

Plant-A-Tree User Guide

Version 1.0 | 2020

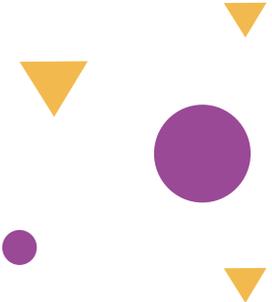
An initiative of the International Decision Support Initiative (iDSI)



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About Plant-A-Tree



Plant-A-Tree V1.0, an initiative of the International Decision Support Initiative (iDSI) is a modified version of an existing Microsoft® Office Excel Add-in called Simple Decision Tree V1.0, originally created by Thomas Seyller in 2008.

Plant-A-Tree features the following additional functions:

- Can grow more than 9 branches
- Copy and pasting of branches
- Costs and outcomes are now presented on the same tree

The Simple Decision Tree V1.0 Add-in is free software: you can distribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

Plant-A-Tree is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

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Messages from the International Decision Support Initiative



Professor Anthony Culyer

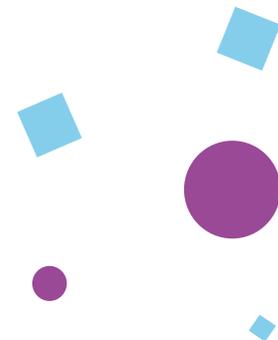
Emeritus Professor, University of York

Board Chairperson, International Decision Support Initiative

Calling all modellers! Are you short of money for buying software?

Plant-a-Tree is free software by iDSI for constructing models in CEA and HTA. It's a bit different from the competition as well as being free, as it's designed to help you understand the workings of a decision tree model while you're using it. Plant-a-Tree is iDSI's free offer because we are committed to enhancing young researchers' ability to propose greener (more efficient) healthcare systems reform.

Messages from the International Decision Support Initiative



Kalipso Chalkidou

Director of Global Health Policy, Center for Global Development

With Health Technology Assessment being adopted as a deliberative and inclusive mechanism for incorporating evidence into allocation decisions, the need for freely available software modelling tools is more pressing than ever. Plant-a-Tree is filling this gap, helping researchers address policy relevant questions and strengthen their modelling skills in parallel. Such open access non-commercial modelling platforms used, improved and co-owned by HTAers around the world offer a needed alternative to complex proprietary disease or intervention specific alternatives owned and driven by small groups of usually Northern experts.

Let this be the beginning of greater investment in disease and technology agnostic, simple and free models for assessing value for money of healthcare interventions, and a necessary complement to the open access movement now gaining momentum amongst donors and publishers the world over.

1. System Requirements

Operating system: Windows XP/Vista/7/10

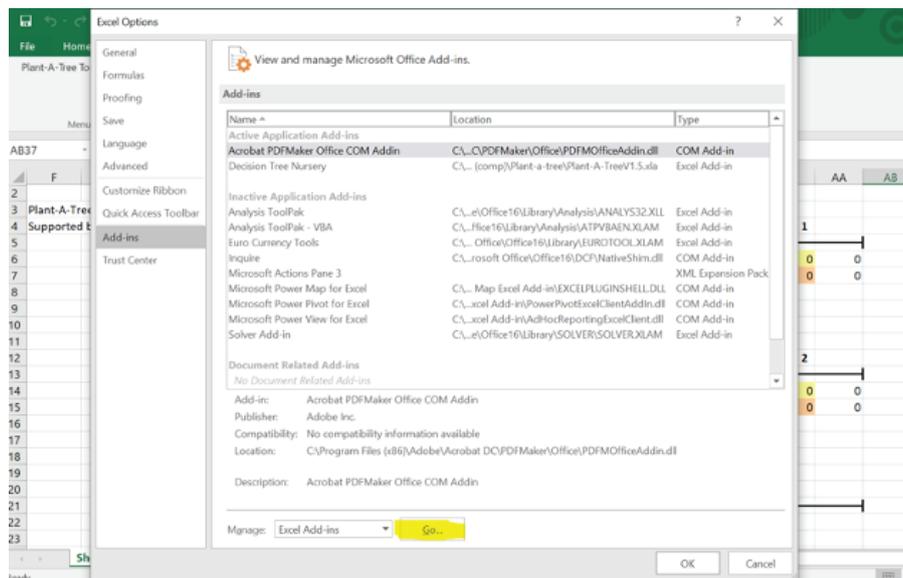
Tested on: Microsoft Excel 2013/2016, Office 365

