

SOFEA© (Soil Fumigant Exposure Assessment system)

Installation Guide

August 2004

Dow AgroSciences
9330 Zionsville Road
Indianapolis, IN 46268

SOFEA System Requirements.

SOFEA is a Microsoft Excel worksheet that incorporates VBA macros as the programming language. Thus, an up to date version of MS Excel is required. SOFEA runs the most consistently on PCs having large amounts of RAM (> 1 Gb). SOFEA can run on PC's having less memory than this optimal, but the user may be limited to smaller air sheds, receptor density, source term density, and years of simulation to avoid exceeding memory constraints. CPU time can be excessive for non-optimal PCs. SOFEA has been successfully run under WindowsTM XP and WindowsTM 2000. It will probably run on earlier versions of Windows, but the user may have to export the macro modules as Basic files (*.bas), and import them back into MS Excel if earlier versions of Windows and Excel are used. In addition, the 3rd party software Crystal Ball 2000 Pro (Trademark of Decisioneering Inc.; www.decisioneering.com) is a mandatory requirement for SOFEA and is used as the stochastic intermediate component for generating probability density functions (see Users Guide for details).

SOFEA offers the potential to link GIS data such as population density, elevation, and land cover to regional simulations. Thus, software such as ArcView (Trademark of ESRI, Inc.) may prove beneficial. GIS data is not a necessity to run SOFEA as default values can be used or coarse descriptors of GIS information can be input directly into SOFEA without the need of GIS software or GIS expertise.

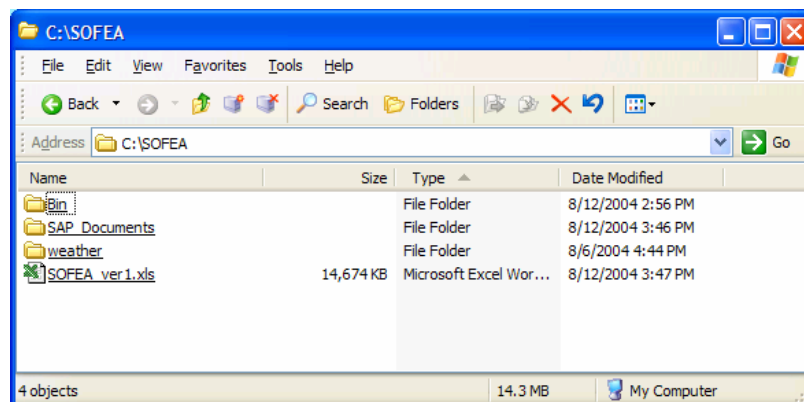
Installing SOFEA on a PC.

The software will have to be unzipped if downloaded from the Internet. The following installation instructions assume files have been unzipped. To install SOFEA, the user need only install the folder "SOFEA" to their hard drive. This folder can be installed in any directory on a host machine, but for demonstration purposes, the SOFEA folder is installed to the C: drive. If another location is selected, then the user will have to modify

the path for the weather file library folder as found in the first worksheet of the SOFEA model.

The content of the SOFEA folder and folder paths is illustrated in Figure 1. Here, the SOFEA folder was copied directly to the C: drive. The model is called “SOFEA_ver1.xls” and is found in the SOFEA directory. Subdirectories under SOFEA include “Bin”, “SAP_Documents”, and “weather”. The “Bin” directory contains all the executables that include the modified version of ISCST3 (ISCST3r) and the optimization program (OPT2). It is in this directory where all ISCST3 input and output files are written. Thus, if a simulation does crash, the user should first look at the ISCST3 error generation messages found in the file called “ISCST3.out” that is located in the Bin directory. The subdirectory “SAP_Documents” contains electronic versions of the Users and Programmers guide, and a concise methodology document that is in preparation for publication submission (8/04). The last subdirectory “weather” contains a library of ISCST3 annual weather files for use in stochastic simulations of SOFEA. The user will have to place all weather files that will be used with SOFEA in the “weather” subdirectory. Example meteorological files for a variety of California areas are provided. In addition, meteorological files specific for ISCST3 for the United States can be found at the SCRAM website of USPEA (<http://www.epa.gov/ttn/scram/>).

