TRIST Help

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1. WARNING! TRIST files location and Excel security

Because of the way Excel handles security with user files containing vba code (macros), the following rules should be observed:

- **All TRIST files must be stored on your computer's hard drive**. Accessing TRIST files from another hard drive on your local network will trigger a security alert from Excel and jeopardize TRIST proper operation.
- **Excel settings should be adjusted** in order to authorize TRIST files to run. It recommended to authorize the folder containing all TRIST related files by following the process below:

    1. In Excel, click the *File* menu and then choose *Options*.
    2. In the *Options* panel, choose *Trust Center* and click *Trust Center Settings*.
    3. In the Trust Center panel choose Trusted Locations.
    4. Click *Add new location...* and browse to select the folder in which your TRIST files are stored and click *OK*.
       The new folder location should be now added to the list of trusted locations.
    5. Click OK to close the *Trust Center* and the *Options* panels.

Excel now trusts the folder to be safe and TRIST should operate smoothly.

2. About TRIST Help

This is TRIST (Tariff Reform Impact Simulation Tool) help file. You may want to learn more about:

- What is TRIST - Overview
- TRIST Step by Step Operation
- TRIST Aggregation file
- TRIST Simulation file

3. What is TRIST - Overview

- TRIST (Tariff Reform Impact Simulation Tool) is a trade model and Excel-based software solution designed to simulate the short-term impacts of trade reforms (duties, taxes, and non-tariff measures).
- TRIST allows decision makers to quickly assess adjustment costs related to trade reforms.

TRIST features

- Answers policy-relevant questions by operating at the tariff line level
- Provides a complete picture of fiscal revenue by accounting for tariff exemptions and all taxes and duties applied to imports
- Handles virtually any type of tariff reform through a flexible tariff reform scenario builder
- Simulates the lifting of non-tariff measures
- Simulates impacts on the domestic sector, including domestic production and local employment
- Accommodates specific situations such as sensitive products and quotas
- Provides a simple and transparent simulation tool with Excel files that can be adjusted to incorporate local knowledge

TRIST input needs

- **CUSTOMS**: Data on imports and FIscal revnue on tariff (customs duty) and any other tax or duty levied on imports (excise, VAT...) by product and trading partner; data on non-tariff measures (optional)
- **NATIONAL STATISTICS**: data on domestic output and employment by sector (optional)
- **USER**: country group aggregations, tariff line selection, definition of tariff reform scenarios, and model parameters.

Theoretical Framework

TRIST uses a static and simple partial equilibrium model that takes into account up to four different channels through which tariff reform affects revenue:

1. The direct revenue losses associated with abolishing or lowering a tariff.
2. Exporter substitution, that is, goods that were previously imported from another country are now imported from the country for which tariffs have been reduced.
3. Domestic substitution, that is, goods that were previously produced domestically are replaced with imports.
4. The demand effect, that is, the overall increase in consumption of a product when its price falls due to tariff liberalization.

For a detailed description on how these effects are modeled please refer to the sections on Exporter Substitution, Domestic Substitution and Demand Effect.

Apart from tariffs, the model also takes into account revenue from taxes like VAT, excise duties, or any other tax on imports.

TRIST modeling assumptions:

- No substitution between different products (distinct tariff lines)
- Imperfect substitution among varieties of any given product (for example shirts from different source countries). TRIST uses the Armington assumption of heterogeneous goods and extends it to the domestic production (with distinct substitution elasticity with imports).
- TRIST operates with the price taker (or small country) assumption. It means the considered market is not big enough to influence world prices when its demand changes.
- TRIST computation is based on elasticity values (i.e. percentage changes). Therefore, initial zero imports remain at zero when tariff changes. As a consequence, no new exporter can enter the market.

TRIST results

TRIST estimates post reform values of:

- Imports
- Fiscal revenues on imports
- Applied tariff and tax rates, and price changes
- Domestic output and employment

TRIST software

TRIST operates within Excel (2007 and later version) and is made of two files:

- The TRIST Aggregation file is used to prepare the data for the simulation;
- The TRIST simulation file is used to setup and run the simulation.

4. TRIST Data requirements

TRIST uses data on imports of goods to simulate the impact of tariff, tax or even Non Tariff Measures reforms, on imports values and fiscal revenues.

DATA:

Ideally, data are to be extracted from the computerized system used by the customs administration (usually ASYCUDA) for the last complete fiscal year available and cover all imports at the transaction level.

Data should be exported as an Excel file or as a comma delimited text file (*.csv or *.txt file) with information as listed below organized in columns for each transaction (in rows):

- **Country of Origin**
- **Product extended HS Code** (at the national tariff line level) (6 or more digit codes)
- **Customs Procedure Code** (CPC or Regime) (permanent, transit, temporary...) with an additional table (see METADATA below);
- **Additional CPC code** if any
- **Agreement Code** (MFN or any preferential treatment) with an additional table (see METADATA below);
- **Import Value**
- **Statutory tariff rate**
- **Effective Tariff Revenue** (value)
- **Effective Revenue for each and every other tax or duty** collected on imports at the border (VAT, Excise, ….)

- **Optionally** and if relevant to the analysis, **the list of NTM codes** applied to each product at the tariff line level, using the international classification of NTMs

INFORMATION:

The following tables should be included:

- **Customs Procedure Codes** (CPC or Regime) and additional CPC codes: the table should include all codes, their respective description and the respective treatment of imported goods for each and every duties and taxes.
- List of existing **preferential trade agreements** with their respective code and list of partner countries.
- Tariff Schedule for each preferential trade agreement.
- A document detailing **all tariffs taxes and duties with their respective calculation base** (for example VAT = (Import Value + Effectively Applied Tariff Revenue) * VAT rate) and including any other relevant information
- A file with the **complete tariff, tax and duty statutory schedules** at the national tariff line level (TLL) and by import regime (see template below).

5. What's new in TRIST

- The maximum of taxes and duties has been increased to 8 on top of customs duties.
- The fiscal base for each tax and duty can be precisely defined in TRIST Aggregation and adjusted in TRIST Simulation. In other words, changing a tax fiscal base is now possible through scenarios.
- The maximum number of country groups has been increased to 25.
- TRIST Simulation offers more flexibility in identifying sensitive products in order to build product groups.
- The impact of lifting Non Tariff Measures (NTMs) can now be simulated beside tariff and tax reforms on imports.
- The Trade Diversion add-on has been included.
- Many processes have been streamlined

6. TRIST Step by Step Operation

1. **In TRIST Aggregation file:**
    1. Reset TRIST Aggegation file (optional but recommanded);
    2. Set the number of taxes and duties ;
    3. Define the fiscal base for each tax or duty;
    4. Use the Data Import Assistant to fill the file with the requested information;
    5. Build country groups ;
    6. Select the tariff lines to be included in the simulation;
    7. Build TRIST Simulation dataset ;
2. **In TRIST Simulation file:**
    1. Reset TRIST Simulation file (optional but recommanded);
    2. Import trade data from TRIST Aggregation file;
    3. Import domestic data if any (optional);
    4. Build additional product groups or tariff schedules (optional);
    5. Build tariff scenarios ;

6. Apply a scenario to each country group;
7. Adjust elasticity values and adjustment factors (optional);
8. Save results (optional).

7. TRIST Aggregation File

TRIST Aggregation file file is where you prepare the data to be used in TRIST simulations.

See also:

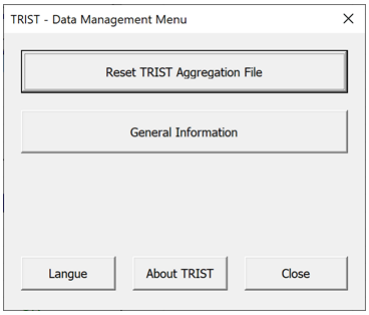
- Resetting TRIST Aggregation file
- Entering General Information
- Setting Number of Taxes and Duties
- Defining Taxes and Duties
- Importing Raw Data

7.1 Reset TRIST Aggregation file

TRIST Aggregation file must be reset before starting with a new simulation project in TRIST. This makes sure you'll start fresh with a completely clean file before importing new data.

To reset TRIST Aggregation file:

1. Choose the *Data Info* worksheet
2. Click the *TRIST Menu* button to open the panel:

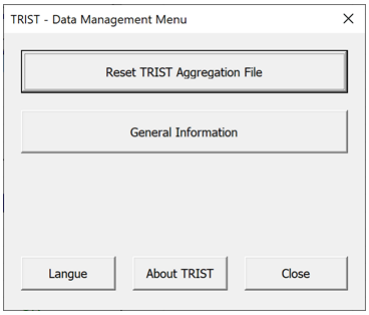


3. Click *Reset TRIST Aggregation File* button
4. Click OK to reset TRIST Aggregation file.

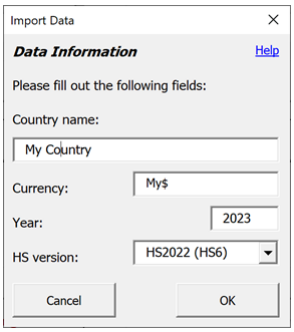
7.2 Enter General Information

To set general information in TRIST Aggregation file:

1. Display the *Data Info* worksheet and click the *Manage Data button* to display *TRIST - Data Management*panel:



2. Click the *General Information* button to display:



3. Enter meta data information, namely *Country Name* , *Currency*, *Year* and select the *HS version* used by the considered tariff structure. If there is an information you don't know, leave it blank and come back later. The year format can be either 2008 or 2008-09 depending on the fiscal year format for the considered country.
   Note that the proper HS version should be carefully selected as it is used internally to concord various nomenclatures in TRIST.
4. Click *OK* to save. Information you entered now appears on the *Data Info* spreadsheet.

See also:

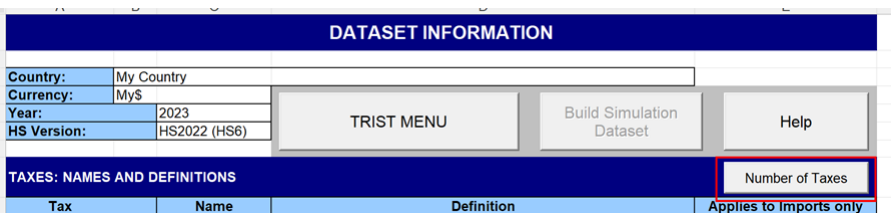
- Import Data - Introduction
- Step 1 - General information
- Step 2 - Tax information
- Step 3-7 - Data import
- EPA exclusion list

7.3 Number of Taxes and Duties

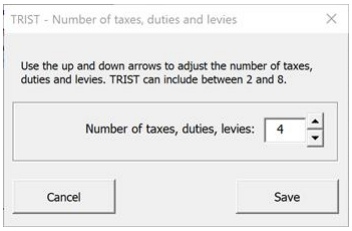
TRIST can now handle up to 8 different taxes and duties in addition to the custom duties.

To specify the number of taxes and duties:

1. On the Control Panel worksheet, click the *Number of Taxes* button



2. In the panel, click the up and down buttons to select the proper number:



3. Click the *Save* button.

TRIST automatically adjust the taxes and duties tables accordingly.

8	**TAXES: NAMES AND DEFINITIONS**			Number of Taxes
9	**Tax**	**Name**	**Definition**	**Applies to Imports only**
10	**Tax 1**	Tax 1	**Missing**	No
11	**Tax 2**	Tax 2	**Missing**	No
12	**Tax 3**	Tax 3	**Missing**	No
13	**Tax 4**	Tax 4	**Missing**	No
18				
19				
20		**TRIST - Status of Imported Data**		
21		Imports		**Missing**
22		Statutory Tariff Revenue		**Missing**
23		Collected Tariff Revenue		**Missing**
24		Tax 1		**Missing**
25		Tax 2		**Missing**
26		Tax 3		**Missing**
27		Tax 4		**Missing**
32		Optional Step: Non Tariff Measures		Option

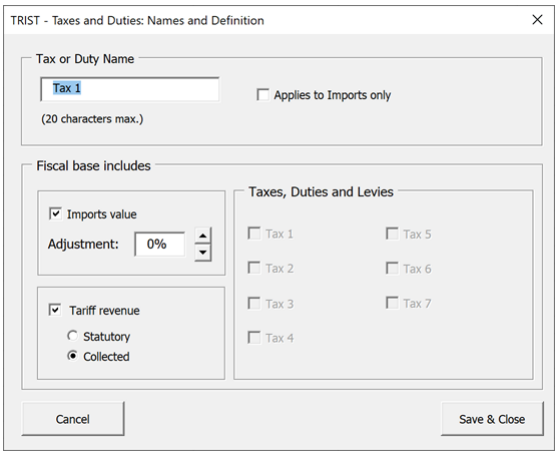
7.4 Define Tax & Duties

Entering Tax Information

Once the number of taxes is specified, each tax must be defined. The principle here is to replicate as accurately as possible the calculation method for each tax or duty.

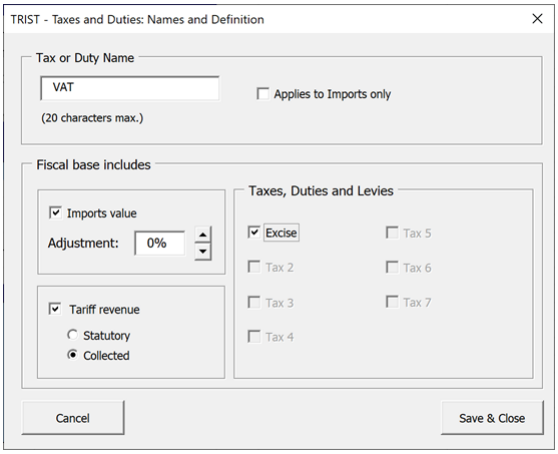
To define a tax:

1. In the *DATA INFO* worksheet click on the tax name in the table titled *TAXES NAMES AND DEFINITIONS* .



2. Enter the *Tax or Duty Name*.
3. Check *Applies to Imports only* if the considered tax applies only to imports, not to the domestic production.
4. Specify what the *Fiscal Base includes* by checking the proper components.
   For *Imports value*, the *Adjustment* parameter allows to increase/decrease the declared

value if necessary.
For Tariffs (customs duty) you can choose between Statutory or Collected.
Any previously defined tax or duty can be included in the fiscal base as shown below:



Example: a tax with rate r which fiscal base includes the import value adjusted by adj % plus the Collected Tariff Revenue plus the Excise tax will be computed by TRIST as follows:

r * (M*(1+adj) + CTR + Excise)

Once the tax is named and defined, click the *Save & Close* button to save and move to the next tax if necessary.

See also:

- Specifying the number of taxes and duties

7.5 Import Raw Data

Importing the data and filling information is the very first step in using TRIST. In order to be able to import the data into TRIST Aggregation file, you must make sure they are in the proper format. You can refer to the following check list to make sure everything is OK with your data:

- The mandatory data for the TRIST simulation are:
  - Import values,
  - Statutory tariff revenue,
  - Collected tariff revenue,
  - Excise duty (or equivalent) revenue,
  - VAT (or equivalent) revenue, you can also aggregate all other import related taxes in one *Other Taxes* dataset.
- The optional data for the TRIST simulation are:
  - Additional Tax revenue (aggregated as one)
  - EPA exclusion list of products
  - Non Tariff Measures (NTM) list of measures
- Import values and revenue data are organized by tariff line and partner (origin) country.

- Each data set is organized as one table with tariffs codes in rows (in the first column) and partner country names in columns (in the first row).
- The tariff codes are the same for all data sets and in the same order. There cannot be any empty cell in this list.
- The partner country names are the same for all data sets and in the same order. There cannot be any empty cell in this list.
- All values are in the same monetary unit.
- All values are formatted as numbers, tariff codes and country names as text.
- No tariff code with zero total imports remains in the tables.
- The EPA exclusion list and NTM data format are detailed in their respective Help section.

See also:

- Import Data - Introduction
- Step 1 - General information
- Step 2 - Tax information
- Step 3-7 - Data import
- EPA exclusion list

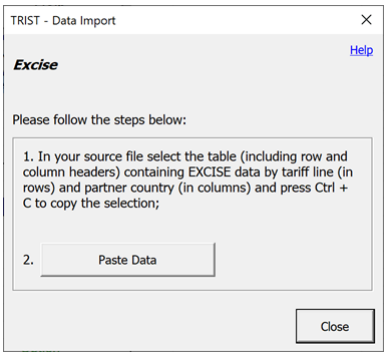
7.5.1 Mandatory Raw Data

This section explains how to import raw data collected from customs or other sources into TRIST aggregation file. See Import Raw Data - Introduction to review the data check list.

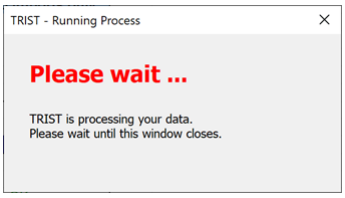
Taxes and duties must be defined prior to importing data into TRIST.

To import data into TRIST Aggregation file:

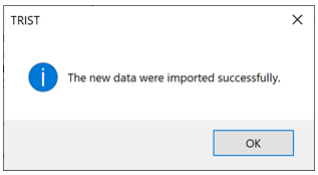
1. In the *DATA INFO* worksheet, in the *TRIST - Status of Imported Data* table, click the name of the dataset you want to import into TRIST .



   In this example, Excise was clicked on the table as indicated in the panel.
2. If not done yet, open the Excel file that contains the dataset to be imported.
3. Select the dataset in the source file. Make sure the structure of your dataset meets TRIST requirements (see Import Raw Data).
4. Press *Ctrl + C* to copy your data.
5. Go back to *TRIST Aggregation* file and click the *Paste Data* button in *TRIST - Data Import*panel.
   TRIST starts the data import process. Wait while the following panel is displayed:



TRIST implements numerous tests to make sure the dataset meets the requirements. If a problem is detected, TRIST displays an error information box which identifies the problem and explains how to fix it. When the process is successfully completed the following panel is displayed:



6. Repeat from step 2 to import all mandatory datasets.

Note that you don't need to import all datasets at once. TRIST keeps track of the Aggregation file construction process and displays a *Data Status Report* on the *Data Info* worksheet. It gives a snapshot of the current situation with regards to importing the data for the simulation and all other requirements (product selection, country groups). TRIST Aggregation file is completed once all ***Missing*** statuses are cleared.

See also:

- Import Data - Introduction
- Step 1 - General information
- Step 2 - Tax information
- Step 3-7 - Data import
- EPA exclusion list

7.5.2 Non Tariff Measures

If your simulation involves lifting of NTM, TRIST offers the option to import NTMs by product and their ad-valorem equivalent tariffs to be used in the simulation. This requires of course having calculated or obtain the ad-valorem equivalent tariffs prior to importing NTM data into TRIST.

Importing NTM data into TRIST follows the same process as for other data sets (see Step 3-7 - Data Import), but the structure of the NTM table to be imported is quite different:

- the first column should list the tariff line codes as used for the other data sets;
- to each tariff line code may correspond **up to 5 NTM** in rows;
- each NTM is identified using the UNCTAD Classification of Non-Tariff Measures at 3-digit level (columns B, D, F, H and J below);

The table to be imported should follow the table structure has below as follows:

	A	B	C	D	E	F	G	H	I	J	K
1	TL	NTMC1	NTMV1	NTMC2	NTMV2	NMTC3	NTMV3	NTMC4	NTMV4	NTMC5	NMTV5
2	01042090	A820	22.00%	G310	27.00%	D410	35.00%	D110	1.00%	C300	3.00%
3	01051110										
4	01051190										
5	01051900										
6	01059410	A820	22.00%								
7	01061940	G310	27.00%								
8	01062090	B851	46.00%								
9	02012000	B310	44.00%								
10	02023000										
11	02031200										
12	02031900										
13	02032900										
14	02044200										
15	02044300										
16	02071400	H190	36.00%	A859	35.00%						
17	02072500	P300	20.00%								
18	02090000										
19	02101100	E350	47.00%								
20	02101200										
21	02101900										
22	03011000	D110	1.00%	G320	12.00%						
23	03021200	E900	17.00%	A310	9.00%						
24	03024000	E410	15.00%								

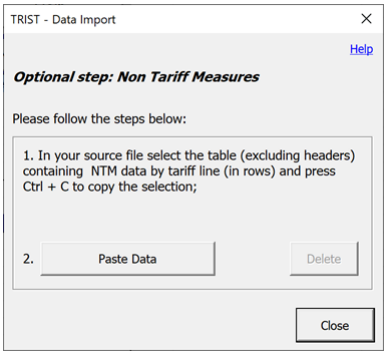
with NTMCx (i.e *NTMC1*) the NTM code and NTMVx (i.e *NTMV1*) the ad-valorem equivalent tariff of the mesure.

.

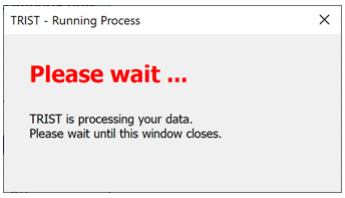
Based on the NTM code, TRIST will automatically identifiy NTM that affect production versus distribution.

To import NTM data into TRIST Aggregation file:

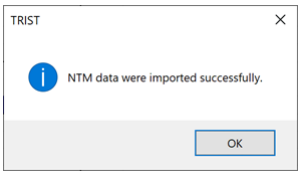
1. In *TRIST - Status of Imported Data*, click on the *Non-Tariff Measures* label.
   The following panel displays:



2. If not done yet, open the Excel file that contains the NTM data to be imported.
3. Select the dataset in the source file, excluding column headings. Make sure the structure of your dataset meets TRIST requirements (see above).
4. Press *Ctrl + C* to copy your data.
5. Go back to *TRIST Aggregation* file and click the *Paste Data* button in *TRIST - Data Import*panel.
   TRIST starts the data import process. Wait while the following panel is displayed:



TRIST implements some tests to make sure the dataset meets its requirements. If a problem is detected, TRIST displays an error information box which identifies the problem and explains how to fix it.When the process is successfully completed the following panel is displayed:



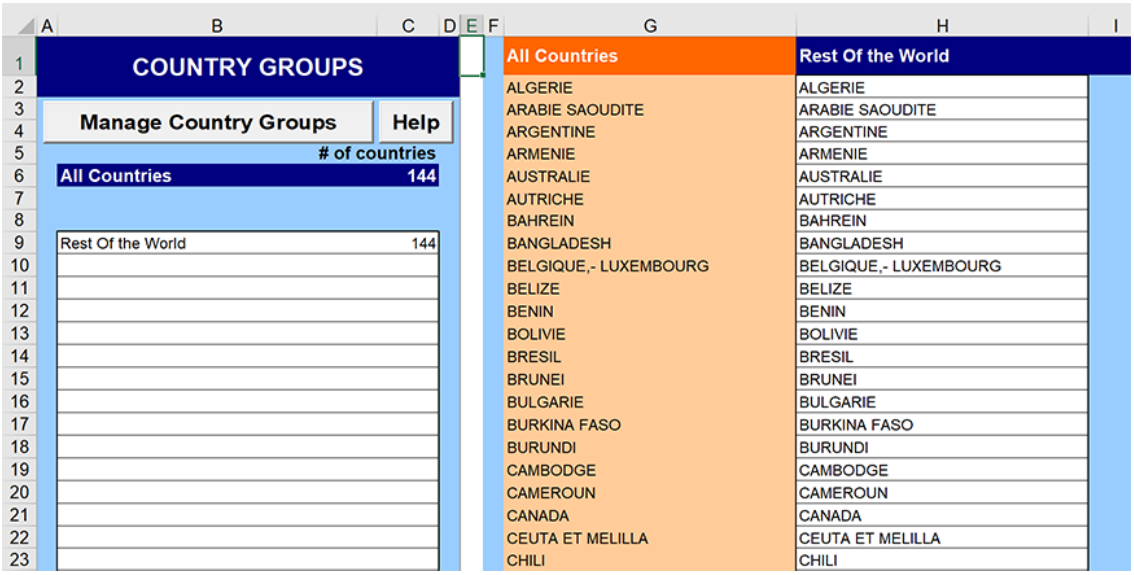
NTM data are stored in the *NTM* worksheet in your TRIST Aggregation file.

7.6 Manage Country Groups

Building country groups is mandatory step in preparing data in TRIST Aggregation file for the TRIST simulation. Since each group will be associated with one tariff reform scenario in the TRIST simulation, the principle is to group countries that would be treated the same way through the tariff reform. The idea is also to store in the Rest Of the World (ROW) group countries which are not important trade partners or not relevant for the considered simulation. TRIST version 5 allows a maximum of 25 country groups, which gives a lot of flexibility. This includes the *Rest Of the World* group which is created by default and filled with countries that are not included in a user-built country group. *Rest Of the World* must always contain at least one country.

Note that in order to avoid double counting any trade flow, a country may belong to only one country group at a time. Also, TRIST requires at least one country group in addition to the *Rest of the World* group.

Country groups are stored and managed in the *Country Groups* worksheet. It is filled with the list of *All Countries* (column G) created from the first imported raw data set. In other words you can't build country groups until you have imported at least one data set into TRIST Aggregation file.



All operations on country groups are available in the *Country Group* worksheet by clicking the *Manage Country Groups* button.

See also:

- Introduction to country groups management
- Open the country group builder
- Build country groups
- Edit country groups
- Transfer countries between country groups
- Rename country groups
- Delete country groups

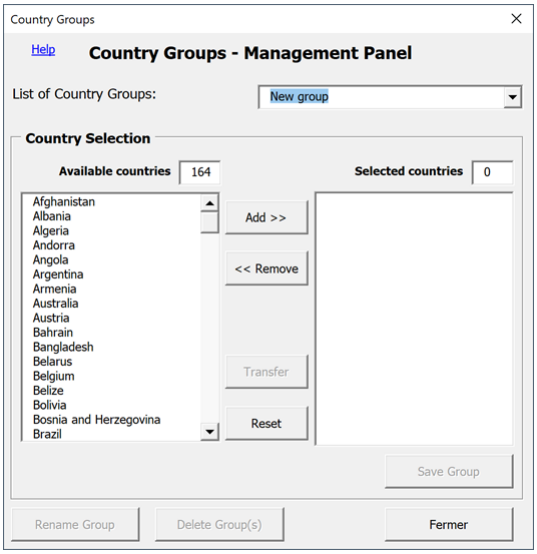
7.6.1 Open the Group Builder

All operations related to country groups are implemented in the *Country Group Builder* .

To open the country group builder:

1. Display the *Country Groups* worksheet.

2. Click the *Manage Country Groups* button. The following window displays:



Let's review the various elements of this panel:

- The main area contains the *Country Selection* tools with two list areas:
  - the left one is titled *Available countries* and lists all countries found in your data that can be included in a custom country group. Here are listed only countries that are not already included in any existing country group (except for Rest of the World). Below the list the number in the Total field returns the number of available countries in the list above.
  - the right one is titled *Selected countries* and this is where countries to be included in the same country group are listed. It is empty at first because no country has been included yet. The *Selected* field below the list returns the number of countries included in the country group under construction.
  - The 4 buttons between the two lists allow manipulating the list of Selected countries:
    - *Add*: to move countries from the list of Avalable countries to the list of Selected countries. (see Building groups)
    - *Delete* : to move country (countries) from the list of *Selected countries* back to the list of *Available countries* . (see Building groups)
    - *Reset* : to remove all countries from the list of *Selected countries* .
    - Transfer : to move countries from the list of Selected countries back to the list of Avalable countries. (see Transferring countries between groups)
- The bottom area displays three buttons to manage country groups:
  - *Save Group* : to name and save the country group under construction. (see Building groups)
  - *Rename Group* : to change the name of an existing country group. (see Renaming groups)
  - *Delete Group* : to delete any existing country group or all groups at once. (see Deleting groups)
- The top area includes a dropdown list to switch between existing groups or create a new group.

See also:

- Introduction to country groups management
- Open the country group builder

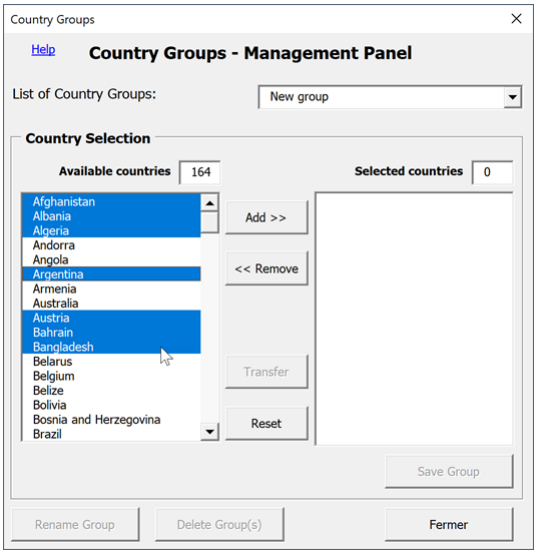
- Build country groups
- Edit country groups
- Transfer countries between country groups
- Rename country groups
- Delete country groups

7.6.2 Build groups

Building country groups is one of the mandatory steps in preparing the data for the TRIST simulation. TRIST requires at least one country group beside the automatic Rest Of the World group. Groups are built by adding countries into them.

