Ex ante Tool for Ranking Policy Alternatives

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What is EXTRAPOLATE?

Extrapolate is a decision support tool that assesses the impact of different policy measures. By disaggregating the effects of policy interventions the tool facilitates discussion of the relevant issues and enables users to visualise the predicted impacts of policy interventions, based on a simple numerical analysis. The tool helps decision makers to sift through a range of policy measures to identify those that could be applied in a specific situation to achieve particular outcomes that further specific policy objectives.

Extrapolate has been developed in close collaboration with policy makers in the livestock sectors of developing countries and thus adapted to meet their specific requirements. The software includes access to an online library of models that have already been developed, enabling users from different regions and disciplines to share knowledge and experiences. Some of these have been written-up more fully as working papers for the FAO Pro-poor Livestock Initiative (PPLPI).

What is this User Guide?

This user guide has been written to provide step-by-step instructions for all the features of the EXTRAPOLATE software. These include how to:

- enter and edit model data;
- view and print summary information;
- run interactive simulations with EXTRAPOLATE and print the results of these.

For more information regarding the rationale behind EXTRAPOLATE and details of its inner workings, please refer to the accompanying EXTRAPOLATE manual (et al., 2005). This guide should be read in conjunction with the full EXTRAPOLATE manual.
The EXTRAPOLATE User Interface

Opening the EXTRAPOLATE software package displays the following user interface.

Functions of the Extrapolate User Interface

The Extrapolate user interface has been designed to allow the user easy access to the following major functions:

- Displaying and editing the data that are required to run an extrapolate model.
- Displaying exploratory information about the model
- Displaying analytical outputs of model runs
Navigating through EXTRAPOLATE

In order to access the various functions of EXTRAPOLATE, the user need to be familiar with the two major methods of navigation:

- The MS Outlook style side bar on the left-hand side of the user interface gives access to the main pages of the user interface.

<table>
<thead>
<tr>
<th>Models</th>
<th>Current Model Data</th>
<th>Model Summaries</th>
<th>Policy Analysis</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of models</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Export the current model</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Import a model</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The navigator bar is divided into five main sections:

- **Models** accesses the functions that allow the user to set up the basic information about Extrapolate models. These include sorting, viewing, editing and adding to the data for individual models as well as viewing or printing information about them. Users can also export and import complete or partially completed models here.

- **Current Model Data** allows editing of the more detailed model data as well as giving access to some tools for assisting with date collection.

- **Model Summaries** are graphical representations of the model data that facilitate an initial exploratory analysis of the policy scenario and help the user to identify policy options for more detailed analysis.

- **Policy Analysis** Allows access to the interactive features that allow comparisons to be made amongst different combinations of policy instruments.

- **System** Settings include changes to the software, setup options access to the on-line help system, contacting the distributors of software and closing the programme.

To use the side bar for navigation:

- select the section that you require
- click on the button within the section to display the page that you require.
• The navigation bars that are associated with EXTRAPOLATE’s data grids are used to perform various tasks relating to the data in each grid (e.g. moving amongst records or adding and deleting records).

The exact function of each button depends on the grid to which the navigator is attached but the general function of each button is as follows:

- Go to the first record* in the grid.
- Go to the previous page of records in the grid.
- Go to the record that is immediately before the currently selected record.
- Go to the record that is immediately after the currently selected record.
- Go to the next page of records in the grid.
- Go to the last record in the grid.
- Insert a new record into the grid.
- Delete the record that is currently selected.
- Accept any edits that have been made.
- Cancel the most recent edits.
- Bookmark the record that is currently selected.
- Go directly to a record that was previously bookmarked.

* - in EXTRAPOLATE, a record can be a model, stakeholder group, outcome, constraint or policy depending on which grid is currently in view.
Changing the Appearance of Data Displayed in Grids

**Grouping Records**

In order to locate particular records in a grid it is sometimes convenient to group these according to a particular characteristic. For example, the list of models may be grouped by the country to which the model relates.

To group the list of models by country:

<table>
<thead>
<tr>
<th>List of models</th>
<th>Edit current model description</th>
<th>Current model diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Country: India
- Country: Kenya
- Country: Senegal
- Country: Uganda

- Click and hold the *Country* header and drag it to the top bar of the grid. Drag the header back to its original position to switch back to the normal view.

To expand the list of models for a particular country in a grouped list:

<table>
<thead>
<tr>
<th>List of models</th>
<th>Edit current model description</th>
<th>Current model diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Country: India
- Country: Kenya
- Country: Senegal
- Country: Uganda

- Click on the icon next to the country name
Filtering Records

The records displayed in a grid may be restricted by specifying other criteria for some of their characteristics. For example to display only the models that relate to Kenya in the grid:

1. Click on the icon on the right-hand side of the country header
2. Select Kenya from drop-down list that appears
3. To restore the full list of records in the grid:
   - Uncheck the box next to the filter condition that is displayed on the left-hand side of the filter bar that appears at the bottom of the grid when a filter is active.
More complex filters may be constructed using the custom filter dialog.