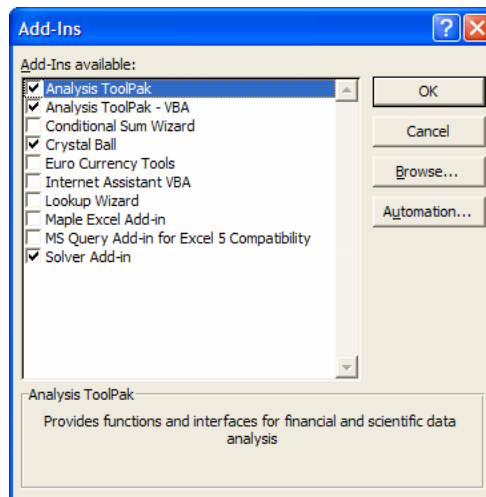
To summarize the directory file system, the subdirectories “Bin” and “weather” must be immediately below the directory where the SOFEA model resides (SOFEA_ver1.xls). This file structure is intact if the user copies the SOFEA folder without making any modifications.



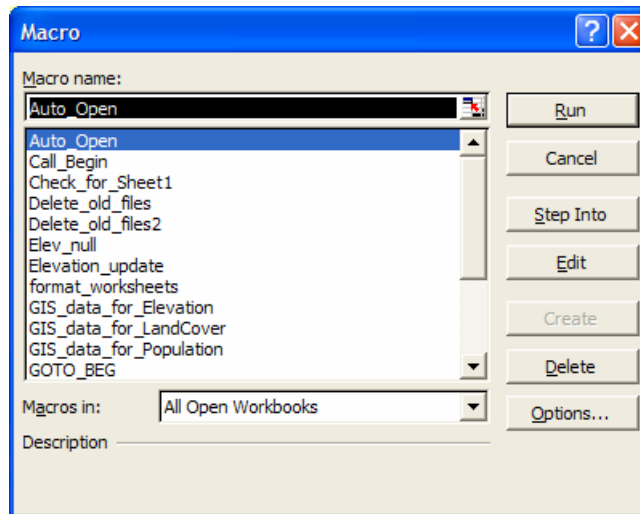
Once the SOFEA folder has been installed, the model is ready to run (or modify inputs and then execute) simply by opening up the MS Excel file called “SOFEA_ver1.xls” (assuming Crystal Ball has been successfully installed).

Crystal Ball Installation

The user will need to follow the Crystal Ball instructions for successful installation of Crystal Ball. However, the user will have the choice of opening up Crystal Ball every time MS Excel is opened (or not). If Crystal Ball is installed, but does not open with Excel, the user can do a search from Explorer, looking for the file called “CB.XLA”. Double clicking on this icon will open up Crystal Ball. In addition, the user needs to make sure that MS Excel is linked to the Crystal Ball Libraries. This may only be necessary the first time SOFEA is executed. For proper library linkage, under Excel, the user would select Tools>Add-ins ... and the following (or similar) dialog box will appear. Make sure Crystal Ball has been selected.



In addition, the user will need to properly verify that the Crystal Ball libraries are linked with the VBA code. This is accomplished via Tools>Macros>Macros ...of Excel. The following Dialog box (or something very similar will appear).