To build a country group:

1. Open the Country Groups builder;
2. Select *New group* in the *List of Country Groups* drop down list if not already selected.
3. In the *Available countries* list, click on the country names to be included in the new country group. Selected countries are highlighted in *blue* as shown below:

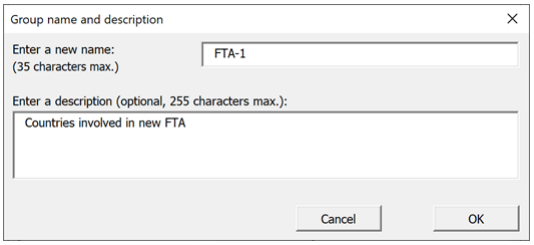


Note the system indicates the total number of available countries (*144* in the example above).

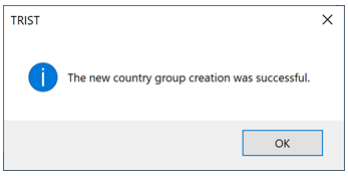
4. Click the *Add button* to move selected countries from the left list to right one (*Selected countries*). As a result:

The number of selected countries is now 6 while the total number of available countries is now 138 (144-6).

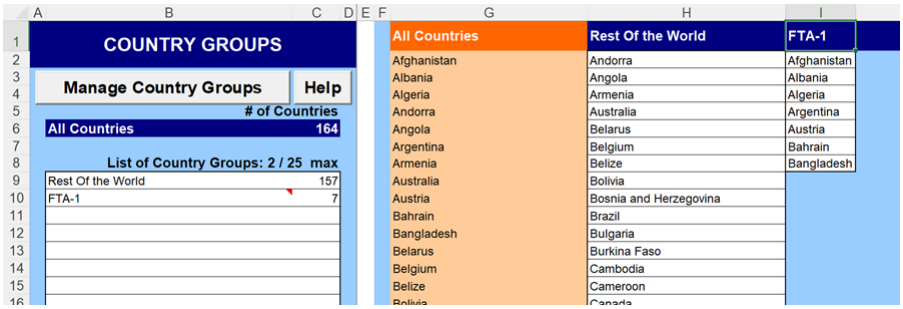
5. Repeat step 4 as necessary.
   You can also remove countries from the selection if you added them by error. Simply click on them in the *Selected countries* list and click the *Delete* button to bring them back to the *Available countries* list.
6. Click the *Save Group* button to display the window as below. Enter a *name* and a *description* (optional) and click *OK.*



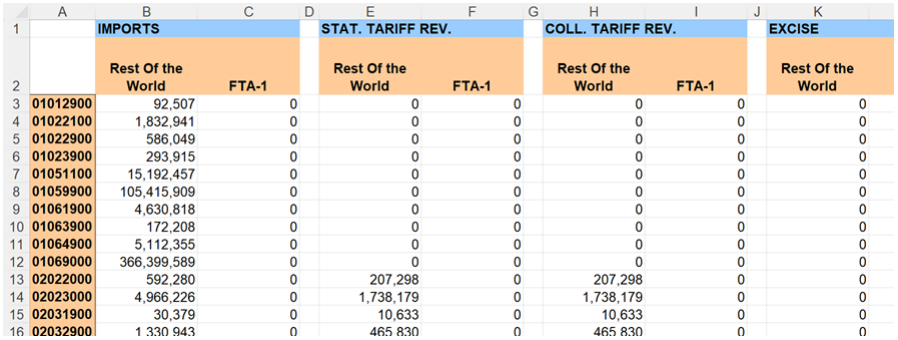
TRIST builds the new country group and displays the following:



The new group name (Group FTA in our example) is added to the List of Country Groups in column B and a new column (column I in the example) is created with the group name as the heading, followed by the actual list of included countries as shown below:



7. Repeat steps 1 to 6 to create additional groups;
8. Click the *Build* button when you are done managing country groups. TRIST then builds the aggregated (by country group) data tables in the *TRIST SELECTION* worksheet (this operation may take some time). The *TRIST Selection* worksheet contains the data as they will actually be used in the *TRIST Simulation* fileas shown below:



	IMPORTS		STAT. TARIFF REV.		COLL. TARIFF REV.		EXCISE
	Rest Of the World	FTA-1	Rest Of the World	FTA-1	Rest Of the World	FTA-1	Rest Of the World
01012900	92,507	0	0	0	0	0	0
01022100	1,832,941	0	0	0	0	0	0
01022900	586,049	0	0	0	0	0	0
01023900	293,915	0	0	0	0	0	0
01051100	15,192,457	0	0	0	0	0	0
01059900	105,415,909	0	0	0	0	0	0
01061900	4,630,818	0	0	0	0	0	0
01063900	172,208	0	0	0	0	0	0
01064900	5,112,355	0	0	0	0	0	0
01069000	366,399,589	0	0	0	0	0	0
02022000	592,280	0	207,298	0	207,298	0	0
02023000	4,966,226	0	1,738,179	0	1,738,179	0	0
02031900	30,379	0	10,633	0	10,633	0	0
02032900	1,330,943	0	465,830	0	465,830	0	0

See also:

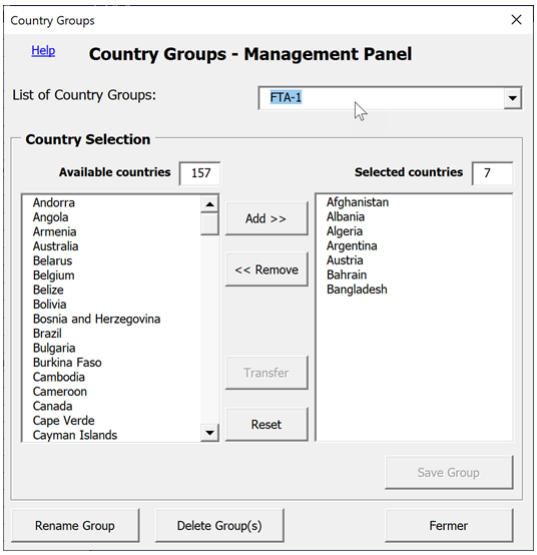
- Introduction to country groups management
- Open the country group builder
- Build country groups
- Edit country groups
- Transfer countries between country groups
- Rename country groups
- Delete country groups

7.6.3 Edit groups

Country groups can be edited any time. You can choose to add more countries or to delete some countries from the group. Countries deleted from the group automatically go back to the *Rest Of the World* group.

To edit a country group:

1. In the Country Groups worksheet click Manage Country Groups to open the *Country Group Management Panel.*
2. In the *List of Country Groups* dropdown list, select the group to be modified. TRIST fills the *Selected countries* list with the actual content of the chosen group.



3. To add more countries to the group, select them from the list of *Available countries* and click the *Add* button as shown in the Build groups section.
4. To delete countries from the group, select them in the *Selected countries* list and click the *Delete* button. Deleted countries are brought back into the *Available countries* list (and into the *Rest Of the World* group).
5. When you are done editing the content of the group, click the *Save Group* button. TRIST adjusts the *Country Groups* worksheet accordingly. TRIST will also rebuild *TRIST Selection* worksheet when the *Country Group Management Panel* closes.

See also:

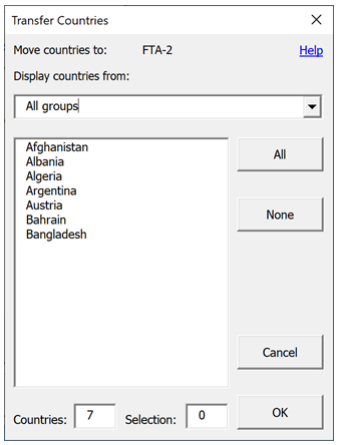
- Introduction to country groups management
- Open the country group builder
- Build country groups
- Edit country groups
- Transfer countries between country groups
- Rename country groups
- Delete country groups

7.6.4 Transfer countries

The *Country Group Management Panel* allows transferring countries from one (or several) group(s) to another. It works only between user defined country groups. To add more countries from Rest Of the World or move back countries to Rest Of the World see Edit Groups .

To transfer countries between groups:

1. In the Country Groups worksheet click *Manage Country Groups* to open the *Country Group Management Panel.*
2. In the *List of Country Groups* , select the destination group, i.e. the one to which you want to transfer countries.
3. Click the *Transfer* button. The following window displays:



The *Move countries to* field indicates the destination group for the transfer of countries (Group FTA-2 in this example). This is the one you selected in first place in the *Country Group Management Panel* .
The list returns all countries belonging to any other group (except Rest of the World) as indicated by the *Display countries from* drop down list (*All groups*). You can narrow the list of countries by selecting a specific group in *Display countries from* .
Depending on the extent of the transfer you want to operate, you can choose to list countries from a single group or all groups, to select individual countries or to click the *All* button to select all listed countries. The *Countries* and *Selection* boxes return the number of listed countries and the number of selected countries to be transfered to the destinaiton country group.

4. Click OK when your changes are completed. TRIST rebuilds all groups involved in the transfer. Note that some groups may be deleted as a result of the transfer if the countries belonging to them are all transferred to another group. The Transfer window closes.

   You need to rebuild TRIST Selection dataset each time you modify country groups (see Build TRIST Simulation dataset).

See also:

- Introduction to country groups management
- Open the country group builder
- Build country groups
- Edit country groups
- Transfer countries between country groups
- Rename country groups
- Delete country groups

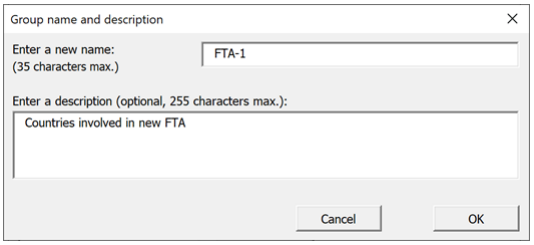
7.6.5 Rename groups

You can change a country group name any time.

To change the name of a group:

1. In the *Country Groups* worksheet click *Manage Country Groups* to open the *Country Group Management Panel.*
2. In the *List of Country Groups* , select the country group to be renamed.

3. Click the *Rename Group* button. The following window displays:



The *Name* field contains the current name .
4. Edit the *name* (and the *description* if you wish) and click *OK*.

See also:

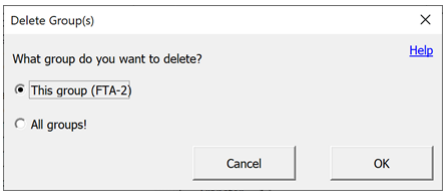
- Introduction to country groups management
- Open the country group builder
- Build country groups
- Edit country groups
- Transfer countries between country groups
- Rename country groups
- Delete country groups

7.6.6 Delete groups

If necessary, country groups can be deleted.

To delete a country group:

1. In the *Country Groups* worksheet click *Manage Country Groups* to open the *Country Group Management Panel.*
2. In the *List of Country Groups* , select the group to be deleted (or any group if you want to delete them all at once).
3. Click the *Delete Group* button. The following window displays:



4. Select *This group* option if you want to delete only the selected group or *All groups!* if you want to delete all and restart building country groups from scratch.
5. Click *OK* to confirm, otherwise click *Cancel*.

See also:

- Introduction to country groups management

- Open the country group builder
- Build country groups
- Edit country groups
- Transfer countries between country groups
- Rename country groups
- Delete country groups

7.7 Manage Tariff Lines

While TRIST always operates at the tariff line level, it allows using and creating product groups in order to select tariff lines to be included in the simulation, or to flag tariff lines to be treated specifically within a tariff reform scenario. For example you may want to work only on a subset of the entire tariff structure (sector analysis for example), or to apply a different tariff to capital goods versus consumer goods and this discrimination can be implemented thanks to product groups.

Note: Tariff schedules should be imported as product groups later in the TRIST simulation file. Tariff schedules as product groups will not be usable as they are if imported in the TRIST Aggregation file but there are still situations where it is convinient to import tariff schedules in TRIST Aggregation first and then convert them into proper tariff schedules in TRIST Simulation.

About the Product Groups worksheet

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Total # of Lines	4510		Add Group		Help							
2	# Of Selected Lines	4510		Delete Group									
3				Reset Selection		Include	No Filter	No Filter	No Filter	No Filter	No Filter	No Filter	
4	Apply Selection												
5	Actually Imported Tariff Lines	Overall Selection		GTAP Categories	ISIC Categories	All Products	Petroleum Products	Raw Material	Intermediate Goods	Consumer Goods	Capital Goods	EPA Exclusion List	
6	01042090	1		09	012	1		1				1	
7	01051110	1		10	012	1		1				1	
8	01051190	1		10	012	1		1				1	
9	01051900	1		10	012	1		1				1	
10	01059410	1		10	012	1		1				1	
11	01061940	1		10	012	1		1				1	
12	01062090	1		10	012	1		1				1	
13	02012000	1		19	151	1		1					
14	02023000	1		19	151	1		1					
15	02031200	1		20	151	1		1					
16	02031900	1		20	151	1		1					
17	02032900	1		20	151	1		1					
18	02044200	1		19	151	1		1					
19	02044300	1		19	151	1		1					
20	02071400	1		20	151	1		1					
21	02072500	1		20	151	1		1					
22	02090000	1		19	151	1			1				
23	02101100	1		20	151	1			1				
24	02101200	1		20	151	1			1				
25	02101900	1		20	151	1			1				
26	03011000	1		14	050	1		1				1	
27	03021200	1		14	050	1		1				1	

- Total number of lines in B1, is the number of tariff lines imported from the raw data;
- Number of selected lines in B2, is the currently number of lines selected for the simulation. This number is the counting of 1 values in the Overall Selection column (column B from row 6). TRIST build the *TRIST Selection* worksheet based on the actual number of selected tariff lines. If this number differs from the first one, it means the simulation will be done on a subset of the data. (see Build a selection)
- Column A from row 6 and below lists all tariff lines as imported from the raw data.

- Column B from row 6 and below (Overall Selection) displays the value of 1 for each selected tariff line (empty cell for not selected lines). In the example above all lines are selected because there is a 1 in each cell facing a tariff line code.
- The *GTAP* and *ISIC* (v3) columns are used for concordance purpose in the simulation file.
- The *All Products* column is the largest possible group. It includes all tariff lines. This is the group you refer to when you want to select all lines or all except some specific lines.
- The *Petroleum Products* , *Raw Material* , *Intermediate Goods* and *Capital Goods* columns contain the definition of their respective product group. In principle these four groups together should cover all tariff lines, however it is not always the case since the tariff line structure of any given country may contain tariff lines that cannot be matched with any of those groups. Therefore, the only sure way of selecting all lines is by referring to the *All Products* group.
- The *EPA exclusion list* is filled only if you imported EPA data. (see EPA list).
- Each product group column is headed by a drop down list on row 3 which controls the use of the corresponding product group in the construction of the *Overall Selection* list. By default (and as in the example above) *Include* is selected for *All Products* while all other product groups display *No Filter* . As a result, the *Overall Selection* list is filled with the value 1. The rules are the following:
    - Any product group which uses *Include* will be added to the *Overall Selection* list.
    - Product Groups displaying *No Filter* are simply not taken into account to build the *Overall Selection* list.
    - *Exclude* is used to remove tariff lines of the considered product group from the *Overall Selection* list. For example, to select all products except *Petroleum* ones, *Include* should be chosen for *All Products* , *Exclude* for *Petroleum Products* , and all other product groups should display *No Filter* . The exclusion can be seen as a subtraction from the *Overall Selection* list.

The combination of these 3 statuses and the possibility to create your own product groups offer all the flexibility in selecting tariff lines for the simulation and in defining tariff reform scenarios.

See also:

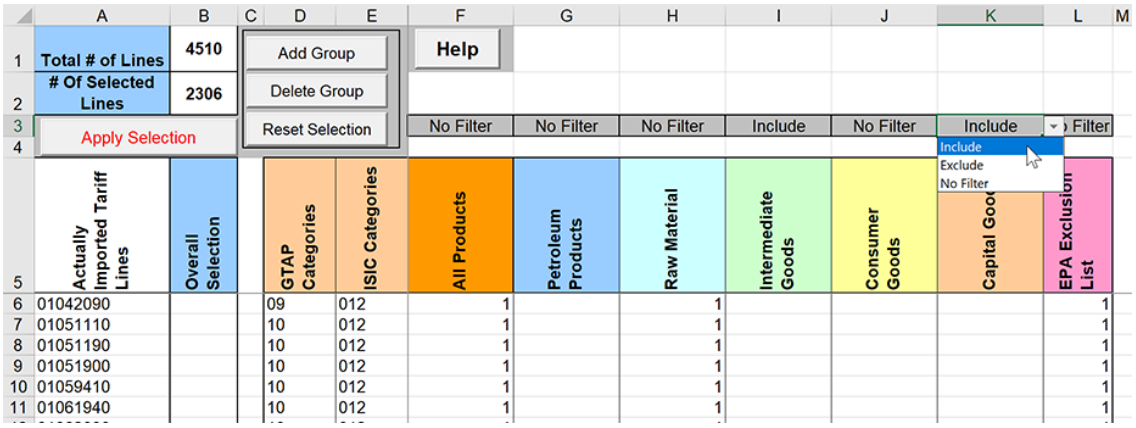
- Manage tariff lines - Introduction
- Make a selection
- Build product groups
- Delete product groups
- Reset selection

7.7.1 Make a selection

TRIST comes with pre-built commonly used product groups that can be used to select tariff lines to be included in the simulation. For example you may want to simulate the impact of a tariff reform on capital goods only, or on all goods except petroleum products. You can do so thanks to the product group feature. It is recommended to read Manage tariff lines - Introduction for a good understanding of how this feature operates.

To build the selection:

1. Build the overall selection by:
   - Setting the status to *Include* for product groups you want to add to the *Overall Selection* list.
   - Setting the status to *Exclude* for product groups which tariff lines you want to remove from the *Overall Selection* list.
   - Setting the status to *No Filter* for product groups you don't want to be taken into account in the construction of the *Overall Selection* list.



   In the example above, *All products* status was changed to *No Filter* while *Intermediate Goods* and *Capital Goods* were set to *Include*. As a result, the *# of Selected Lines* now shows 2306 (the actual selection) while the *Total # of Lines* is 4510. The later remains unchanged, it is the size of the full dataset imported into TRIST.
   Note: as soon as you change any product group filter status, the button to apply the selection chnages to Apply Selection written in red. This is to remind you that the current tariff line selection has not been applied to TRIST Selection dataset yet.
2. Verify that the *# of Selected Lines* is as expected.
3. Click the *Apply Selection* button.

   TRIST processes your selection and adjusts the TRIST SELECTION worksheet accordingly (this operation may take some time to complete).

   The App*lied Selection* button changes to *Selection Applied* .

See also:

- Manage tariff lines - Introduction
- Make a selection
- Build product groups
- Delete product groups
- Reset selection

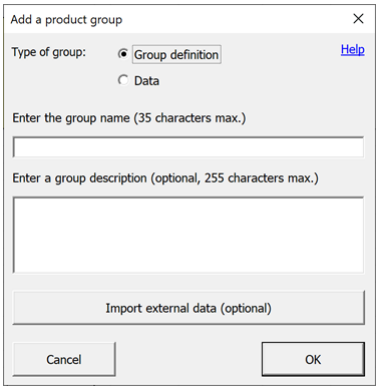
7.7.2 Build product groups

Product groups are used either to flag products for selection purpose or to store data by tariff line.

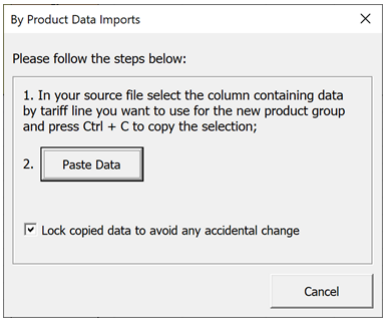
To build a product group:

1. Display the *Product Groups* worksheet;

2. Click the *Add Group* button. The following window displays:

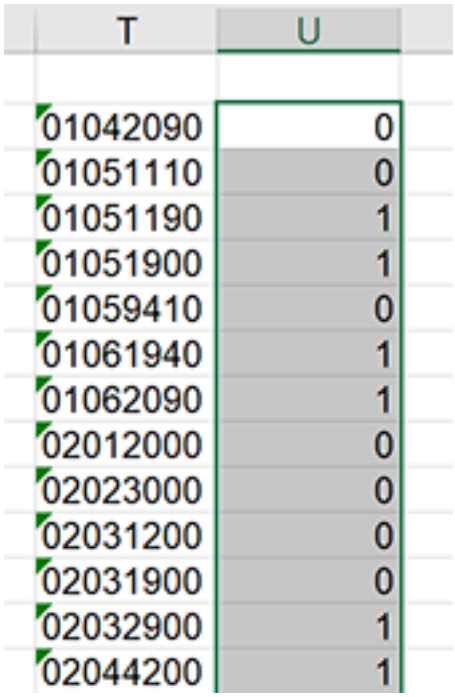


3. Choose the Type of group you want to create:
   - Group definition : to build a product group used to flag tariff lines for selection purpose;
   - Data: to build a single column data storage to be used as a reference in building a group definition. For example the column may contain import values that you then use as a reference to flag in a separate group definition all tariff lines greater than a given import value.
4. Enter a *group name* (mandatory) and a *description*(optional).
   If you want to import the definition or the data from an external file continue with step 5, otherwise go directly to step 9.
5. Click *Import external data* button.



6. If not yet done open the source file containing the definition data you want to copy into TRIST Aggregation;
7. Select the definition data in your source file and press *Ctrl + C* to copy them as shown below. The selection must include as many rows as the tariff line structure already in *TRIST Aggregation* file and only the single column containing the definition (column U in the example below) or the data.
   Note : the copied range can't have any empty cell:
   - Definition: the range can contains only 1s (for selected tariff lines) and 0s otherwise.

- Data: the range can contain any numerical value



	T	U
	01042090	0
	01051110	0
	01051190	1
	01051900	1
	01059410	0
	01061940	1
	01062090	1
	02012000	0
	02023000	0
	02031200	0
	02031900	0
	02032900	1
	02044200	1

8. Click the *Paste Data* button to complete the data import process. This brings you back to the main window once the data transfer process is completed.
9. Click the *OK* button to create the new product group.
   The new group is added in the first empty column of the *Product Groups* worksheet.

If you did not import the definition data, next you need to fill cells with 1 values in the newly created group for the tariff line codes you want to see included in the considered product group or the data if you created a data group. There is no need to enter 0s for tariff lines not included.

See also:

- Manage tariff lines - Introduction
- Make a selection
- Build product groups
- Delete product groups
- Reset selection

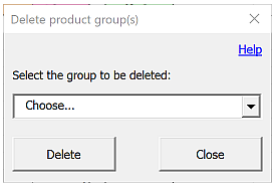
7.7.3 Delete product groups

You may want to delete previously created groups to keep you file small and clean. Only user-made product groups can be deleted, not pre-defined ones.

To delete a product group:

1. Display the *Product Groups* worksheet;

2. Click the *Delete Group* button. The following window displays:



3. Choose in the list the group to be deleted. You can select either a single group or the *All groups!* entry to delete all user-made product groups at once.
4. Click the *Delete* button to confirm deletion;
5. Click *Close* when you are done.

See also:

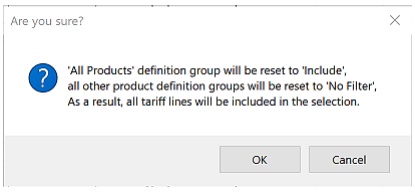
- Manage tariff lines - Introduction
- Make a selection
- Build product groups
- Delete product groups
- Reset selection

7.7.4 Reset selection

If your tariff line selection is messed up or you want to make a new selection from scratch, you can use the Reset Selection feature.

To Reset Selection:

1. Display the *Product Groups* worksheet;
2. Click the *Reset Selection* button. The following window displays:



3. Click *OK* to confirm the reset.
   As a result, TRIST sets the status at *No Filter* for all product group definitions except for the *All Products* group which receives the *Include* status. Consequently, all tariff lines are selected.

See also:

- Manage tariff lines - Introduction
- Make a selection
- Build product groups
- Delete product groups
- Reset selection

7.8 Building TRIST simulation dataset

Once all requirements are completed in TRIST Aggregation file, the simulation dataset can be produced.

To build the simulation dataset:

1. Display *DATA INFO* worksheet
2. Click the *Build Simulation Dataset* button
   TRIST builds the various tables for the specified country groups and selected tariff lines. Those tables are located in the *TRIST SELECTION* worksheet.

Once this step is completed, TRIST Aggregation file is ready to be used as the dataset source in *TRIST Simulation* file.

8. TRIST Simulation File

TRIST Simulation file is where you setup and run TRIST simulations.

See also:

- The Worksheets
- Manage Simulation Inputs
- Manage Simulation Elasticities
- Manage Tariff Reform Scenarios
- Manage Product Groups
- Manage Simulation Results
- Advanced Commands

8.1 The Worksheets

The TRIST simulation files is made of several worksheets which are automatically displayed or hidden depending on the context. The following table summarizes the list of worksheets and the context in which they are displayed by default.

WORKSHEET	CONTENTS	DISPLAYED WHEN
TRIST	Control panel of the TRIST Simulator.	Always
Trade Data	All trade related data used in the simulation.	when trade related data have been imported.
Results	Simulation aggregated results for all tariff lines and country groups.	when trade related data have been imported.
Tariff & Price Change	pre and post tariffs and other taxes (in %), domestic pre and post prices of imports (relative to world prices) and their percentage change.	when trade related data have been imported.

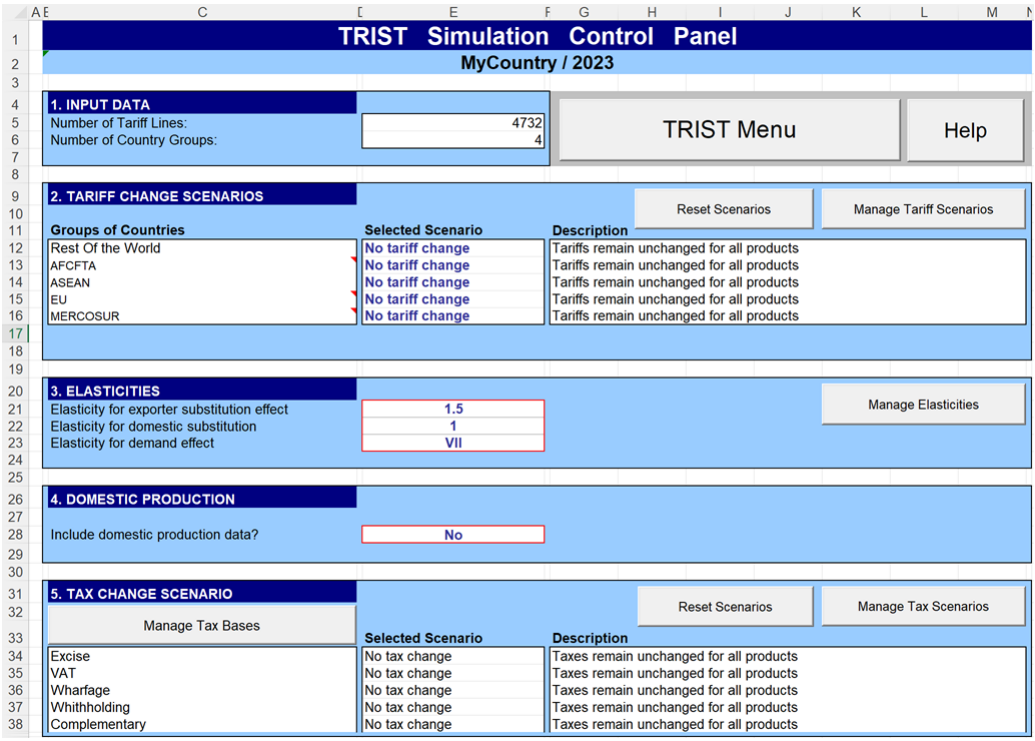
Exporter Substitution	calculates the substitution of imports between export partners following a change in tariffs.	when trade related data have been imported.
Domestic Substitution	calculates the substitution of domestic production with imports due to a reduction in import prices following tariff reform.	when domestic data have been included in the simulation.
Demand Effect	calculates the change in imports and domestic production (if included) due to the change in the overall domestic price for each good resulting from tariff reform.	when trade related data have been imported.
Results - Detailed	contains simulation results by tariff line and country group.	when trade related data have been imported.
Results - ISIC	contains simulation results aggregated by ISIC category.	when trade related data have been imported.
Results - Domestic	contains results for domestic production and employment.	when domestic data have been included in the simulation
Results - GTAP	contains simulation results aggregated by GTAP category.	only if requested by the user.
TL-ISIC Link	matches tariff line level trade related data with ISIC category level domestic data.	when domestic data have been included in the simulation.
Domestic Data	all domestic related data imported into TRIST.	when domestic data have been included in the simulation.
Product Groups	all product group definitions and tariff schedules created or imported by the user.	when trade related data have been imported.
Multistep Sim	Multiple Step Simulation parameters.	when this module is called from TRIST Control Panel.
NTM Data	NTM data used in the simulation.	when NTM data have been imported.
NTM Groups	NTM group builder and management.	when NTM data have been imported.
Diversion	Trade Creation/Diversion results	when the Trade Creation/Diversion add-on is executed from TRIST Control Panel.

