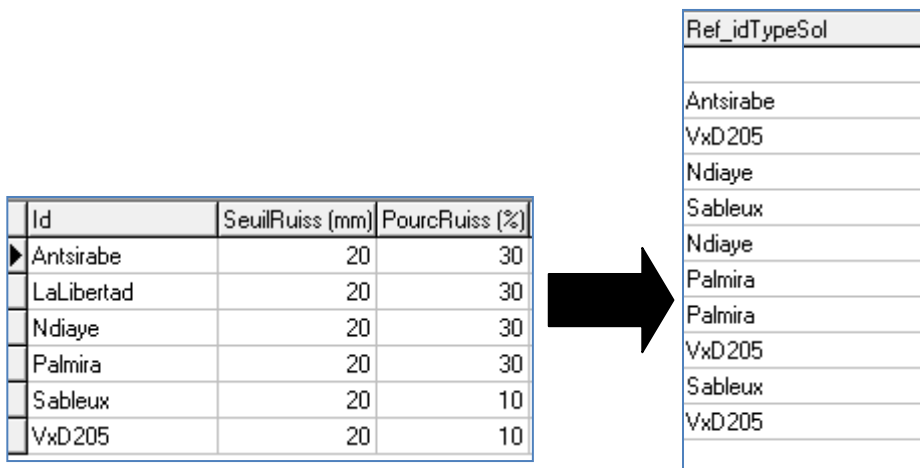
- a. Simply **double click** the cell on the table that you wish to edit
- b. In case the table is non editable by default, there usually are buttons in the interface that will allow editing once you click them such as  which toggles edit mode on or off

COMPONENT SPECIFIC INSTRUCTIONS

Outlined in the previous pages are general steps to work with the components (creation, deletion, editing of rows of data for a component) however, there are some parts of the system which are not yet fully intuitive for a new user, we will outline some points that will be helpful in the creation, deletion, and modification of each specific components in the next few pages.

a. PLOT AND SOIL

There are two tables in the interface, the top one displays the plot setup (Table A), and the bottom one gives the soil attributes (Table B), the **Ref_idTypeSol** column in Table A contains values which can only be added, edited, or selected from Table B



Id	SeuilRuiss (mm)	PourcRuiss (%)
Antsirabe	20	30
LaLibertad	20	30
Ndiaye	20	30
Palmira	20	30
Sableux	20	10
VxD205	20	10

Ref_idTypeSol
Antsirabe
VxD205
Ndiaye
Sableux
Ndiaye
Palmira
Palmira
VxD205
Sableux
VxD205

Figure 9 Left: soil type table (Table B) Right : Ref_idTypeSol from Plot setup table (Table A)

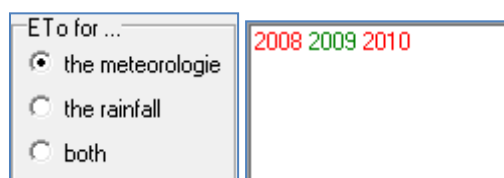
b. CLIMATIC ZONE

The interface for climatic zone only includes selection of rain and meteorology code stations plus the assignment of KPar value, the creation of the code stations however is not done here but in another interface entered by clicking Direct management of stations/country (please refer to **“To create a new station, country, or continent”** guide for further details), the editing and deletion of specific rows of each code station is also done in another interface found under the **“CLIMATIC DATA”** tab, both rain and meteorology data can be found here.

CodeStation	Jour	Plus (mm)	TMax (°C)	TMin (°C)	TMoy (°C)	HMax (%)	HMin (%)	HMoy (%)	Vt (m/s)	Ins (heure(dec))	Pp (MM/m²/jour)	ETP (mm)
Palmir	01-01-2010	0	31.5	17.2	23.6	95	39	71	0.81			21
Palmir	02-01-2010	0	31.6	17.3	23.4	94	41	72	0.97			21.8
Palmir	03-01-2010	0	31.6	17.7	23.3	94	35	72	0.88			21
Palmir	04-01-2010	0	31	17.6	23.4	91	37	70	1.04			20.2
Palmir	05-01-2010	0	31.4	18.7	23.3	91	34	67	0.67			18.2
Palmir	06-01-2010	0	31.1	17	22.8	93	38	72	0.88			18.2
Palmir	07-01-2010	0	31.5	17.6	23.7	95	42	72	1.17			18.3
Palmir	08-01-2010	0.5	31.2	19.3	24	98	49	79	0.76			13.7
Palmir	09-01-2010	0.1	30.8	17.4	23.9	99	48	76	0.91			15.5
Palmir	10-01-2010	0.4	30.7	20.6	24.2	97	53	76	0.81			13.8
Palmir	11-01-2010	0	31.1	20	24	100	39	79	0.56			17.2
Palmir	12-01-2010	0	31.1	20.1	24	93	45	73	0.58			14.9
Palmir	13-01-2010	0	31.8	18.6	24.1	95	38	72	0.63			20.3
Palmir	14-01-2010	0	31.2	18.5	23.6	92	43	72	1.1			16.9
Palmir	15-01-2010	0	31.2	17.7	23.9	92	43	72	1			16.4
Palmir	16-01-2010	0	31.2	18.4	24	97	45	75	0.53			16.9
Palmir	17-01-2010	0	31.8	19.3	24.5	95	46	76	0.81			16.5
Palmir	18-01-2010	0	32.4	19.3	24.8	93	41	73	0.53			16.7
Palmir	19-01-2010	0	31.3	20	24.5	92	46	74	0.73			13.1
Palmir	20-01-2010	0	32.9	19.9	24.7	96	40	74	0.58			16.9
Palmir	21-01-2010	0	32.4	19.2	24.6	89	35	69	0.91			19
Palmir	22-01-2010	0	29	19.1	23.6	95	57	76	0.67			13.1
Palmir	23-01-2010	2	31.6	19	23.3	97	42	79	0.82			15.5
Palmir	24-01-2010	9.2	32.4	17.8	22.4	98	40	83	0.82			18.2
Palmir	25-01-2010	1.8	28.2	19.7	22.7	99	58	85	0.84			11.3
Palmir	26-01-2010	0.3	29.1	19.3	22.8	100	54	85	1			11.6
Palmir	27-01-2010	0	30.5	19.3	23.4	99	51	83	1.09			15.1
Palmir	28-01-2010	0	26.7	18.5	21.6	99	68	89	0.91			7.2
Palmir	29-01-2010	0.1	29.7	17.8	22.7	98	51	80	0.83			14.3
Palmir	30-01-2010	0	31.4	18.6	24.2	98	44	76	0.57			18.5
Palmir	31-01-2010	0	32.6	18.4	24.4	96	38	75	0.74			21.1
Palmir	01-02-2010	0	32.9	19.1	24.7	96	40	74	0.81			20.8
Palmir	02-02-2010	0	33.6	19.7	25.3	94	37	73	0.95			21.8
Palmir	03-02-2010	0	34.7	21.6	26.6	92	40	71	0.89			20.5

Figure 10 climatic data interface, both rain and meteorology data are displayed

Additionally, a group of radio buttons can be found at the bottom of the interface, right beside a large display box containing year numbers.








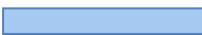




The display box on the right displays the available years for the data type indicated by the chosen fields in the radio button group to the left. The years are color coded, **RED** for years with missing data, **GREEN** for years with complete data, **GRAY** for years without any data.

c. CULTURES

By default, all parameters used by SAMARA V2 are shown in the table to the right, clicking on [SHOWING ALL PARAMETERS](#) will filter the table into frequently used parameters, clicking the button again will filter it into non-frequently used parameters.

Additionally, all parameters are divided into functional groups indicated by the color of the cells in each column. The groupings are as follows:

	Phenology and Photoperiodism
	Light extinction and conversion
	Maintenance Respiration
	Water relations
	Root growth
	Leaf properties
	Internode properties
	Panicle properties
	Tillering
	Seed properties

d. CULTURAL PRACTICES

The column named **Ref_IdIrrigation** accepts entries coming from an irrigation list, clicking brings up the window where you can add, edit, or delete entries for irrigation