This dialog box lists all of the macros for the SOFEA model. Select any macro by highlighting it (it doesn't matter which one) and then select the "Edit" button. Be careful not to inadvertently deleted or modify any VBA code once you're in the edit mode. For example, if "Auto_Open" macro is selected for editing from the above dialog box, the user will get the following via the VBA editor of MS Excel.

```

Microsoft Visual Basic - SOFEA_ver1.xls - [Module1 (Code)]
File Edit View Insert Format Debug Run Tools Add-Ins Window Help
Type a question for help
Ln 701, Col 23

(General) Check_for_Sheet1

' This subroutine is automatically executed upon opening of the workbook "SOFEA_ver1.xls"
' The dialog sheet with the name of the modeling system, developer, and version number
' is displayed until the user closes the window (Window must be closed before execution
' of the worksheet macros can occur.
'
Dim k As Integer, kk As Integer

' Hide window, show dialog, unhide window
Call Check_for_Sheet1
' With ThisWorkbook
'   .Windows(1).Visible = False
'   .DialogSheets("Screen_Dialog").Show 'I eliminated the dialog box that had the name and my picture ...
'   .Windows(1).Visible = True         'graphics that need to go away in an attempt to save memory 6/16/04 sac
' End With
Call GOTO_BEG

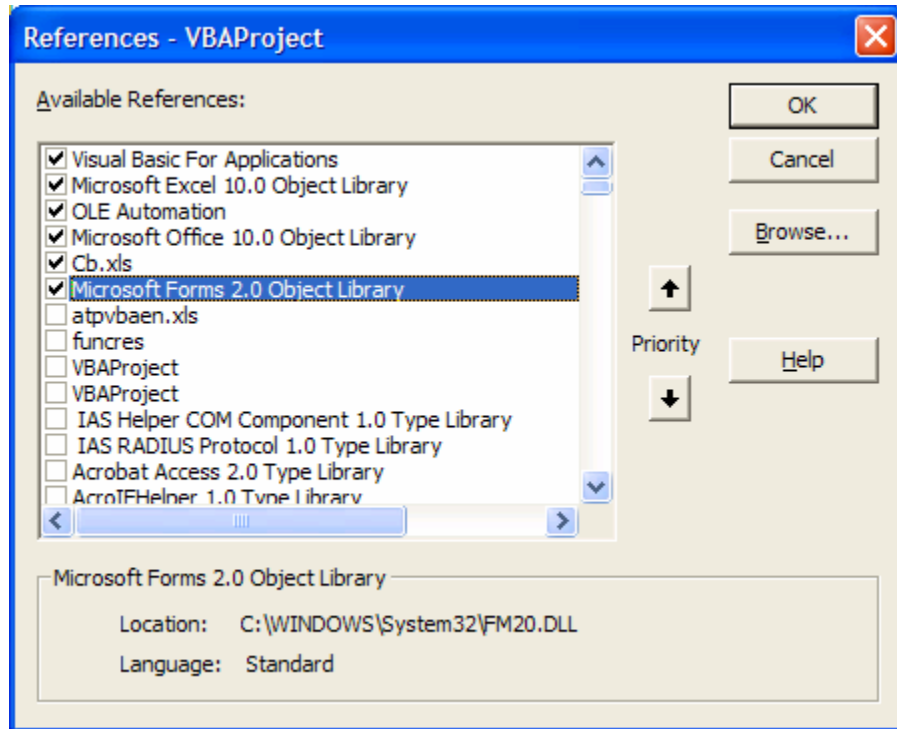
' ThisWorkbook.DialogSheets("Screen_Dialog").Hide
End Sub

Sub GOTO_BEG()
Worksheets("PDF Parameters").Activate
'CALL_BEG
End Sub

' Check for any other Excel workbooks that may be open. Often, Crystal Ball
' doesn't work properly if multiple workbooks are open. Keep only the 1,3-D
' system workbook called "SOFEA_ver1.xls".
'
Sub Check_for_Sheet1()
Dim w As Workbook
Application.DisplayAlerts = False
For Each w In Workbooks
If w.Name <> "SOFEA_ver1.xls" Then
w.Activate

```

From this VBA editor, select “Tools>References...” and the following dialog box will appear.



Again make sure Cb.xls has been selected. If not, make the selection and exit via the “O.K. button”. Once complete, the user can exit the VBA editor via the upper right window button “X” which will return you to the MS Excel worksheet for SOFEA. The user should now be ready to begin a simulation and should not have to repeat these steps again for properly linking Excel to the Crystal Ball libraries.