The following worksheets are used by TRIST to manage some data or metada in the background. **It is strongly advised not to modify** any information on these worksheets as it would prevent TRIST proper operation.

Sh_SimVar	Contains variables used in TRIST and label translations for multilanguage purpose.
Sh_SimPassT	Contains passthrough parameters by tariff line and country group used to computing the domestic substitution.
Sh_SimScen	Contains tariff scenario information.
Sh_SimTax	Contains tax scenario information.
Sh_TempStorage	Contains temporary data used for various computations.
Concordances	Contains system tables for concordance between product nomenclatures and elasticity sets.

8.1.1 TRIST

The TRIST worksheet is where you operate the simulation either from the sheet itself or via the control panel window.



Most information on this worksheet is read only and can be modified through windows which open via the various button.

Input Data

The Input Data section is read only and automatically filled when the trade data are imported into TRIST simulation file.

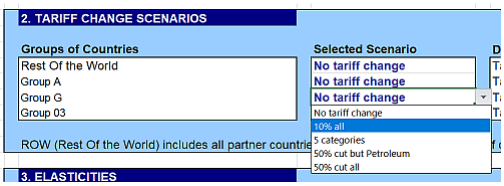
- Number of tariff lines: displays the number of tariff lines in the current dataset used for the simulation.

- Number of Country Groups: displays the number of country groups in the current dataset in addition to default group Rest Of the World.

Tariff Change Scenario

The *Tariff Change Scenario* section displays each country group along with its associated tariff scenario name and description.

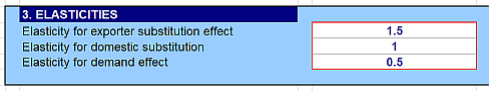
A tariff reform scenario is applied to the considered group of countries by making a selection in the drop down list as shown below:



Use the *Manage Tariff Scenarios* button to open the corresponding panel. 

Elasticities

The Elasticities section gather information about elasticity values and adjustment factors (if selected) used for the current simulation. This information is read only and can be changed via the Manage Elasticities window. To learn more on this subject see Manage Simulation Elasticities.

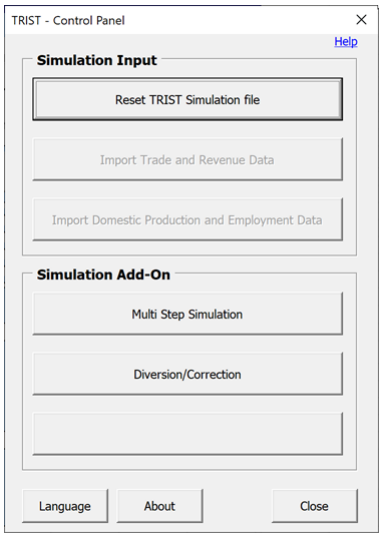


Domestic Production

This section indicates wether Domestic Production is used in the current simulation. This information is read only and can be changed via the Import Domestic Production and Employment Data window. To learn more on this subject see Import Domestic Data.

The Control Panel window

Clicking the *TRIST Menu* button opens the corresponding window:



The following commands are proposed:

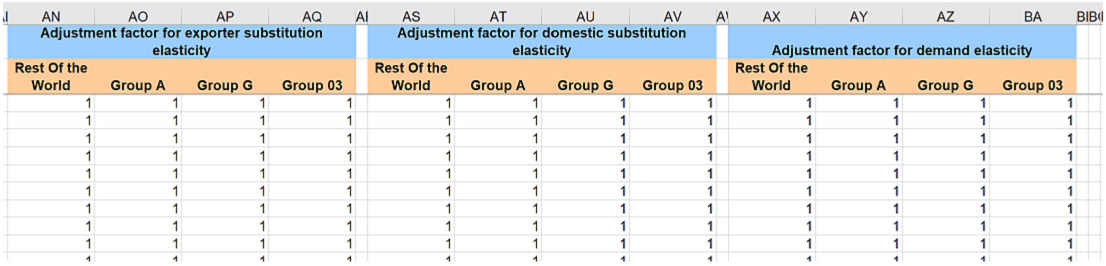
- Reset TRIST simulation file
- Import trade and revenue data
- Import domestic data
- Multi Step simulation
- Diversion/Correction
- Advanced

8.1.2 Trade Data

The Trade Data worksheet contains all trade related data imported from TRIST Aggregation file. These are pre reform data and they are organized in tables by type of data (imports, statutory tariff revenue, ...) with country groups in columns and tariff lines in rows. NTM related columns are only displayed when NTM data are included.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1		IMPORTS (CIF)					IMPORTS - NTM COST ON PRODUCTION						STAT. TARIFF REV.				
2		Rest Of the World	Group A	Group G	Group 03		NTM AVE	Rest Of the World	Group A	Group G	Group 03		Rest Of the World	Group A	Group G	Group 03	
3	01042090	1,403,816	0	0	0		26.0%	1,114,140	0	0	0		0	0	0	0	
4	01051110	391,961,148	0	0	0			391,961,148	0	0	0		12,968,386	0	0	0	
5	01051190	336,632,625	0	0	0			336,632,625	0	0	0		9,522,230	0	0	0	
6	01051900	8,662,455	0	0	0			8,662,455	0	0	0		1,732,491	0	0	0	
7	01059410	28,131,297	0	0	0		22.0%	23,058,440	0	0	0		1,406,565	0	0	0	
8	01061940	6,790,395	7,207,230	0	0		0.0%	6,790,395	7,207,230	0	0		583,835	0	0	0	
9	01062090	99,278	0	0	0		46.0%	67,999	0	0	0		0	0	0	0	
10	02012000	0	2,786,771	0	0		44.0%	0	1,935,258	0	0		0	0	0	0	
11	02023000	4,674,897	8,028,748	0	0			4,674,897	8,028,748	0	0		934,979	0	0	0	
12	02031200	13,918,754	0	0	0			13,918,754	0	0	0		2,783,751	0	0	0	
13	02031900	1,255,866	0	0	0			1,255,866	0	0	0		251,173	0	0	0	
14	02032900	23,763,587	864,783	0	0			23,763,587	864,783	0	0		4,752,717	0	0	0	
15	02044200	119,713,619	0	0	0			119,713,619	0	0	0		23,942,724	0	0	0	
16	02044300	10,522,347	0	0	0			10,522,347	0	0	0		2,104,469	0	0	0	
17	02071400	513,622	0	0	0		0.0%	513,622	0	0	0		102,724	0	0	0	
18	02072500	0	3,274,486	0	0		20.0%	0	2,728,738	0	0		0	0	0	0	
19	02090000	10,243,008	0	0	0			10,243,008	0	0	0		2,048,602	0	0	0	
20	02101100	142,783,026	3,687,137	1,973,806	0		47.0%	97,131,310	2,508,256	1,342,725	0		28,556,605	737,427	394,761	0	

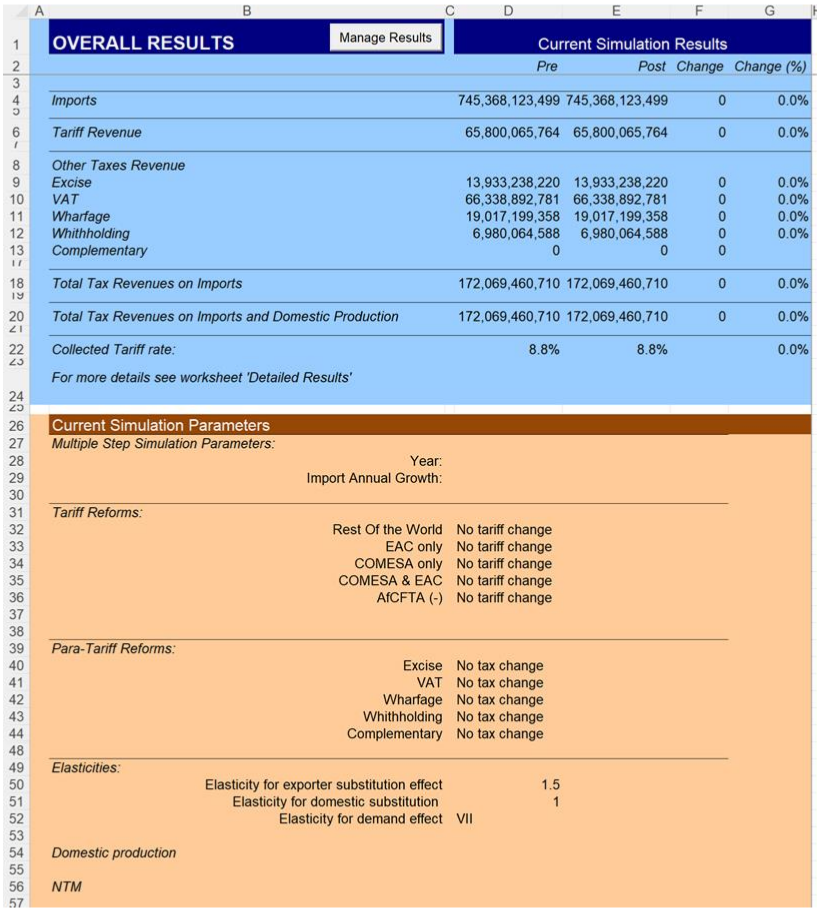
The worksheet also contains adjustment factor tables which may be used to individualize elasticity values (see About Adjustment Factors).



Adjustment factor for exporter substitution elasticity				Adjustment factor for domestic substitution elasticity				Adjustment factor for demand elasticity			
Rest Of the World	Group A	Group G	Group 03	Rest Of the World	Group A	Group G	Group 03	Rest Of the World	Group A	Group G	Group 03
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1

8.1.3 Results

The *Results* worksheet displays the aggregated pre and post reform results for all products and partners, including absolute and percentage changes.



OVERALL RESULTS (Manage Results)	Current Simulation Results			
	Pre	Post	Change	Change (%)
Imports	745,368,123,499	745,368,123,499	0	0.0%
Tariff Revenue	65,800,065,764	65,800,065,764	0	0.0%
Other Taxes Revenue				
Excise	13,933,238,220	13,933,238,220	0	0.0%
VAT	66,338,892,781	66,338,892,781	0	0.0%
Wharfage	19,017,199,358	19,017,199,358	0	0.0%
Whithholding	6,980,064,588	6,980,064,588	0	0.0%
Complementary	0	0	0	
Total Tax Revenues on Imports	172,069,460,710	172,069,460,710	0	0.0%
Total Tax Revenues on Imports and Domestic Production	172,069,460,710	172,069,460,710	0	0.0%
Collected Tariff rate:	8.8%	8.8%		0.0%
For more details see worksheet 'Detailed Results'				

Current Simulation Parameters	
Multiple Step Simulation Parameters:	
Year:	
Import Annual Growth:	
Tariff Reforms:	
Rest Of the World	No tariff change
EAC only	No tariff change
COMESA only	No tariff change
COMESA & EAC	No tariff change
AfCFTA (-)	No tariff change
Para-Tariff Reforms:	
Excise	No tax change
VAT	No tax change
Wharfage	No tax change
Whithholding	No tax change
Complementary	No tax change
Elasticities:	
Elasticity for exporter substitution effect	1.5
Elasticity for domestic substitution	1
Elasticity for demand effect	VII
Domestic production	
NTM	

Additional columns are displayed on this worksheet when simulation results are saved by clicking the *Manage Results* button (see Manage Simulation Results). The parameters for each simulation (current or saved) are recorded below the results.

8.1.4 Tariff & Price Change

The *Tariff And Price Change* worksheet contains all pre and post tariff rates and other taxe rates (in %), domestic pre and post prices of imports (relative to world prices) and their percentage change. The worksheet is organized in Pre and Post tables for each type of tax with country groups in columns and tariff lines in rows. Pre tariff and tax percentages are calculated by dividing the considered tariff or tax revenue by the value of imports. Tariff post values are

calculated for each country group based on the chosen tariff reform scenarios. NTM AVE pre and post are also included here when NTM are included in the simulation.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1		NTM Cost On Prod.			Pre Statutory Tariff					Post Statutory Tariff					Pre Collected Tariff		
2		Pre	Post		Rest Of the World	Group A	Group G	Group 03		Rest Of the World	Group A	Group G	Group 03		Rest Of the World	Group A	Group G
3	01042090	26.0%	26.0%		0.0%					0.0%					0.0%		
4	01051110	0.0%	0.0%		3.3%					3.3%					2.9%		
5	01051190	0.0%	0.0%		2.8%					2.8%					0.0%		
6	01051900	0.0%	0.0%		20.0%					20.0%					20.0%		
7	01059410	22.0%	22.0%		5.0%					5.0%					5.0%		
8	01061940	0.0%	0.0%		8.6%	0.0%				8.6%	0.0%				8.6%	0.0%	
9	01062090	46.0%	46.0%		0.0%					0.0%					0.0%		
10	02012000	44.0%	44.0%			0.0%					0.0%					0.0%	
11	02023000	0.0%	0.0%		20.0%	0.0%				20.0%	0.0%				20.0%	0.0%	
12	02031200	0.0%	0.0%		20.0%					20.0%					20.0%		
13	02031900	0.0%	0.0%		20.0%					20.0%					20.0%		
14	02032900	0.0%	0.0%		20.0%	0.0%				20.0%	0.0%				20.0%	0.0%	
15	02044200	0.0%	0.0%		20.0%					20.0%					20.0%		
16	02044300	0.0%	0.0%		20.0%					20.0%					20.0%		

The formula used to calculate the domestic price relative to the world market price depends on how tax 1 and tax 2 (and in option tax 3) have been defined in TRIST Aggregation file. The most common formula is:

Pdom / Pwld = 1*(1+t)*(1+e)*(1+VAT)

with:

- Pdom the domestic price,
- Pwld the world market price,
- t the tariff rate,
- e the excise duty rate,
- and VAT the VAT rate.

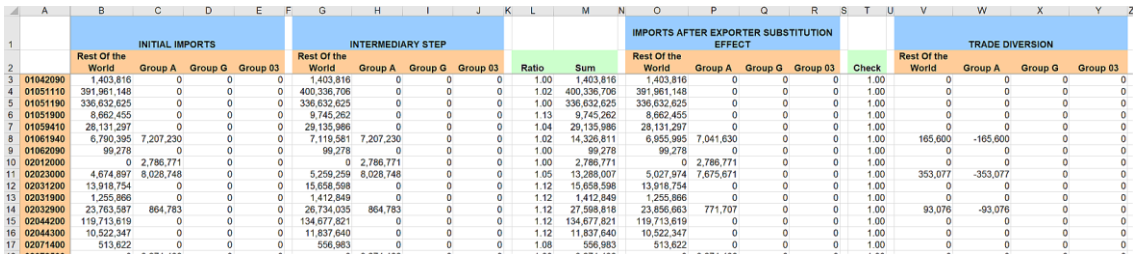
This formula reflects the praxis revenue authorities in many countries to apply customs duty first, then apply the excise duty rate to the post-tariff value, and then the VAT to the post-tariff and post-excise value of an imported good. If the considered market does not import a particular good from a particular partner before the reform, it is assumed that the price change is zero for imports of this good from this country.

8.1.5 Exporter Substitution

This worksheet calculates the exporter substitution effect, that is, the substitution of imports between export partners following a change in tariffs. The worksheet reads in information on current imports (from *Trade Data*) and price changes due to the reform (from *Tariff and Price Change*). Imports from all partner countries are then inflated using the following formula: Mxsb = Mold + Mold*(-dP*Exs), where Mxsb is imports after exporter substitution effect, Mold is old imports, dP is the price change for this good from this partner resulting from the change in tariffs, and Exs is the exporter substitution elasticity chosen in the Control Panel (and adjusted by the product and trading partner specific *adjustment factor* chosen in *Trade Data*). For example, if Exs is chosen to be 1.5 and the price for import good 1 from country A decreases by 10%, then imports of good 1 from country A would increase by 15%. This is based on the assumption that goods from different exporters are imperfect substitutes.

The next step is to calculate the growth ratio of total imports for each good due to this increase. For example, if imports of good 1 from country A grow from 100 to 120 (because tariffs are reduced) and imports from country B stay at 100 (because tariffs towards country B do not change under the chosen reform scenario) then total imports would grow from 200 to 220, which implies a growth ratio of 220/200=1.1. Then, imports from all partners are divided by this ratio. That way, total imports after this step equal total imports before this step (remember that the purpose of this worksheet is to model the exporter substitution effect only)

but the sources of imports have changed. In our example, imports from country A after the would increase from 100 (before the exporter substitution effect) to 120/1.1=~110 (after the exporter substitution effect) whereas imports from country B would decrease from 100 to 100/1.1=~90 so total imports would remain unchanged at 200. The result of this calculation is NOT the final import level after reform, but an intermediate step that isolates the diversion effect.



		INITIAL IMPORTS				INTERMEDIARY STEP						IMPORTS AFTER EXPORTER SUBSTITUTION EFFECT					TRADE DIVERSION			
		Rest Of the World	Group A	Group G	Group 03	Rest Of the World	Group A	Group G	Group 03	Ratio	Sum	Rest Of the World	Group A	Group G	Group 03	Check	Rest Of the World	Group A	Group G	Group 03
3	01042090	1,403,816	0	0	0	1,403,816	0	0	0	1.00	1,403,816	1,403,816	0	0	0	1.00	0	0	0	0
4	01051110	391,961,148	0	0	0	400,336,706	0	0	0	1.02	400,336,706	391,961,148	0	0	0	1.00	0	0	0	0
5	01051190	336,632,625	0	0	0	336,632,625	0	0	0	1.00	336,632,625	336,632,625	0	0	0	1.00	0	0	0	0
6	01051900	8,662,455	0	0	0	9,745,262	0	0	0	1.13	9,745,262	8,662,455	0	0	0	1.00	0	0	0	0
7	01059410	28,131,297	0	0	0	29,135,986	0	0	0	1.04	29,135,986	28,131,297	0	0	0	1.00	0	0	0	0
8	01061940	6,790,395	7,207,230	0	0	7,119,581	7,207,230	0	0	1.02	14,326,811	6,955,995	7,041,630	0	0	1.00	165,600	-165,600	0	0
9	01062090	99,278	0	0	0	99,278	0	0	0	1.00	99,278	99,278	0	0	0	1.00	0	0	0	0
10	02012000	0	2,786,771	0	0	0	2,786,771	0	0	1.00	2,786,771	0	2,786,771	0	0	1.00	0	0	0	0
11	02023000	4,674,897	8,028,748	0	0	5,259,259	8,028,748	0	0	1.05	13,288,007	5,027,974	7,675,671	0	0	1.00	353,077	-353,077	0	0
12	02031200	13,918,754	0	0	0	15,658,598	0	0	0	1.12	15,658,598	13,918,754	0	0	0	1.00	0	0	0	0
13	02031900	1,255,866	0	0	0	1,412,849	0	0	0	1.12	1,412,849	1,255,866	0	0	0	1.00	0	0	0	0
14	02032900	23,763,587	864,783	0	0	26,734,035	864,783	0	0	1.12	27,598,818	23,856,663	771,707	0	0	1.00	93,076	-93,076	0	0
15	02044200	119,713,619	0	0	0	134,677,821	0	0	0	1.12	134,677,821	119,713,619	0	0	0	1.00	0	0	0	0
16	02044300	10,522,347	0	0	0	11,837,640	0	0	0	1.12	11,837,640	10,522,347	0	0	0	1.00	0	0	0	0
17	02071400	513,622	0	0	0	556,983	0	0	0	1.08	556,983	513,622	0	0	0	1.00	0	0	0	0

The following tables are displayed:

- **Initial imports**: pre reform import values as imported from TRIST Aggregation file;
- **Intermediary step**: used as intermediary step in the computation of the exporter substitution effect.
- **Ratio**: calculates the ratio of the sum of imports as calculated at the intermediary step to the sum of initial imports.
- **Sum**: calculates the sum of imports as calculated at the intermediary step.
- **Imports after exporter substitution effect**: calculates new imports values after exporter substitution effect.
- **Check**: value of 1 confirms the exporter diversion effect computation has not led to any change in overall imports.
- **Trade diversion**: calculates imports after substitution effect minus initial imports.

8.1.6 Domestic Substitution

Note: the *Domestic Substitution* worksheet is hidden when domestic production is no included in the simulation. Computation in this worksheet does not affect the simulation results when domestic production is not included.

This worksheet calculates the domestic substitution effect, that is, the substitution of domestic production with imports due to a reduction in import prices following tariff reform. The worksheet reads in information on imports after the exporter substitution effect (from Exporter substitution) and price changes due to tariff reform (from Price Change). For each good, the average change in import prices is calculated weighting all trading partners by their share in total imports. Then, a procedure similar to the one used for the exporter substitution effect is applied:

- First, imports from all trading partners are inflated based on the following formula: Mdsb=Mxsb+Mxsb*(-dAMP)*Eds where Mdsb is imports after the domestic substitution effect, Mxsb is imports after the exporter substitution effect, dAMP is the average change in import prices for a product calculated as described above and Eds is the elasticity for the domestic substitution effect as chosen on 'Control Panel' (and adjusted by the product and trading partner specific adjustment coefficient chosen under 'Raw Data'). For example, if Eds is chosen to be 1.5 and the average price for imports decreases by 10%, then imports would increase by 15%. This is based on the assumption that imports and domestic production are imperfect substitutes.

- The next step is to calculate the growth ratio of the total amount of each good in the country (imports+domestic production) due to the inflating procedure described above. For example, if total imports of good 1 (from all exporters) increases from 100 to 120 (because tariffs are reduced) and domestic production is at 100, then the total would grow from 200 to 220, which implies a growth ratio of 220/200=1.1. Then, imports from all partners and domestic production are divided by this ratio. That way, the total amount (imports+domestic production) after this step equals the total before the step, (remember that the purpose of this worksheet is to model the exporter substitution effect only) but the distribution between imports and domestic production has changed. In our example, total imports A would increase from 100 (before the step) to 120/1.1=~110 whereas domestic production would decrease from 100 to 100/1.1=~90 so the total would remain unchanged at 200. The result of this calculation is NOT the final import level after reform, but an intermediate step that isolates the domestic substitution effect.

An obvious problem with the calculation of percentage changes as done above is that it cannot account for market entry of exporters in sectors where importing is currently zero. If imports of a particular product are zero, then, with the current methodology, they will remain at zero regardless of any price changes. This, of course, is not necessarily a realistic assumption. While this is certainly a shortcoming in some cases, there is no obvious and straightforward way to avoid this problem.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1				INTERMEDIARY STEP									IMPORTS AFTER SUBSTITUTION OF DOMESTIC PRODUCTION					
2		IMPORTS PRICE CHANGE		Rest Of the World	Group A	Group G	Group 03	Domestic Production		Ratio	Sum		Rest Of the World	Group A	Group G	Group 03	Domestic Production	
3	01042090	0.0%		1,403,816	0	0	0	140,382		1.00	1,544,198		1,403,816	0	0	0	140,382	
4	01051110	-1.4%		397,544,854	0	0	0	39,196,115		1.01	436,740,968		392,462,268	0	0	0	38,694,995	
5	01051190	0.0%		336,632,625	0	0	0	33,663,263		1.00	370,295,888		336,632,625	0	0	0	33,663,263	
6	01051900	-8.3%		9,384,326	0	0	0	866,246		1.08	10,250,572		8,723,458	0	0	0	805,242	
7	01059410	-2.4%		28,801,089	0	0	0	2,813,130		1.02	31,614,219		28,190,897	0	0	0	2,753,530	
8	01061940	-1.6%		7,066,382	7,153,376	0	0	1,399,763		1.01	15,619,521		6,965,887	7,051,644	0	0	1,379,856	
9	01062090	0.0%		99,278	0	0	0	9,928		1.00	109,206		99,278	0	0	0	9,928	
10	02012000	0.0%		0	2,786,771	0	0	278,677		1.00	3,065,448		0	2,786,771	0	0	278,677	
11	02023000	-3.2%		5,187,987	7,919,944	0	0	1,270,365		1.03	14,378,296		5,042,112	7,697,253	0	0	1,234,645	
12	02031200	-8.3%		15,078,650	0	0	0	1,391,875		1.08	16,470,525		14,016,773	0	0	0	1,293,856	
13	02031900	-8.3%		1,360,521	0	0	0	125,587		1.08	1,486,108		1,264,710	0	0	0	116,742	
14	02032900	-8.1%		25,778,668	833,879	0	0	2,462,837		1.07	29,075,384		24,019,467	776,973	0	0	2,294,767	
15	02044200	-8.3%		129,689,754	0	0	0	11,971,362		1.08	141,661,116		120,556,673	0	0	0	11,128,308	
16	02044300	-8.3%		11,399,209	0	0	0	1,052,235		1.08	12,451,444		10,596,448	0	0	0	978,134	
17	02071400	-5.6%		542,529	0	0	0	51,362		1.05	593,892		516,122	0	0	0	48,862	
18	02072500	0.0%		0	3,274,486	0	0	327,449		1.00	3,601,935		0	3,274,486	0	0	327,449	

The following tables are displayed:

- *Imports price change* : the average change in import prices is calculated by weighting all trading partners by their share in total imports.
- *Intermediary step* : used as intermediary step in the computation of the domestic substitution effect, including the domestic production if any.
- *Ratio*: calculates the ratio of the sum of imports as calculated at the intermediary step to the sum of initial imports.
- *Sum*: calculates the sum of imports as calculated at the intermediary step.
- *Imports after domestic substitution effect* : calculates new imports values and domestic production values (if any) after domestic substitution effect.

8.1.7 Demand Effect

Based on the results from the *Domestic Substitution* worksheet, the *Demand Effect* worksheet calculates the change in imports and domestic production due to the change in the overall domestic price for each good resulting from tariff reform(s). The change in the overall domestic price is calculated for each good as the change in the average price for imports multiplied by the share of imports in the total (imports+domestic production). For example, if the average import price of good 1 decreases by 10% (due to a tariff reform) and 20% of the total for this

good are imported (ie 80% are produced domestically), then the overall domestic price change is calculated as -10%*20%=-2%. This is based on the assumption that imports and domestic production are imperfect substitutes.

Based upon the overall domestic price change for each good, the worksheet then inflates imports from each partner and domestic production using the formula Mnew = Mdsb + Mdsb*(-dADP*Edm), where Mnew is imports after tariff reform, Mdsb is imports after exporter and domestic substitution effect, dADP is the overall domestic price change as calculated above and Edm is the demand elasticity chosen on 'cover sheet'. Note the difference between dADP and dP and dAMP on the previous worksheets: dP is the change in price of a good imported from a specific partner, dAMP is the average change in import the import price of a good and dADP is the resulting overall change in the domestic price for this good. The results of this worksheet are the expected amount of imports after tariff reform.

	A	B	C	D	E	F	G	H	I
1				IMPORTS AND DOMESTIC PRODUCTION AFTER DEMAND EFFECT					
2		GLOBAL DOMESTIC PRICE CHANGE		Rest Of the World	Group A	Group G	Group 03	Domestic Production	
3	01042090	0.0%		1,403,816	0	0	0	140,382	
4	01051110	-1.3%		395,003,561	0	0	0	38,945,555	
5	01051190	0.0%		336,632,625	0	0	0	33,663,263	
6	01051900	-7.6%		9,053,892	0	0	0	835,744	
7	01059410	-2.2%		28,495,993	0	0	0	2,783,330	
8	01061940	-1.4%		7,016,135	7,102,510	0	0	1,389,809	
9	01062090	0.0%		99,278	0	0	0	9,928	
10	02012000	0.0%		0	2,786,771	0	0	278,677	
11	02023000	-2.9%		5,115,049	7,808,599	0	0	1,252,505	
12	02031200	-7.6%		14,547,712	0	0	0	1,342,866	
13	02031900	-7.6%		1,312,616	0	0	0	121,165	
14	02032900	-7.3%		24,899,067	805,426	0	0	2,378,802	

The following tables are displayed:

- *Price change*: the average change in prices on the domestic market (of both imports and domestic production if any) is calculated by weighting imports price change by the share of total imports on total consumption (imports + domestic production).
- *Imports and domestic production after demand effect*: calculates final imports and domestic production (if any) values after the demand effect. These final values take all effect into account.