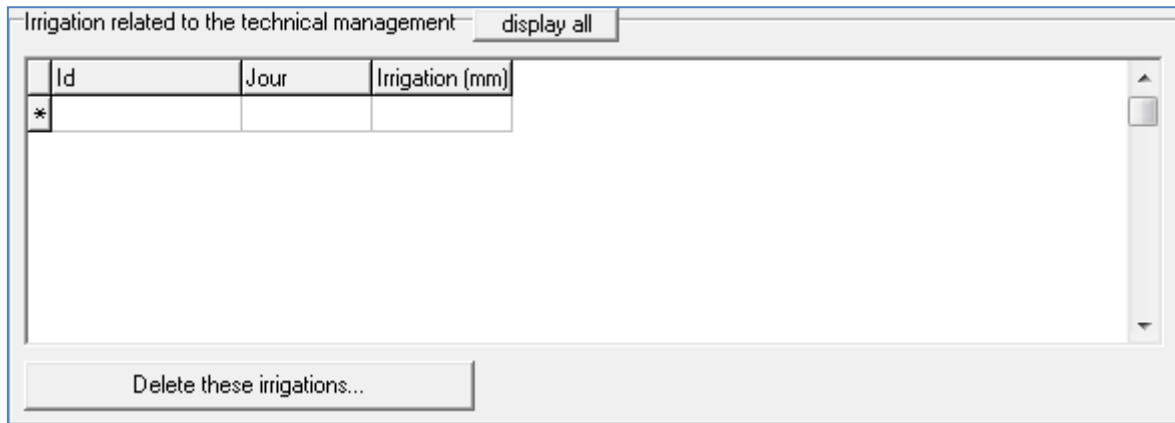



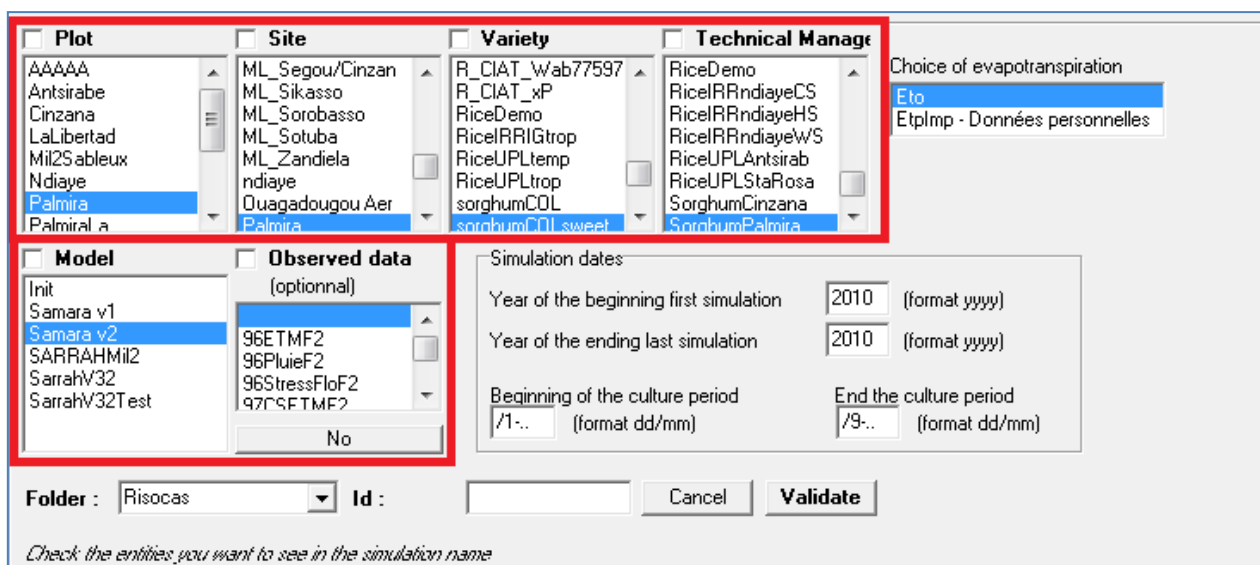
Figure 11 irrigation entries window

PHASE II: Create and execute new simulation scenario

Following all the steps in **PHASE I**, you should have created new entries under each of the five components (the 6th one is the model itself). The following steps explain how to create and execute a new simulation scenario.

Creation of a Simulation Setup

- Hit the button  located at the lower left corner of the simulation interface
- The interface should show six check boxes with bold headers, these are the six components of a simulation scenario shown beforehand. Select which entry you wish to use for at least 5 of the 6 components in case you don't have any observed data to use with the simulation



The screenshot shows a simulation setup interface with the following components:

- Plot**: List includes AAAA, Antsirabe, Cinzana, LaLibertad, Mil2Sableux, Ndiaye, **Palmira**, Palmira a.
- Site**: List includes ML_Segou/Cinzan, ML_Sikasso, ML_Sorobasso, ML_Sotuba, ML_Zandiela, ndiaye, Ouagadougou Aer, **Palmira**.
- Variety**: List includes R_CIAT_Wab77597, R_CIAT_xP, RiceDemo, RiceRRIGtrop, RiceUPLtemp, RiceUPLtrop, sorghumCOL, **sorghumCOL sweet**.
- Technical Manage**: List includes RiceDemo, RiceRRndiayeCS, RiceRRndiayeHS, RiceRRndiayeW/S, RiceUPLAntsirab, RiceUPLStaRosa, SorghumCinzana, **SorghumPalmira**.
- Model**: List includes Init, Samara v1, **Samara v2**, SARRAHMil2, SarrahV32, SarrahV32Test.
- Observed data (optional)**: List includes 96ETMF2, 96PluieF2, 96StressFloF2, 97CFETMF2, No.

Simulation dates section:

- Year of the beginning first simulation: 2010 (format yyyy)
- Year of the ending last simulation: 2010 (format yyyy)
- Beginning of the culture period: /1.. (format dd/mm)
- End the culture period: /9.. (format dd/mm)

Folder: Risocas Id: [] Cancel Validate

Check the entities you want to see in the simulation name

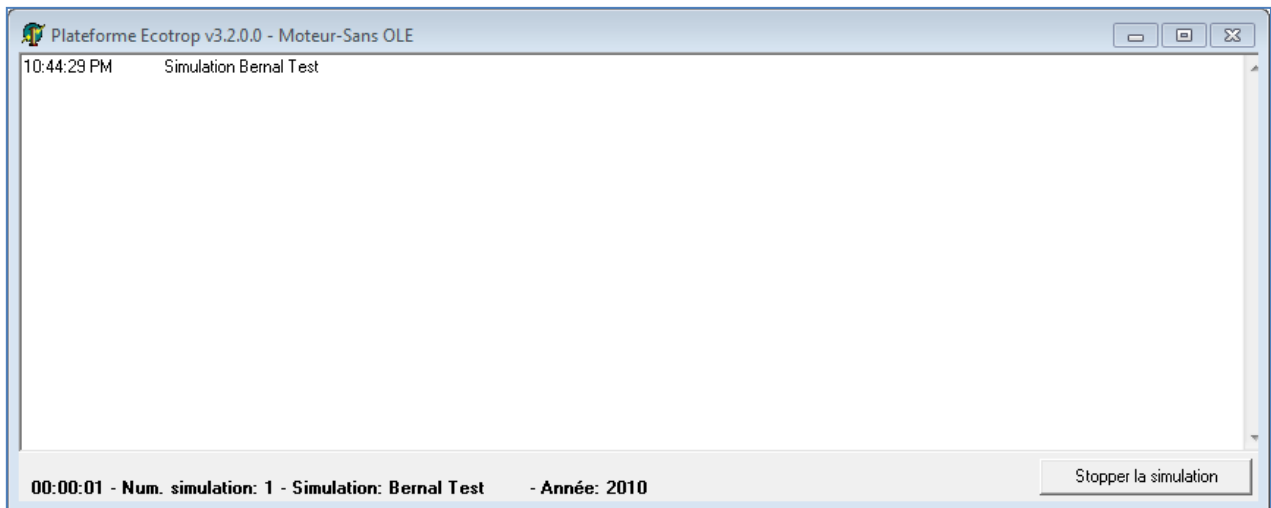
- Fill in the rest of the fields concerning the dates, making sure that the formatting for the date in SAMARA and the windows system is in the **dd/MM/yyyy** format (further discussed in the **date format correction** section of this manual). Make sure the start and end dates of simulation comprise your experimental duration.

- d. Choose which folder to save the simulation setup in, then provide a unique ID for your simulation setup; this ID will be the name of the entry that will be displayed on the simulations scenario list
- e. Click on **Validate** next to the ID entry field to save the settings, attempting to exit the interface without choosing to save or cancel the changes will result in an error. If no error appears, your new simulation ID will now be an entry in the simulations list in the simulations interface