To display this dialog, either

- Select custom from the drop-down list
- Press the [Customize...] button on the filter bar at the bottom of the grid.
Working with Extrapolate Model Data

EXPTRAPOLATES functions relating to the basic manipulation of models are accessed through the Models section of the side bar.

- **List of models**: Displays the list of models allowing basic model information to be edited and a representative diagram of the model to be viewed and manipulated.
- **Export the current model**: Exports the currently selected model to a file.
- **Import a model**: Imports a new model from an external file specified by the user.

To display the models section of the side bar:

- Click on the Models section heading.
The List of Models

<table>
<thead>
<tr>
<th>Model name</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andhra Pradesh Small Ruminant Sector</td>
<td>India</td>
</tr>
<tr>
<td>Dairy Sector Developer</td>
<td>Uganda</td>
</tr>
<tr>
<td>Impacts of Subdivision in Kenya</td>
<td>Kenya</td>
</tr>
<tr>
<td>Promotion of Lactoenergetic Milk Treatment</td>
<td>Kenya</td>
</tr>
<tr>
<td>Small Ruminant Marketing for Tobacco</td>
<td>Senegal</td>
</tr>
</tbody>
</table>

The list of models currently loaded into Extrapolate displays by default when the software is opened.

If the list is not currently visible and you wish to view it:

- Press the button marked List of models under the “Models” heading of the side bar.
Displaying Model Descriptions in the List

To view the list with the model descriptions displayed:

1. Make sure that the **Show model descriptions in list** checkbox is checked.

To hide the model descriptions in the list of models:

1. Uncheck the **Show model descriptions in list** checkbox.
Printing the List of Models

The list of models can be printed directly from the List of Models page.

To display the print preview dialog that allows the selection of printers and manipulation of the appearance of the print out:

✓ Press the "Print model list" button on the top right-hand side of the page.

To print to the currently selected printer from the print preview dialog:

Press the "" button.
Editing the Model Description

In order to edit the model description:

- Select the **Edit current model description** tab on the List of Models page.
- Make any changes that you require.
- Press the ✔ button to accept those changes or
- Press the ✗ button to cancel them.
Changing the Model Basis

To change the driving variable for the model:

- Select whether you wish to use the default “Stakeholder livelihood status” as the driving variable or specify a custom driving variable of your own choice.

If you choose to use a custom driving variable you will need to give it an appropriate name in the box that appears:

- Enter the custom variable name in the text box.
- Press the ✓ button to accept the name or
- Press the ✗ button to cancel.
The Model Diagram
The model diagram summarise the elements in the current model in a way that is easy for the user to assimilate. In addition, it provides a rapid interactive tool for assessing the individual pathways through which policies may exert their effects in the model.

To display the model diagram:

1. Select the tab on the List of Models page.

To make the model diagram more useful to the user, it can be expanded to include descriptive drop-down lists of the individual elements of the model. To expand the lists:

1. Right-click with the mouse on one of the model boxes (Policies, Constraints, Outcomes or Stakeholders).

✓ Right-click with the mouse on one of the model boxes (Policies, Constraints, Outcomes or Stakeholders).
Select the list display option that you require. Selecting “List” drops-down only the list for the currently selected model box while “List all” drops down the lists for all boxes.

To use the diagram interactively:

Select from the elements in the lists to construct a path through the model that you wish to examine.

The numbers next to the arrows linking boxes in the model summarise the strength of the interaction between the elements that have been selected under the boxes. A path in which all of these numbers is large suggests a path through which the implementation of the selected policy is likely to be effective. If small numbers (particularly zeros) are displayed in the diagram, the policy is likely to be ineffective via the path that has been constructed.
**Exporting Models**

To export an EXTRAPOLATE model to a file that may be used to circulate the model to other users:

- Select the model that you wish to export in the List of Models.

- Press the button marked “Export the current model” under the “Models” heading of the side bar.

- Enter a suitable name for the model (.etp) file in the dialog box that appears.
Importing Models
To import a model that has been sent to you by another user:

Press the button marked “Import a model” under the “Models” heading of the side bar.

Select the model file name from the list in the dialog box that appears.
**Specifying Detailed Data for an Extrapolate Model**

Manipulation of the detailed data that are required to construct an effective EXTRAPOLATE model is accessed via the buttons under the Current Model Data section of the side bar.

- Go to the Stakeholder groups data page
- Go to the Outcomes data page
- Go to the Constraints data page
- Go to the Policies data page

After you have selected the model that you wish to work with from the List of Models, to display the Current Model Data section of the side bar:

✔ Click on the Current Model Data section heading.
Stakeholder Group Data

The data required to describe the stakeholder groups in the model may be viewed and edited on the Stakeholder Groups data page.

