Use IFs (Download): World Map and All-Variable Displays

This is the approved revision of this page, as well as being the most recent.

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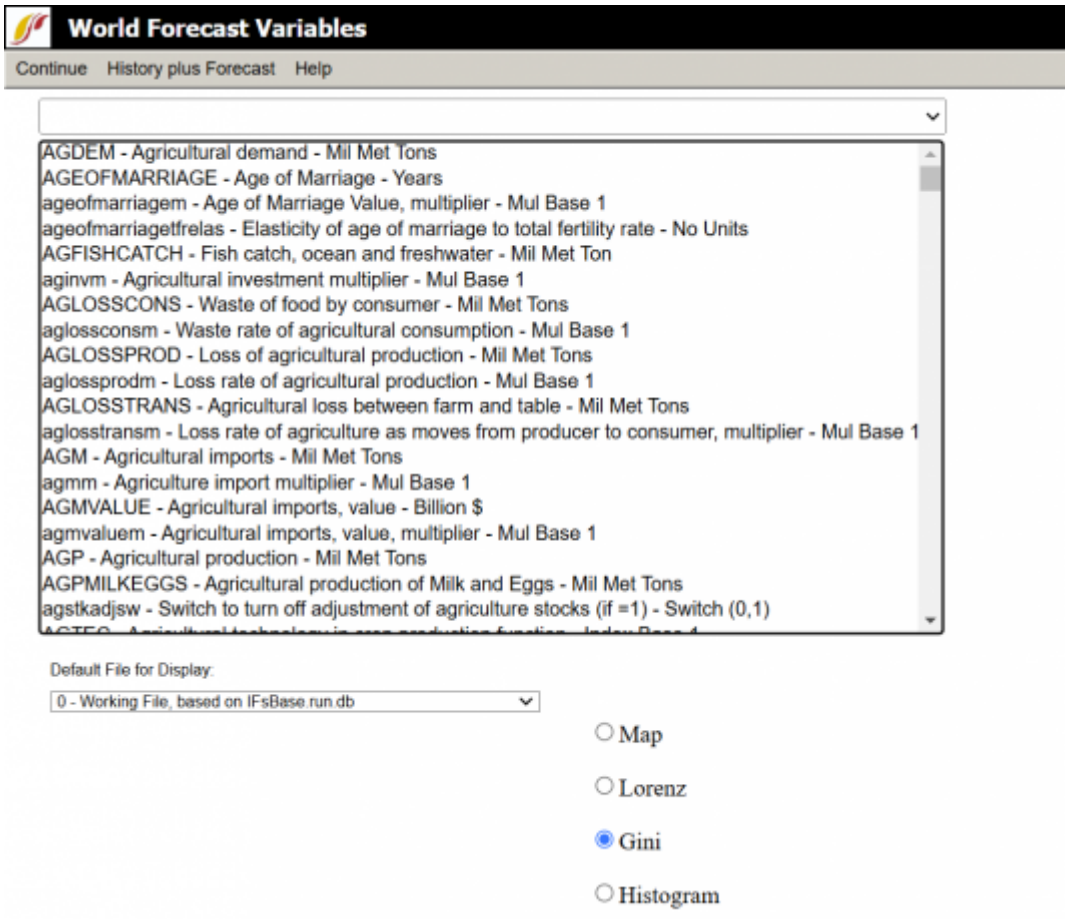
World Map, Lorenz Curve, Gini, Histogram

The World Map, Lorenz Curve, Gini, Histogram specialized display can be reached from the **Display** option on the Main Menu, the **Specialized Displa**y sub-option and then the ***World Map, Lorenz Curve, Gini sub-sub-option***.



Displaying World Map, Lorenz Curve, or Gini Index

The main screen of World Map, Lorenz Curve, Gini is shown on the right.