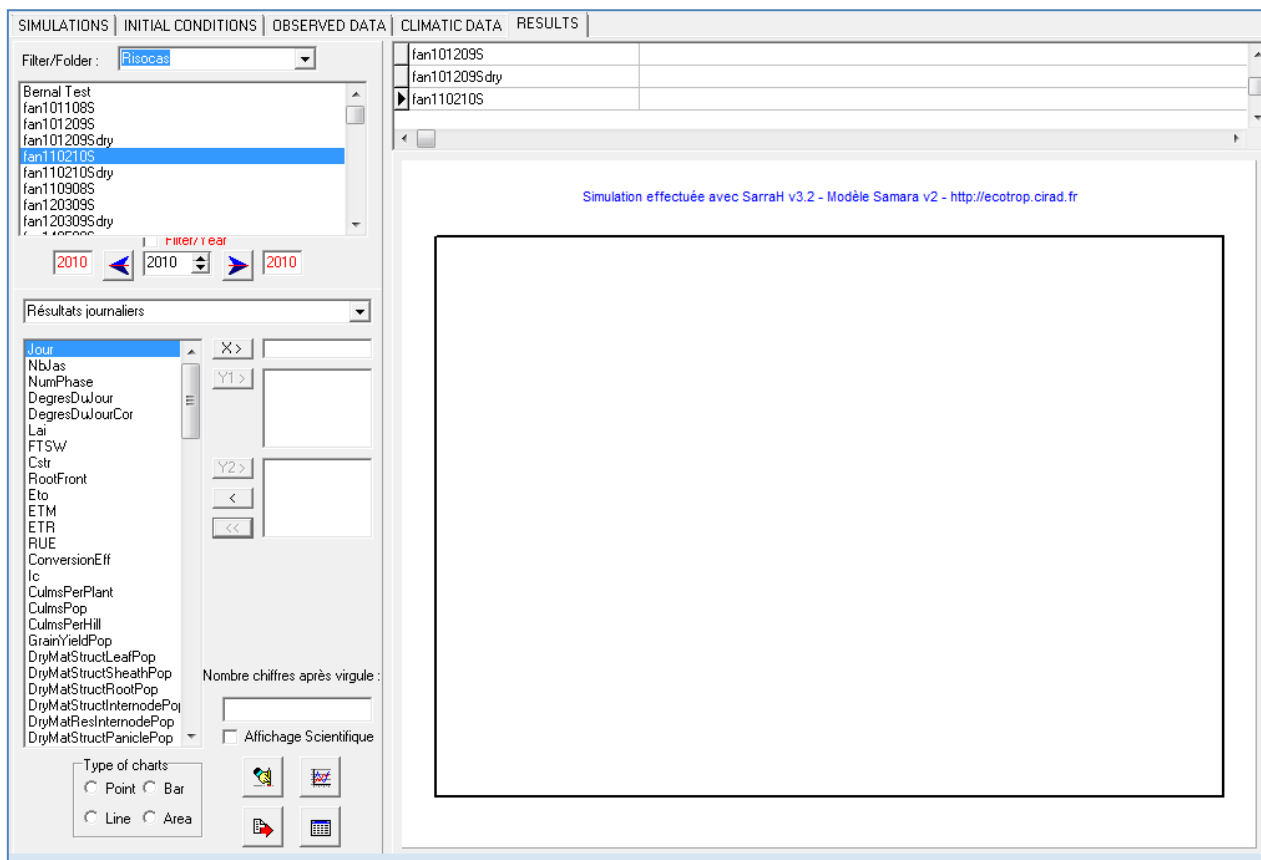
Running A Simulation

Now you are ready to simulate the provided conditions with your unique simulation scenario ID. The steps below describe how to run a newly created scenario.

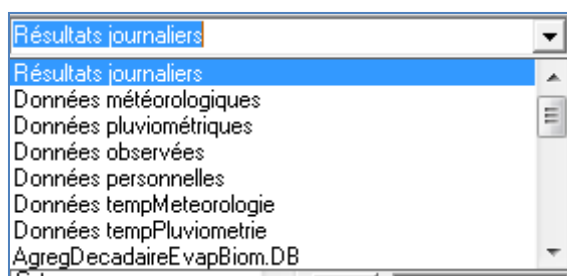
- a. Choose your simulation **ID** and hit the button **Launch...** at the bottom of the simulation scenarios list, a window should appear for a moment which indicates the simulation is being done.



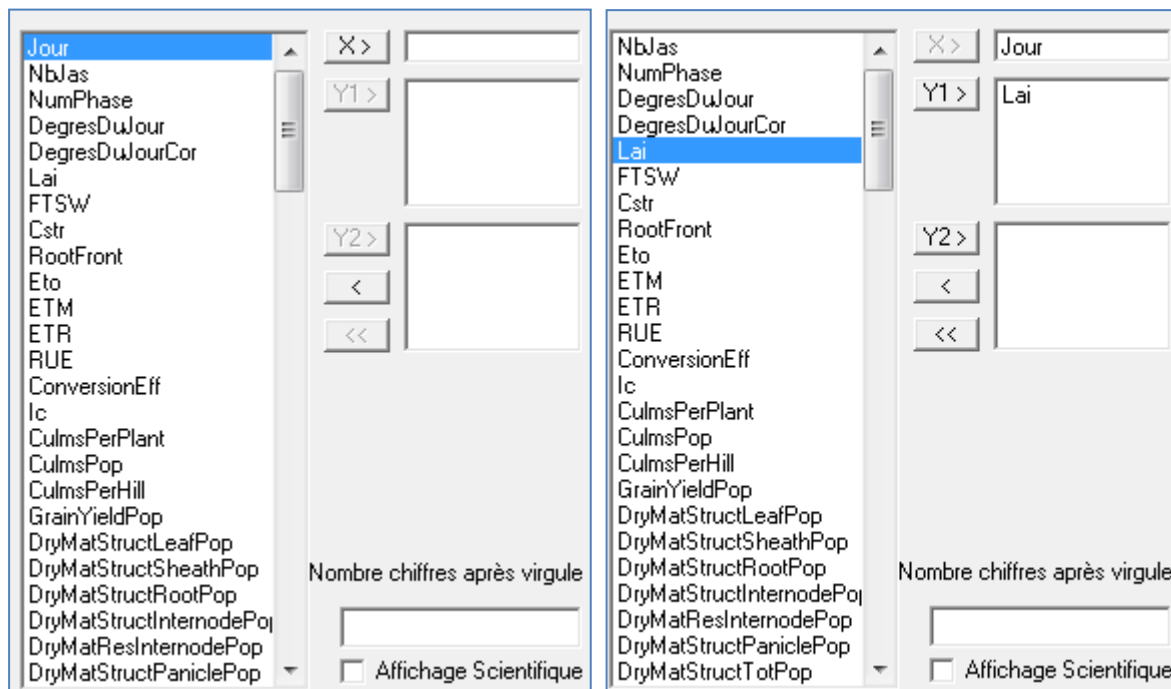
- b. Once the simulation is done you can view the results of simulation by clicking the **RESULTS** tab at the top of the interface. A window with a graph display to the right should appear



- c. To the left of the window is the “variables to be graphed” section, this is where you will choose which parameters to view on the graph to the right. A dropdown box filters the outputs / observed variables into different categories



- d. Select the variables which you want to view by clicking them from the list to the left and then pressing **X>** to set the x axis and then **Y1>** or **Y2>** depending on how you want to view the graph. **<** and **<<** removes a previously selected variable and removes all selected variables respectively. Once all the variables of interest are selected, we are ready to graph.



To Graph the Results

A group of four buttons can be found to the lower left of the results interface



is for refreshing the graph and deleting what is currently graphed



is for graphing the selected **X** and **Y1, Y2** variables in the previous step

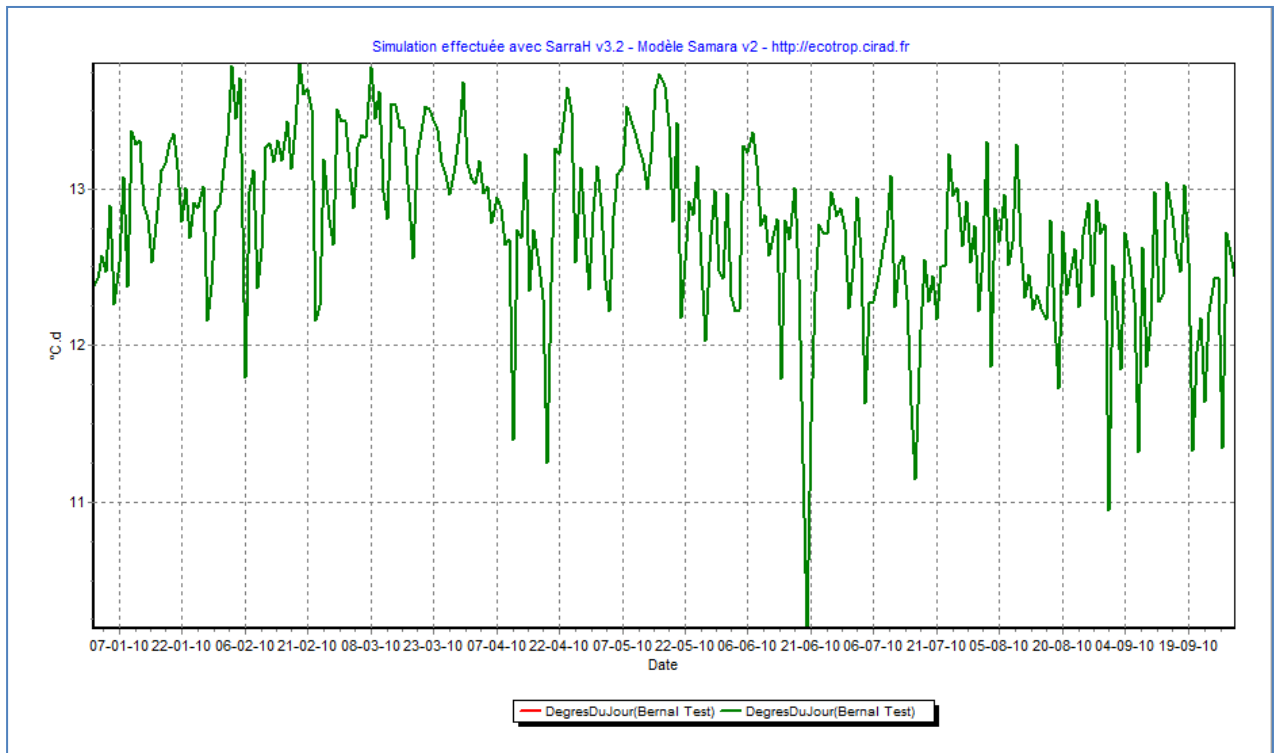


Figure 12 graph of a simulation result with chosen variable Jour and DegreesDuJour



is for viewing the results in tabular mode, every output in the currently selected category is shown regardless of which parameters are chosen for X, Y1, and Y2