8.1.8 Results - Detailed

The `Results - Detailed` worksheet contains simulation results by tariff line (and the total for all tariff lines) and group of countries.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1				PRE IMPORTS						POST IMPORTS						
2				Rest Of the World	Group A	Group G	Group 03	TOTAL		Rest Of the World	Group A	Group G	Group 03	TOTAL	Change	
3	Tariff		TOTAL	2,527,188,326,936	302,326,593,085	163,766,561,950	57,378,713,059	3,050,660,195,030		2,567,203,724,854	297,685,913,697	161,527,201,987	57,221,761,165	3,083,638,601,703	32,978,406,673	162,5
4	Line	GTAP	ISIC													
5	01042090	09	012	1,403,816	0	0	0	1,403,816		1,403,816	0	0	0	1,403,816	0	
6	01051110	10	012	391,961,148	0	0	0	391,961,148		395,003,561	0	0	0	395,003,561	3,042,413	
7	01051190	10	012	336,632,625	0	0	0	336,632,625		336,632,625	0	0	0	336,632,625	0	
8	01051900	10	012	8,662,455	0	0	0	8,662,455		9,053,892	0	0	0	9,053,892	391,437	
9	01059410	10	012	28,131,297	0	0	0	28,131,297		28,495,993	0	0	0	28,495,993	364,696	
10	01061940	10	012	6,790,395	7,207,230	0	0	13,997,625		7,016,135	7,102,510	0	0	14,118,645	121,020	
11	01062090	10	012	99,278	0	0	0	99,278		99,278	0	0	0	99,278	0	
12	02012000	19	151	0	2,786,771	0	0	2,786,771		0	2,786,771	0	0	2,786,771	0	
13	02023000	19	151	4,674,897	8,028,748	0	0	12,703,645		5,115,049	7,808,599	0	0	12,923,648	220,003	
14	02031200	20	151	13,918,754	0	0	0	13,918,754		14,547,712	0	0	0	14,547,712	628,958	
15	02031900	20	151	1,255,866	0	0	0	1,255,866		1,312,616	0	0	0	1,312,616	56,750	
16	02032900	20	151	23,763,587	864,783	0	0	24,628,370		24,899,067	805,426	0	0	25,704,494	1,076,124	
17	02044200	19	151	119,713,619	0	0	0	119,713,619		125,123,213	0	0	0	125,123,213	5,409,594	
18	02044300	19	151	10,522,347	0	0	0	10,522,347		10,997,829	0	0	0	10,997,829	475,482	
19	02071400	20	151	513,622	0	0	0	513,622		529,326	0	0	0	529,326	15,704	

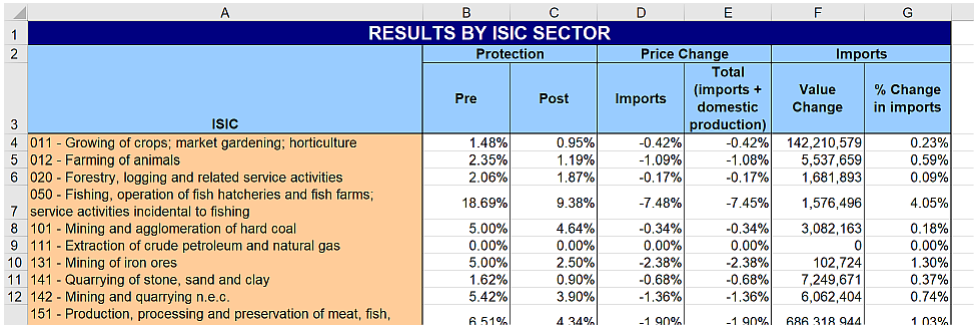
The following information is available:

- *Tariff line*: the tariff line code
- *GTAP*: the corresponding GTAP category
- *ISIC*: the corresponding ISIC category

- *Pre Imports*: initial imports data including Total imports by tariff line.
- *Post Imports*: post reform imports results, Total imports by tariff line and absolute changes compared to the pre situation.
- *Pre Statutory Tariff Revenue*: initial statutory tariff revenue data and Total statutory tariff revenue by tariff line.
- *Post Statutory Tariff Revenue*: post reform statutory tariff revenue results, Total statutory tariff revenue by tariff line and absolute changes compared to the pre situation.
- *Pre Collected Tariff Revenue*: initial collected tariff revenue data and Total collected tariff revenue by tariff line.
- *Post Collected Tariff Revenue*: post reform collected tariff revenue results, Total collected tariff revenue by tariff line and absolute changes compared to the pre situation.
- *Pre Tax1*: initial Tax1 revenue data and Total Tax1 revenue by tariff line. (actual label for Tax1 depends on you choice when building TRIST Aggregation file)
- *Post Tax1*: post reform Tax1 revenue results, Total Tax1 revenue by tariff line and absolute changes compared to the pre situation. (actual label for Tax1 depends on you choice when building TRIST Aggregation file)
- *Pre Tax2*: initial Tax2 revenue data and Total Tax2 revenue by tariff line. (actual label for Tax2 depends on you choice when building TRIST Aggregation file)
- *Post Tax2*: post reform Tax2 revenue results, Total Tax2 revenue by tariff line and absolute changes compared to the pre situation. (actual label for Tax2 depends on you choice when building TRIST Aggregation file)
  Note that the following Tax3 tables are displayed when Tax3 was included when building the TRIST Aggregation file.
- *Pre Tax3*: initial Tax3 revenue data and Total Tax3 revenue by tariff line. (actual label for Tax3 depends on you choice when building TRIST Aggregation file)
- *Post Tax3*: post reform Tax3 revenue results, Total Tax3 revenue by tariff line and absolute changes compared to the pre situation. (actual label for Tax3 depends on you choice when building TRIST Aggregation file)
- *Pre Total Fiscal Revenue on Imports*: sum of Pre collected tariff and all tax revenues by tariff line and country group and total by tariff line.
- *Post Total Fiscal Revenue on Imports*: sum of Post collected tariff and all tax revenues by tariff line and country group, total by tariff line and absolute changes compared to the pre situation.
- *Pre Domestic Production and Fiscal Revenue*: pre domestic production (if any) and corresponding Tax1 and Tax2 revenues. (actual label for Tax1 and Tax2 depends on you choices when building TRIST Aggregation file)
- *Post Domestic Production and Fiscal Revenue*: post domestic production (if any) and corresponding Tax1 and Tax2 revenues. (actual label for Tax1 and Tax2 depends on you choices when building TRIST Aggregation file)
- *Change in Domestic Production and Fiscal Revenue*: absolute change (Post - Pre) in domestic production (if any) and corresponding Tax1 and Tax2 revenues. (actual label for Tax1 and Tax2 depends on you choices when building TRIST Aggregation file)

8.1.9 Results - ISIC

The Results - ISIC worksheet displays simulation results aggregated by ISIC category.



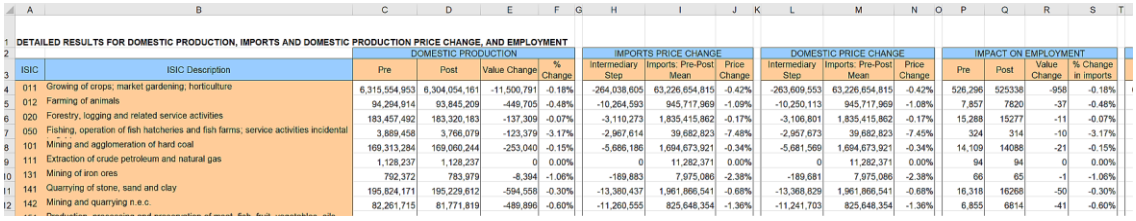
RESULTS BY ISIC SECTOR						
	Protection		Price Change		Imports	
ISIC	Pre	Post	Imports	Total (imports + domestic production)	Value Change	% Change in imports
011 - Growing of crops; market gardening; horticulture	1.48%	0.95%	-0.42%	-0.42%	142,210,579	0.23%
012 - Farming of animals	2.35%	1.19%	-1.09%	-1.08%	5,537,659	0.59%
020 - Forestry, logging and related service activities	2.06%	1.87%	-0.17%	-0.17%	1,681,893	0.09%
050 - Fishing, operation of fish hatcheries and fish farms; service activities incidental to fishing	18.69%	9.38%	-7.48%	-7.45%	1,576,496	4.05%
101 - Mining and agglomeration of hard coal	5.00%	4.64%	-0.34%	-0.34%	3,082,163	0.18%
111 - Extraction of crude petroleum and natural gas	0.00%	0.00%	0.00%	0.00%	0	0.00%
131 - Mining of iron ores	5.00%	2.50%	-2.38%	-2.38%	102,724	1.30%
141 - Quarrying of stone, sand and clay	1.62%	0.90%	-0.68%	-0.68%	7,249,671	0.37%
142 - Mining and quarrying n.e.c.	5.42%	3.90%	-1.36%	-1.36%	6,062,404	0.74%
151 - Production, processing and preservation of meat, fish,	6.51%	4.34%	-1.90%	-1.90%	686,318,944	1.03%

The following statistics are available:

- Protection: the imports weighted average applied (collected) tariff pre (Old) and post (New) reform.
- Price change: the imports weighted average price change on imports and on total consumption (imports + domestic production) if relevant.
- Imports: total change in imports value and percentage change by ISIC code.

8.1.10 Results - Domestic

The *Results - Domestic* worksheet is produced when domestic production data are included in the TRIST simulation. It aggregates statistics related to the domestic market by ISIC categories.



DETAILED RESULTS FOR DOMESTIC PRODUCTION, IMPORTS AND DOMESTIC PRODUCTION PRICE CHANGE, AND EMPLOYMENT																			
			DOMESTIC PRODUCTION				IMPORTS PRICE CHANGE			DOMESTIC PRICE CHANGE			IMPACT ON EMPLOYMENT						
ISIC	ISIC Description	Pre	Post	Value Change	% Change	Intermediary Step	Imports: Pre-Post Mean	Price Change	Intermediary Step	Imports: Pre-Post Mean	Price Change	Pre	Post	Value Change	% Change in imports				
011	Growing of crops; market gardening; horticulture	6,315,554,953	6,304,054,161	-11,500,791	-0.18%	-264,038,605	63,226,654,815	-0.42%	-263,609,553	63,226,654,815	-0.42%	526,296	525338	-958	-0.18%				
012	Farming of animals	94,294,914	93,845,209	-449,705	-0.48%	-10,264,593	945,717,969	-1.09%	-10,250,113	945,717,969	-1.08%	7,857	7820	-37	-0.48%				
020	Forestry, logging and related service activities	183,457,492	183,320,183	-137,309	-0.07%	-3,110,273	1,835,415,862	-0.17%	-3,106,801	1,835,415,862	-0.17%	15,288	15277	-11	-0.07%				
050	Fishing, operation of fish hatcheries and fish farms; service activities incidental	3,889,458	3,766,079	-123,379	-3.17%	-2,957,614	39,682,823	-7.48%	-2,957,673	39,682,823	-7.45%	324	314	-10	-3.17%				
101	Mining and agglomeration of hard coal	169,313,284	169,060,244	-253,040	-0.15%	-5,686,186	1,694,673,921	-0.34%	-5,681,569	1,694,673,921	-0.34%	14,109	14088	-21	-0.15%				
111	Extraction of crude petroleum and natural gas	1,128,237	1,128,237	0	0.00%	0	11,282,371	0.00%	0	11,282,371	0.00%	94	94	0	0.00%				
131	Mining of iron ores	792,372	783,979	-8,394	-1.06%	-189,883	7,975,086	-2.38%	-189,681	7,975,086	-2.38%	66	65	-1	-1.06%				
141	Quarrying of stone, sand and clay	195,824,171	195,229,612	-594,558	-0.30%	-13,380,437	1,961,866,541	-0.68%	-13,368,829	1,961,866,541	-0.68%	16,318	16268	-50	-0.30%				
142	Mining and quarrying n.e.c.	82,261,715	81,771,819	-489,896	-0.60%	-11,260,555	825,648,354	-1.36%	-11,241,703	825,648,354	-1.36%	6,855	6814	-41	-0.60%				

The following statistics are available:

- *Domestic Production*: pre and post reform domestic production values, value change (post - pre) and percentage change.
- *Import Price Change (weighted)*: the imports weighted average price change on imports.
- *Domestic Price Change (weighted)*: the consumption weighted average price change on total consumption (imports + domestic production)
- *Impact On Employment*: if any the pre and post employment value, its value and percentage change over the reform.
- *Imports*: the pre and post imports values.
- *Tariff Revenue*: the pre and post collected tariff revenues.
- *Protection*: the pre and post imports weighted average tariff rates.

8.1.11 Results - GTAP

The Results - GTAP worksheet displays simulation results aggregated by GTAP category. This worksheet is not displayed by default since this aggregation is mostly useful to users who want to use TRIST results in the GTAP CGE modeling tool.

			PRE-REFORM APPLIED TARIFF				POST-REFORM APPLIED TARIFF			
GTAP	GTAP Description	Rest Of the World	Group A	Group G	Group 03	Rest Of the World	Group A	Group G	Group 03
01	PDR - Paddy rice	0.0%		0.0%		0.0%		0.0%	
02	WHT - Wheat	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%
03	GRO - Cereal grains n.e.c.	1.9%	3.8%	9.9%	10.0%	1.0%	3.8%	9.9%	10.0%
04	V_F - Vegetables, fruit, nuts	10.4%	17.7%	0.6%	6.5%	5.3%	17.7%	0.6%	6.4%
05	OSD - Oil seeds	9.7%	0.0%	10.0%		4.9%	0.0%	10.0%	
06	C_B - Sugar cane, sugar beet	0.0%				0.0%			
07	PFB - Plant-based fibers	5.0%				2.5%			
08	OCR - Crops n.e.c.	9.2%	5.9%	2.7%		4.6%	5.9%	2.7%	
09	CTL - Bovine cattle, sheep and goats, horses	0.0%				0.0%			
10	OAP - Animal products n.e.c.	3.5%	2.7%	20.0%		1.8%	2.8%	20.0%	
12	WOL - Wool, silk-worm cocoons	5.0%				2.5%			
13	FRS - Forestry	0.6%	5.0%	0.0%		0.3%	5.0%	0.0%	

This worksheet produces pre and past applied tariff rates by country group and GTAP category.

8.1.12 TL-ISIC Link

When domestic production data is used, this worksheet makes the link between imports related data at the tariff line level with domestic production data at the ISIC category level.

Tariff Line	ISIC 3	Imports	Share of Imports	Estimated Domestic Production by Tariff Line	Imports price Change Intermediary Step	Total Price Change Intermediary Step	Imports: Pre-Post Mean	Consumption: Pre-Post Mean
01042090	012	1,403,816	90.9%	140,382	0	0	1,403,816	1,544,198
01051110	012	391,961,148	90.9%	39,196,115	-5,605,376	-5,601,783	393,482,354	432,553,189
01051190	012	336,632,625	90.9%	33,663,263	0	0	336,632,625	370,295,888
01051900	012	8,662,455	90.9%	866,246	-738,181	-735,543	8,858,174	9,709,168
01059410	012	28,131,297	90.9%	2,813,130	-674,134	-673,417	28,313,645	31,111,875
01061940	012	13,997,625	90.9%	1,399,763	-223,094	-222,935	14,058,135	15,452,921
01062090	012	99,278	90.9%	9,928	0	0	99,278	109,206
02012000	151	2,786,771	90.9%	278,677	0	0	2,786,771	3,065,448
02023000	151	12,703,645	90.9%	1,270,365	-407,787	-407,210	12,813,647	14,075,081
02031200	151	13,918,754	90.9%	1,391,875	-1,186,102	-1,181,864	14,233,233	15,600,603
02031900	151	1,255,866	90.9%	125,587	-107,020	-106,638	1,284,241	1,407,616

The following data are calculated:

- *Imports*: pre imports values by tariff line.
- *Share of Imports* : calculated by aggregating imports at the ISIC category level and taking the ratio on imports plus domestic production.
- *Estimated Domestic Production by Tariff line* : calculated by using the share of imports at the tariff line level and splitting domestic production values from ISIC to tariff line level.
  The last four columns are used to calculate price changes at the ISIC level in the Results-Domestic worksheet.
- *Imports Price Change - Intermediary Step* : average pre - post imports multiplied by imports price change.
- *Total Price Change - Intermediary Step* : average pre - post imports and domestic production multiplied by domestic market price change.
- *Imports Old-New Mean* : average pre - post imports.
- *Consumption Old-New Mean* : average pre - post imports and domestic production.

8.1.13 Domestic Data

The *Domestic Data* worksheet stores domestic production and employment data with matching imports at ISIC level and calculates shares of imports.

ISIC	ISIC Description	Domestic Employment	Domestic Production	Imports	Imports / Total
011	Growing of crops; market gardening; horticulture	526,296	6,315,554,953	63,155,549,525	91%
012	Farming of animals	7,857	94,294,914	942,949,140	91%
020	Forestry, logging and related service activities	15,288	183,457,492	1,834,574,916	91%
050	Fishing, operation of fish hatcheries and fish farms; service activities	324	3,889,458	38,894,575	91%
101	Mining and agglomeration of hard coal	14,109	169,313,284	1,693,132,839	91%
111	Extraction of crude petroleum and natural gas	94	1,128,237	11,282,371	91%
131	Mining of iron ores	66	792,372	7,923,724	91%
141	Quarrying of stone, sand and clay	16,318	195,824,171	1,958,241,706	91%

8.1.14 Product Groups

This worksheet is where product groups imported from the TRIST Aggregation file are stored. It is also where you can create additional groups or tariff schedules.

Add Product Group | Delete Product Group | Help

Actually Imported Tariff Lines	GTAP Categories	ISIC Categories	All Products	Petroleum Products	Raw Material	Intermediate Goods	Consumer Goods	Capital Goods	EPA Exclusion List	Dynamic PG-ForNTM	SimpleDef
01042090	09	012	1		1					Collected	1
01051110	10	012	1		1					Tariff <= 10	1
01051190	10	012	1		1					1,1,-1,1,10	1
01051900	10	012	1		1						1
01059410	10	012	1		1						
01061940	10	012	1		1						
01062090	10	012	1		1						1
02012000	19	151	1		1				1		1
02023000	19	151	1		1				1		1
02031200	20	151	1		1				1		

See Manage Product Groups for more information.

8.1.15 Concordances

This worksheet, hidden by default, is used by the TRIST system to concord data among the various nomenclatures and to store demand elasticity sets that can be used for the simulation.

8.1.16 NTM Data

The NTM Data worksheet contains all NTM data imported from TRIST Aggregation file. It includes the following tables:

- *NTM Nomenclature*: a reference table which lists NTM codes, labels and types. There are 2 types which reflect the way NTM affect imports, either at the production level (type 1) or at the distribution level (type 0) of the considered product. The distribution of NTM codes between these 2 types was implemented by World Bank trade specialists.

	A	B	C
1		NTM NOMENCLATURE	
2	CODE	LABEL	TYPE
3	A110	Temporary geographic prohibition for SPS reasons	1
4	A120	Geographical restrictions on eligibility	1
5	A130	Systems oach Appr	1
6	A140	Special Authorization for SPS reasons	
7	A150	Registration requirements for importers	
8	A190	Prohibitions or restrictions of products or substances because of SPS	1
9	A210	Tolerance limits for residues of or contamination by certain substances	1
10	A220	Restricted use of certain substances in foods and feeds	1
11	A310	Labelling requirements	1
12	A320	Marking requirements	1
13	A330	Packaging requirements	1
14	A410	Microbiological criteria on the final product	1
15	A420	Hygienic practices during production	1
16	A490	Hygienic requirements n.e.s.	1
17	A510	Cold/heat treatment	1
18	A520	Irradiation	1

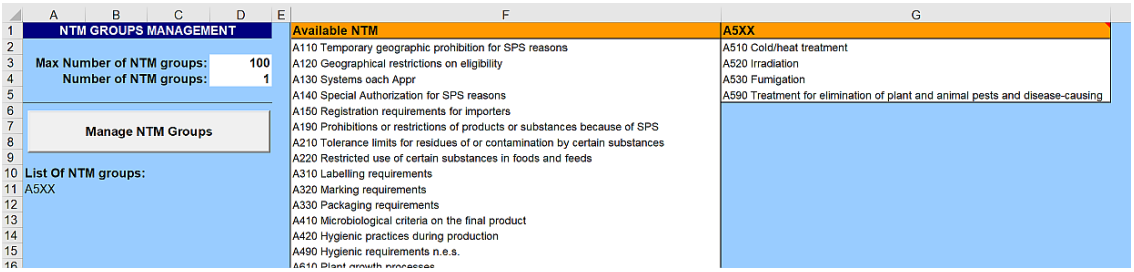
- *Pre NTM by Product*: stores NTM information as imported from TRIST Aggregation file and merges it with the NTM Nomenclature table in order to identify NTM affecting production vs. distribution. These data represent the initial state (pre reform) wih regards to NTM.

D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y
									PRE NTM BY PRODUCT (SELECTED TARIFF LINES)												
	TARIFF LINE	# OF NTM	SUM AVE	PROD	DIST	NTMC1	NTMI1	NTMV1	NTMC2	NTMI2	NTMV2	NMTC3	NTMI3	NTMV3	NTMC4	NTMI4	NTMV4	NTMC5	NTMI5	NMTV5		
	01042090	5	88.0%	26.0%	62.0%	A820	1	22.0%	G310	0	27.0%	D410	0	35.0%	D110	1	1.0%	C300	1	3.0%	
	01051110																				
	01051190																				
	01051900																				
	01059410	1	22.0%	22.0%	0.0%	A820	1	22.0%													
	01061940	1	27.0%	0.0%	27.0%	G310	0	27.0%													
	01062090	1	46.0%	46.0%	0.0%	B851	1	46.0%													
	02012000	1	44.0%	44.0%	0.0%	B310	1	44.0%													
	02023000																				
	02031200																				
	02031900																				
	02032900																				
	02044200																				
	02044300																				
	02071400	2	71.0%	0.0%	71.0%	H190	0	36.0%	A859	0	35.0%										
	02072500	1	20.0%	20.0%	0.0%	P300	1	20.0%													
	02090000																				
	02101100	1	47.0%	47.0%	0.0%	E350	1	47.0%													

  For each tariff line included in the simulation data set, the Pre NTM by Product table includes the following information:
  - *# of NTM*: indicates the number of NTM the considered tariff line (product) is subject to;
  - *SUM AVE*: the sum of all NTM ad-valorem equivalent tariffs;
  - *PROD*: the sum of AVE affecting the production on the source country (exporter) side;
  - *DIST*: the sum of AVE affecting the distribution of the considered product on the destination (importer) market;
  - *NTMC1*: the ID code of the first NTM affecting the considered product. There can be up to 5 distinct NTM (NTMC1 to NTMC5) for any given product. Please note that the order in which NTM are sotred does not affect the simulation results;
  - *NTMI1*: identifies the type (production vs. distribution effect) of the considered NTM;
  - *NTMV1*: stores the AVE tariff value of the considered NTM;
- Post NTM by Product: same as Pre NTM by Product table but for Post reform values. When an NTM is lifted within the simulation, its AVE tariff value is set to 0.

8.1.17 NTM Groups

The NTM Groups worksheet is where you manage NTM groups. Once groups are created, they are listed in columns G and after. Column F lists NTM that are not yet included in any NTM group. The Manage NTM Groups button opens the NTM Group Builder panel. This workshet and the NTM group builder are very similar to the Country Groups interface in TRIST Aggregation file.



8.2 Manage Simulation Inputs

Inputs are data used as the starting point for the TRIST simulation.

Click a link below to display help on the chosen topic:

- Reset TRIST Simulation file
- Import trade related data
- Import domestic data

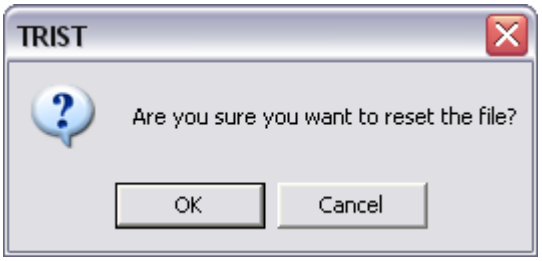
8.2.1 Reset TRIST simulation file

TRIST simulation file must be reset before a new simulation data set can be imported.

Note that all data are lost when the file is reset, including scenario definitions and custom product groups.

To reset TRIST simulation file:

1. Display the *TRIST* worksheet;
2. Click on the *TRIST Menu* button;
3. In the *Control Panel*, click *Reset TRIST Simulation File* button;
4. Click *OK* in the confirmation window to proceed or click *Cancel*.



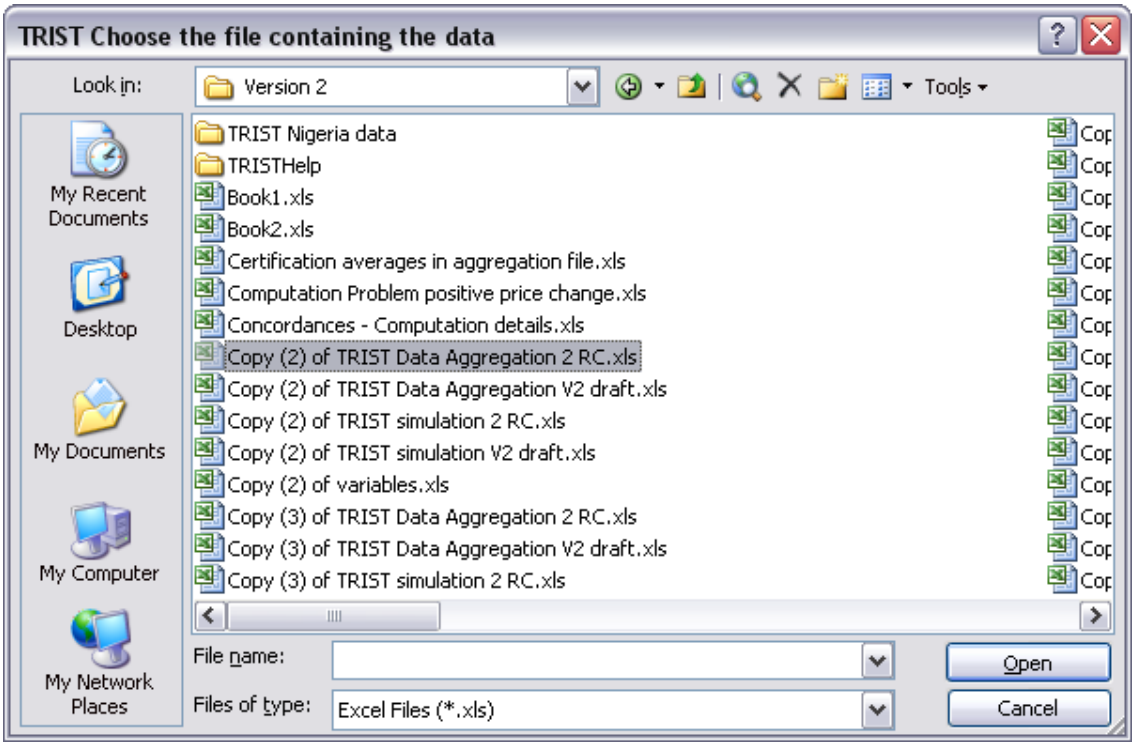
TRIST displays the *Please Wait* message while the process runs. When reset is completed, TRIST worksheet is the only visible worksheet. All other worksheets are hidden since they are irrelevant right after a reset. They reappear when new trade data are imported into TRIST Simulation file.

8.2.2 Import trade related data

The trade related data to be used for the simulation must be imported from a TRIST aggregation file. TRIST simulation file must be reset before you can import new data.

To import a new imports related data set:

1. Display the *TRIST* worksheet;
2. Click the *TRIST Menu* button;
3. In the *Control Panel*, click *Import Trade and Revenue Data* button;
4. Select the TRIST Aggregation file which contains the trade data to be imported and click on *Open* ;



TRIST displays a *Please Wait* message while the process runs. Note that depending on the size of the imported dataset (and the speed of your computer), this process may take up to two minutes. Once the process is completed, TRIST displays additional worksheets related to the simulation.

TRIST implements many checks on the source file before importing the data. A specific error message will be displayed if a problem is detected.

TRIST Simulation file automatically import all data as included in the Aggregation file, including NTM data if any.

8.2.3 Import domestic data

This module is temporarily disabled as it is being completely revamped

Trade related data must be imported first before domestic data can be included into TRIST.