There are a few features and options in the tool bar:

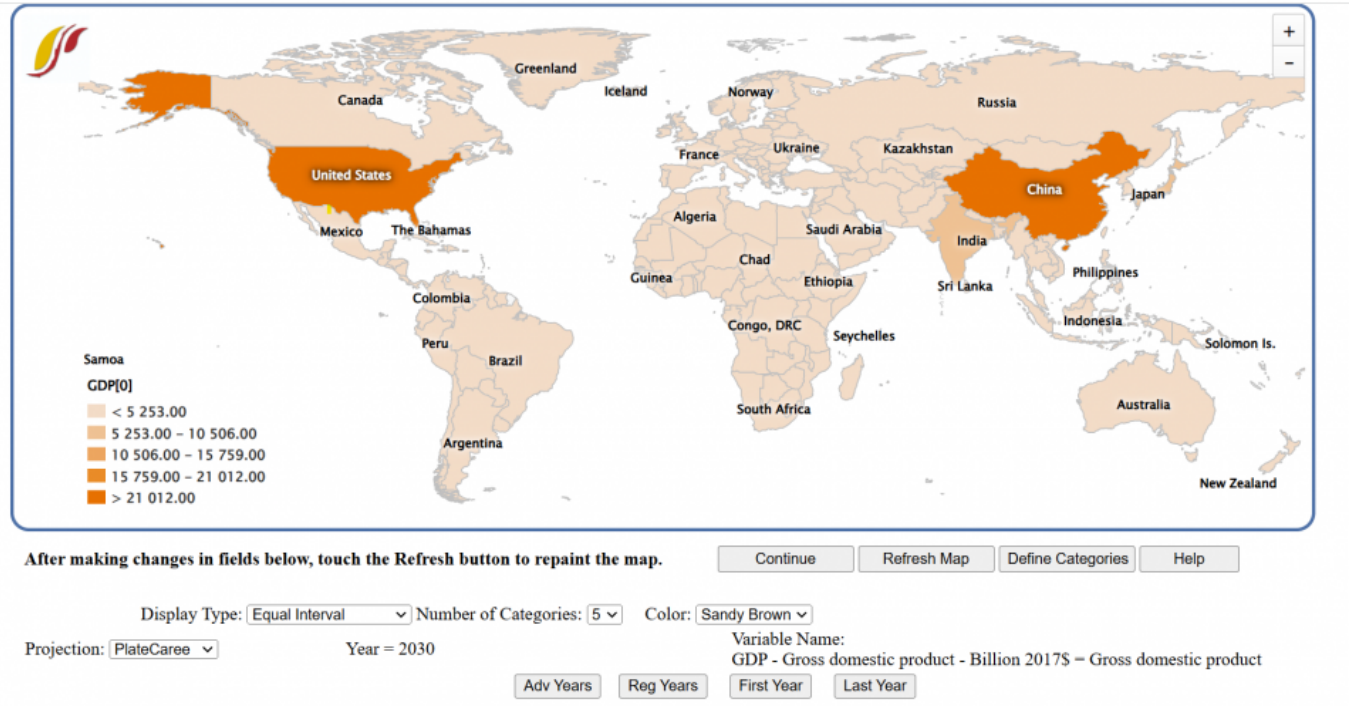
- **Continue**: Go back to the previous menu or to the Main Menu of IFs.
- **History plus Forecast**: Select either **On** or **Off** from this drop down. **On** displays historical data along with the forecast, and **Off** only displays the forecast.
- **Help**: Click to open the corresponding page in the Pardee Wiki with the current feature or display they are on.

At the bottom of the screen select the desired scenario from the scenario drop down. Click the type of display to view the results as. The display options are: Map, Lorenz curve, Gini, or Histogram.

After selecting the desired display and scenario, select the desired variable to explore from the list of variables that takes up most of the screen. Scroll to a variable or click in the text box and search for a variable. The chosen display for the selected scenario and variable will open. Sometimes, before the desired display is presented, select a dimension for certain variables, for example whether to display Male, Female, or Total.