IdSimule	NumeroSimule	Jour	NbJas (d)	NumPhase (none)	DegresDwJour (°C.d)	DegresDwJourCor (°C.d)	Lai (m ² /m ²)	MaxLai (m ² /m ²)	FTSW (none)
Bernal Test	1	01-01-2010	-141		12.3832167832168	12.3832167832168	0	0	C
Bernal Test	1	02-01-2010	-140		12.4304195804196	12.4304195804196	0	0	C
Bernal Test	1	03-01-2010	-139		12.5723021582734	12.5723021582734	0	0	C
Bernal Test	1	04-01-2010	-138		12.4716417910448	12.4716417910448	0	0	C
Bernal Test	1	05-01-2010	-137		12.894094488189	12.894094488189	0	0	C
Bernal Test	1	06-01-2010	-136		12.2624113475177	12.2624113475177	0	0	C
Bernal Test	1	07-01-2010	-135		12.526618705036	12.526618705036	0	0	C
Bernal Test	1	08-01-2010	-134		13.0718487394958	13.0718487394958	0	0	C
Bernal Test	1	09-01-2010	-133		12.3746268656716	12.3746268656716	0	0	C
Bernal Test	1	10-01-2010	-132		13.3648351648352	13.3648351648352	0	0	C
Bernal Test	1	11-01-2010	-131		13.2792792792793	13.2792792792793	0	0	C
Bernal Test	1	12-01-2010	-130		13.3086363636364	13.3086363636364	0	0	C
Bernal Test	1	13-01-2010	-129		12.8954545454545	12.8954545454545	0	0	C
Bernal Test	1	14-01-2010	-128		12.8090551181102	12.8090551181102	0	0	C
Bernal Test	1	15-01-2010	-127		12.53	12.53	0	0	C
Bernal Test	1	16-01-2010	-126		12.775	12.775	0	0	C
Bernal Test	1	17-01-2010	-125		13.1164	13.1164	0	0	C
Bernal Test	1	18-01-2010	-124		13.1568702290076	13.1568702290076	0	0	C
Bernal Test	1	19-01-2010	-123		13.2920353982301	13.2920353982301	0	0	C
Bernal Test	1	20-01-2010	-122		13.3534615384615	13.3534615384615	0	0	C
Bernal Test	1	21-01-2010	-121		13.1272727272727	13.1272727272727	0	0	C
Bernal Test	1	22-01-2010	-120		12.7873737373737	12.7873737373737	0	0	C
Bernal Test	1	23-01-2010	-119		13.0079365079365	13.0079365079365	0	0	C
Bernal Test	1	24-01-2010	-118		12.6835616438356	12.6835616438356	0	0	C
Bernal Test	1	25-01-2010	-117		12.9123529411765	12.9123529411765	0	0	C
Bernal Test	1	26-01-2010	-116		12.8729591836735	12.8729591836735	0	0	C
Bernal Test	1	27-01-2010	-115		13.0138392857143	13.0138392857143	0	0	C
Bernal Test	1	28-01-2010	-114		12.155487804878	12.155487804878	0	0	C




is for importing data from the tabulated results into a tab delimited text file

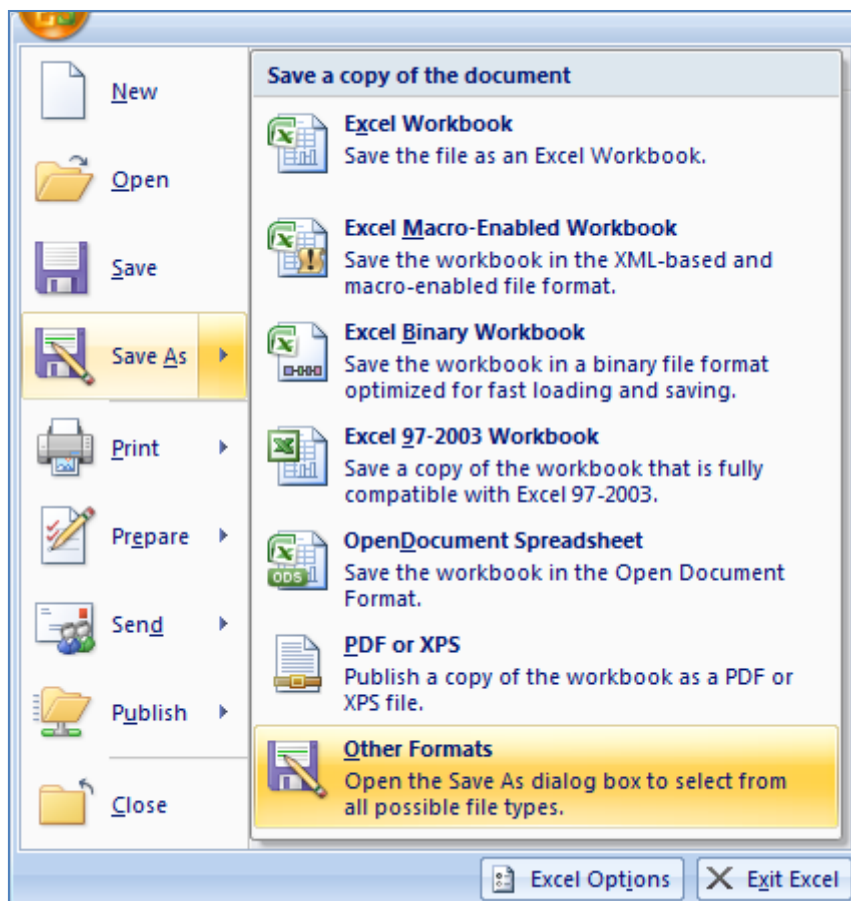
DATA IMPORTATION

To create a tab delimited file from MSExcel

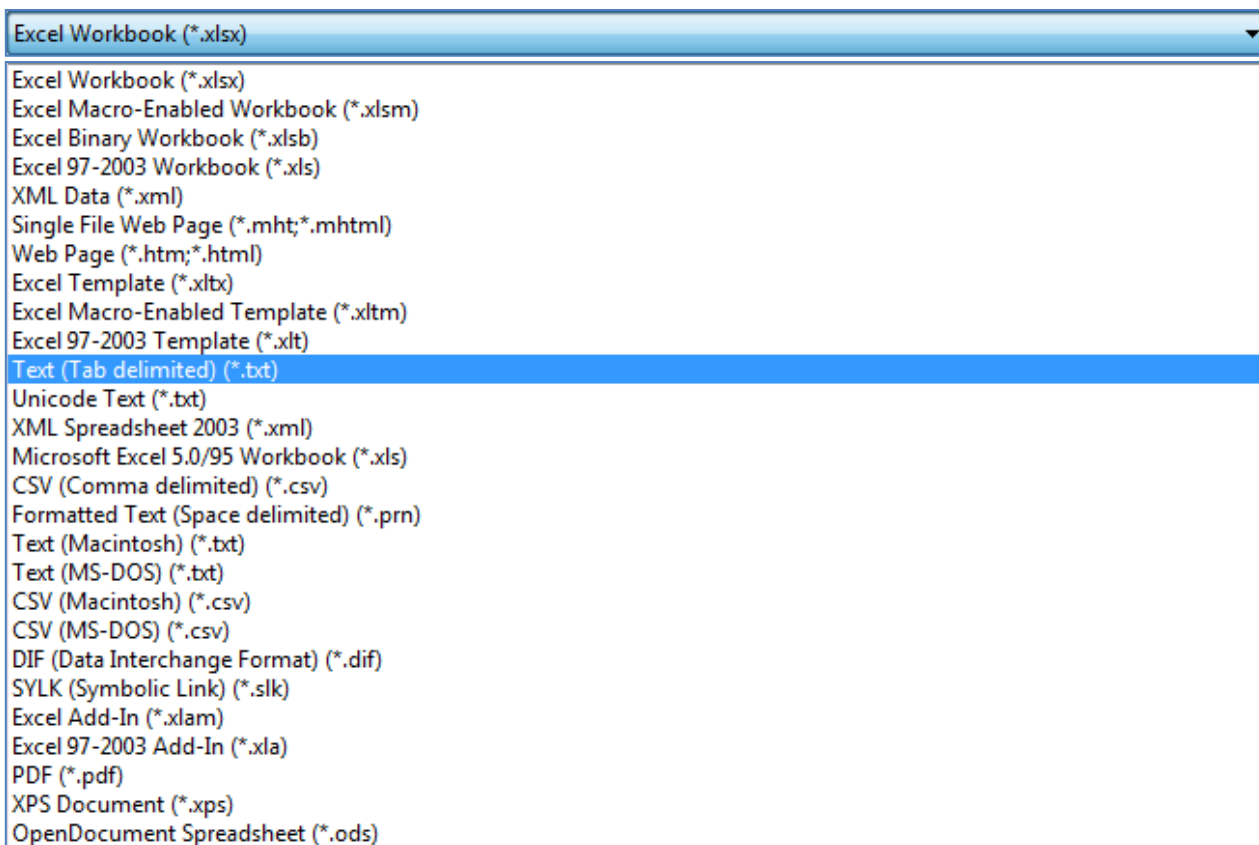
The excel file may be delimited by several symbols but it is recommended to use tabulations for the purpose of uniformity. Below is how to save an excel file into a tab delimited text file


Note : Samara can use non tab delimited files (files delimited by space, colon, etc.) but for uniformity, we will use the tab delimited formatting

- a. From the excel interface, click on the  button located at the very corner on the upper left, this will bring up a dropdown list; select `Save As` then click on `Other Formats` here



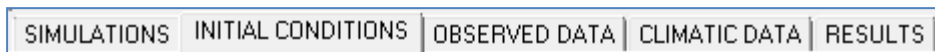
- b. A file selection window will pop up, from here select the type of file you want to save it as, in our case, a tab delimited text file



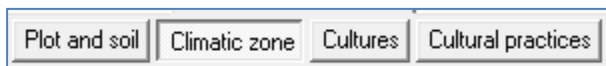
- c. After clicking on  , the file should be saved as a tab delimited text file.