2. Installation

a) Save the Plant-A-Tree .XLA file in a secure folder in your computer (i.e. not in your Downloads folder). Excel will encounter an issue locating the Add-In source if you move the .XLA file to a different folder after installation.

b) Launch Microsoft® Excel, click on **File > Options > Add-Ins**

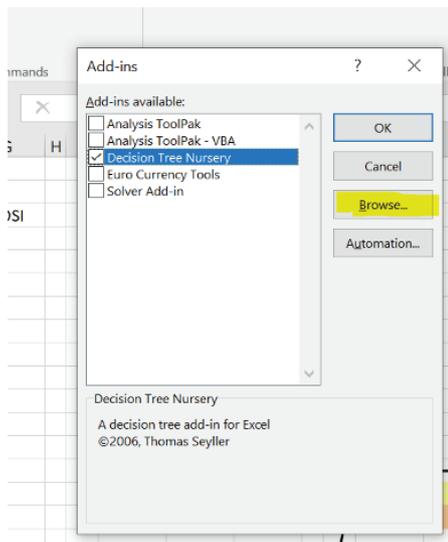
c) Near the bottom of the pop-up window, under **Manage**, change the drop-down list to “Excel Add-in”, then click **Go**



d) In the pop-up window, click **Browse**

e) Locate the Plant-A-Tree .XLA file you have downloaded and saved in a secure folder and click **OK**

f) Ensure that the Add-In “Decision Tree Nursery” is ticked.



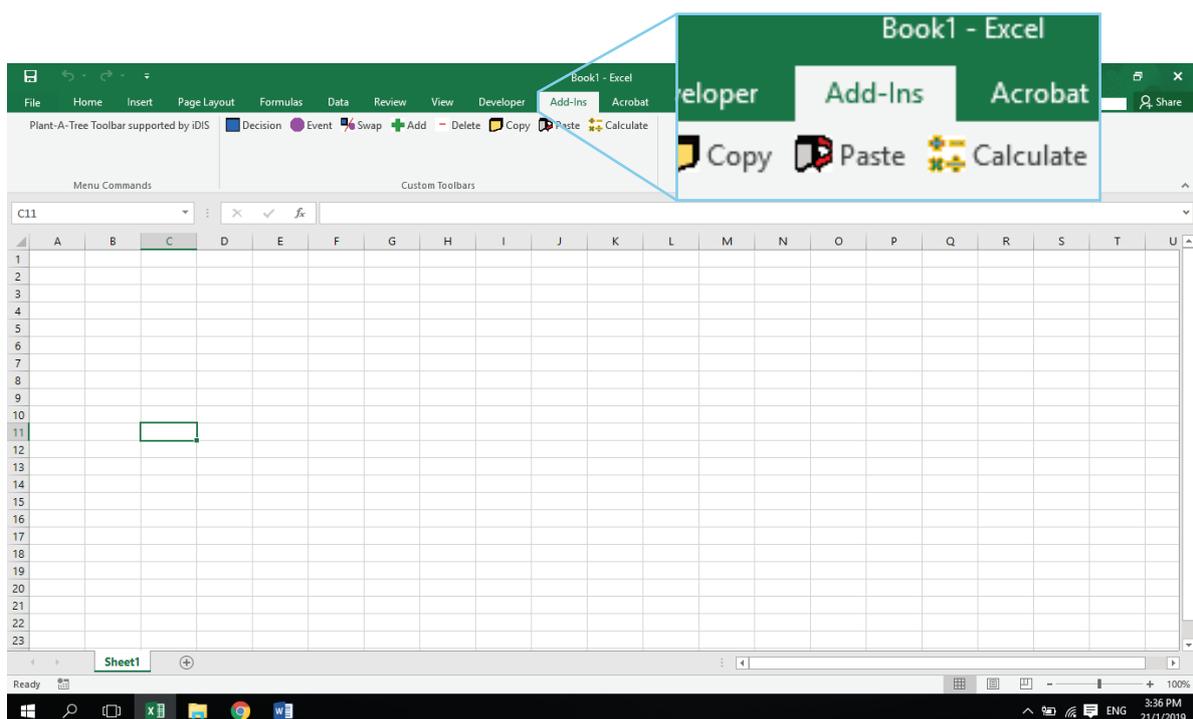
g) Close Microsoft® Excel. You will need to restart the program to use the Add-In. Ensure that Macro is enabled by clicking on the Enable Macro tab.