Each of the display options are explained below using GDP MER (2017) as the selected variable:

Map



Map display page example for GDP (2017)

The options and features that can adjust the map:

- **Continue**: Go back to the previous menu or to the Main Menu of IFs.
- **Refresh Map**: After making changes to the display option fields, click this to update those changes in the map.
- **Define Categories**: Open a screen to adjust the cutoffs for the display categories.
- **Help**: Open the corresponding page in the Pardee Wiki with the current feature or display they are using.
- **Adv Years**: Move the display year forward by 5 years.
- **Reg Years**: Move the display year back 5 years.
- **First Year**: Display the base year.
- **Last Year**: Display the last year of forecasting: 2100.

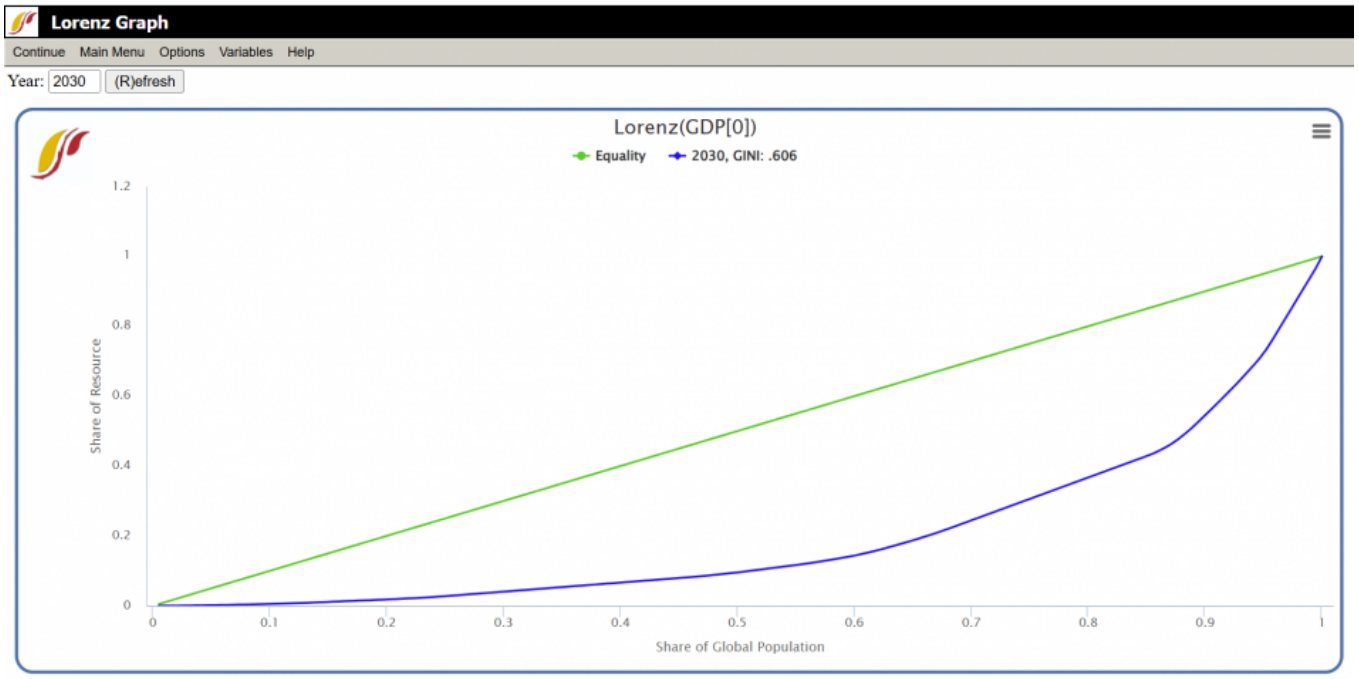
Display option fields:

- **Display Type**: Select one of the two sub options:
  - **Equal Interval**: Set the display categories to have the same range of variables (ex. 0 to 400 and 400 to 800).
  - **Equal Count**: Set the display categories to each hold the same count of countries.
- **Number of Categories**: Change the number of display categories using this drop down from 2 to 7.
- **Color**: Choose the display color of the map from this dropdown: sandy brown, green, blue, red, or gray.
- **Projection**: Change the type of map projection from the dropdown.