To create a new station, country, or continent

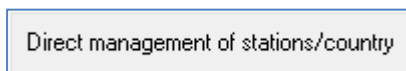
- a. At the Samara main interface, open the **Initial Conditions** tab



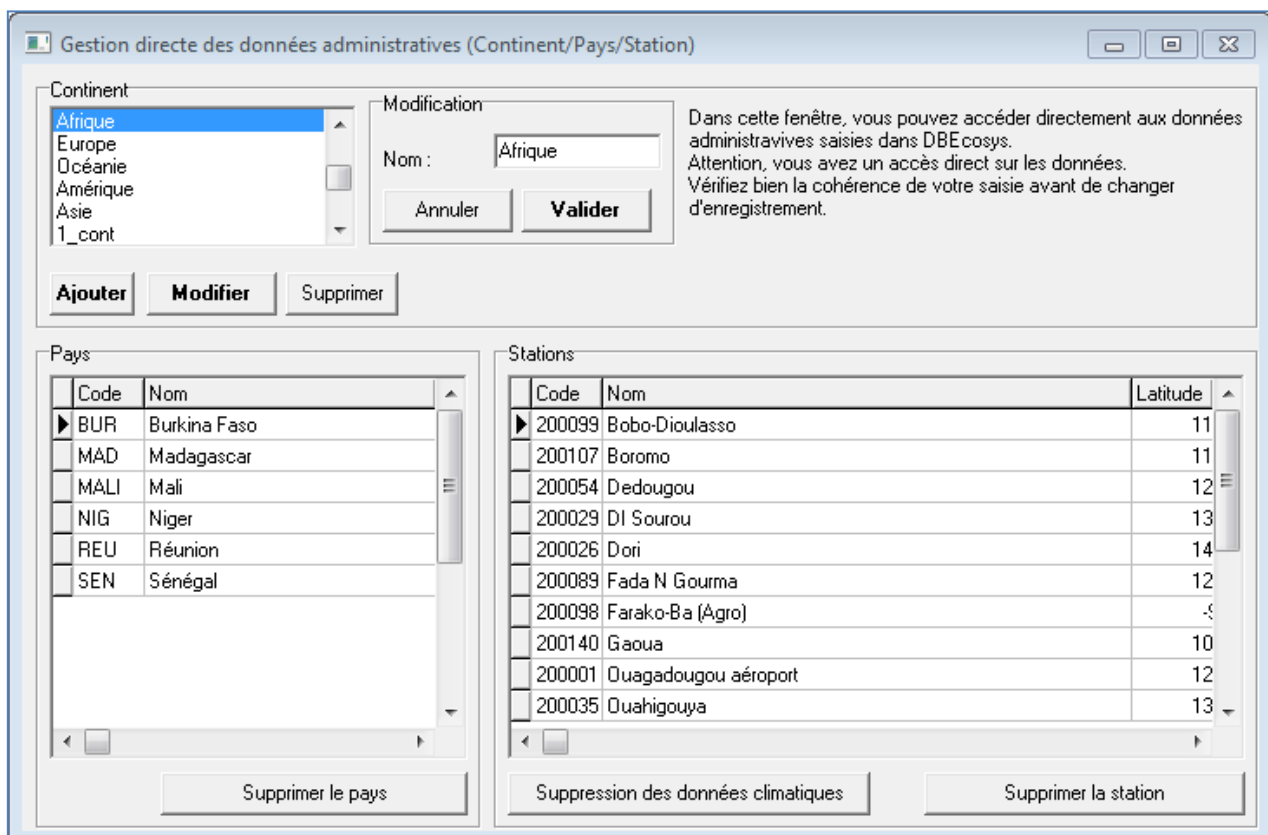
- b. Click on **Climatic Zone**



- c. Along the top of the window, click on **Direct management of stations/country.**



- d. Wait for the data administration window to appear



- e. Now you can choose, add, modify or delete a continent from the list. click on **Ajouter** , type in the desired name of the continent on the name field, then click on **Valider** . Your new continent is now saved to the database

Continent

- Afrique
- Europe
- Océanie
- Amérique
- Asie
- 1_cont

Modification

Nom : Afrique

Annuler Valider

Dans cette fenêtre, vous pouvez accéder directement aux données administratives saisies dans DBEcosys. Attention, vous avez un accès direct sur les données. Vérifiez bien la cohérence de votre saisie avant de changer d'enregistrement.

Ajouter Modifier Supprimer

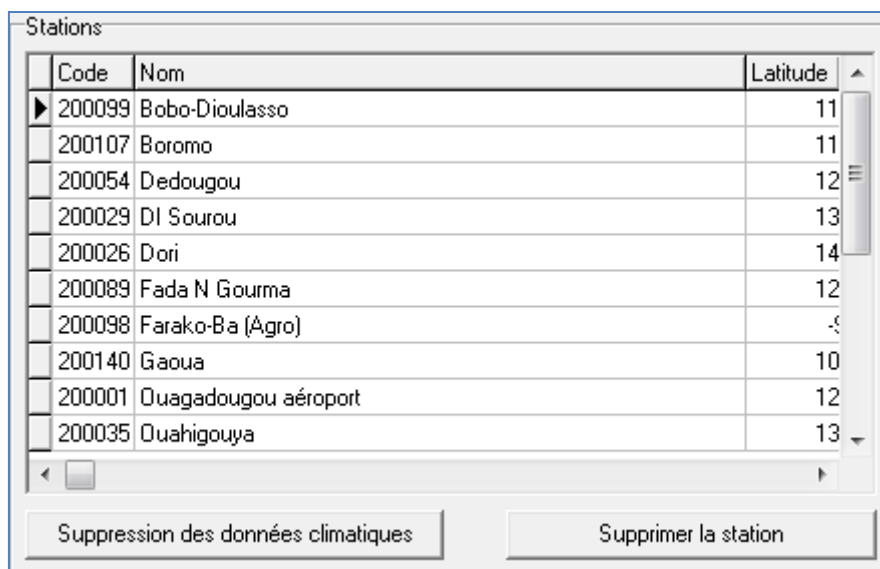
- f. Now specify country for weather station location. If you don't see the country of your weather station location, go to the end of the matrix hit the down arrow on the keyboard and you should be able to enter country code and name (please refer to the section named ` **To create new plot and soil characteristics** ` for the detailed procedure).

Pays

Code	Nom
BUR	Burkina Faso
MAD	Madagascar
MALI	Mali
NIG	Niger
REU	Réunion
SEN	Sénégal

Supprimer le pays

- g. Once you enter the country code and name then in the second matrix on right hand side of the window you can enter the weather station code, name, latitude, longitude and altitude in the similar way.




Code	Nom	Latitude
200099	Bobo-Dioulasso	11
200107	Boromo	11
200054	Dedougou	12
200029	DI Sourou	13
200026	Dori	14
200089	Fada N Gourma	12
200098	Farako-Ba (Agro)	-9
200140	Gaoua	10
200001	Ouagadougou aéroport	12
200035	Ouahigouya	13