<table>
<thead>
<tr>
<th>Stakeholder group</th>
<th>Livelihood status (1-10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC1 Immigrant farmers</td>
<td>2</td>
</tr>
<tr>
<td>SC2 Pastoralists (livestock only)</td>
<td>1</td>
</tr>
<tr>
<td>SC3 Pastoralists (plus livestock)</td>
<td>6</td>
</tr>
<tr>
<td>SC4 Pastoralists (plus cropping)</td>
<td>5</td>
</tr>
<tr>
<td>SC5 Rural consumers</td>
<td>3</td>
</tr>
<tr>
<td>SC6 Urban consumers</td>
<td>6</td>
</tr>
<tr>
<td>SC7 Environmental community</td>
<td>10</td>
</tr>
</tbody>
</table>

To access this page:

Press the button marked “Stakeholder groups” under the “Current Model Data” heading of the side bar.

The data required to define each stakeholder group consist of:

- A descriptive name for the stakeholder group
- An assessment of the livelihood status of the groups relative to other groups in the model. This may be determined in any way deemed fit by the user although EXTRAPOLATE provides a pairwise ranking tool (see below) for a more systematic assessment if required.
- An optional description of the characteristics of the group that may be accessed via the tab marked "Edit description of current group"
Displaying Stakeholder Group Descriptions in the List

To view the list with the descriptions of each stakeholder group displayed:

✓ Make sure that the checkbox is checked.

To hide the descriptions in the list of stakeholder groups:

✓ Uncheck the checkbox.

Printing the List of Stakeholder Groups

The list of stakeholder groups can be printed directly from the Stakeholder groups data page.

To display the print preview dialog that allows the selection of printers and manipulation of the appearance of the print out:

✓ Press the button on the top right-hand side of the page.

To print to the currently selected printer from the print preview dialog:

✓ Press the button on the print preview dialog.
Pairwise Ranking of Stakeholder Groups

Extrapolate includes a tool that allows the user to conduct a set of pairwise rankings amongst a model’s stakeholder groups in order to generate a more consistent set of values of the relative livelihood statuses of those groups.

To make use of the pairwise comparisons tool

✓ Click on the Pairwise comparisons tab.

When the pairwise comparisons grid is displayed, the stakeholder groups currently in the model are transferred automatically to the two axes of the grid. To enter values for each comparison:

- Click on the button that best describes the relationship between the livelihood status of the stakeholder group in the row and that in the corresponding column. The value and its inverse for the column - row comparison will be entered and the cursor will move to the next cell so that the data entry process can be repeated.
When all the cells have been completed, EXTRAPOLATE will perform the comparisons required to rank the stakeholder groups for livelihood status on a scale of 1 - 10.
The calculated ranks for each stakeholder group are displayed in the right-hand column of the grid. To update the stakeholder group data for the current model with these calculated ranks:

- Press the button marked Update stakeholders

Consistency ratio: 0.165

The consistency ratio for the pairwise comparisons is displayed on the left-hand side, just above the grid. This is colour-coded, with green indicating that the exercise has been conducted with an acceptable level of consistency. Should the user wish to explore the consistency of the matrix further, a consistency matrix can be displayed.
To display this matrix:

![Matrix Image]

Select the tab marked **Consistency matrix**

The consistency matrix may be used to search for possible sources of inconsistency in the pairwise comparisons, higher values indicate individual comparisons that may be contradicting comparisons elsewhere in the pairwise grid.
Outcomes Data

The data required to describe the outcomes in the model may be viewed and edited on the Outcomes data page.

To access this page:

Press the button marked “Outcomes” under the “Current Model Data” heading of the side bar.

The data required to define each stakeholder group consist of:

- A descriptive name for the outcome
- An optional description of the characteristics of the outcome that may be accessed via the tab marked "Edit description of current outcome"
- An assessment of the level of impact (on a scale of -5 to +5) that each outcome can be expected to have on each of the stakeholder groups in the model.
Impacts of Outcomes on Stakeholder Groups

To access the data entry page for the impacts of outcomes on stakeholder groups:

- Select the tab marked **Impacts of outcomes on stakeholder groups**.

The data entry grid may be grouped by outcome or stakeholder group to improve clarity and reduce the chances of errors during data entry.

**Displaying Outcome Descriptions in the List**

To view the list with the descriptions of each outcome displayed:

- Make sure that the **Show outcome descriptions in list** checkbox is checked.

To hide the descriptions in the list outcomes:

- Uncheck the **Show outcome descriptions in list** checkbox.
Printing the List of Outcomes
The list of outcomes can be printed directly from the outcomes data page.

To display the print preview dialog that allows the selection of printers and manipulation of the appearance of the print out:

✓ Make sure that the list of outcomes or an outcome description is displayed
✓ Press the "Print list of outcomes" button on the top right-hand side of the page.