Lorenz

The Lorenz display option on the Menu of World Map leads to a display called a Lorenz curve. Lorenz curves and Gini indices are standard measures of distribution of any variable across any population. Lorenz curves show the portion of the variable being examined (such as GDP) that accrues to different portions of the population (such as the world population). Reading across the bottom of the curve one can see the portions of the population, beginning with those that receive/control the smallest portion of the variable. Thus a 0.1 portion of the population (10%) will normally receive considerably less than a 0.1 (10%) share of the resource. And a 0.5 portion will receive less than 50%. But as one moves across the graph, ultimately a 1.0 (100%) portion of the population will receive or control 100%.

It is theoretically possible that the "poorest" 10% of the population could obtain a 10% share, that the "poorest" 50% portion could obtain 50%, and so on. If so, the Lorenz curve would be equivalent to the diagonal line that rises from the lower left to the upper right. That line is called the "Line of Equality," and it is almost an invariant rule that the actual Lorenz curve will fall well below it. The area between the Line of Equality and the actual Lorenz curve is the area of inequality.



Example of Lorenz curve for global population on GDP MER (2017)

The Lorenz curve window has several options:

- **Continue**: Open the previous menu page.
- **Main Menu**: Open to the Main Menu of IFs.
- **Options**:
  - **Save**: *Not functioning in current version of IFs.*
  - **Refresh**: Update the display to the desired chosen year.
  - **Reset**: Remove any curves except the chosen year's.
  - **Add Curve**: Forecast changing inequality over time by adding multiple curves. Once Add curve is clicked, enter the desired year for an additional curve, then click **OK.**

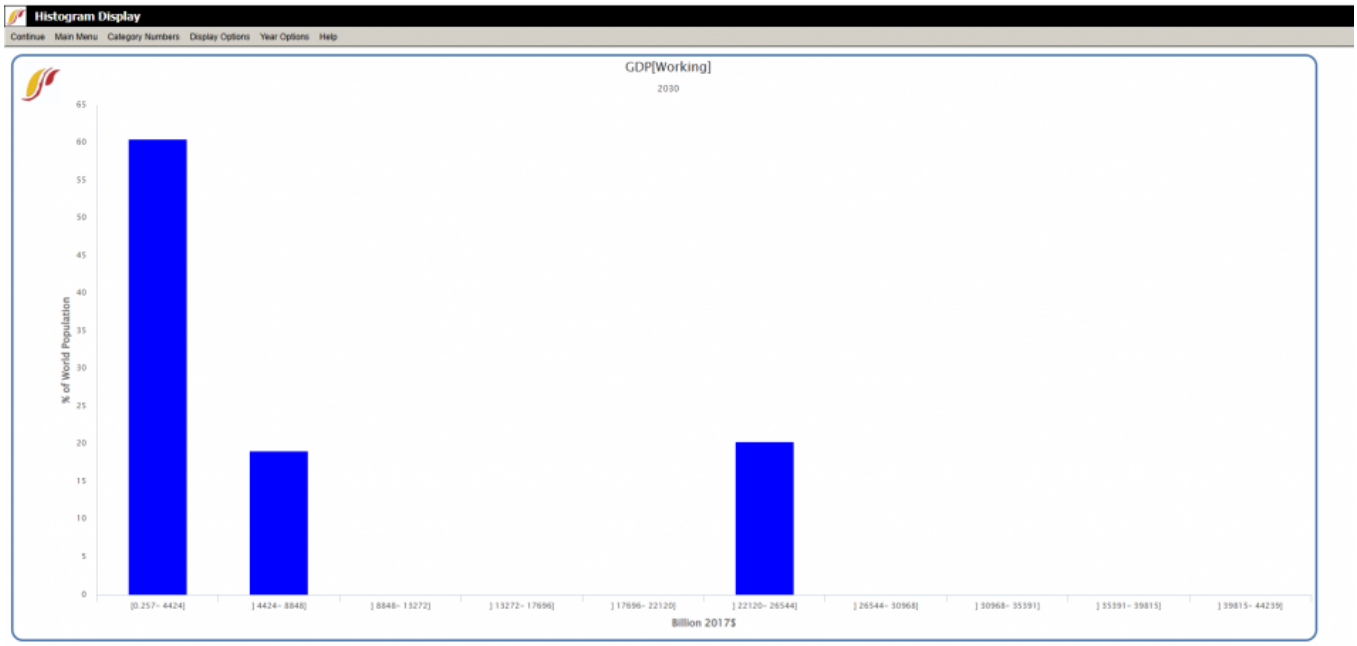
- **Variables**: Open World Map, Lorenz Curve, Gini, and Histogram menu page.
- **Help**: Open the corresponding page in the Pardee Wiki with the current feature or display they are using.