Suppression des données climatiques Supprimer la station

To Import Data

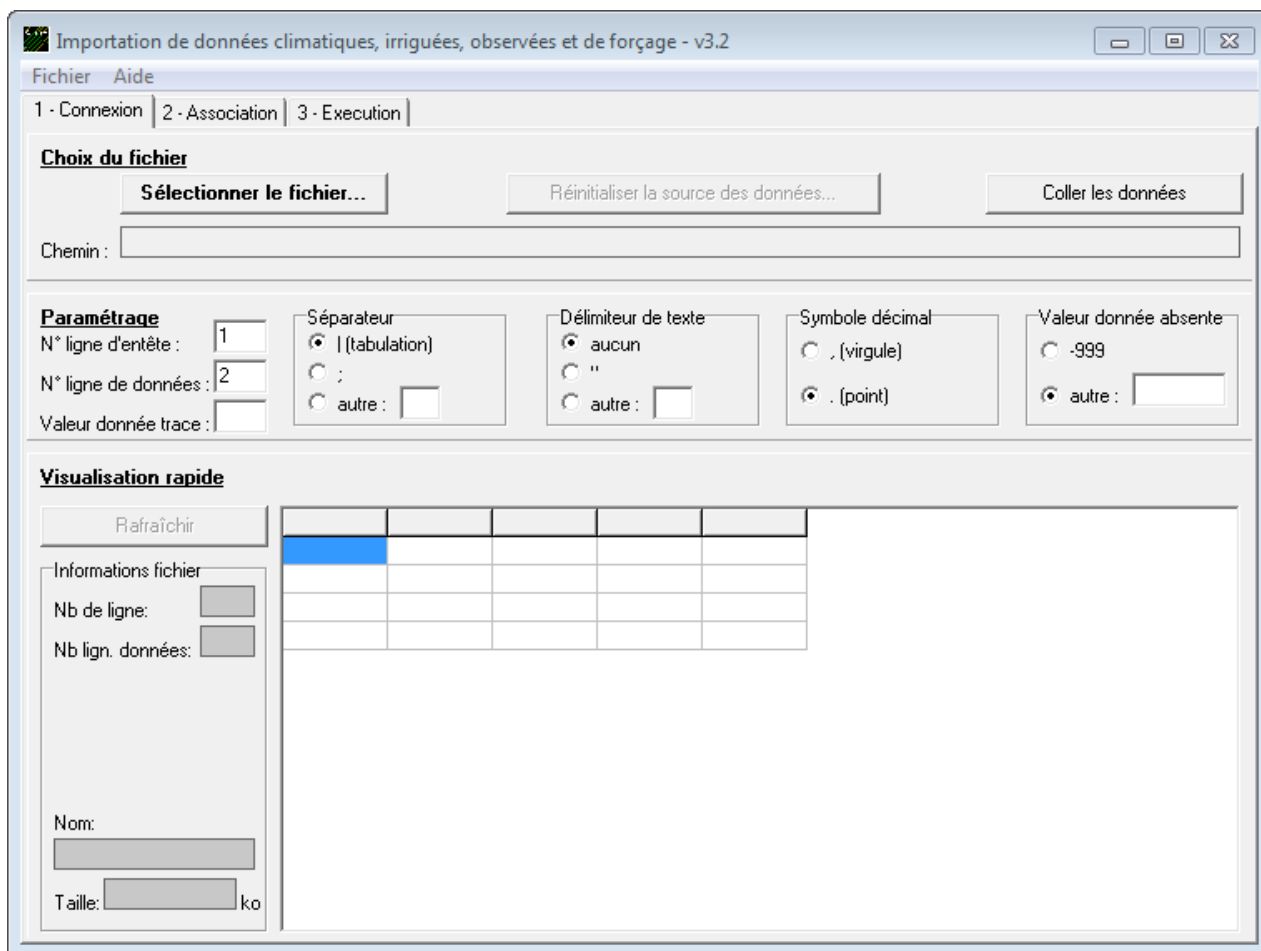
Note : These are general instructions to import sets of data, the same set of steps will also work for all other data types as long as they are in the proper file format, for this example we will import plot and soil data.

The following steps explain the processes of importing climatic data into SAMARA data base. We will detail the manual steps in importing data below, header names used for files to be used in manual importation need not be exactly like the header names in SAMARA as there will be a step in the procedure which will take care of the association.

- a. Hit the button  on the very corner at the top left of the main interface
- b. Select **manual data importation**

Automatic data importation
Manual data importation
Variables management
Tables compaction
Nettoyage Table
Empty the results tables
Request
Regenerate the calculated ETo
Countries and stations management ▶
Exit

c. Wait for a new window to appear, this is the manual importation interface



Note : You can click on any tab among 1 - Connexion | 2 - Association | 3 - Execution but it won't work unless you have previously done a previous step among the three

d. Select the **1 - Connexion** tab, a file importation interface should appear

The screenshot shows a software interface with three tabs: "1 - Connexion", "2 - Association", and "3 - Execution". The "1 - Connexion" tab is selected. Below the tabs, there are three buttons: "Sélectionner le fichier...", "Réinitialiser la source des données...", and "Coller les données". A "Chemin:" text box is located below these buttons.

The "Paramétrage" section contains several configuration options:

- N° ligne d'entête:
- N° ligne de données:
- Valeur donnée trace:
- Séparateur: | (tabulation), ;, autre:
- Délimiteur de texte: aucun, ", autre:
- Symbole décimal: . (virgule), . (point)
- Valeur donnée absente: -999, autre:

The "Visualisation rapide" section includes a "Rafraîchir" button and a preview table with 5 columns and 5 rows. The first cell of the table is highlighted in blue. To the left of the table is a sidebar with "Informations fichier" and fields for "Nb de ligne:", "Nb lign. données:", "Nom:", and "Taille:" (with a "ko" unit).

e. Click the button **Sélectionner le fichier...** in this interface and select the file containing the data to be imported from your system, again the default format is a tab delimited text file.

- f. You should see a preview of the data (ready to be imported) inside the grid displayed in the interface.

1 - Connexion | 2 - Association | 3 - Execution

Choix du fichier

Sélectionner le fichier... Réinitialiser la source des données... Coller les données

Chemin : D:\Projets Cirad\RIDEV\METEO\Meteo_MADAGASCAR_SENEGAL.txt

Paramétrage

N° ligne d'entête : 1

N° ligne de données : 2

Valeur donnée trace :

Séparateur
 | (tabulation)
 ;
 autre :

Délimiteur de texte
 aucun
 "
 autre :

Symbole décimal
 , (virgule)
 . (point)

Valeur donnée absente
 -999
 autre :

Visualisation rapide

Rafraîchir

Informations fichier

Nb de ligne: 2912

Nb lign. données: 2911

Nom: Meteo_MADAGASCAR_

Taille: 194.429 ko

CodeStation	Jour	Tmax	Tmin	Tmoy	HMax	HMin	HMoy	Vt
Ivory	01/01/2009	32.1	20.5		96	40		1.956018E
Ivory	02/01/2009	29.9	19.2		96	46		1.9097222
Ivory	03/01/2009	33.1	21.1		94.5	36		1.5856481
Ivory	04/01/2009	30.3	18.2		96	46		1.7361111
Ivory	05/01/2009	30.2	19.7		96	45.5		1.539351E
Ivory	06/01/2009	29.8	20.7		95.5	51.5		1.4814814
Ivory	07/01/2009	30.7	19		96	46.5		1.6203703
Ivory	08/01/2009	31.3	19.7		94.5	46		1.4583333
Ivory	09/01/2009	31.6	19.8		96	40		1.5856481
Ivory	10/01/2009	30.3	17.9		96	42		1.979166E
Ivory	11/01/2009	30.9	18.9		96	40.5		1.5856481
Ivory	12/01/2009	30.4	18.4		96.5	41.5		1.6782407
Ivory	13/01/2009	28.6	16.9		96.5	50.5		2.627314E

- g. Now hit the **2 - Association** tab on the top of the same window and a window should appear

1 - Connexion | **2 - Association** | 3 - Execution

Données de type

- données pluviométriques
- données météorologiques
- données observées
- données d'irrigation
- données de forçage
- données d'ETP

Veuillez sélectionner le type de données à importer ci-dessus.

- h. Specify what data type you will enter and the station it falls under at the upper part of this interface

Données de type

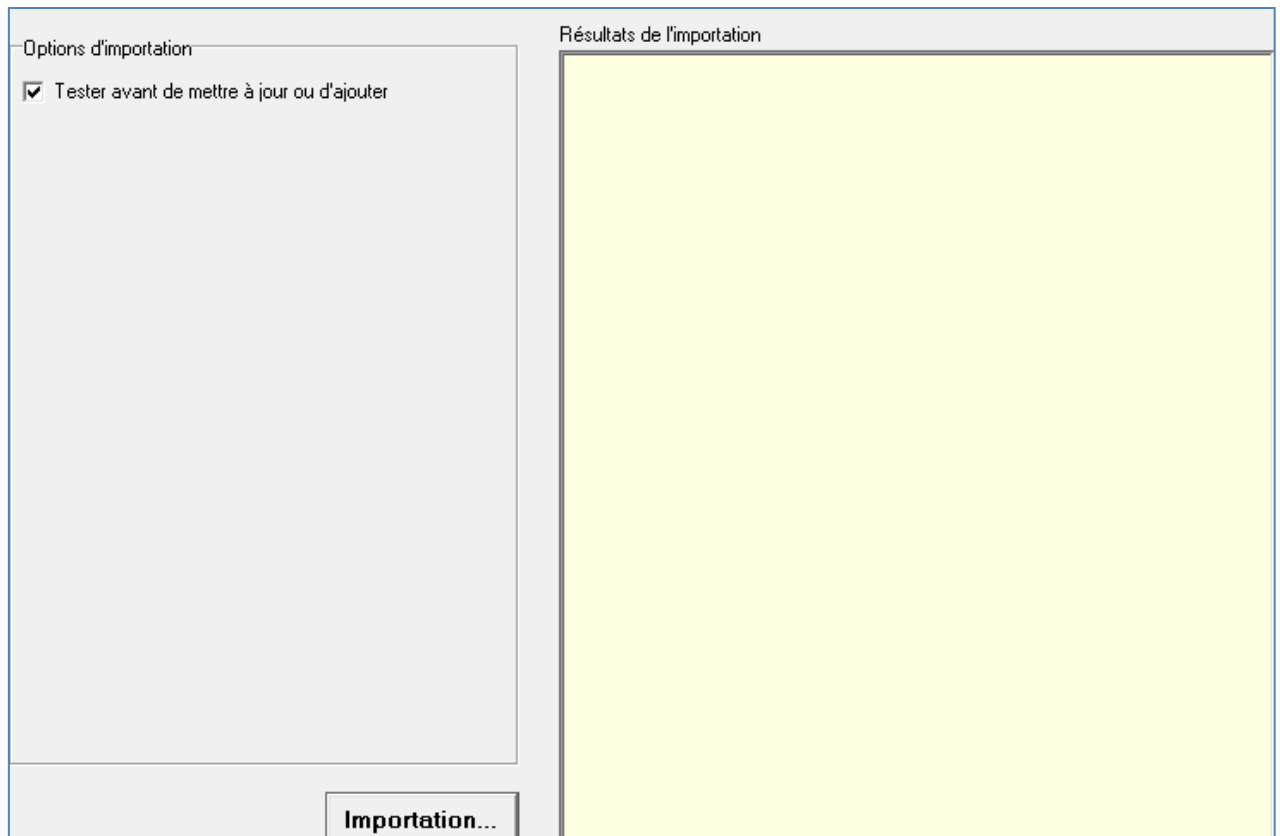
- données pluviométriques
- données météorologiques
- données observées
- données d'irrigation
- données de forçage
- données d'ETP