To print to the currently selected printer from the print preview dialog:

✓ Press the "Print" button on the print preview dialog.

Printing the List of Outcome Impacts
The list of impacts of outcomes on stakeholder groups can be printed directly from the outcomes data page.

To display the print preview dialog that allows the selection of printers and manipulation of the appearance of the print out:

✓ Make sure that the list of impacts of outcomes on stakeholder groups is displayed
✓ Press the "Print summary of outcome impacts" button on the top right-hand side of the page.

To print to the currently selected printer from the print preview dialog:

✓ Press the "Print" button on the print preview dialog.
Constraints Data
The data required to describe the constraints in the model may be viewed and edited on the Constraints data page.

<table>
<thead>
<tr>
<th>Constraints</th>
<th>Show constraint descriptions in list</th>
<th>Print list of constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>C01 Access to cash</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C02 Access to crop land</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C03 Access to grazing land</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C04 Livestock disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C05 Financial insecurity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C06 Uncertain land tenure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To access this page:

Press the button marked “Constraints” under the “Current Model Data” heading of the side bar.

The data required to define each stakeholder group consist of:

- A descriptive name for the constraint
- An optional description of the characteristics of the constraint that may be accessed via the tab marked "Edit description of current outcome"
- An assessment of the level of impact (on a scale of -5 to +5) that each constraint can be expected to have on each of the outcomes in the model.
- An assessment of the relevance (on a scale of 0 to 10) that each constraint has to each of the stakeholder groups in the model.
### Impacts of Constraints on Outcomes

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Outcome</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of knowledge and skills</td>
<td>Increase production, sale of dairy products</td>
<td>4</td>
</tr>
<tr>
<td>Lack of knowledge and skills</td>
<td>Increased profit margins</td>
<td>3</td>
</tr>
<tr>
<td>Lack of knowledge and skills</td>
<td>Increased security of livestock assets</td>
<td>2</td>
</tr>
<tr>
<td>Lack of knowledge and skills</td>
<td>Improved nutritional status</td>
<td>2</td>
</tr>
<tr>
<td>Lack of knowledge and skills</td>
<td>Increased and efficient employment opportunities</td>
<td>2</td>
</tr>
<tr>
<td>Lack of knowledge and skills</td>
<td>Reduced environmental degradation</td>
<td>2</td>
</tr>
<tr>
<td>Poor access to land</td>
<td>Increase production, sale of dairy products</td>
<td>4</td>
</tr>
<tr>
<td>Poor access to land</td>
<td>Increased profit margins</td>
<td>0</td>
</tr>
<tr>
<td>Poor access to land</td>
<td>Increased security of livestock assets</td>
<td>0</td>
</tr>
<tr>
<td>Poor access to land</td>
<td>Increased on-effort employment opportunities</td>
<td>0</td>
</tr>
<tr>
<td>Poor access to land</td>
<td>Reduced environmental degradation</td>
<td>2</td>
</tr>
<tr>
<td>Poor access to water</td>
<td>Increase production, sale of dairy products</td>
<td>4</td>
</tr>
<tr>
<td>Poor access to water</td>
<td>Increased profit margins</td>
<td>2</td>
</tr>
<tr>
<td>Poor access to water</td>
<td>Increased security of livestock assets</td>
<td>2</td>
</tr>
<tr>
<td>Poor access to water</td>
<td>Improved nutritional status</td>
<td>0</td>
</tr>
<tr>
<td>Poor access to water</td>
<td>Increased on-effort employment opportunities</td>
<td>0</td>
</tr>
<tr>
<td>High costs and low availability of inputs</td>
<td>Increase production, sale of dairy products</td>
<td>5</td>
</tr>
<tr>
<td>High costs and low availability of inputs</td>
<td>Increased profit margins</td>
<td>5</td>
</tr>
<tr>
<td>High costs and low availability of inputs</td>
<td>Increased security of livestock assets</td>
<td>2</td>
</tr>
<tr>
<td>High costs and low availability of inputs</td>
<td>Improved nutritional status</td>
<td>0</td>
</tr>
<tr>
<td>High costs and low availability of inputs</td>
<td>Increased on-effort employment opportunities</td>
<td>0</td>
</tr>
<tr>
<td>High costs and low availability of inputs</td>
<td>Reduced environmental degradation</td>
<td>-1</td>
</tr>
<tr>
<td>Low yielding cattle breeds</td>
<td>Increase production, sale of dairy products</td>
<td>2</td>
</tr>
<tr>
<td>Low yielding cattle breeds</td>
<td>Increased profit margins</td>
<td>2</td>
</tr>
<tr>
<td>Low yielding cattle breeds</td>
<td>Increased security of livestock assets</td>
<td>-2</td>
</tr>
<tr>
<td>Low yielding cattle breeds</td>
<td>Improved nutritional status</td>
<td>-1</td>
</tr>
<tr>
<td>Low yielding cattle breeds</td>
<td>Increased on-effort employment opportunities</td>
<td>-1</td>
</tr>
<tr>
<td>Low yielding cattle breeds</td>
<td>Reduced environmental degradation</td>
<td>-1</td>
</tr>
<tr>
<td>Insufficient labour force</td>
<td>Increase production, sale of dairy products</td>
<td>1</td>
</tr>
<tr>
<td>Insufficient labour force</td>
<td>Increased profit margins</td>
<td>1</td>
</tr>
</tbody>
</table>