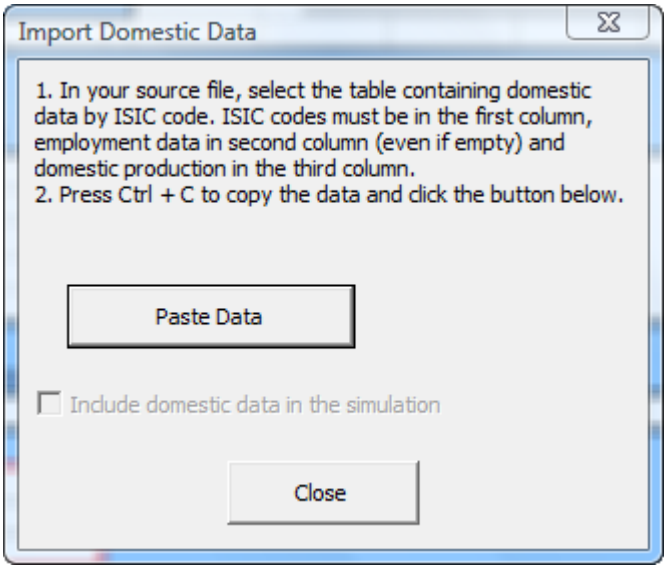
Domestic Data must follow some rules:

- TRIST accept ISIC 3-digit codes only
- TRIST accept ISIC version 3, 3.1 and 4
- Data is organized in a table with 3 columns and n rows, with n the number of ISIC codes

- The first column contains the ISIC codes, the second column contains employment data (number of employees), and column 3 contains the domestic production data (using the same currency as the trade data).
- Domestic production is mandatory data
- Domestic employment is optional but column 2 must be included in the dataset even if empty

To import a new domestic related data set:

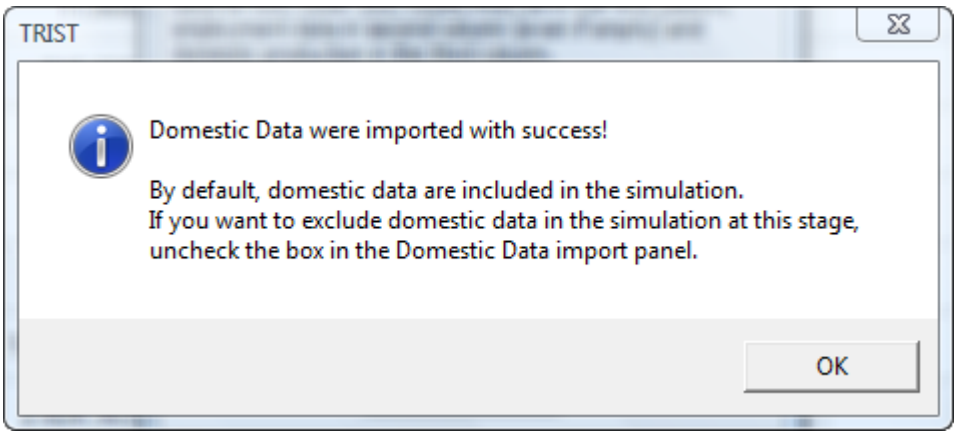
1. Display the *TRIST* worksheet;
2. Click the *Control Panel* button;
3. In the *Control Panel*, click the *Import Domestic Production and Employment Data* button;
   The following windows displays:



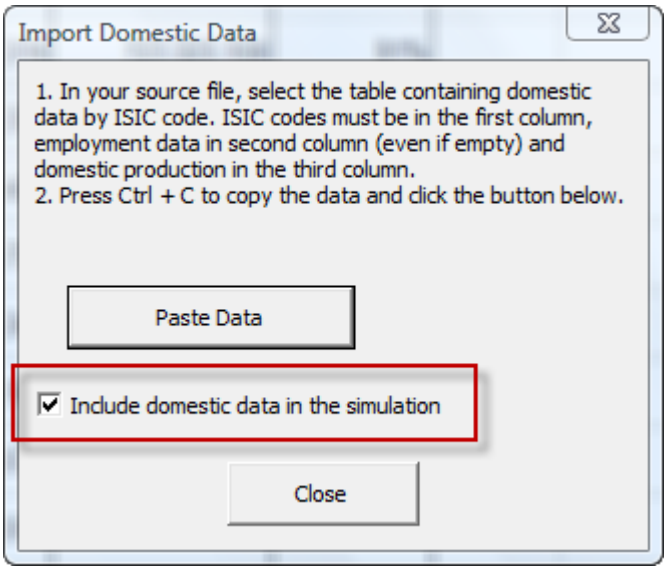
4. If not yet done open the source file containing the domestic data;
5. Select the domestic data and press *Ctrl + C* to copy them as shown below. The selection must include the following 3 columns (and in this order): ISIC Code, Employment, Domestic Production.

	A	B	C
1	ISIC	EMPLOY	PROD
2	011		12618813689
3	012		375929626.8
4	020		72332315.8
5	050		11668372.5
6	101		846566419.5
7	131		7923724
8	141		391648341.2
9	142		156268140.2
10	151		13377659533
11	152		2824303550
12	153		32377042549
13	154		23753295462
14	155		12571756254
15	160		175074136
16	171		538083
17	231		7993273.4
18	233		10125934.4
19	241		7035406184
20	242		17994209468
21	269		9184283515
22	272		6070864.4
23	333		20865944.4
24			

6. Click the *Paste Data* button in the *Import Domestic Data* window.
TRIST processes the data for a short moment and displays the following window when completed with success.



7. Click on *OK* to get back to the *Imports Domestic Data* window. *Include Domestic Data* option box in now activated and checked. It means the data you've just imported into TRIST are now included in the simulation. Simply uncheck the option box if you don't want to use the domestic data in the simulation at this stage. You can come back anytime to this window to change your choice.



Note: at this stage, TRIST disables tax scenarios automatically when domestic producton is included in the simulation.

8. Click the Close button when you are done.
   Once domestic data are imported, TRIST displays additional worksheets related to this part of the simulation. You can always decide which worksheets to be displayed any time by using the Show Hide Worksheets window.

8.3 Manage Simulation Elasticities

Click a link below to display help on the chosen topic:

- Set Simulation elasticities
- About adjustment factors
- About demand elasticity sets

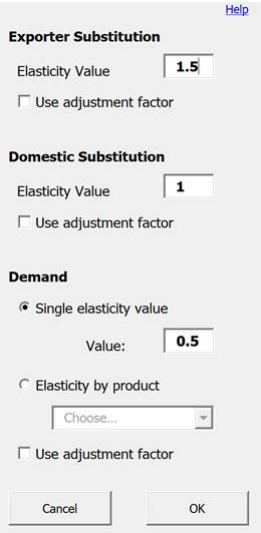
8.3.1 Set Simulation elasticities

TRIST makes use of elasticity values which affect the simulation results. For more information on how elasticities work in the simulation you may want have a look at the Theoretical model section in What is TRIST - Overview or in the topics on Exporter Substitution (for elasticity of exporter substitution), Domestic Substitution , and Demand Effect .

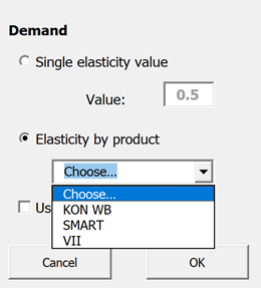
To set elasticity value:

1. Display the *TRIST* worksheet;
2. Click on the *Manage Elasticities* button;

   The following panel displays:



3. Enter the value for the elasticity you want to change. You can enter any number between 0 and 10. The value you enter here will be used for all tariff lines and country groups.
   For the elasticity of demand you can select the Elasticity by product option instead and choose the desired elasticity set in the drop down list:



   For more information on the various options see About Demand elasticity sets .
4. In option, you can check the box to use adjustment factor values for any of the three elasticity types. See About adjustment factors for more information on this subject.
5. Click OK to confirm changes and close the panel.

As always in TRIST Simulation, any change in elasticities leads to an automatic recalculation and new results.

8.3.2 About Adjustment Factors

For each type of elasticity, adjustment factors can be used by checking the corresponding option box in the *Elasticity Management* window (see Set Simulation elasticities). Adjustment factors allow for the individualization of elasticity values by tariff line and product group. They are located in the *Trade Data* worksheet (the three rightmost tables).

Adjustment factors are elasticity multipliers and are set to 1 by default. These coefficients can be used to take into account product or trading partner specific deviations from the elasticities values. They are simply multipliers of the elasticities, so a coefficient of 1 (default) leaves the elasticity unchanged, any value below 1 lowers it and any value above 1 increases the elasticity for this particular product and trading partner. For example, if the nature of the imports for a certain good made it unlikely that the exporter source for this import would be strongly

affected by changes in trade policy, one can set the adjustment coefficient for exporter substitution for this good to zero (no effect) or a value below 1 (weaker effect).

On the other hand, if for example a product is believed to be particularly sensitive to substitution of domestic products with imports, one can set the adjustment coefficient for domestic substitution at a value higher than one, thus increasing the domestic substitution elasticity for this product. A final example would be a scenario where one believes that additional demand due to lower domestic prices will after tariff reform will be allocated entirely to imports, not domestic production. In this case, one can set the adjustment coefficient for the demand elasticity to zero for all domestic production.

AN	AO	AP	AQ	AS	AT	AU	AV	AX	AY	AZ	BA
Adjustment factor for exporter substitution elasticity				Adjustment factor for domestic substitution elasticity				Adjustment factor for demand elasticity			
Rest Of the World	Group A	Group G	Group 03	Rest Of the World	Group A	Group G	Group 03	Rest Of the World	Group A	Group G	Group 03
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1

Example:
If the adjustment value is one, the elasticity will be 1.5 * 1 = 1.5 (unchanged), if the value is 2 then the elasticity value actually used for the considered tariff line and country group will be 1.5 * 2 = 3.

To use adjustment factors:

1. Display the *Trade Data* worksheet;
2. Replace *1* values with values of your choice in the adjustment factor table for the considered type of elasticity.
3. Open the *Elasticity Management* panel and check the *Use adjustment factor* option box. See Set Simulation Elasticities for more information.

8.3.3 About Demand Elasticity Sets

By default, TRIST uses a single demand elasticity value for all products. You may want to use individual values instead either though adjustment factors or by selecting one of the alternative elasticity sets made available in TRIST.

- **SMART set**
  This set is the one used in SMART simulation tool available in World Bank WITS. Values were estimated through surveys in the early 80's for over 100 product groups.
- **WB KON set**
  This set is more recent and more detailed that the SMART one. Values were estimated at the 6 digit level of the HS nomenclature (over 5,000 distinct products) in 2005 using econometric technics at the World Bank Trade Department (Kee, Olarreaga and Nicita).
- **VII set**
  This is the latest elasticity addition in TRIST, estimated by the Vienna Institute for International Economic Studies. For more information, you may want to visit their web site and read the background paper Ghodsi, M., J. Grübler and R. Stehrer (2016), 'Import Demand Elasticities Revisited', wiiw Working Paper, No. 132, November.

See Set Simulation Elasticities to learn more on how to use a demand elasticity set in TRIST.

8.4 Manage Tariff Reform Scenarios

This section details how to build and apply tariff reform scenarios. Any given tariff scenario can be applied to one or several country groups.

Click a link below to display help on the chosen topic:

- Apply a scenario
- Open the Scenario Management panel
- Build a scenario
- Edit a scenario
- Types of tariff changes

8.4.1 Apply a tariff scenario

In TRIST, initial tariffs are changed through reform scenarios, which impact imports and revenues.

Note: if building a multiple step simulation, please see Set Step parameters (specially point 3) instead of this section.

Each country group is associated with a single scenario as detailed below:

To apply a scenario:

1. Select the *TRIST* worksheet;
2. For the desired country group, select the scenario to be applied in the list of available scenarios as shown below:

TRIST automatically recalculates the full workbook to reflect the impact of the chosen scenario.

See also:

- Apply a scenario
- Open the Scenario Management panel
- Build a scenario
- Edit a scenario
- Types of tariff changes

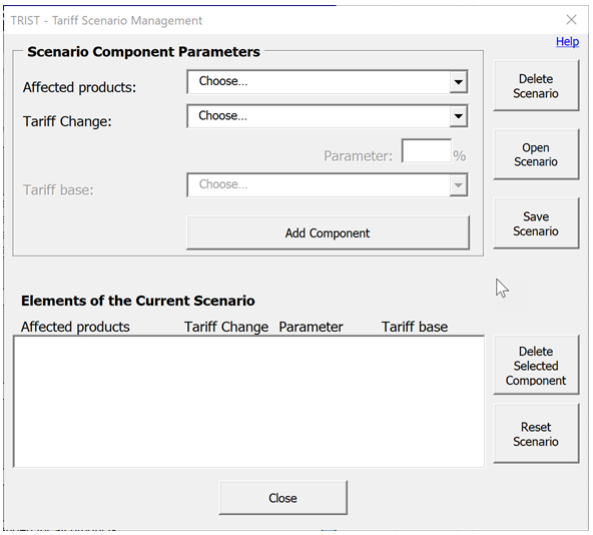
8.4.2 Open the tariff scenario panel

TRIST allows building tariff reform scenarios to be applied to the tariff schedules faced by the various groups of partner countries.

To open the scenario management panel:

1. Select the *TRIST* worksheet;
2. Click on *Manage Tariff Scenarios* on the worksheet.

   The following panel displays:



Next:Build a scenario

See also:

- Apply a scenario
- Open the Scenario Management panel
- Build a scenario
- Edit a scenario
- Types of tariff changes

8.4.3 Build a tariff scenario

This section explains how to build a tariff reform scenario in TRIST.

Scenarios are made of components, each of them being defined by a set of parameters. Each component allows dealing distinctly with a specific group of products. A scenario can be as simple as made of one single component (all products are treated the same way) or made of a maximum of 7 components.

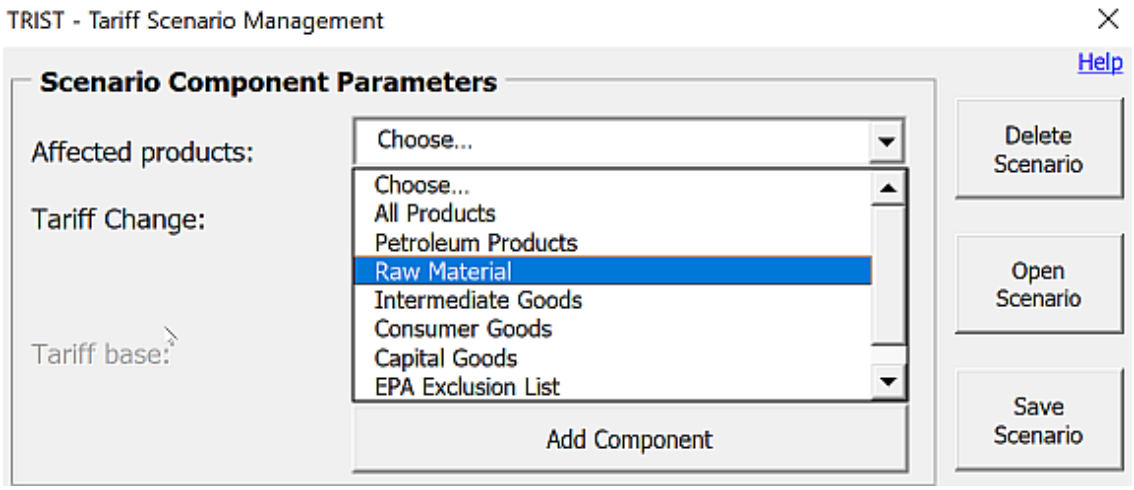
Note: the order in which components are included in a scenario affects the way tariffs are changed for tariff lines that belong to several product groups. Indeed, any tariff line will be changed only once by a scenario. For example, if a tariff line belongs to product group A and to product group B, and if the first component of the scenario affects group B and the second component affects group A, then the considered tariff line will be affected as a member of group B, not as a member of group A. For example, if the chosen tariff change for group B is a 50% cut and it is a 25% cut for group A, then any tariff line belonging to both groups will be cut by 50% only. The components order in a scenario should be carefully considered when building a scenario.
Therefore, any exempted group of products should be used in the first component(s) before adding components which affect tariffs.

To build a Scenario:

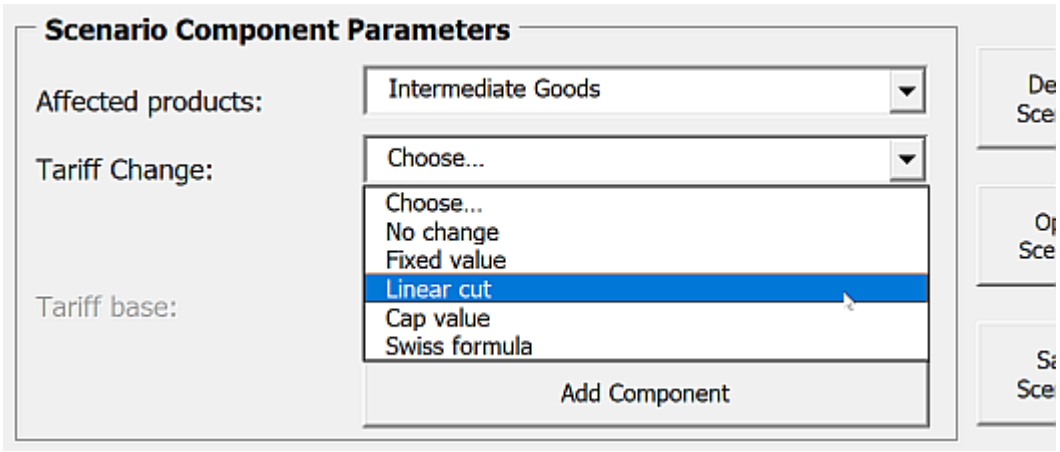
1. Open the Tariff Scenario Management panel;
2. Create the components of the scenario and finalize with Remaining products if necessary;
3. Save the scenario by clicking on the Save button;
4. Give a name and a description to the scenario;

To create a component for a scenario:

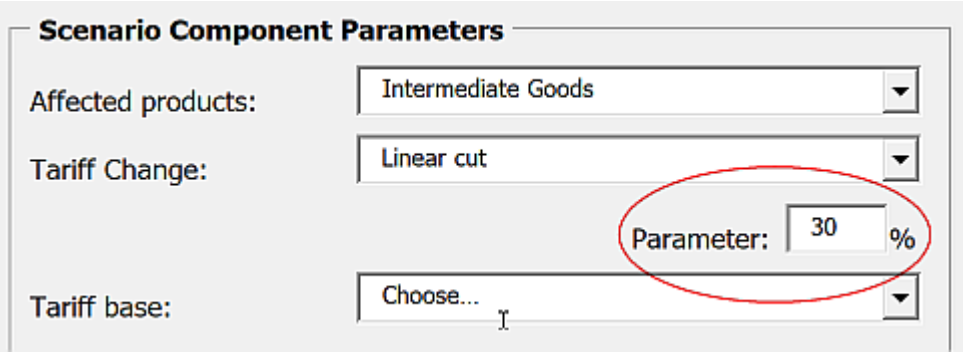
1. Under Scenario Definition Parameters, select a product group in the Affected products drop down list. The list depends on products groups TRIST finds in the Product Groups worksheet.



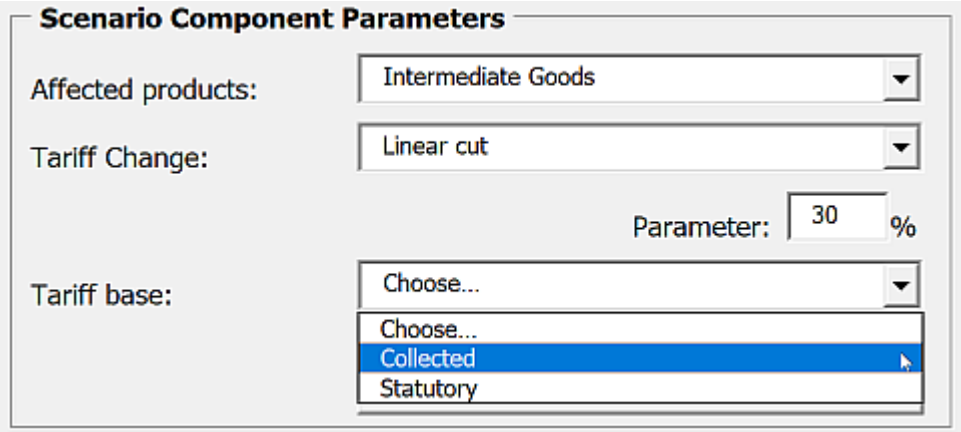
2. Select a type of change in the Tariff change drop down list. Depending on your choice here the Parameter and the Tariff base fields may be enabled or not.



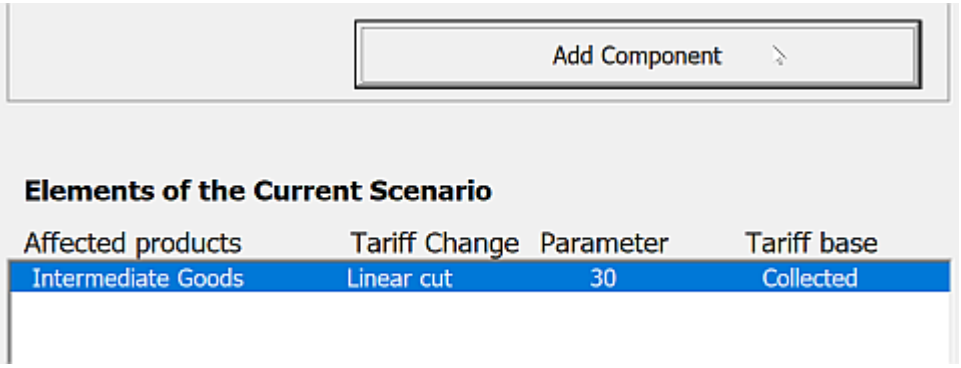
3. If enabled (depending on the chosen tariff change), enter the value for the Tariff Change parameter in the text box. Note that the percentage character does not need to be typed.



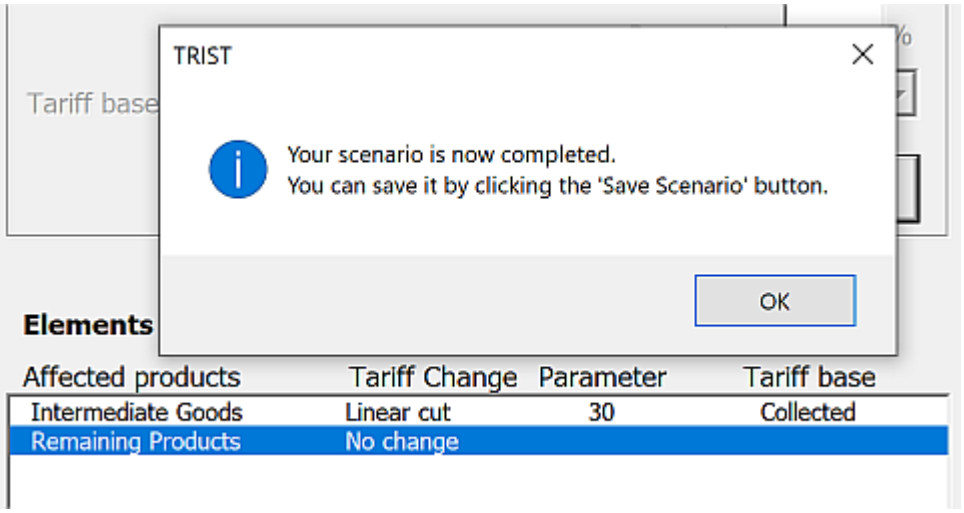
4. Next, select (if enabled) the Tariff base. This is the type of tariff to be used as the starting point for the computation of the new tariff. Choosing one or the other type of tariff base depends on how you want exemptions to be treated through the reform scenario. Using Statutory as the tariff base means that exemptions would be abolished with to the reform. Using Collected instead means that exemptions would remains at the same level after the reform.



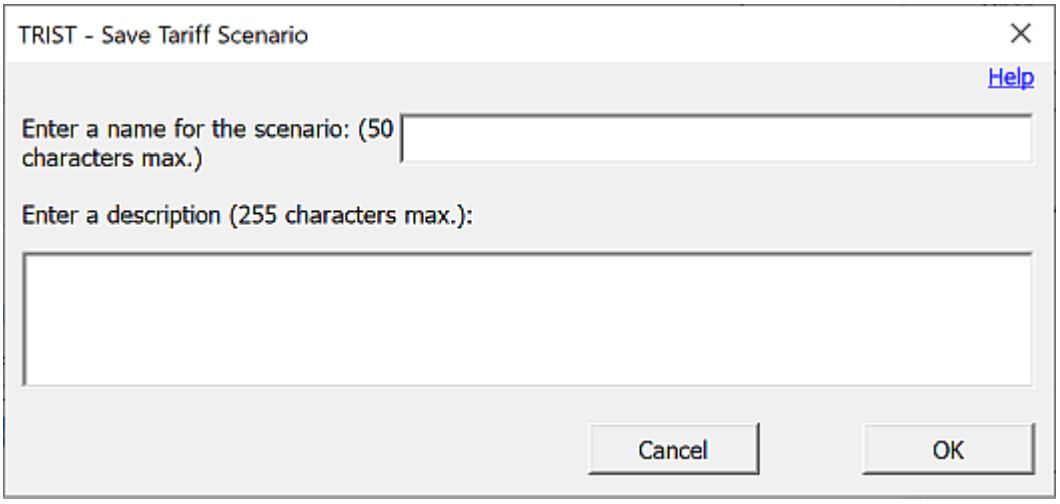
5. Finally click on the Add Definition button to the scenario. As a result, TRIST creates in the bottom table titled List of tariff changes included in the current scenario a row with the parameters of the newly created component:



6. Repeat steps 1 to 5 until your scenario is fully defined. A scenario is fully defined when its definition covers all products. There are two ways of covering all products: either choose All Products as the Affected products when building the first component of your scenario (in that case your scenario will be made of only one component and all products will be treated the same way), or finalize the scenario by choosing Remaining Products as the Affected products in the last component of your scenario (in that case your scenario can include up to 7 components and the last component will always refer to Remaining Products). TRIST automatically detects when the scenario is completed and displays:



7. Click the Save Scenario button and give a name and description (both mandatories) and press OK.



The newly saved scenario can now be applied on any country group on the *TRIST* worksheet. (see Apply a scenario) or the *Multistep Sim* worksheet (see Set Step parameters).

See also:

- Apply a scenario
- Open the Scenario Management panel
- Build a scenario
- Edit a scenario
- Types of tariff changes

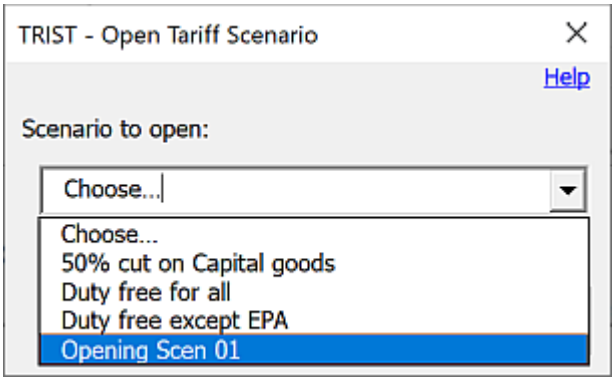
8.4.4 Edit a tariff scenario

You can modify an existing scenario any time by following the steps below.