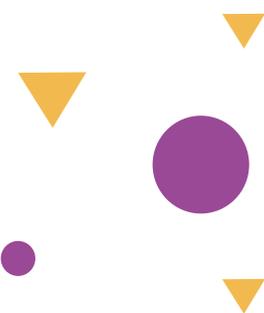
3. Getting Started

a) Launch a new Excel worksheet and click on the Add-ins tab.

- If you cannot find the Add-ins tab, please click on the File menu.
- Select Options from the menu. Then, click on the Customize Ribbon option on the left.
- Next, click on the Add-ins checkbox under the list of Main Tabs on the right.
- Lastly, click on the OK button.

b) Click on the Add-ins tab, you will find the program toolbar <Plant-A-Tree Toolbar> with a series of buttons available.





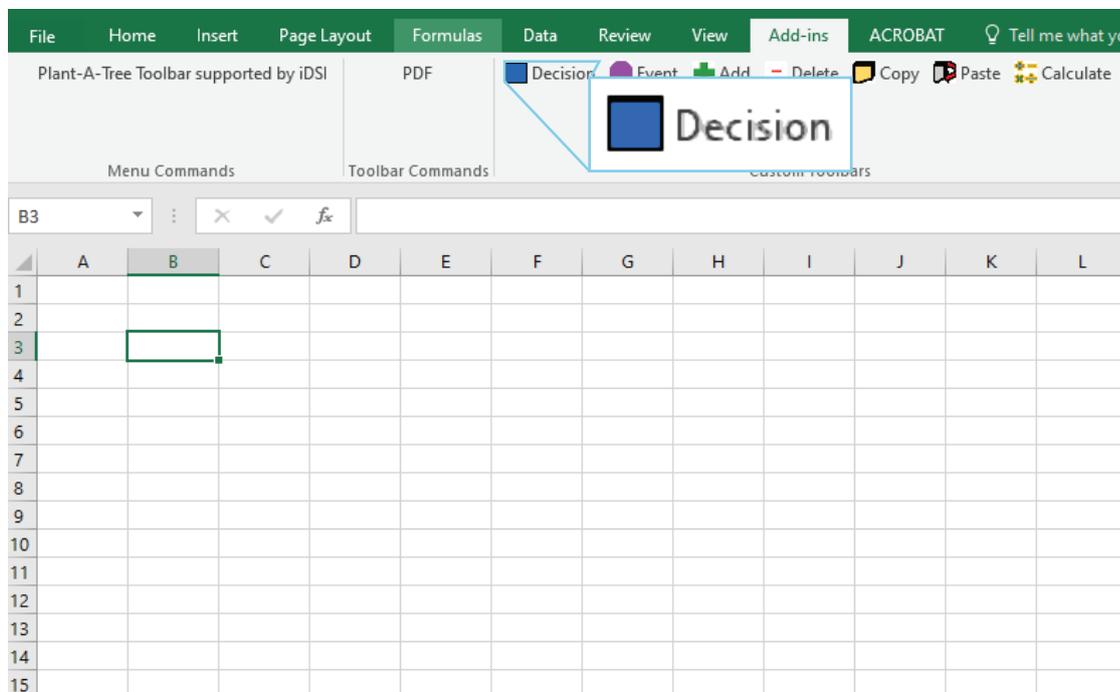
c) Functions of each button:

- **Decision:** To create a decision node
- **Event:** To create an event node
- **Add:** To add more nodes to the current decision/event node
- **Delete:** To delete Decision/Event/Leaf node
- **Copy:** To copy an Event subtree of the current node
- **Paste:** To paste the copied Event subtree to the existing leaf node
- **Calculate:** Start the Decision Tree analysis (folding back) if there are any amendments made (e.g. Overwritten of the value to the embedded formula cell) on the current tree



d) Examples

a. To create a decision node: choose any cell in the worksheet (e.g. cell B3) and click on **Decision** the button.



b. To create an event node: Choose either one of the end of the leaf node (cell H5 or H13) and click on the **Event** button.

The first screenshot shows the Excel ribbon with the 'Event' button highlighted. The second screenshot shows the decision tree with two event nodes added to the end of the leaf nodes. The event nodes are labeled '0.5 Event 1' and '0.5 Event 2'. The decision tree structure is as follows:

- Decision Node (Blue square)
 - Option 1
 - Cost1: 0, OutC1: 0
 - Event Node: 0.5 Event 1
 - Cost1: 0, OutC1: 0
 - Event Node: 0.5 Event 2
 - Cost2: 0, OutC2: 0
 - Option 2
 - Cost2: 0, OutC2: 0

c. To add more nodes to the current Event/Decision node, choose the cell immediately right of the existing node (cell I9 in the example) and click on the **Add** button. Each Add click adds one node. Repeat the process if more nodes are required.

The first screenshot shows the Excel ribbon with the 'Add' button highlighted. The second screenshot shows the decision tree with three event nodes added to the end of the leaf nodes. The event nodes are labeled '0.5 Event 1', '0.5 Event 2', and '0 Event 3'. The decision tree structure is as follows:

- Decision Node (Blue square)
 - Option 1
 - Cost1: 0, OutC1: 0
 - Event Node: 0.5 Event 1
 - Cost1: 0, OutC1: 0
 - Event Node: 0.5 Event 2
 - Cost2: 0, OutC2: 0
 - Event Node: 0 Event 3
 - Cost3: 0, OutC3: 0
 - Option 2
 - Cost2: 0, OutC2: 0

d. To delete the leaf node, choose the cell immediately right of the existing leaf node (cell N21 in the example) which you wish to delete and click on the **Delete** button.

The screenshot shows the Excel interface with the 'Plant-A-Tree' toolbar. The ribbon includes 'File', 'Home', 'Insert', 'Page Layout', 'Formulas', 'Data', 'Review', and 'View'. The 'Delete' button is highlighted in a callout box. The spreadsheet shows a decision tree with three options: Option 1, Option 2, and Option 3. Each option has associated costs and outputs. A leaf node is highlighted in green at cell N21. A red arrow points to the 'Delete' button, and a purple arrow points to the leaf node. The right side of the image shows the tree after the leaf node has been removed.

e. To delete an event node, choose the cell immediately right to the existing event node (cell I9 in the example) you wish to delete and click on the **Delete** button.