To access the data entry page for the impacts of constraints on outcomes

- Select the tab marked **Impacts of constraints on outcomes**

The data entry grid may be grouped by constraint or outcome to improve clarity and reduce the chances of errors during data entry.
Relevance of Constraints to Stakeholder Groups

To access the data entry page for the relevance of constraints to stakeholder groups:

✔ Select the tab marked “Relevance of constraints to stakeholder groups.”

The data entry grid may be grouped by constraint or stakeholder group to improve clarity and reduce the chances of errors during data entry.

Displaying Constraint Descriptions in the List

To view the list with the descriptions of each constraint displayed:

✔ Make sure that the “Show constraint descriptions in list” checkbox is checked.

To hide the descriptions in the list outcomes:

✔ Uncheck the “Show constraint descriptions in list” checkbox.
Printing the List of Constraints
The list of constraints can be printed directly from the constraints data page.

To display the print preview dialog that allows the selection of printers and manipulation of the appearance of the print out:

✓ Make sure that the list of constraints or a constraint description is displayed
✓ Press the [Print list of constraints] button on the top right-hand side of the page.

To print to the currently selected printer from the print preview dialog:

✓ Press the [Print] button on the print preview dialog.

Printing the List of Constraint Impacts
The list of impacts of constraints on outcomes can be printed directly from the constraints data page.

To display the print preview dialog that allows the selection of printers and manipulation of the appearance of the print out:

✓ Make sure that the list of impacts of constraints on outcomes is displayed
✓ Press the [Print summary of constraint impacts] button on the top right-hand side of the page.

To print to the currently selected printer from the print preview dialog:

✓ Press the [Print] button on the print preview dialog.

Printing the List of Constraint Relevances
The list of relevances of constraints to stakeholder groups can be printed directly from the constraints data page.

To display the print preview dialog that allows the selection of printers and manipulation of the appearance of the print out:

✓ Make sure that the list of relevances of constraints to stakeholder groups is displayed
✓ Press the [Print summary of constraint relevancies] button on the top right-hand side of the page.

To print to the currently selected printer from the print preview dialog:

✓ Press the [Print] button on the print preview dialog.
Policy Data
The data required to describe the policies in the model may be viewed and edited on the Policies data page.

<table>
<thead>
<tr>
<th>Policy</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PCA Account for SFN needs in managing village commons</td>
<td></td>
</tr>
<tr>
<td>PCs Allow SFN access to state forest areas for grazing</td>
<td></td>
</tr>
<tr>
<td>PCs Allocation of revenue lands for SFN grazing</td>
<td></td>
</tr>
</tbody>
</table>

To access this page:

- Press the button marked “Policies” under the “Current Model Data” heading of the side bar.

The data required to define each policy consist of:

- A descriptive name for the policy
- An optional description of the characteristics of the policy that may be accessed via the tab marked "Edit description of current policy"
- An assessment of the level of impact (on a scale of -5 to +5) that each constraint can be expected to have on each of the outcomes in the model.
Impacts of Policies on Constraints

To access the data entry page for the impacts of policies on constraints:

✓ Select the tab marked "Impacts of policies on constraints".

The data entry grid may be grouped by policy or constraint to improve clarity and reduce the chances of errors during data entry.

Displaying Policy Descriptions in the List

To view the list with the descriptions of each policy displayed:

✓ Make sure that the "Show policy descriptions in list" checkbox is checked.

To hide the descriptions in the list policies:

✓ Uncheck the "Show policy descriptions in list" checkbox.
Printing the List of Policies
The list of policies can be printed directly from the policies data page.

To display the print preview dialog that allows the selection of printers and manipulation of the appearance of the print out:

- Make sure that the list of policies or a policy description is displayed
- Press the [print list of policies] button on the top right-hand side of the page.

To print to the currently selected printer from the print preview dialog:

- Press the [print] button on the print preview dialog.

Printing the List of Policy Impacts
The list of impacts of policies on constraints can be printed directly from the policies data page.

To display the print preview dialog that allows the selection of printers and manipulation of the appearance of the print out:

- Make sure that the list of impacts of policies on constraints is displayed
- Press the [print summary of policy impacts] button on the top right-hand side of the page.