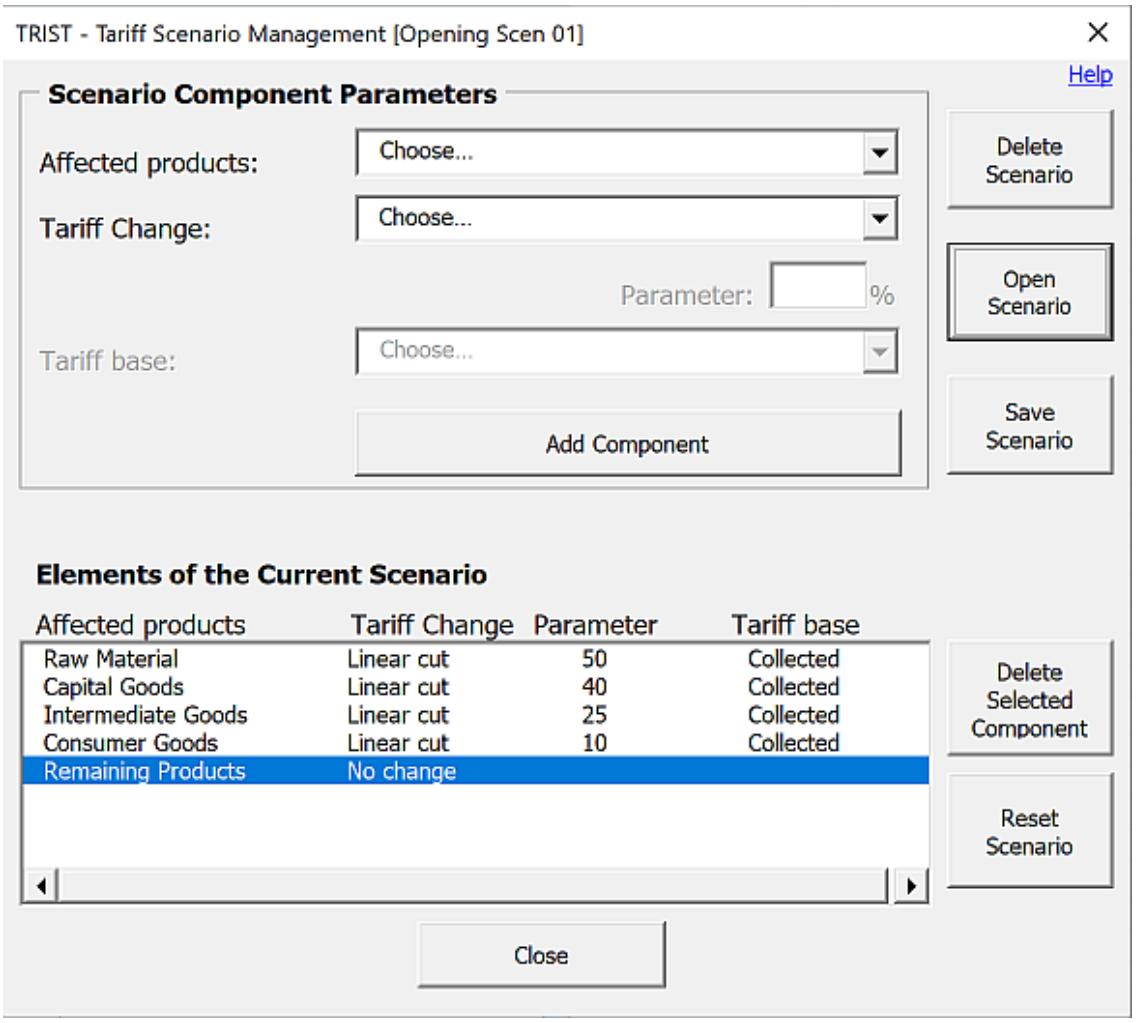
To edit a scenario:

1. Open the *Tariff Scenario Management* window;

2. Click the *Open Scenario* button to display the window as below;



3. Select in the list the scenario to be edited and click *OK*. TRIST opens the scenario in the main window and list all its components (tariff changes) in the lower table:



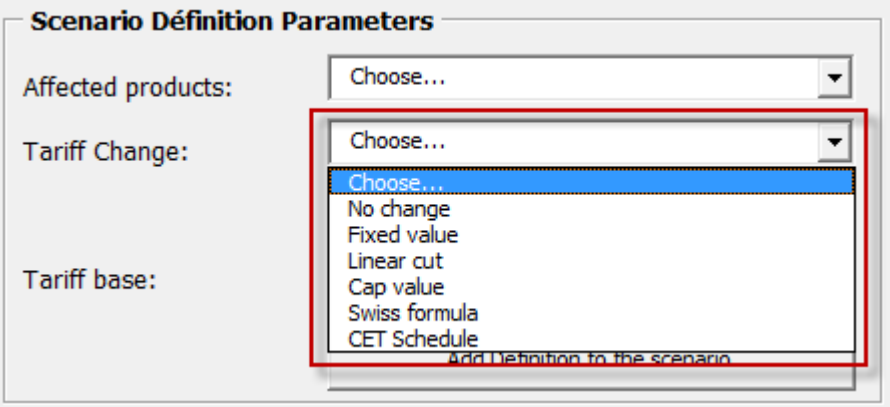
4. If you want to add new components, first select the *Remaining Products* entry (last row) and click the *Delete Selected Change* button. If the chosen scenario is made of only one component, delete the *All Products* entry instead.
   If dont want to add any component but you only want to delete one, simply select the component to be deleted and click the *Delete Selected Change* button.
5. You can add components the same way you would build a new scenario.
6. Click *Save* Scenario when the scenario edition is completed.

See also:

- Apply a scenario
- Open the Scenario Management panel
- Build a scenario
- Edit a scenario
- Types of tariff changes

8.4.5 Types of tariff changes

TRIST offers multiple options in changing tariff rates via reform scenarios. The following details the various possibilities.



No Change

Use this option when you don't want any change in the tariffs for the product group selected as *Affected products*. This option is useful when you want to exclude some products from any tariff reform.

Fixed Value

Use this option when you want to replace all tariffs (for the considered product group) with a single fixed value. When you select this option, enter the chosen value in the *Parameter* field. For example you may want to set to 5% all tariffs for raw material products.

Linear cut

Use this option when you want to apply a linear cut to all tariffs for the considered product group. When you select this option, enter the chosen value in the *Parameter* field and select which type of tariffs (*statutory* or *collected*) to be cut in the *Tariff Base* field. Choosing one or the other type of tariff base depends on the treatment of exemptions you want to simulate with the reform scenario. Using statutory as the tariff base means that exemptions would be abolished thanks to the reform. Using collected instead means that exemptions would remains at the same level after the reform.

Cap value

Use this option when you want to make sure no tariff will be greater than the chosen value after the reform. Any tariff equal or below the cap will be unchanged while any tariff above the cap will be replaced with the cap value. When you select this option, enter the chosen value in

the Parameter field and select which type of tariffs (statutory or collected) to be cut in the Tariff Base field. Choosing one or the other type of tariff base depends on the treatment of exemptions you want to simulate with the reform scenario. Using statutory as the tariff base means that exemptions would be abolished thanks to the reform. Using collected instead means that exemptions would remains at the same level after the reform.

Swiss formula

Use those option if you want to apply the Swiss formula type of change. The Swiss formula is well known formula used in the past in multilateral negotiations. Its main characteristics are first to cut hight tariffs more than low tariffs and second to cap all tariffs at the value of the chosen parameter. The formula is:

t1 = (t0*A)/(t0+A)

with:
t0 the initial tariff
t1 the new tariff
A the parameter

examples with A = 7:

1. t0 = 50% then t1 = 6.14
2. t0 = 5% then t1 = 2.92

When you select this option, enter the Swiss formula parameter value in the *Parameter* field and select which type of tariffs (statutory or collected) to be cut in the *Tariff Base* field. Choosing one or the other type of tariff base depends on the treatment of exemptions you want to simulate with the reform scenario. Using statutory as the tariff base means that exemptions would be abolished thanks to the reform. Using collected instead means that exemptions would remains at the same level after the reform.

Tariff Schedule

Any imported tariff schedule will namely appear in the list after the Swiss formula entry. This option is very useful when tariffs are not adjusted through a formula (or receive the same new value) but they are changed as the result of negotiations (common external tariff for example).

See also:

- Apply a scenario
- Open the Scenario Management panel
- Build a scenario
- Edit a scenario
- Types of tariff changes

8.5 Manage Tax Reform Scenarios

This section details how to build and apply tax reform scenarios. Contrary to tariff reform scenarios, tax reform the scenarios are not discriminatory according to the origin of the imports but are applied to imports from all country groups.

TRIST allows not only the modification of any tax rate but also its fiscal base, i.e., the base on which the rate is applied.

Click a link below to display help on the chosen topic:

- Apply a tax scenario
- Open the tax scenario panel
- Build a tax scenario
- Edit a tax scenario
- Types of tax changes
- Modify the fiscal base

8.5.1 Apply a tax scenario

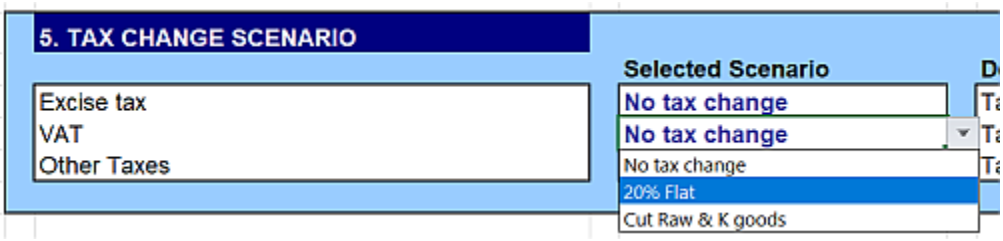
In TRIST, taxes can be changed through reform scenarios, which impact imports and revenues.

Each type of taxes is associated with a single scenario as detailed below:

Note: if building a multiple step simulation, please see Set Step parameters (specially point 4) instead of this section.

To apply a tax scenario:

1. Select the *TRIST* worksheet;
2. For the desired tax, select the scenario to be applied in the list of available scenarios as shown below:



TRIST automatically recalculates the full workbook to reflect the impact of the chosen scenario.

See also:

- Apply a tax scenario
- Open the tax scenario panel
- Build a tax scenario
- Edit a tax scenario
- Types of tax changes
- Modify the fiscal base

8.5.2 Open the tax scenario panel

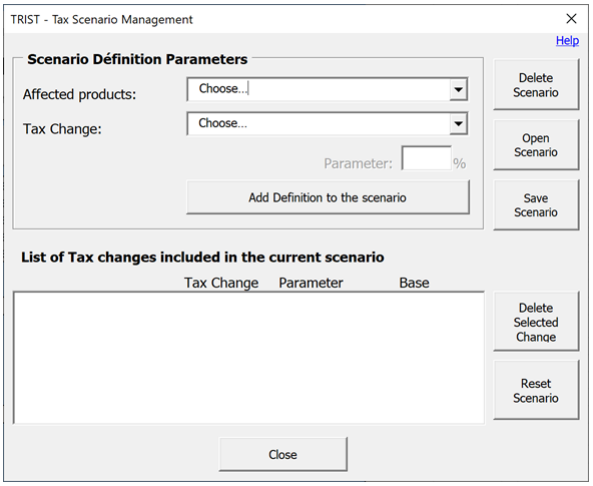
TRIST allows building tax reform scenarios to be applied to any tax set.

To open the tax scenario management panel:

1. Select the *TRIST* worksheet;

2. Click on the *Control Panel* button and c lick on the *Manage tax Reform Scenario* button.
   or
   Click directly on the *Manage Tax Scenarios* button on the worksheet.

   The following panel displays:



See also:

- Apply a tax scenario
- Open the tax scenario panel
- Build a tax scenario
- Edit a tax scenario
- Types of tax changes
- Modify the fiscal base

8.5.3 Build a tax scenario

This section explains how to build a tax reform scenario in TRIST.

A scenario is made of components, each of them being defined by a set of parameters. Each component allows dealing distinctly with a specific group of products. A scenario can be as simple as made of one single component (all products are treated the same way) or made of a maximum of 7 components.

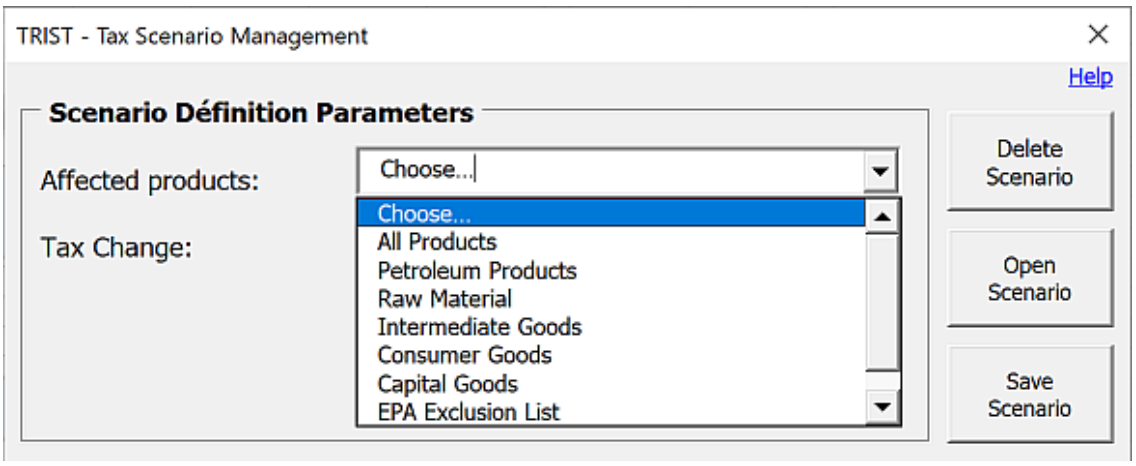
Note: the order in which components are included in a scenario affects the way taxes are changed for products that belong to several groups. Indeed, any product will be changed only once by a scenario. For example, if a product belongs to product group A and to product group B, and if the first component of the scenario affects group B and the second component affects group A, then the considered product will be affected as a member of group B, not as a member of group A. For example, if the chosen tax change for group B is a 50% cut and it is a 25% cut for group A, then any product belonging to both groups will see its tax cut by 50% only. The components order in a scenario should be carefully considered when building a scenario.

To build a tax scenario:

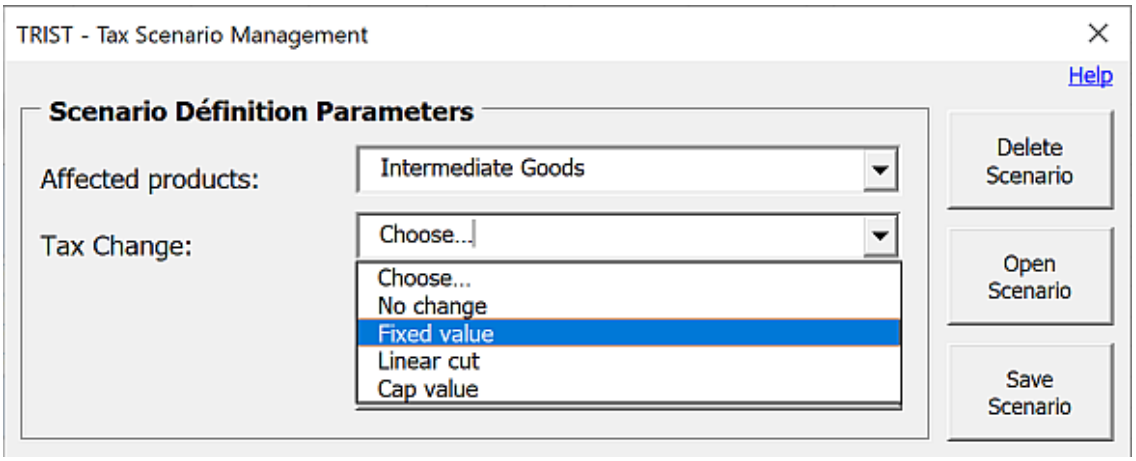
1. Open the *Tax Scenario Management* panel;
2. Create the components of the scenario and finalize with *Remaining products* if necessary;
3. Save the scenario by clicking on the *Save Scenario* button;
4. Give a *name* and a *description* to the scenario;

To create a component for a scenario:

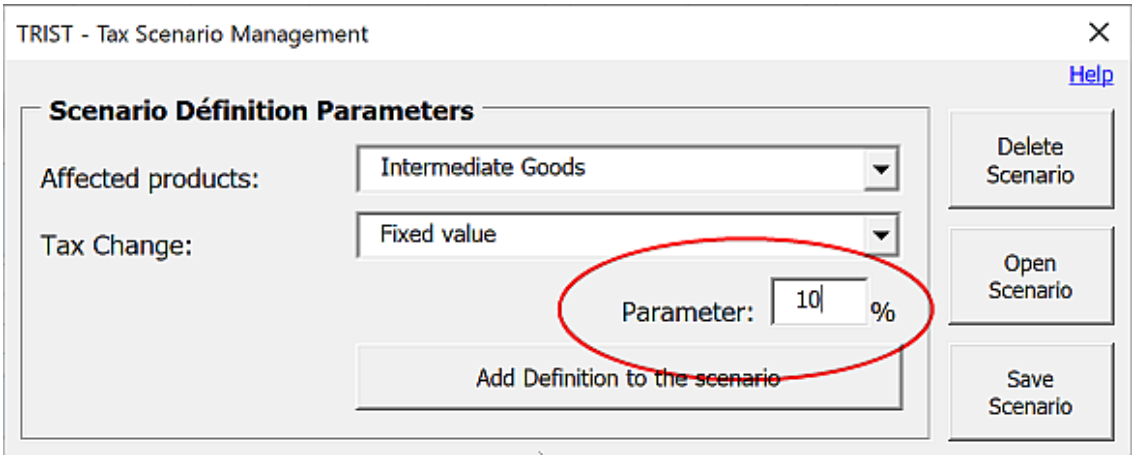
1. Under *Scenario Definition Parameters*, select a product group in the *Affected products* drop down list. The list depends on products groups TRIST finds in the *Product Groups* worksheet.



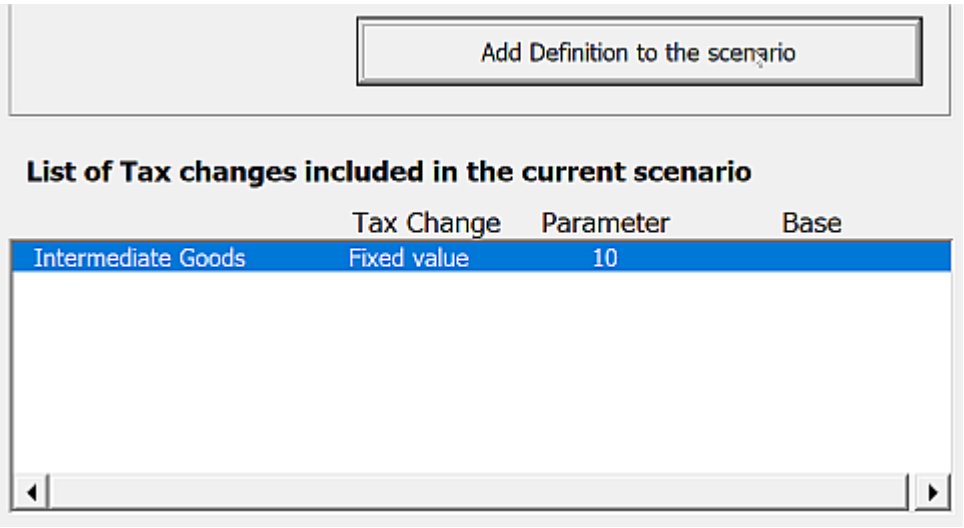
2. Select a type of change in the *Tax change* drop down list. Depending on your choice here the *Parameter* field will be automatically enabled or not.



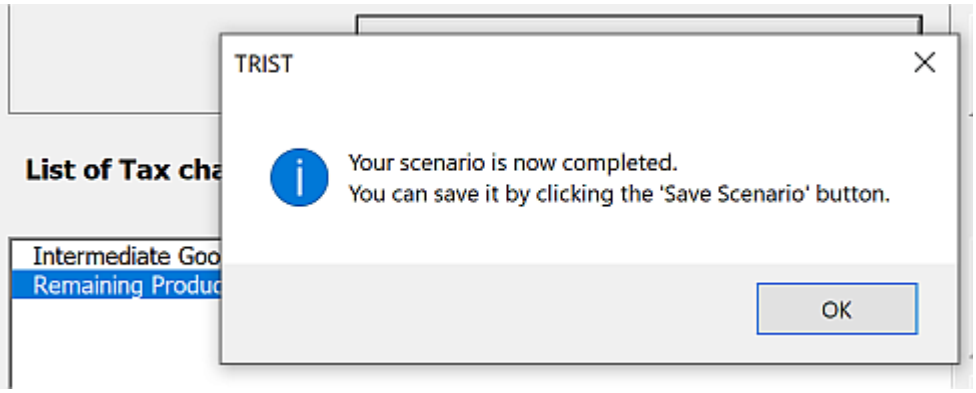
3. If enabled (depending on the chosen tax change), enter the value for the Tariff Change parameter in the text box. Note that the percentage character does not need to be entered.



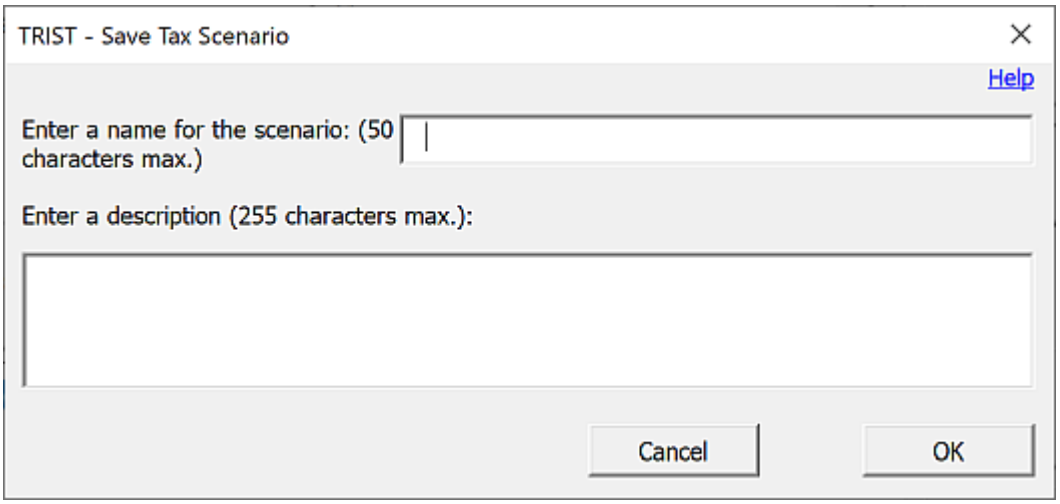
4. Finally click on *Add Definition* to the scenario. As a result, TRIST creates in the bottom table titled *List of tax changes included in the current scenario* a row with the parameters of the newly created component:



5. Repeat steps 1 to 5 until your scenario is fully defined. A scenario is fully defined when its definition covers all products. There are two ways of covering all products: either choose *All Products* as the *Affected products* when building the first component of your scenario (in that case your scenario will be made of only one component and all products will be treated the same way), or finalize the scenario by choosing *Remaining Products* as the *Affected products* in the last component of your scenario (in that case your scenario can include up to 7 components and the last component will always refer to *Remaining Products*). TRIST automatically detects when the scenario is completed and displays:



6. Click OK, then the Save Scenario button and give a name and description (both mandatories) and press OK.



The newly saved scenario can now be applied on any tax set on the *TRIST* worksheet (see Apply a tax scenario) or the *Multistep Sim* worksheet (see Set Step parameters).

See also:

- Apply a tax scenario
- Open the tax scenario panel
- Build a tax scenario
- Edit a tax scenario
- Types of tax changes
- Modify the fiscal base

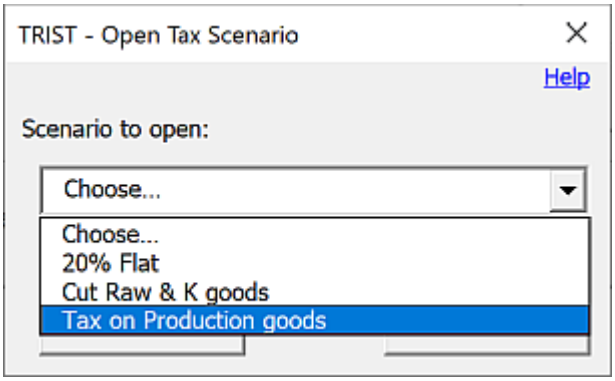
8.5.4 Edit a tax scenario

You can modify an existing tax scenario any time by following the steps below.

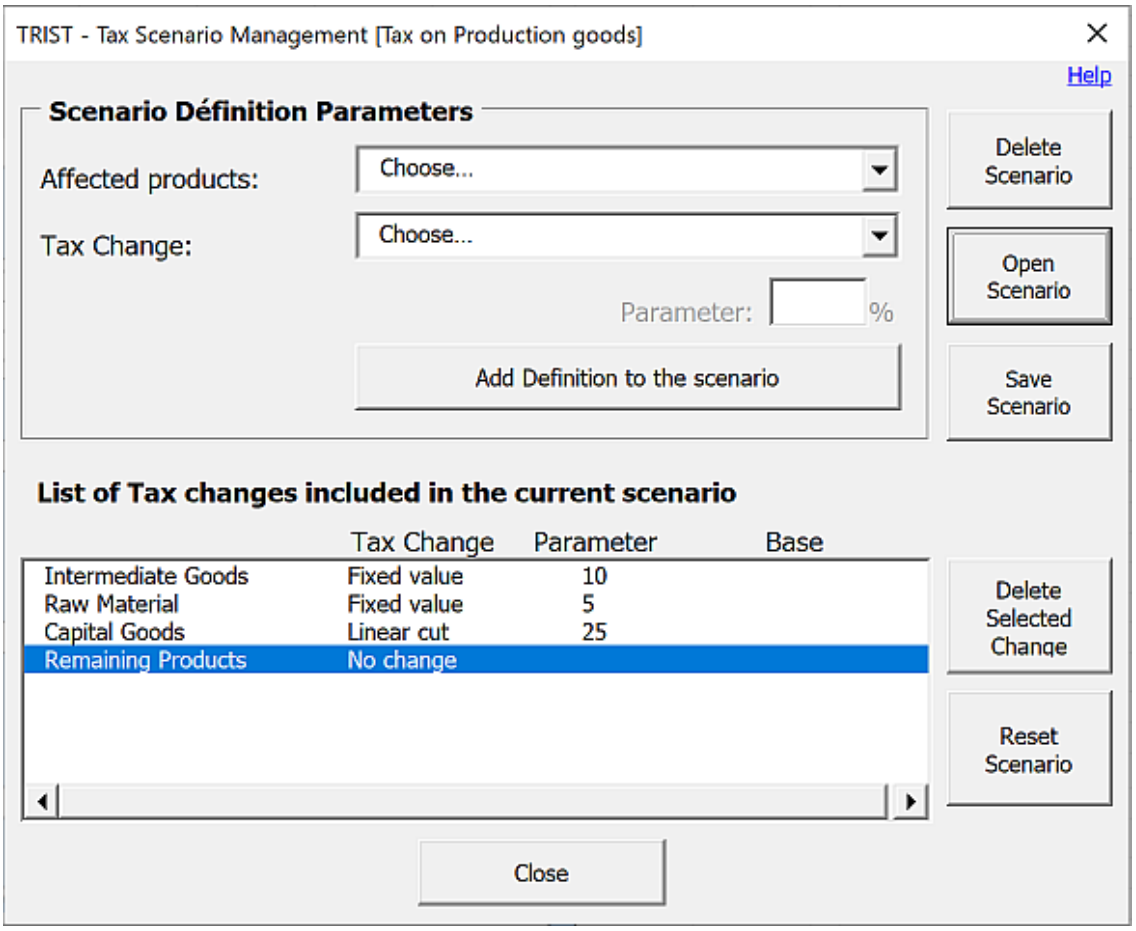
To edit a scenario:

1. Open the Tax Scenario Management window;

2. Click the Open Scenario button to display the window as below;



3. Select in the list the scenario to be edited and click OK. TRIST opens the scenario in the main window and list all its components (tax changes) in the lower table:



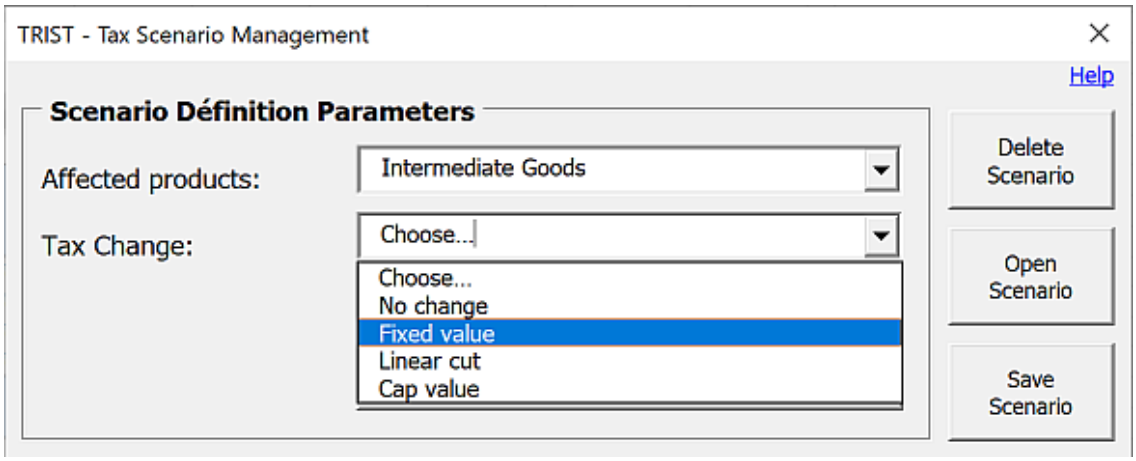
4. If you want to add new components, first select the Remaining Products entry (last row) and click the Delete Selected Change button. If the chosen scenario is made of only one component, delete the All Products entry instead.
   If dont want to add any component but you only want to delete one, simply select the component to be deleted and click the Deleted Selected Change.
5. You can add components the same way you would build a new scenario .
6. Click Save Scenario when the scenario is completed.

See also:

- Apply a tax scenario
- Open the tax scenario panel
- Build a tax scenario
- Edit a tax scenario
- Types of tax changes

8.5.5 Types of tax changes

TRIST offers multiple options in changing tax rates via reform scenarios. The following details the various possibilities.



No Change

Use this option when you don't want any change in the taxes for the product group selected as Affected products. This option is useful when you want to exclude some products from any tax reform.

Fixed Value

Use this option when you want to replace all taxes (for the considered product group) with a single fixed value. When you select this option, enter the chosen value in the Parameter field. For example you may want to set taxes to 5% for raw material products.