Gini

The Gini index is calculated as the area of inequality divided by the entire area under the Line of Equality. Thus, larger numbers indicate greater inequality. Gini can range from 0 (perfect equality) to 1 (perfect inequality), but for most economic distributions, the value of Gini will fall between 0.2 (quite high equality or low inequality) and 0.8 (very high inequality).

Choosing the Gini option, opens the **Display Menu** with the Gini index of their chosen variable loaded into the status box. Select **Graph** and then **Line** to see a line graph of the Gini index they just created.

Histogram



Example of Histogram Display Page for GDP MER (2017)

The Histogram Display window has several options:

- **Continue**: Open the previous menu page.
- **Main Menu**: Open the Main Menu of IFs.
- **Category Numbers**: Change the number of bins or categories in the histogram. Adjust number and then hit submit.
- **Display Options** :Choose from the drop down options:
  - **X Values**: Display the x axis as values or percentage of the variable being displayed.
  - **Y Values**: Display the y axis values in percent of countries or percent of global population.
  - **Order Detail**: Organize the order of histograms by selecting one of the following

options:

- **Alphabetical for Regions Name**
- **Value for Chosen Variable**

- **Set Title, Display Interval, or Year**: Adjust the display year, the title, and the titles of axes.
- **Display/Run Horizon**: Choose from the drop down or type the maximum year that this histogram can be displayed for, which will limit the **Year Options.**

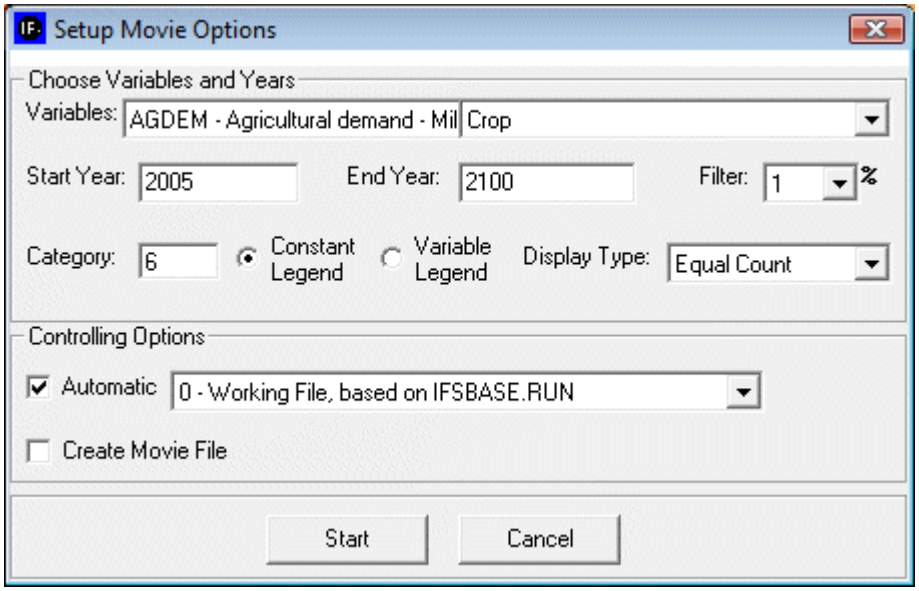
- **Year Options**:
  - **Advance**: Move the display year forward by 5 years.
  - **Regress**: Move the display year back 5 years.
  - **Go To Year**: Enter the desired year to display.