To print to the currently selected printer from the print preview dialog:

- Press the [print] button on the print preview dialog.
Summarising Extrapolate Models

EXTRAPOLATE offers a number of graphical summaries of the data that may be used as a basis for discussion amongst stakeholders and for an initial narrowing of the policy options that may be available. Access the model summaries via the buttons under the Model Sumaries section of the side bar.

After you have selected the model that you wish to work with from the List of Models, to display the Model Summaries section of the side bar:

- Click on the section heading.


**Stakeholder Group Summaries**

The stakeholder group summaries page displays information about the livelihood status of each stakeholder group and their relationship with the model outcomes and constraints.

<table>
<thead>
<tr>
<th>Stakeholder Groups</th>
<th>Include?</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Smallholder farmers</td>
</tr>
<tr>
<td>1</td>
<td>Landless, scheduled caste and tribals</td>
</tr>
<tr>
<td>2</td>
<td>Large farmer tenant</td>
</tr>
<tr>
<td>3</td>
<td>Crop tenants / private land owners</td>
</tr>
<tr>
<td>4</td>
<td>Forest villagers</td>
</tr>
<tr>
<td>5</td>
<td>Commercial feed suppliers</td>
</tr>
<tr>
<td>6</td>
<td>Village jirigyas</td>
</tr>
<tr>
<td>7</td>
<td>NGOs</td>
</tr>
<tr>
<td>8</td>
<td>Animal husbandry department</td>
</tr>
<tr>
<td>9</td>
<td>Forest department</td>
</tr>
<tr>
<td>10</td>
<td>Revenue department</td>
</tr>
<tr>
<td>11</td>
<td>Other government departments</td>
</tr>
<tr>
<td>12</td>
<td>Police</td>
</tr>
</tbody>
</table>

To display the stakeholder group summary page:

- Press the button marked “Stakeholder groups” under the “Model Summaries” heading of the side bar.

To switch amongst the stakeholder summaries:

- Select a tab from the set of tabs located above the summary graph.
### Viewing Data for a Selection of Stakeholder Groups

<table>
<thead>
<tr>
<th>Stakeholder group</th>
<th>Include?</th>
</tr>
</thead>
<tbody>
<tr>
<td>S01 Small ruminant reaters</td>
<td>✔️</td>
</tr>
<tr>
<td>S02 Small ruminant cooperatives</td>
<td>✔️</td>
</tr>
<tr>
<td>S03 Landless scheduled castles and till</td>
<td>✔️</td>
</tr>
<tr>
<td>S04 Large ruminant reaters</td>
<td>✔️</td>
</tr>
<tr>
<td>S05 Crop farmers / private land owners</td>
<td>✔️</td>
</tr>
<tr>
<td>S06 Fodder vendors</td>
<td>✔️</td>
</tr>
<tr>
<td>S07 Commercial feed suppliers</td>
<td>✔️</td>
</tr>
<tr>
<td>S08 Village panchayats</td>
<td>✔️</td>
</tr>
<tr>
<td>S09 NGOs</td>
<td>✔️</td>
</tr>
<tr>
<td>S10 Animal husbandry department</td>
<td>✔️</td>
</tr>
<tr>
<td>S11 Forest department</td>
<td>✔️</td>
</tr>
<tr>
<td>S12 Revenue department</td>
<td>✔️</td>
</tr>
<tr>
<td>S13 Other government departments</td>
<td>✔️</td>
</tr>
<tr>
<td>S14 Politicians</td>
<td>✔️</td>
</tr>
</tbody>
</table>

Users may wish to view summaries that relate to only a subset of the stakeholder groups in the model. This can be achieved by checking or unchecking stakeholder groups in the filter list that is to the left of the summary graph.
Initial Livelihood Status

This graph displays the livelihoods status of the selected stakeholder groups before the application of any policies.
Impacts of Outcomes

This graph shows the aggregated impacts of the individual outcomes across the selected stakeholder groups.

Mean Impacts of Outcomes on Livelihood Status of the Selected Stakeholder Groups
Relevance of Constraints

This graph shows the mean relevance of the constraints in the model to the selected stakeholder groups.
**Outcome Summaries**

The outcome summaries page displays information about the relationships of the outcomes with the model stakeholder groups and constraints.

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Include?</th>
<th>Impacts on constraints</th>
<th>Impacts on stakeholder groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>001: Freely rights for access to ride</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>002: Free rights for access to ride</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>003: Have planted timber on common</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>004: Have planted timber on private</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>005: Have effective use of crop type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>006: Better access to purchased feed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>007: Improved animal livestock</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>008: Improved health of livestock</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To display the outcome summary page:

- Press the button marked “Outcomes” under the “Model Summaries” heading of the side bar.