Linear cut

Use this option when you want to apply a linear cut to all taxes for the considered product group. When you select this option, enter the chosen value in the Parameter field.

Cap value

Use this option when you want to make sure no tax will be greater than the chosen value after the reform. Any tax equal or below the cap will be unchanged while any tax above the cap will be replaced with the cap value. When you select this option, enter the chosen value in the Parameter field.

Tax Schedule

Any tax schedule (product group) will namely appear in the list after the Cap value entry. This option is very useful when taxes are not adjusted through a formula (or receive the same new value) but are to be adjusted one by one.

See also:

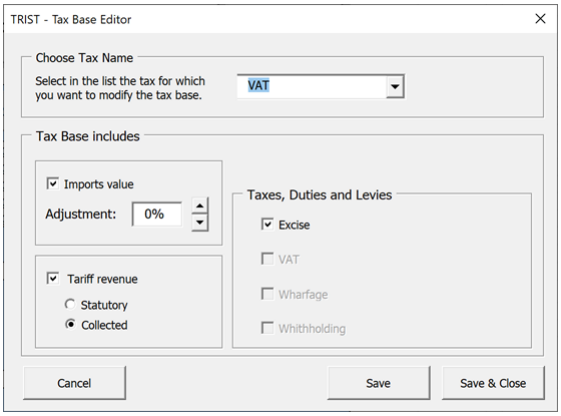
- Apply a tax scenario
- Open the tax scenario panel
- Build a tax scenario
- Edit a tax scenario
- Types of tax changes
- Modify the fiscal base

8.5.6 Modify the fiscal base

TRIST allows the modification of a tax fiscal base, i.e., the base on which the rate is applied.

To change the fiscal base for a tax:

1. Display the *TRIST* worksheet
2. In the *Tax Scenario* table (5), click the *Manage Tax Bases* button. This panel opens:



3. In the dropdown list, select the tax you want to adjust.
4. Adjust the various components of the bas as needed. For more details on how this panel works see Defining Tax and Duties.
5. Click *Save & Close* to save changes and close the panel, click *Save* to save changes and keep the panel open to adjust another tax or click *Cancel* to cancel any change.

See also:

- Apply a tax scenario
- Open the tax scenario panel
- Build a tax scenario
- Edit a tax scenario
- Types of tax changes
- Modify the fiscal base

8.6 Manage NTM Reform Scenarios

This section details how to build and apply NTM reform scenarios. Contrary to tariff reform scenarios, NTM reform scenarios are not discriminatory and are applied to imports from all country groups. Also, NTMs are lifted or not, there are no half measures.

TRIST can simulate the impact of lifting one or many NTMs faced by one or many imported products. It is as simple as defining a group of NTMs to be lifted and to link that group to a group of products to be affected (those products for which the considered NTMs will be lifted).

Click a link below to display help on the chosen topic:

- Build NTM groups
- Apply an NTM lifting scenario

8.6.1 Build NTM groups

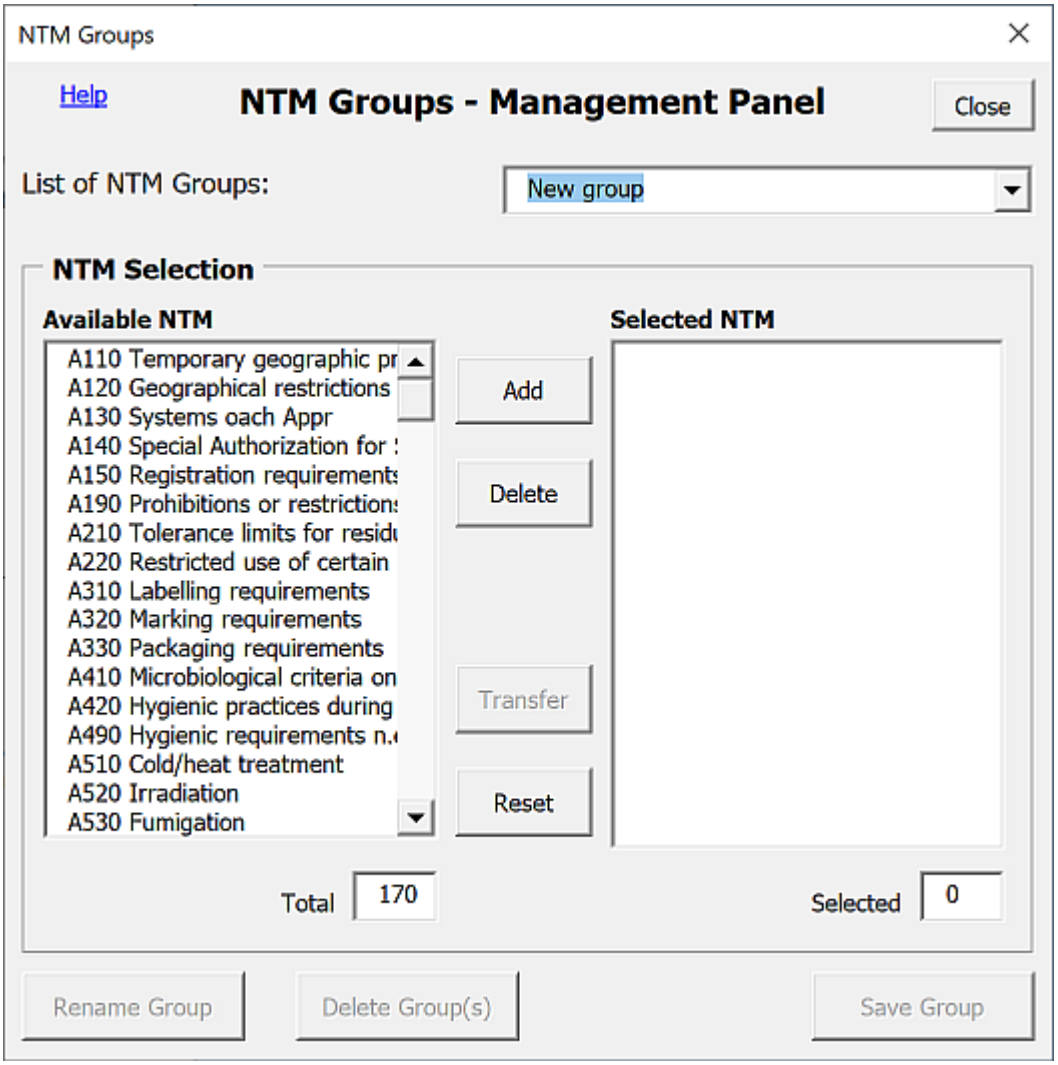
NTM groups must be built before a NTM reform scenario can be included in the TRIST simulation.

An NTM group includes one or several NTMs to be lifted.

To build a NTM group:

1. Display the *NTM Groups* worksheet.

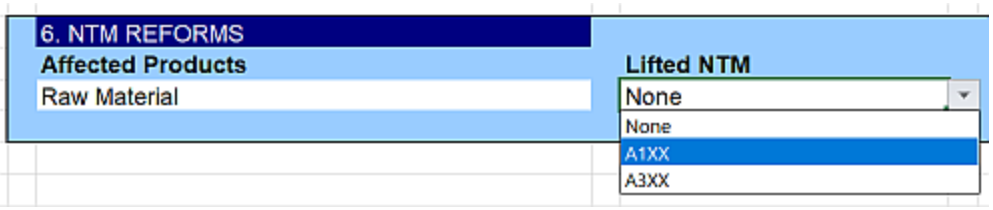
2. Click the *Manage NTM Groups* button. The following window displays:



3. The NTM group builder operates the same way as the *Country Group Builder* in TRIST Aggregation file, and as for countries, any NTM may belong to only one group of NTMs. For more detailed instructions see Manage Country Groups .

8.6.2 Apply NTM scenario

When NTM are imported in TRIST Simulation file, a 6th section is added on the TRIST worksheet as reproduced below:



An NTM scenario is made of two components:

- a NTM group (see Build NTM Groups);
- a product group (affected products);

When a scenario is defined, TRIST will lift the NTMs included in the chosen NTM group for the tariff lines included in the chosen product group and will automatically assess the impact on the results. Please note that NTM scenarios are limited to the lifting of NTM .

To add a NTM scenario:

1. Click on *Add NTM* .
2. Fill the *Affected Products* and *Lifted NTM* fields.

To delete a NTM scenario:

1. Select the Affected Products or Lifted NTM field for the NTM scenario to be deleted.
2. Click on the *Delete* button.

8.7 Manage Product Groups

You can manage product groups in TRIST simulation the same way you do it in the TRIST Aggregation file. You can create two types of groups:

- Product group definitions which can be used as affected product list in tariff scenarios:
  - Manual definition
  - Imported definition
  - Advanced definition
- Tariff schedules which can be used as new values (tariff change) in tariff scenarios:
  - Manual schedule
  - Imported schedule
- Delete Product Groups

8.7.1 Build group definitions

Product group definitions are used in tariff and tax scenarios to identify the tariff lines which are affected by the (tariff or tax) change. In a product group definition, 1s identify included tariff lines while 0s or empty cells indicate excluded ones.

TRIST allows building product group definitions in three different ways:

- Manual definition : is the simpliest way of building a tariff schedule, but it is convenient only when the simulation involves a limited number of tariff lines. The schedule is filled manually in the Product Groups worksheet by entering '1' in the cells facing the tariff lines to be included.
- Imported definition : the definition (list of 1s and empty cells) is copied from another file when creating the product group.
- Advanced definition : allows building a group of products by specifying selection rules. For example, to include all tariff lines which tariff is higher than 20%, or the tariff lines producing the highest tariff revenues, up to 20% of total imports. TRIST builds a product group using '1' for the tariff lines which fit the selection rules.

See Also:

- Product group definitions
  - Manual definition
  - Imported definition

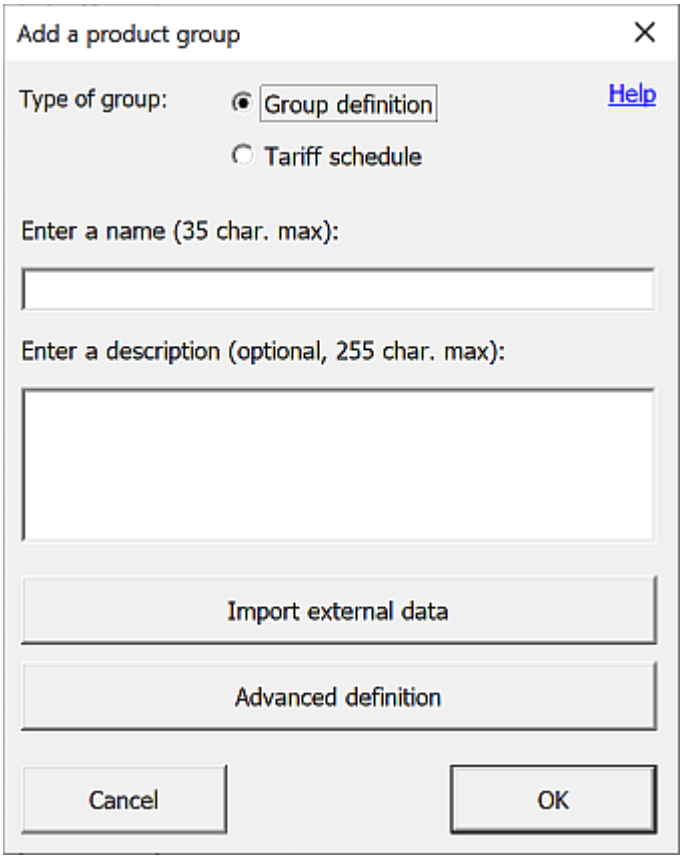
    - Advanced definition
- Tariff schedules
    - Manual schedule
    - Imported schedule
- Delete Product Groups

8.7.1.1 Manual definition

The manual definition is the simpliest way of creating a product group, specially if it includes a limited number of tariff lines. The group's column is filled manually by entering 1 in the cells facing the tariff lines to be included in the group.

To build a manual definition:

1. Display the *Product Groups* worksheet;
2. Click the *Add Product Group* button to display:



3. Choose *Group definition* as the *Type of group*;
4. Enter a *name* and a *description* (optional) for the new group.
5. Click *OK* to create the new group's column. The group is added in the first empty column in the *Product Groups* worksheet.
6. Enter *1* in the column for each tariff line to be included in the group.

See Also:

- Product group definitions
    - Manual definition
    - Imported definition

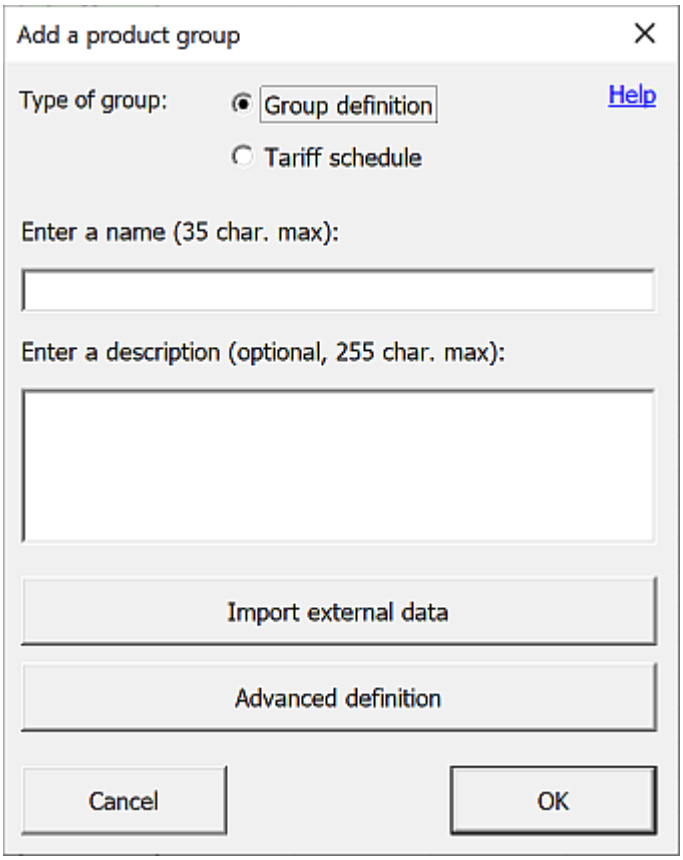
    - Advanced definition
- Tariff schedules
    - Manual schedule
    - Imported schedule
- Delete Product Groups

8.7.1.2 Imported definition

The definition (list of 1 and empty cells) is imported from another file when creating the group definition.

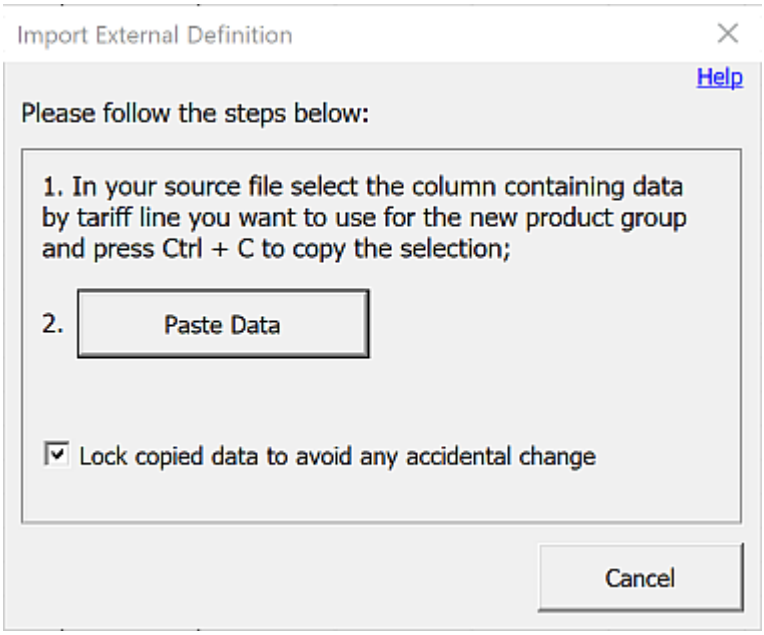
To build an imported definition:

1. Display the *Product Groups* worksheet;
2. Click the *Add Product Group* button to display:

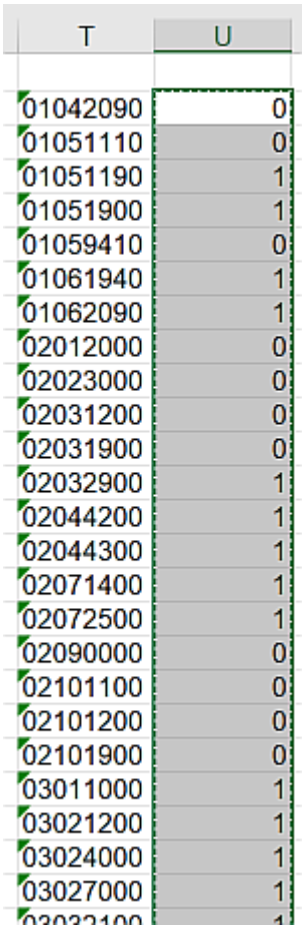


3. Choose *Group definition* as the *Type of group* ;
4. Enter a *name* and a *description* (optional) for the new group.

5. Click the *Import* external data button:



6. Check the box to lock the data or uncheck it to be able to edit the list after it is imported.
7. If not yet done, open the file that contains the definition to be imported into TRIST.
8. Select the range of cells containing the definition and press *Ctrl + C* to copy as shown below. The range should cover all tariff lines as included in the TRIST Simulation file and include only the column containing the definition (column U in the example below). The range must contains *1* (for selected lines) and *0* otherwise or *1* and empty works the same.



T	U
01042090	0
01051110	0
01051190	1
01051900	1
01059410	0
01061940	1
01062090	1
02012000	0
02023000	0
02031200	0
02031900	0
02032900	1
02044200	1
02044300	1
02071400	1
02072500	1
02090000	0
02101100	0
02101200	0
02101900	0
03011000	1
03021200	1
03024000	1
03027000	1

9. Go back to TRIST simulation file and click the *Paste Data* button to complete the copy/paste process and close the window.
10. Click *OK* to finalize the creation of the new product group.
    The new product group is added in the first empty column of the Product Groups worksheet.

See Also:

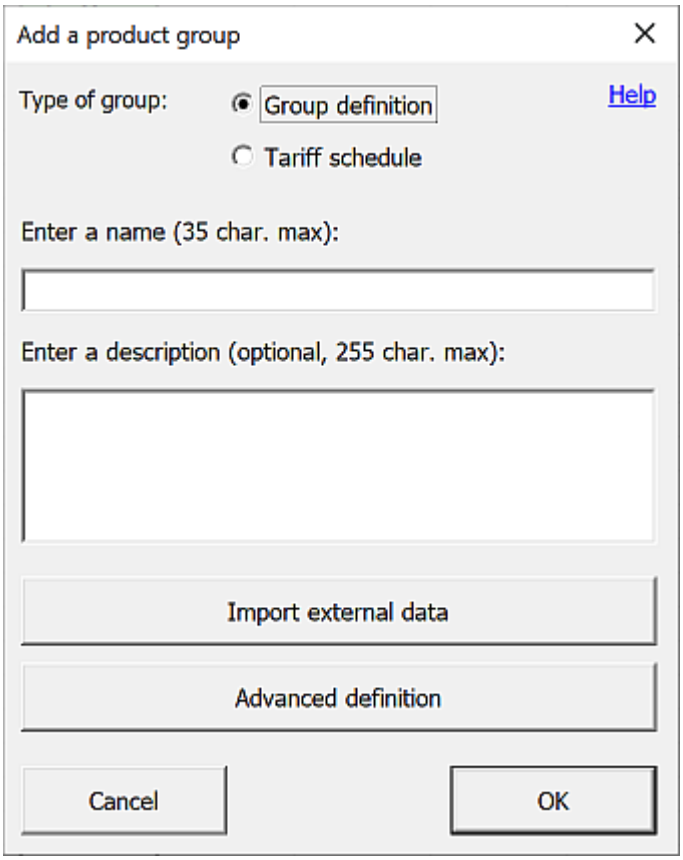
- Product group definitions
  - Manual definition
  - Imported definition
  - Advanced definition
- Tariff schedules
  - Manual schedule
  - Imported schedule
- Delete Product Groups

8.7.1.3 Advanced definition

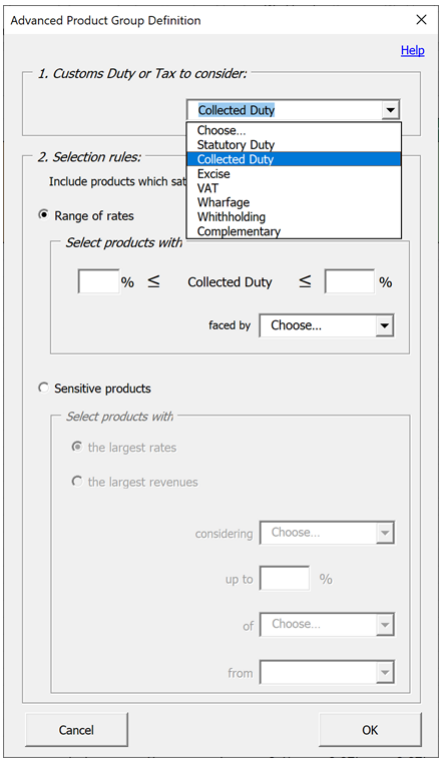
An advanced definition allows building a group of products by specifying selection rules. For example, to include all tariff lines which tariff is higher than 20%, or the tariff lines producing the highest tariff revenues, up to 20% of total imports.

To build an advanced definition:

1. Display the *Product Groups* worksheet;
2. Click the *Add Product Group* button to display:

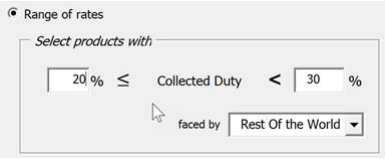


3. Choose *Group definition* as the *Type of group*;
4. Click the *Advanced definition* button. This panel opens:



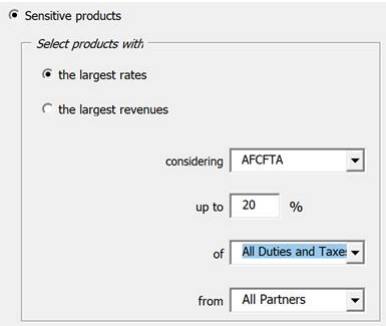
5. In section *1.*, choose the *Duty or Tax to Consider* for selecting tariff lines. *Collected Duty* is chosen in our example
6. In section *2.* , choose one of the two options:

   Range of rates: tariff lines are selected based on the tariff value (for example all lines which tariff is above 20%). Enter values in at least one text field and click on the ≤ to alternate between stricly below (<) and below or equal (≤).



   In the example above products which (here *Collected Duty*) rates faced by the country group *Rest Of the World* are above or equal to 20% and stricly below 30% will be selected.

   Sensitive products: tariff lines are selected based on their respective sensitivity with regards to protection (highest rates) or to revenues (highest revenues).



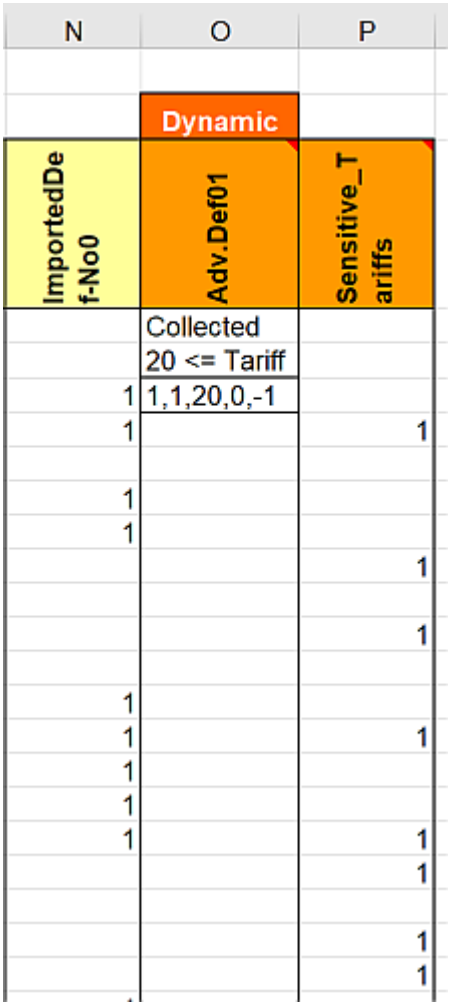
   In both cases (rates or revenues) the following parameters are to be specified:

   - *considering*: choose the country group(s) to consider to build the rule. You can choose between all exporting countries (*All partners*) or a single group of countries (*AFCFTA* in the example above)
   - *up to* : specifies when to stop the selection. In the example above TRIST will consider the product lines facing the largest rates when imported from AFCFTA, up to *20%* of revenues from All Duties and taxes collected from All Partners.
   - *of*: specifies the values to consider in order to stop the selection. Possible choices are *Imports* values, revenues from *All Duties and Taxes* or revenues from the duty or tax selected in the first place (*Collected duty* in our example).
   - *from* : works in conjonction with *of* above to specify the selection.

   In our example above, our specification tells TRIST to build a group of products by considering the Collected Duty largest rates faced by AfCFTA country group, and stop the selection when the selected products represent *20%* of revenues from *All Duties and Taxes* collected from *All Partners* .
7. Click *OK* to validate the selection rule and return to the previous window.
8. Enter a *name* the new group, the descripption is automatically filled by TRIST.
9. Click *OK* to build the group. The new product group is added in the first empty column of the Product Groups worksheet.

The group is built in the *Product Groups* worksheet depending on the chosen type of *Advanced definition* (*Range of tariff values* or *Sensitive products*):

- *Range of tariff values*: the group is so called *Dynamic* . Included tariff lines are not identified with 1s. Instead, the first 3 lines of the column display the definition. The actual content of the product group adjusts dynamically depending on the considered group of countries. Indeed, initial tariffs can be different for different country groups and the actual list of tariff lines included in the group adjusts automatically. Such product group is headed with the label Dynamic as shown below (column O).



N	O	P
	Dynamic	
ImportedDef-No0	Adv.Def01	Sensitive_Tariffs
	Collected	
	20 <= Tariff	
1	1,1,20,0,-1	
1		1
1		
1		
		1
		1
1		
1		1
1		
1		
1		1
		1
		1
		1

- *Sensitive Products* : the group is static and contains 1 for included tariff lines (column P above).

See Also:

- Product group definitions
  - Manual definition
  - Imported definition
  - Advanced definition
- Tariff schedules
  - Manual schedule
  - Imported schedule
- Delete Product Groups

8.7.2 Build tariff schedules

Tariff schedules can be used as new (post) tariffs in tariff scenario definitions. A tariff schedule contains one tariff for each tariff line included in the TRIST simulation.

Building or importing a tariff schedule into TRIST is the best solution for complex or negotiated tariff changes.

Note: the tariff schedule can be used as a tax schedule depending on the needs.

TRIST allows building schedules in two different ways:

- Manual schedule : is the simpliest way of building a tariff schedule, but it is convenient only when the simulation involves a limited number of tariff lines. The schedule is filled manually in the Product Groups worksheet by entering values in the cells facing the tariff lines.
- Imported schedule : the shedule is copied from another file when creating the product group.

See Also:

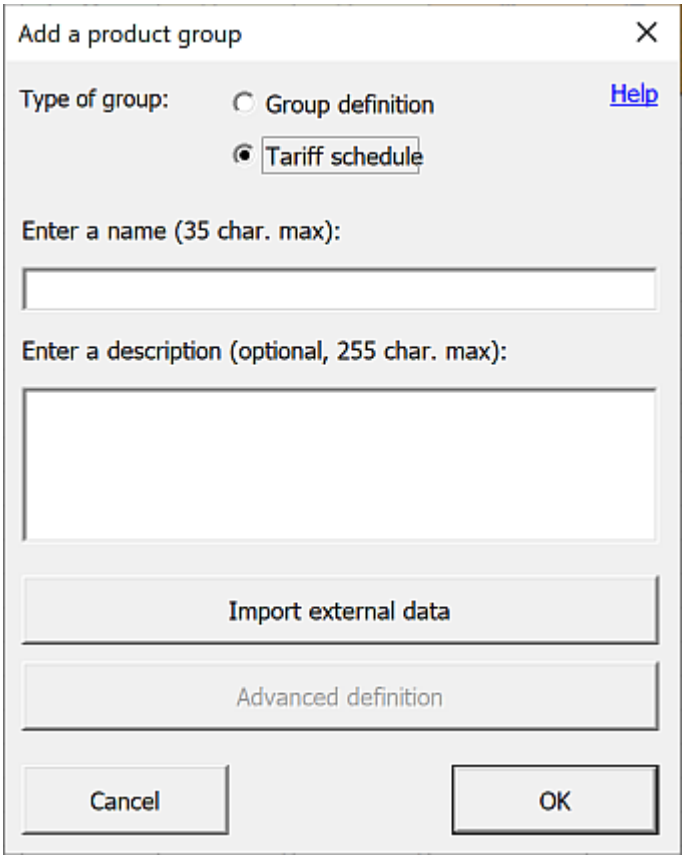
- Product group definitions
  - Manual definition
  - Imported definition
  - Advanced definition
- Tariff schedules
  - Manual schedule
  - Imported schedule
- Delete Product Groups

8.7.2.1 Manual schedule

To build a manual tariff schedule:

1. Display the *Product Groups* worksheet;

2. Click the *Add Product Group* button to display:



3. Choose *Tariff schedule* as the *Type of group*;
4. Enter a *name* and a *description* (optional) for the new group.
5. Click *OK* to create the new group's column. The group is added in the first empty column in the *Product Groups* worksheet. It is easily identified as a tariff schedule thanks to the *Tariff* heading on top of the column.
6. Enter each the tariff value in the column for each tariff line (5 for 5% for example).