World Map Movie (Forecast)

Feature is no longer available or outdated in the model.

The World Map Movie is accessible in two locations in IFs. The first is under the Data Analysis heading on the main IFs screen. The second is under Specialized Display, which is a sub-heading of the Display heading on the Main Menu. The World Map Movie found under the Data Analysis heading deals with historic data, while the World Map Movie found under the Specialized Display heading deals with forecasted data. Selecting the World Map Movie allows the user to display on a map of the world the changes in selected variables over time in all of the countries for which IFs has data. This section describes how to use the various options to tailor the movie to the user's preferences.

After selecting World Map Movie, the dialog box pictured below appears on the user's screen.



World Map Movie Settings

Choose Variables and Years:

Variables: allows user to select from the entire database of variables in IFs for the Historic World Map Movie. The forecasted World Map Movie includes a more limited database of variables from which to choose.

Start Year: Enter the year from which the movie will begin.

End Year: Enter in the year with which the movie will end.

Filter: User can set the filter from 1% to 100%. This feature sets a minimum value for a portion of the data to be displayed in a given year.

Category: Can be set from 1 to 16. Determines the number of categories to divide the values into.

Constant/Variable Legend: Selecting the constant function will keep the numbers and measurements in the individual categories constant. The numbers and measurements will change over time if the variable legend is selected.

Display Type: When Constant Legend is selected, two options will appear under display type: equal interval and equal count. The equal interval function divides the values equally between categories, with the interval calculated by the equation (highest value-lowest value/number of categories= interval width). The equal count function distributes the number of countries equally between the selected of number of categories. When Variable Legend is selected, a third option becomes available: equal match. If equal match is selected, legend values are assigned to each value uniquely. If there are not enough categories to represent each value, the countries that do not have the selected values are represented as blank.

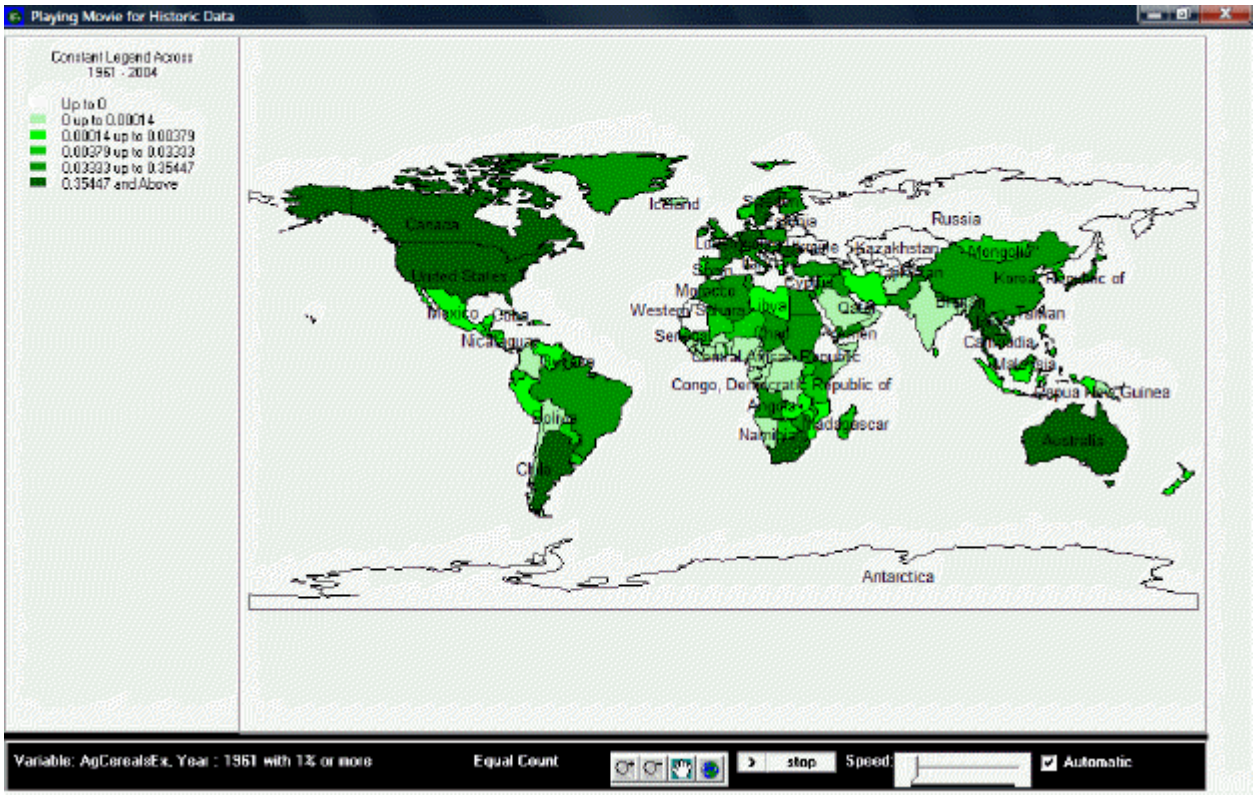
Controlling Options:

Automatic: When deselected, the user scrolls through the years of the movie manually. When selected, the movie will automatically play the start year to the end year.

World/Country: This toggle switch is available only under the Historic World Map Movie. It allows the user to view a movie of changes of the selected variable across the world or, when country is selected, to view a movie of the change in a variable across regions in a country. Three countries are available to the user to select: China, India, and Mexico.

Create Movie File: This toggle switch allows the user to save the movie created. When the playing of the movie is complete, a prompt appears which allows the user to name and save the movie file. The saved movie file is available in Stored Map Movie.

After clicking ‘Start’, the dialog box will close, and the World Map as pictured below (or similar to it) will appear. This section describes what the user is viewing, and how to manipulate the functions at the bottom of the screen.



World Map as typically displayed by World Map Movies

Playing Movie for Historic Data:

The upper left portion of the screen lists whether the movie is showing a variable or constant legend and across which period of time. Underneath this information is the number of categories and the corresponding color for each category, and the numerical range for each category.

The main portion of the screen is the world map, divided into all countries for which IFs has data. The various shadings of the countries correspond to the various shading of the categories listed in the map legend. By right-clicking on the world map, the user is able to copy the map, zoom in on a particular location of the map, zoom out, or to reset the map to its original point of view.

The bottom section of the screen, from left to right, lists the variable displayed by the map, with the start year shown and the level of the filter. Next is the selected display type. The four buttons to the right of the display type allow the user to zoom in, zoom out, pan, and show the full extent of the world map. The first two buttons allow the user to zoom in on or zoom out from the area under which the cursor is located, while the full extent option resets the view of the world to the original perspective. The pan button allows the user to pan across the world by clicking on different parts of the map, which effectively pans across the world by re-centering the map on the area selected, after having zoomed in or zoomed, without zooming in or out any further. The next set of buttons allows the user to play or pause the movie, and to adjust the speed at which the movie will play. Next is a toggle switch which, when selected, makes the movie play automatically; when the switch is not selected, the user is able to advance the year displayed on the map or to go over previous years.

If the user selected “Create Movie File” during the setup phase, a dialog box will appear after the movie is finished playing that prompts the user to provide a name and a place to

save the movie file. The program will alert the user if the .avi file is successfully created and saved. To review the saved movie file, go to Stored Map Movie.

Stored Map Movie

Feature is no longer available or outdated in the model.

This feature allows the user to review world map movies that were created and saved. The types of world map movies fall under three categories: Historic, Forecast, and Historic Analysis. The location of a given stored map movie depends on the feature that was used to create it: movie files created in the World Map Movie in Data Analysis are found in the Historic category; movie files created in the World Map Movie in Specialized Display are found in the Forecast category; and movies created in Analyze Across Countries are found in the Historic Analysis category.

To play a movie, simply double click on the desired movie or highlight it and press Play.