To switch amongst the outcome summaries:

- Select a tab from the set of tabs located above the summary graph.
Viewing Data for a Selection of Outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Include?</th>
</tr>
</thead>
<tbody>
<tr>
<td>001 Fixed rights for access to and use</td>
<td>✔</td>
</tr>
<tr>
<td>002 Fixed rights for access to and use</td>
<td>✔</td>
</tr>
<tr>
<td>003 More planted fodder on common</td>
<td>✔</td>
</tr>
<tr>
<td>004 More planted fodder on private land</td>
<td>✔</td>
</tr>
<tr>
<td>005 More effective use of crop by-product</td>
<td>✔</td>
</tr>
<tr>
<td>006 Better access to purchased feed</td>
<td>✔</td>
</tr>
<tr>
<td>007 Improved crop-livestock integration</td>
<td>✔</td>
</tr>
<tr>
<td>008 Improved horticulture-livestock interaction</td>
<td>✔</td>
</tr>
</tbody>
</table>

Users may wish to view summaries that relate to only a subset of the outcomes in the model. This can be achieved by checking or unchecking outcomes in the filter list that is to the left of the summary graph.
Impacts of Constraints

This graph shows the aggregated impacts of the constraints in the model on the selected outcomes.
Impacts on Stakeholder Groups

This graph shows the aggregated impacts of the selected outcomes on each of the model's stakeholder groups.
Constraint Summaries

The outcome summaries page displays information about the relationships of the constraints with the model outcomes stakeholder groups and policies.

![Constraint Summaries Diagram]

To display the constraint summary page:

- Press the button marked “Constraints” under the “Model Summaries” heading of the side bar.

To switch amongst the constraint summaries:

- Select a tab from the set of tabs located above the summary graph.
Viewing Data for a Selection of Constraints

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Include?</th>
</tr>
</thead>
<tbody>
<tr>
<td>C01 Shepherds excluded from VSS</td>
<td>✓</td>
</tr>
<tr>
<td>C02 Tenancy agreements don’t meet r</td>
<td>✓</td>
</tr>
<tr>
<td>C03 Common lands not allocated for gr</td>
<td>✓</td>
</tr>
<tr>
<td>C04 Competition from large ruminants</td>
<td>✓</td>
</tr>
<tr>
<td>C05 Conflict between forest departmen</td>
<td>✓</td>
</tr>
<tr>
<td>C06 Inadequate support for dev and m</td>
<td>✓</td>
</tr>
<tr>
<td>C07 Adverse economics of fodder cult or</td>
<td>✓</td>
</tr>
<tr>
<td>C08 Adverse economics of feed and fc</td>
<td>✓</td>
</tr>
<tr>
<td>C09 Inadequate knowledge of feed / h</td>
<td>✓</td>
</tr>
<tr>
<td>C10 Poor coordination amongst govern</td>
<td>✓</td>
</tr>
<tr>
<td>C11 Poor coordination amongst others</td>
<td>✓</td>
</tr>
</tbody>
</table>

Users may wish to view summaries that relate to only a subset of the constraints in the model. This can be achieved by checking or unchecking constraints in the filter list that is to the left of the summary graph.
Impacts on Outcomes

This graph shows the aggregated impacts of the selected constraints on each of the model’s outcomes.
Relevance to Stakeholder Groups

This graph summarises the mean relevance of the selected constraints to each of the model’s stakeholder groups.

Mean Relevance of the Selected Constraints to Stakeholder Groups
Impacts of Policies

This graph shows the aggregated impacts of the policies in the model on the selected constraints.
Policy Summaries

The policy summaries page displays information about the relationships of the policies with the model constraints.

### Policies

<table>
<thead>
<tr>
<th>Policy</th>
<th>Includes?</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDF Account for SRI needs in managing</td>
<td>✔️</td>
</tr>
<tr>
<td>PGE When SRI access to state forest is</td>
<td>✔️</td>
</tr>
<tr>
<td>PDT Statement of revenue lands for SRI</td>
<td>✔️</td>
</tr>
</tbody>
</table>

#### Mean impacts of the Selected Policies on Model Constraints

![Mean impacts of the Selected Policies on Model Constraints](chart.png)

To display the policy summary page:

- Press the button marked “Policies” under the “Model Summaries” heading of the side bar.
Viewing Data for a Selection of Policies

<table>
<thead>
<tr>
<th>Policy</th>
<th>Include?</th>
</tr>
</thead>
<tbody>
<tr>
<td>P01 Account for SR needs in management</td>
<td>✔️</td>
</tr>
<tr>
<td>P02 Allow SR access to state forest area</td>
<td>✔️</td>
</tr>
<tr>
<td>P03 Allotment of revenue lands for SR</td>
<td>✔️</td>
</tr>
</tbody>
</table>

Users may wish to view summaries that relate to only a subset of the policies in the model. This can be achieved by checking or unchecking policies in the filter list that is to the left of the summary graph.
Impacts on Constraints

This graph shows the aggregated impacts of the selected policies on each of the constraints in the model.
Printing a Summary Graph
To print the summary graph that is currently visible:

✓ Press the print button on the top right-hand side of the interface

For example, to print the graph summarising the relevance of each constraint to the selected stakeholder groups:

✓ Press the button marked 

This will display a print preview dialog.