Continent	Pays	Station
Afrique	Burkina Faso	Andranomanelatra
Europe	Madagascar	Ankepaka
Océanie	Mali	Ivory
Amérique	Niger	Antsirabe
Asie	Réunion	
1_cont	Sénégal	

- i. An association section will appear below, this is where we will associate the header names we used in the files with the header names used by Samara just in case they differ (say the file is in another language); press

The screenshot shows a software interface with three main panels: 'Votre fichier', 'DBEcosys', and 'Résultat'. The 'Votre fichier' panel contains a list of header names: CodeStation, HMax, HMin, HMoy, Vt, Ins, Rog, ETP, and Jour. The 'DBEcosys' panel contains a list of header names: Jour, HMax, HMin, HMoy, Vt, Ins, Rog, and ETP. A button labeled '<- Associer ->' is positioned between the two lists. The 'Résultat' panel displays the following associations: Tmax <--> TMax, Tmin <--> TMin, and Tmoy <--> TMoy. Below the 'Résultat' panel, there are two buttons: '<-- dissociier un champ <--' and '<<-- Tout dissociier <<--'.

j. Once done, select the **3 - Execution** tab and a window like the one below should appear



k. Leaving the "Tester avant de mettre à jour ou d'ajouter" checked (as shown) and clicking the button **Importation...** will run a test execution whether the data can be imported or not (if there is conflict with values or date format in the file) no actual data will be saved

ATTENTION - ATTENTION - ATTENTION - ATTENTION
Il s'agit d'un test de mise à jour car la case
"Test de mise à jour ou d'Ajout" est cochée
AUCUNE DONNÉE N'A ÉTÉ ÉCRITE DANS DBEcosys

l. Once you confirm that the data can be imported, simply uncheck the checkbox mentioned above and click **Importation...** again, this time the data will be imported and saved to the database

m. After importation of data has been done, a window that prompts you to update FAO will appear; You may choose from several available scopes according to the scope of the data you have imported

Mise à jour du bilan ETo d'après FAO 56

Lancer la mise à jour...

Sur toute la base de donnée Sur un pays

Sur un continent Sur une station

Continent

Pays

Station

Exécuter la mise à jour

Information de la progression...

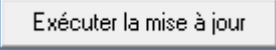
Continent :
Reste:

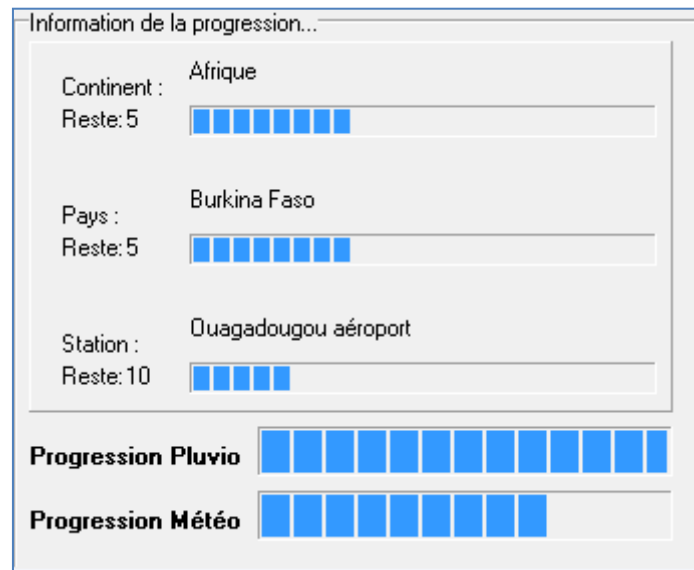
Pays :
Reste:

Station :
Reste:

Progression Pluvio

Progression Météo

n. After specifying the scope, press  and the update should begin



o. Once the processing is over, close all windows except main interface. Now go to main interface and hit the button **CLIMATIC DATA** on top, you should find your imported data into database by selecting continent, country and weather station location you created earlier.

DATE FORMAT CORRECTION

How to spot an erroneous date format

Some installations of Windows have the default date format set to something other than “dd/MM/yyyy”, this can be observed when viewing the simulations setup window (simulations → creation and realization → modify)

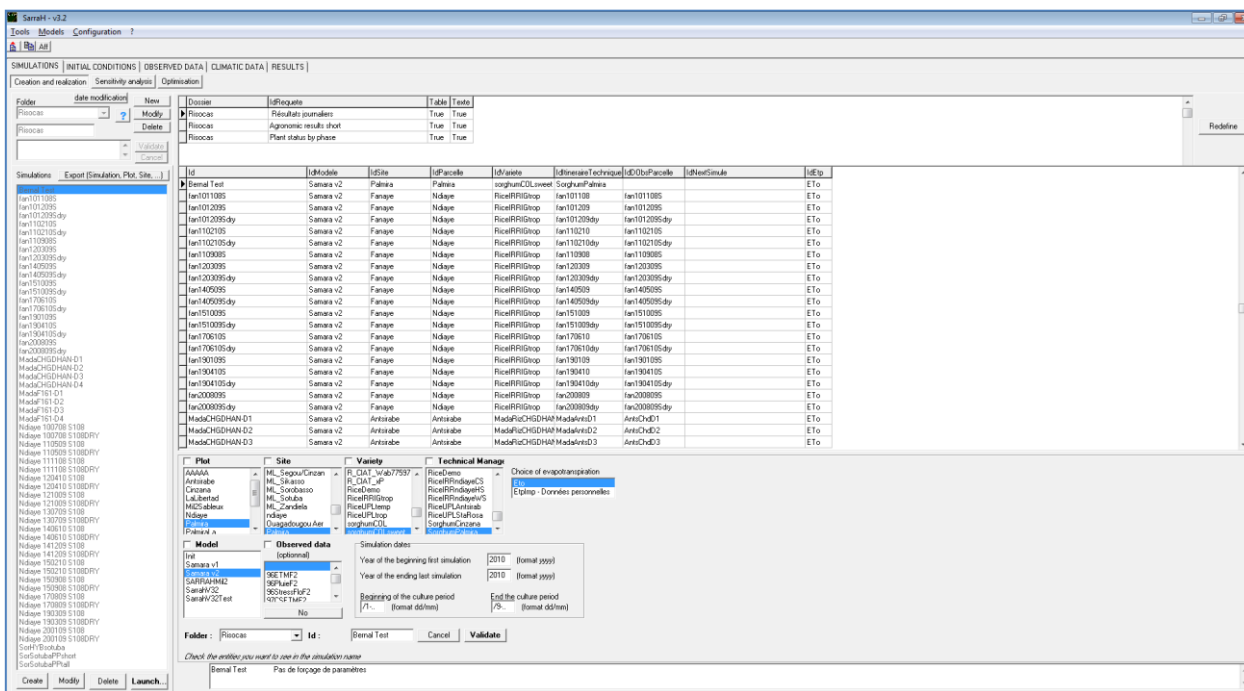


Figure 13 Simulation Setup Window

The error can be pointed out specifically in the “simulation dates” segment where the format which should be dd/mm is instead displayed as another format.

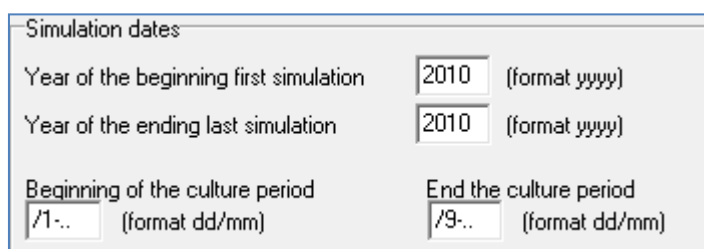
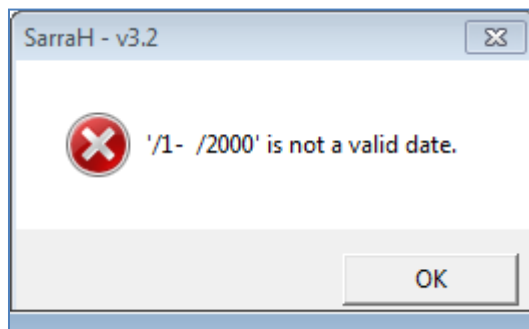


Figure 14 Erroneous Simulation Dates format

When we try to validate / run SAMARA with such erroneous date formatting, we will get an error like the one below and the interface will be unresponsive.



when correctly formatted, the display of figure 14 should be like so :

Simulation dates	
Year of the beginning first simulation	<input type="text" value="2010"/> (format yyyy)
Year of the ending last simulation	<input type="text" value="2010"/> (format yyyy)
Beginning of the culture period	End the culture period
<input type="text" value=".1/.1"/> (format dd/mm)	<input type="text" value="30/.9"/> (format dd/mm)

To correct the date formatting

Note : these steps are done using Windows 7 but shouldn't vary much across windows operating systems.