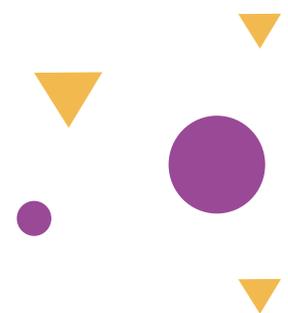
The screenshot shows the Excel interface with the 'Plant-A-Tree' toolbar. The ribbon includes 'File', 'Home', 'Insert', 'Page Layout', 'Formulas', 'Data', 'Review', and 'View'. The 'Delete' button is highlighted in a callout box. The spreadsheet shows a decision tree with three options: Option 1, Option 2, and Option 3. Each option has associated costs and outputs. An event node is highlighted in green at cell I9. A red arrow points to the 'Delete' button, and a purple arrow points to the event node. The right side of the image shows the tree after the event node has been removed.

f. To **Copy** and **Paste** an event subtree, choose the cell immediately right of the existing node of the subtree that you wish to copy (cell I9 in the example) and click on the **Copy** button. Then choose the cell that next to any existing leaf node that you wish to paste the subtree (cell M21 in the example) and click on the **Paste** button.

The image illustrates the process of copying and pasting an event subtree in a decision tree model. It is divided into three main sections:

- Top Section (Copy Action):** Shows the initial state of the decision tree. A callout box highlights the **Copy** button in the toolbar. A purple arrow points from cell I9 (the cell immediately to the right of the event node for Option 1) to the Copy button.
- Middle Section (Paste Action):** Shows the same decision tree with a callout box highlighting the **Paste** button. A purple arrow points from cell M21 (the cell next to a leaf node under Option 2) to the Paste button. A red arrow points to cell M21, indicating the target location for the pasted subtree.
- Bottom Section (Result):** Shows the final state of the decision tree after the subtree has been pasted. The subtree from Option 1 is now duplicated and attached to the leaf node under Option 2. A green box highlights the newly pasted subtree.

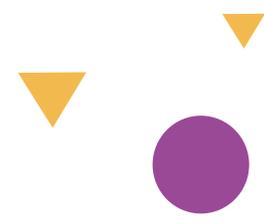
The decision tree model includes a root decision node (blue square) with two options: Option 1 and Option 2. Each option leads to an event node (purple circle) with a probability of 0.5. Option 1 leads to Event 1 (green box) and Event 2 (green box). Option 2 leads to Event 1 (green box) and Event 2 (green box). Each event node has two outcomes: Cost1 and OutC1 for Event 1, and Cost2 and OutC2 for Event 2. The values for Cost1, OutC1, Cost2, and OutC2 are all 0. The decision tree is supported by iDSI.



g. To re-initiate the decision tree analysis

Note: each of the node creation comes with embedded folding back formula. If you have replaced the formula with some written value and wish to retrieve back the formula, you can re-initiate the decision tree analysis by click on the **Calculate** button.

- You can save the current worksheet once you have completed your analysis. Each worksheet can hold only one decision tree.
- You can return at a later time and modify the saved worksheet, as long as the **Plant-A-Tree** add-in is still enabled.



4. Using Your Decision Tree

a) The colored cells are where you should input your costs and outcomes accordingly. Costs must be inputted on yellow cells labeled 'Cost1, Cost2, etc.', while outcomes must be typed on orange cells labeled 'OutC1, OutC2, etc.'. Only terminal leaf nodes will have orange cells for inputting outcomes.

b) You must not input any value in the clear cells next to colored costs and outcomes. The clear cell next to the costs in terminal leaf nodes is the sum of costs for that pathway. For example, Treatment A with complication will entail a cost of 5500.

c) The green cells are where you input the probabilities of each event from occurring. For example, Treatment A provides a survival probability of 0.98 while patients on Treatment B only has 0.55 of survival.

d) Lastly, events and leaf nodes can be labelled accordingly depending on your pathways. These are the clear cells beside the green cells previously labeled as 'Option1' of 'Event 1'.

e) You only need to develop one tree as costs and outcomes are present together. The tree automatically applies the averaging out and folding back technique for all costs, outcomes and probabilities inputted.