To print to the currently selected printer:

✓ press the button marked 

![Print preview dialog]

To print to the currently selected printer:
Policy Analysis with Extrapolate

Manipulation of the detailed data that are required to construct an effective EXTRAPOLATE model is accessed via the buttons under the Current Model Data section of the side bar.

View an analysis of the impacts of policy changes on the stakeholder groups in the model.

View an analysis of the impacts of policy changes on the effects of the outcomes in the model.

View an analysis of the impacts of policy changes on the effects of the constraints in the model.

After you have selected the model that you wish to work with from the List of Models, to display the Policy Analysis section of the side bar:

✔️ Click on the Policy Analysis section heading.
Impacts on Stakeholder Groups

The stakeholder analysis page summarises, graphically, the impacts of applying a set of policy instruments on the livelihoods of selected stakeholder groups in the model.

To display the stakeholder analysis page:

- Press the button marked “Impacts on stakeholder groups” under the “Policy Analysis” heading of the side bar.

To switch amongst the outputs of the analysis:

- Select a tab from the set of tabs located above the summary graph.
Before and After Comparison

This graph compares the livelihood statuses of the stakeholder groups in the model before and after the application of policy instruments.
Summary of Policy Impacts

This graph summarises the net changes in livelihood status of the stakeholder groups (both positive and negative) that the model attributes to the application of the policy instruments.
Impacts on Outcomes

The outcomes analysis page summarises, graphically, the impacts of applying a set of policy instruments on the scale of the impacts exerted on the models stakeholder groups by each of the outcomes in the model.

To display the outcomes analysis page:

Press the button marked “Impacts on outcomes” under the “Policy Analysis” heading of the side bar.

To switch amongst the outputs of the analysis:

Select a tab from the set of tabs located above the summary graph.
Before and After Comparison
This graph compares the scale of the impacts of outcomes on the livelihood statuses of the stakeholder groups in the model before and after the application of policy instruments.
Summary of Policy Impacts

This graph summarises the net changes in the scale of the impacts of model outcomes on the livelihood status of the stakeholder groups (both positive and negative) that the model attributes to the application of the policy instruments.
Impacts on Constraints

The constraints analysis page summarises, graphically, the impacts of applying a set of policy instruments on the scale of the impacts exerted on the models outcomes by each of the constraints in the model.

To display the constraints analysis page:

- Press the button marked “Impacts on constraints” under the “Policy Analysis” heading of the side bar.

To switch amongst the outputs of the analysis:

- Select a tab from the set of tabs located above the summary graph.
Before and After Comparison

This graph compares the scale of the impacts of constraints on the outcomes in the model before and after the application of policy instruments.
Summary of Policy Impacts

This graph summarises the net changes in the scale of the impacts of model constraints on the outcomes (both positive and negative) that the model attributes to the application of the policy instruments.
Filtering the Analysis

An EXTRAPOLATE policy analysis can be carried out with any subset of the model elements using the filter pages that are located to the left of the analysis output graph.

<table>
<thead>
<tr>
<th>Policies</th>
<th>Stakeholders</th>
<th>Outcomes</th>
<th>Constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>P01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Account</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>for SR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>needs in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allow SR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>access to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>state</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>forest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allotment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of revenue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lands for</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SF</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To switch amongst filters:

- Select a tab from the set of tabs located above the filter grids.

To include or exclude a model element from the analysis:

- Check or uncheck the box next to that element in the filter grid.
Printing Summaries of the Analyses

To print a summary graph summarising the results of the analysis that is currently visible:

✓ Press the print button on the top right-hand side of the interface

For example, to print the graph summarising the impacts of policies on model constraints:

✓ Press the button marked

This will display a print preview dialog.

To print to the currently selected printer:

✓ press the button marked
Extrapolate System Functions

Basic system functions are accessed through the buttons on the System section of the sidebar:

- Display the online help file.
- Quit the EXTRAPOLATE software package.

After you have selected the model that you wish to work with from the List of Models, to display the Current Model Data section of the side bar:

✔ Click on the System section heading.

Get Help

The EXTRAPOLATE help file contains all the information contained in this user guide in a format (MS HTML help) that is easily accessible from within the software itself.

To launch the help file:

✔ Press the button marked “Help” under the “System” heading of the side bar.

Closing the EXTRAPOLATE Software

To close the EXTRAPOLATE software programme when you have finished working with it:

✔ Press the button marked “Exit Extrapolote” under the “System” heading of the side bar.