1. Click on the start button, in this case is a circle in the lower left corner with the windows logo



Figure 15 The windows start button / windows button as it appears in Windows 7

2. This will bring up the following popup, select **Control Panel** from the popup selection that appears

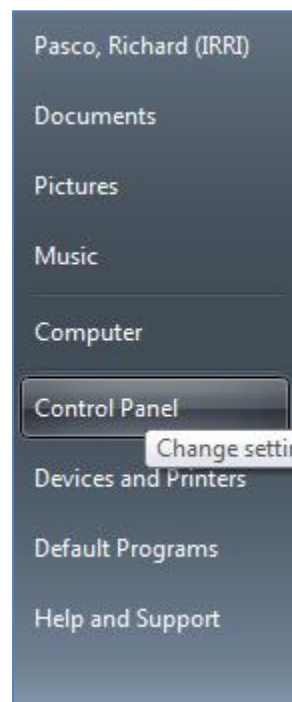


Figure 16 Popup list with Control Panel Selected

3. Another window will appear containing various options, click the **“Clock, Language, and Region”** option here

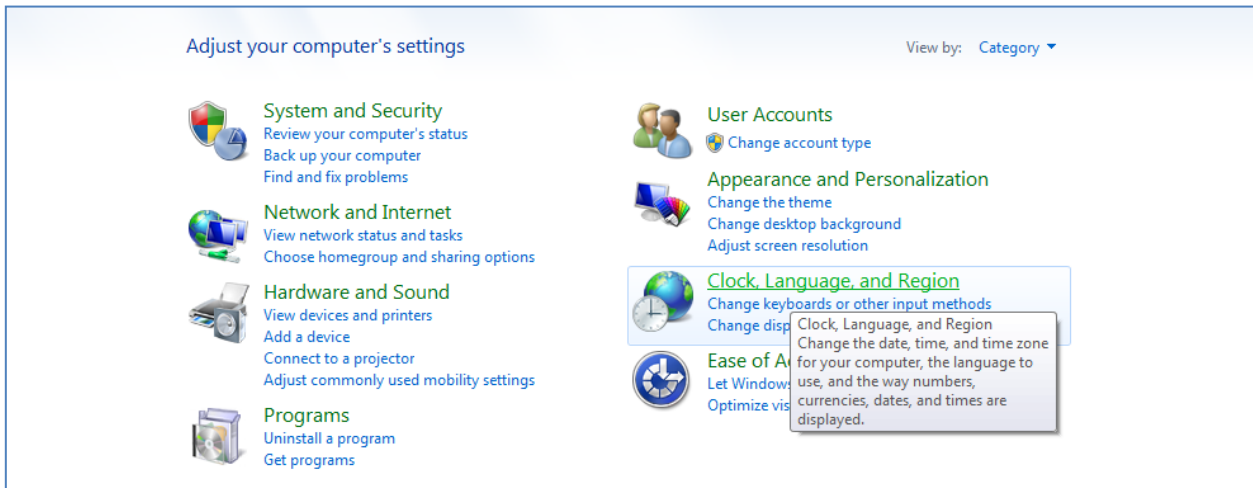
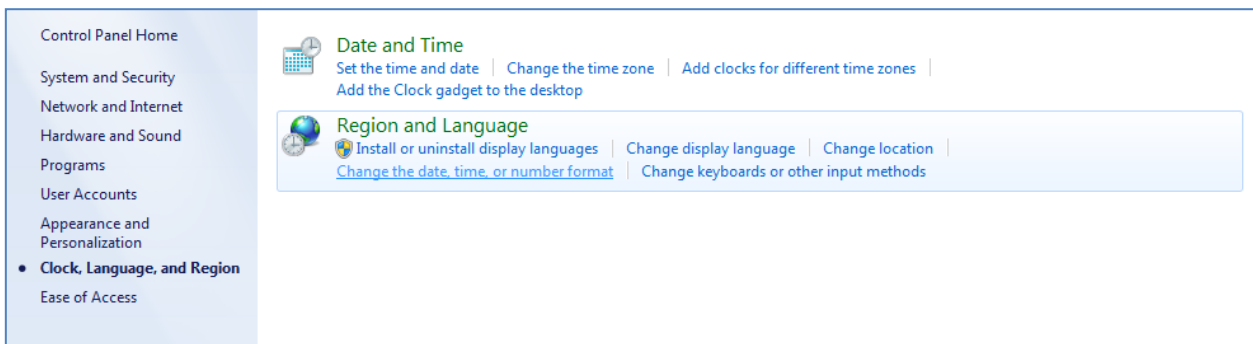


Figure 17 Control panel window containing various options

4. From the next menu that appears, a menu like the one pictured below will appear, click the **“Region and Language”** option from this menu



5. Another window will appear, this will contain the various format options for the date and time

Format:
English (Australia) ▼

Date and time formats

Short date: yyyy-MM-dd ▼

Long date: dddd, yyyy MMMM dd ▼

Short time: h:mm tt ▼

Long time: h:mm:ss tt ▼

First day of week: Monday ▼

[What does the notation mean?](#)

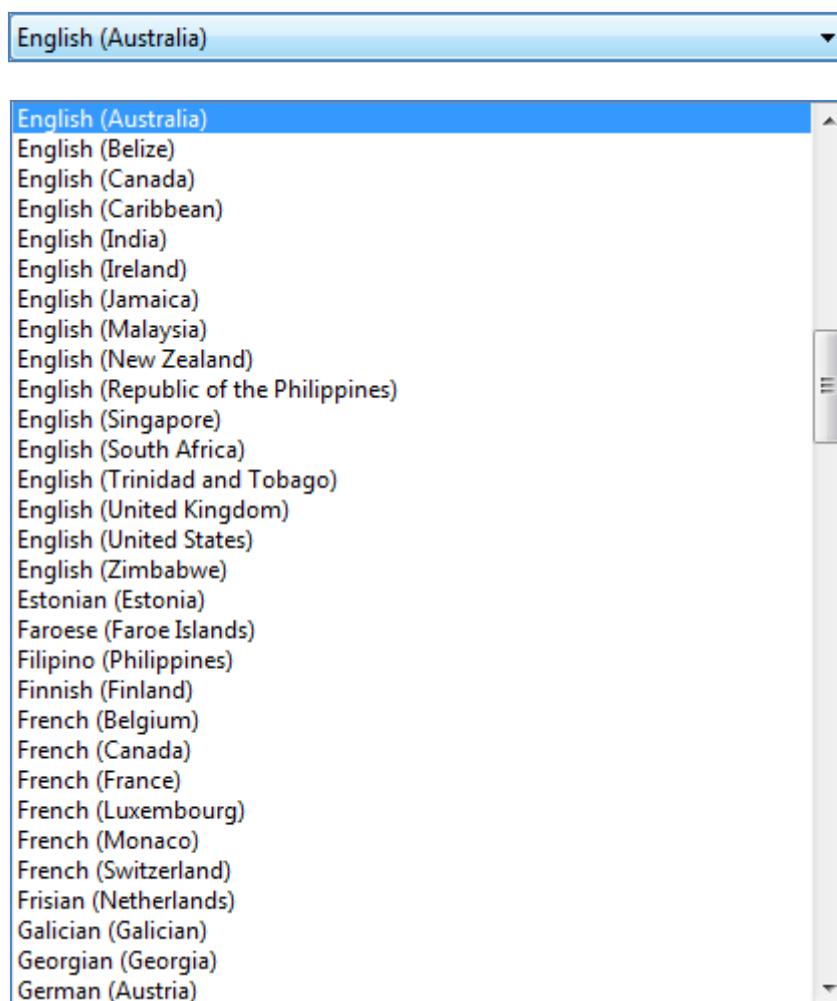
Examples

Short date:	2013-03-05
Long date:	Tuesday, 2013 March 05
Short time:	3:56 PM
Long time:	3:56:14 PM

[Additional settings...](#)

[Go online to learn about changing languages and regional formats](#)

6. Click on the topmost dropdown box labeled “**Format**” , from the various choices , select **English(Australia)** this contains the format we want



7. from the dropdown box labelled “**Short date**” , select the “**dd/MM/yyyy**” format

Date and time formats

Short date: d/M/yy

Long date: dddd, yyyy MMMM dd

Short time: h:mm tt

Long time: h:mm:ss tt

First day of week: Monday

[What does the notation mean?](#)

- d/MM/yyyy
- d/MM/yy
- d/M/yy
- d/M/yyyy
- dd/MM/yy
- dd/MM/yyyy**
- dd-MMM-yy
- dd-MMMM-yyyy
- yyyy-MM-dd
- yy/MM/dd
- yyyy/MM/dd

8. Click on  at the lower right corner of the window

9. **Restart Samara** for the changes to take effect