Once created, the group is available in the tariff scenario builder (tariff change field) and the tax scenario builder (tax change field).

See Also:

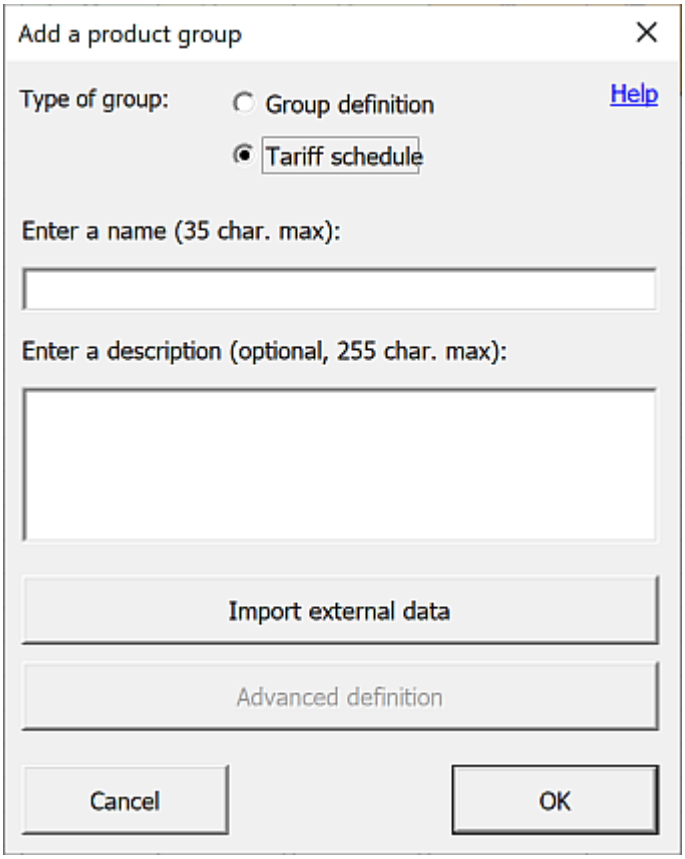
- Product group definitions
  - Manual definition
  - Imported definition
  - Advanced definition
- Tariff schedules
  - Manual schedule
  - Imported schedule
- Delete Product Groups

8.7.2.2 Imported schedule

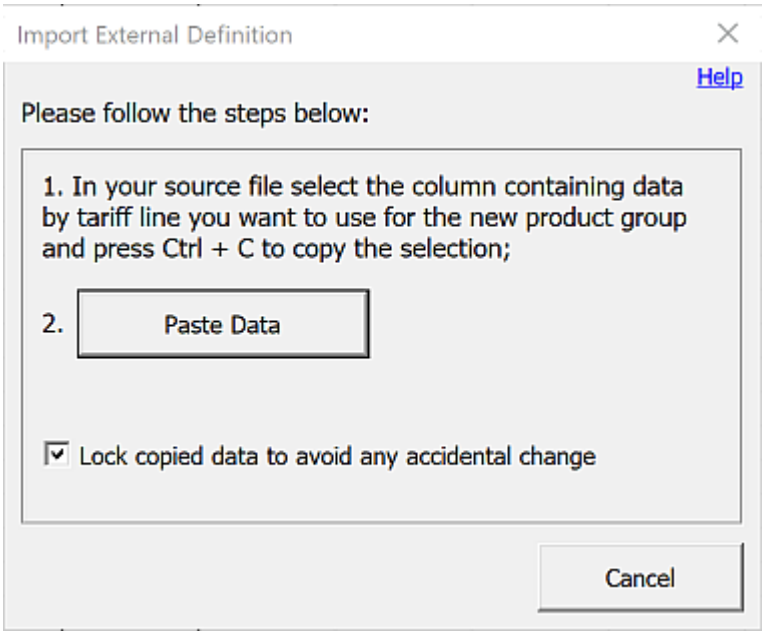
The tariff schedule (list of tariff values for all tariff lines) is imported from another file when creating the tariff schedule group.

To build an imported definition:

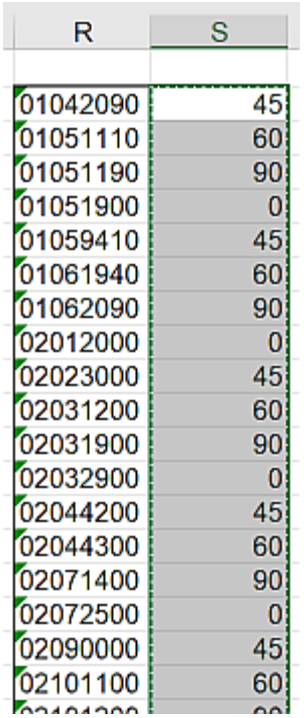
1. Display the *Product Groups* worksheet;
2. Click the *Add Product Group* button to display:



3. Choose *Tariff schedule* as the Type of group;
4. Enter a *name* and a *description* (optional) for the new group.
5. Click the *Import external data* button:



6. Check the box to *lock the data* or uncheck it to be able to edit the list after it is imported.
7. If not yet done, open the file that contains the definition to be imported into TRIST.
8. Select the range of cells containing the tariffs and press *Ctrl + C* to copy as shown below. The range should cover all tariff lines as included in the *TRIST Simulation* file and include only the column containing the tariff values (column S in the example below).



R	S
01042090	45
01051110	60
01051190	90
01051900	0
01059410	45
01061940	60
01062090	90
02012000	0
02023000	45
02031200	60
02031900	90
02032900	0
02044200	45
02044300	60
02071400	90
02072500	0
02090000	45
02101100	60

9. Click the *Paste Data* button to complete the copy/paste process and close the window.
10. Click *OK* to finalize the creation of the new product group.
    The new product group is added in the first empty column of the *Product Groups* worksheet.

See Also:

- Product group definitions
  - Manual definition
  - Imported definition
  - Advanced definition
- Tariff schedules
  - Manual schedule
  - Imported schedule
- Delete Product Groups

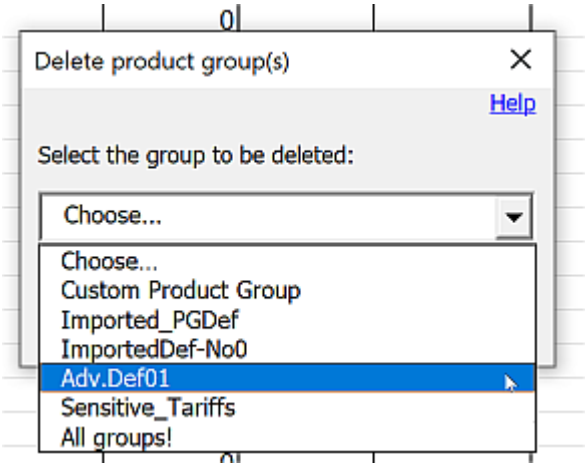
8.7.3 Delete product groups

Only custom groups can be deleted, not TRIST default product groups.

To delete a product group:

1. Display the Product Groups worksheet;

2. Click the Delete Product Group button to display:



3. Choose in the dropdown list the group to be deleted. To delete all groups at once, select All groups!.
4. Click the Delete button;
5. Repeat from 3 to delete another group;
6. Click the Close button.

See Also:

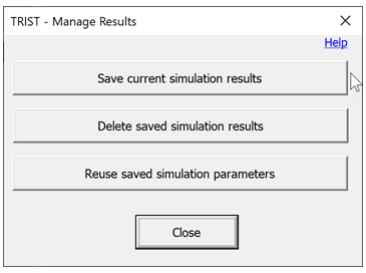
- Product group definitions
  - Manual definition
  - Imported definition
  - Advanced definition
- Tariff schedules
  - Manual schedule
  - Imported schedule
- Delete Product Groups

8.8 Manage Simulation Results

With TRIST you can save results from separate simulations in order to compare results from various scenarios.

To manage simulation results:

1. Display the Results worksheet.
2. Click the *Manage Results* button.
   This window can also be accessed from the main *Control Panel*.



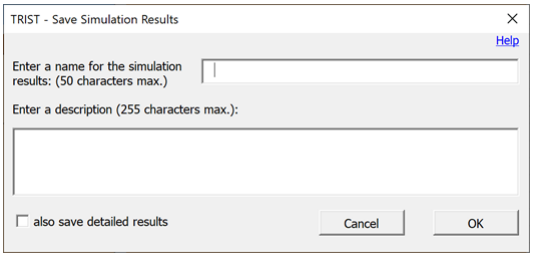
3. Choose the desired option or *Close* to cancel.

See also:

- Manage simulation results
- Save results
- Delete saved results
- Reuse saved simulation parameters

8.8.1 Save results

1. Display the *Results* worksheet.
2. Click the *Manage Simulation Results* button.
3. Click *Save Current Simulation Results* :

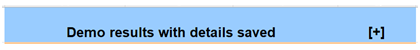


4. Enter a *name* and if desired a *description* for the results
5. Check *also save detailed results* if you want to save more that just the overall results.
6. press *OK*.

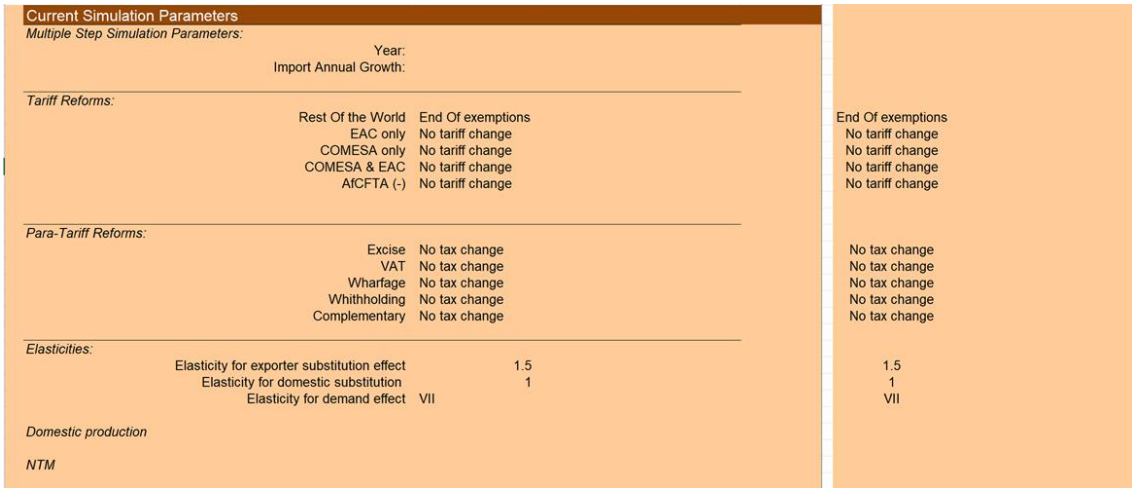
TRIST duplicates the current results on the worksheet to the right as shown below:

OVERALL RESULTS	Manage Results	Current Simulation Results				End of exemptions for ROW			
		Pre	Post	Change	Change (%)	Pre	Post	Change	Change (%)
Imports		745,368,123,499	720,162,618,609	-25,205,504,890	-3.4%	745,368,123,499	720,162,618,609	-25,205,504,890	-3.4%
Tariff Revenue		65,800,065,764	86,357,128,411	20,557,062,647	31.2%	65,800,065,764	86,357,128,411	20,557,062,647	31.2%
Other Taxes Revenue									
Excise		13,933,238,220	13,380,815,348	-552,422,872	-4.0%	13,933,238,220	13,380,815,348	-552,422,872	-4.0%
VAT		66,338,892,781	66,296,366,504	-42,526,277	-0.1%	66,338,892,781	66,296,366,504	-42,526,277	-0.1%
Wharfage		19,017,199,358	18,467,098,824	-550,100,534	-2.9%	19,017,199,358	18,467,098,824	-550,100,534	-2.9%
Whithholding		6,980,064,588	6,876,111,026	-103,953,562	-1.5%	6,980,064,588	6,876,111,026	-103,953,562	-1.5%
Complementary		0	0	0		0	0	0	
Total Tax Revenues on Imports		172,069,460,710	191,377,520,113	19,308,059,402	11.2%	172,069,460,710	191,377,520,113	19,308,059,402	11.2%
Total Tax Revenues on Imports and Domestic Production		172,069,460,710	191,377,520,113	19,308,059,402	11.2%	172,069,460,710	191,377,520,113	19,308,059,402	11.2%
Collected Tariff rate:		8.8%	12.0%		35.8%	8.8%	12.0%		35.8%
For more details see worksheet 'Detailed Results'									

If the option to save detailed results is also checked, the name of the saved results is followed by a [+], which you can click to access the details. See Saved details for more information.



You can save dozens of results sets if necessary. For each saved set of results, the simulation parameters are also saved in the Results worksheet below the results themselves as shown below:

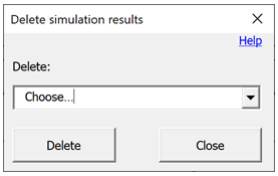


See also:

- Manage simulation results
- Save results
- Delete saved results
- Reuse saved simulation parameters

8.8.2 Delete saved results

1. Display the *Results* worksheet.
2. Click the *Manage Simulation Results* button.
3. Click *Delete Saved Simulation Results* :



4. In the dropdown list choose a single set of results or *All Results*.
5. Click *Delete* to confirm your choice or *Close* to cancel.

   Note that saved detailed results are deleted when global results are deleted.

See also:

- Manage simulation results
- Save results
- Delete saved results
- Reuse saved simulation parameters

8.8.3 Reuse saved simulation parameters

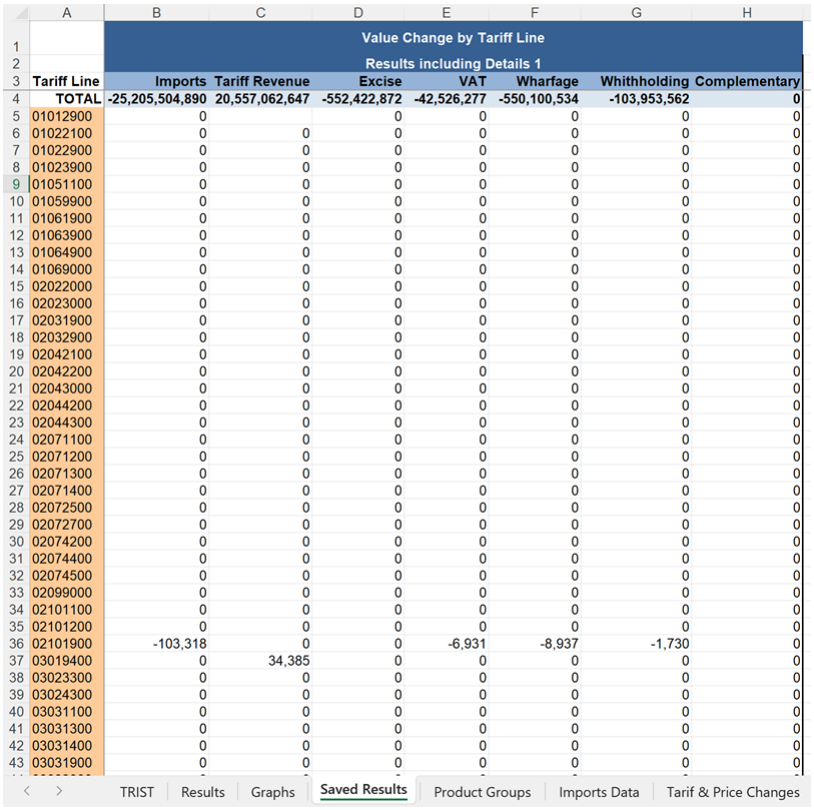
See also:

- Manage simulation results
- Save results

- Delete saved results
- Reuse saved simulation parameters

8.8.4 Saved details

If the checkbox *also save detailed results* is checked when saving results, the worksheet *Saved Results* is displayed as shown below.



	A	B	C	D	E	F	G	H
1		Value Change by Tariff Line						
2		Results including Details 1						
3	Tariff Line	Imports	Tariff Revenue	Excise	VAT	Wharfage	Whithholding	Complementary
4	TOTAL	-25,205,504,890	20,557,062,647	-552,422,872	-42,526,277	-550,100,534	-103,953,562	0
5	01012900	0		0	0	0	0	0
6	01022100	0	0	0	0	0	0	0
7	01022900	0	0	0	0	0	0	0
8	01023900	0	0	0	0	0	0	0
9	01051100	0	0	0	0	0	0	0
10	01059900	0	0	0	0	0	0	0
11	01061900	0	0	0	0	0	0	0
12	01063900	0	0	0	0	0	0	0
13	01064900	0	0	0	0	0	0	0
14	01069000	0	0	0	0	0	0	0
15	02022000	0	0	0	0	0	0	0
16	02023000	0	0	0	0	0	0	0
17	02031900	0	0	0	0	0	0	0
18	02032900	0	0	0	0	0	0	0
19	02042100	0	0	0	0	0	0	0
20	02042200	0	0	0	0	0	0	0
21	02043000	0	0	0	0	0	0	0
22	02044200	0	0	0	0	0	0	0
23	02044300	0	0	0	0	0	0	0
24	02071100	0	0	0	0	0	0	0
25	02071200	0	0	0	0	0	0	0
26	02071300	0	0	0	0	0	0	0
27	02071400	0	0	0	0	0	0	0
28	02072500	0	0	0	0	0	0	0
29	02072700	0	0	0	0	0	0	0
30	02074200	0	0	0	0	0	0	0
31	02074400	0	0	0	0	0	0	0
32	02074500	0	0	0	0	0	0	0
33	02099000	0	0	0	0	0	0	0
34	02101100	0	0	0	0	0	0	0
35	02101200	0	0	0	0	0	0	0
36	02101900	-103,318	0	0	-6,931	-8,937	-1,730	0
37	03019400	0	34,385	0	0	0	0	0
38	03023300	0	0	0	0	0	0	0
39	03024300	0	0	0	0	0	0	0
40	03031100	0	0	0	0	0	0	0
41	03031300	0	0	0	0	0	0	0
42	03031400	0	0	0	0	0	0	0
43	03031900	0	0	0	0	0	0	0

TRIST | Results | Graphs | Saved Results | Product Groups | Imports Data | Tarif & Price Changes

If necessary, additional details are available in the *Detailed Results* worksheet for the current simulation. However, the content of the *Detailed Results* worksheet is not saved and is replaced with new data whenever the simulation parameters are modified. If you need to keep track of all detailed results for a specific simulation, simply save a copy of the TRIST Simulation file with a specific name.

8.9 Multi-step Simulation

TRIST - Multi-Step Simulation (MSS) tool allows simulating reforms which are implemented in more than a year and/or step. For example the reform to be simulated could take place in two years from now or could be implemented in several stages with a first round of reform on the current year, another one in five years from now and so on.

TRIST - MSS tool is an extension to TRIST simulation module and offers all the flexibility and features of the latter within the context of multiple stage reforms. For each step, TRIST uses the result of the previous simulation as the starting point of the current step. In other words, the initial state of each step is the final situation of the previous step, optionally augmented by the growth of imports over the considered period.

Please note that even though the simulation is implemented through several steps, the theoretical economic model used in TRIST remains a static one (see What is TRIST - Overview for more information).

Data-wise, requirements are the same as for simple TRIST simulations and TRIST - MSS operates as well with domestic production data if any.

See Also:

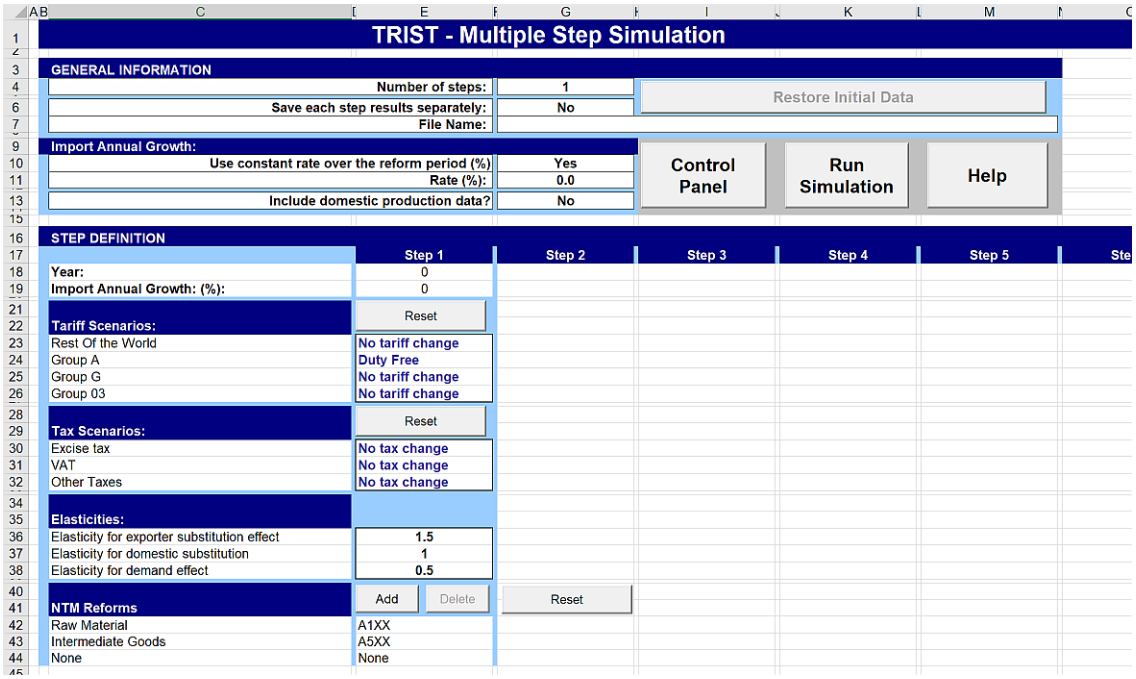
- TRIST MSS - Introduction
- Opening the MSS tool
- MSS interface
- Set MSS parameters
- Set step parameters
- Run the MSS
- View MSS results
- Restoring initial data

8.9.1 Opening MSS tool

TRIST - Multi-Step Simulation (MSS) tool can be used as soon as trade data are imported into the file (see Manage Simulation Inputs for more information).

To open TRIST - Multi-Step Simulation tool:

1. Display the *TRIST* worksheet;
2. Click the *Control Panel* button;
3. In the *Control Panel*, click *Multiple Step Simulation* button;
   TRIST displays a new worksheet entitled *TRIST - Multiple Step Simulation*:



See Also:

- TRIST MSS - Introduction

- Opening the MSS tool
- MSS interface
- Set MSS parameters
- Set step parameters
- Run the MSS
- View MSS results
- Restoring initial data

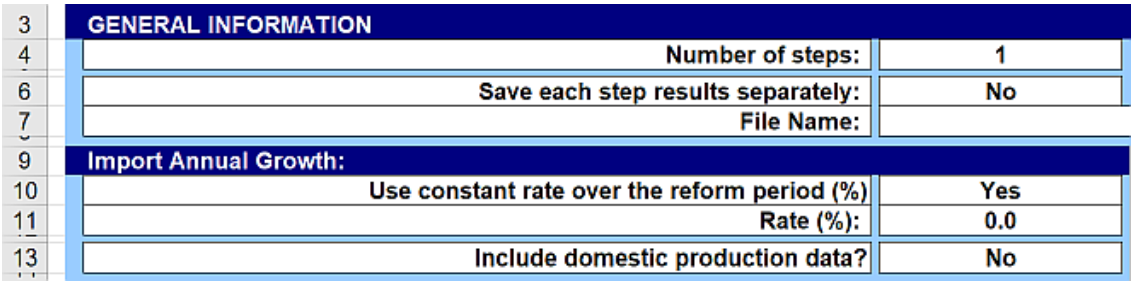
8.9.2 MSS interface

The following describes the various elements of *TRIST Multiple Step Simulation* (MSS) worksheet.

TRIST MSS worksheet is made of three main elements:

General Information:

This section displays the overall parameters for the current MSS and is read only (one can't change the value in the worksheet).

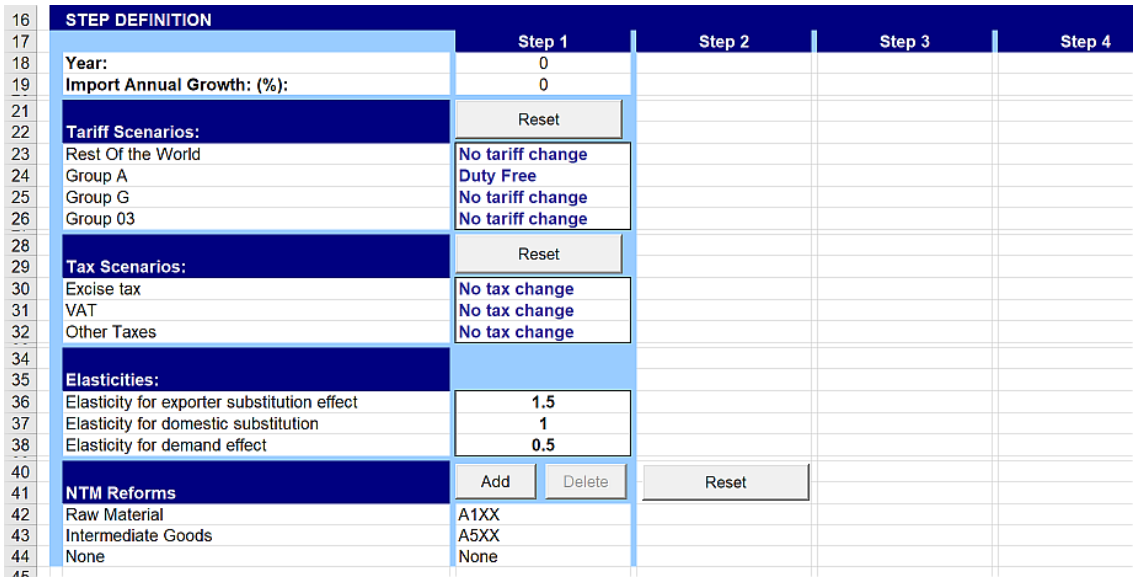


3	**GENERAL INFORMATION**	
4	Number of steps:	1
6	Save each step results separately:	No
7	File Name:	
9	**Import Annual Growth:**	
10	Use constant rate over the reform period (%)	Yes
11	Rate (%):	0.0
13	Include domestic production data?	No

- *Number of steps*: displays the number of steps for the current MSS. By default, value is set to 1 but can be changed to as many as 10 steps in the Control panel.
- *Save each step results separately*: displays the value Yes or No depending on the choice made in the Control Panel. If set to Yes, TRIST will save one separate file for each step. If set to No, TRIST will save only the last step using the name of the current TRIST file and "Step 00 - xx" at the end of the name, with xx the total number of steps.
- *File Name*: displays the file name when Save each step results separately is set to Yes. Each step will be saved as a separate file using the chosen file name, followed by the step number. For example if the file name is "TRIST Simulation.xls", the MSS file will be saved as "TRIST Simulation_Step _xx.xls" with xx the number of current step.
- *Use constant rate over the reform period (%)*: displays the value Yes or No depending on the choice made in the Control Panel. If set to Yes, TRIST will use a constant value of import growth over the reform period (same value for all steps). If set to No, the rate can be adjusted for each step of the simulation.
- *Rate (%)*: displays the constant rate of import growth to be used for all steps in case the previous parameter is set to Yes.

Step Definition:

This is the place where parameters are set for each step of the simulation. TRIST builds one column for each step of the MSS.



STEP DEFINITION				
	Step 1	Step 2	Step 3	Step 4
Year:	0			
Import Annual Growth: (%):	0			
Tariff Scenarios:	Reset			
Rest Of the World	No tariff change			
Group A	Duty Free			
Group G	No tariff change			
Group 03	No tariff change			
Tax Scenarios:	Reset			
Excise tax	No tax change			
VAT	No tax change			
Other Taxes	No tax change			
Elasticities:				
Elasticity for exporter substitution effect	1.5			
Elasticity for domestic substitution	1			
Elasticity for demand effect	0.5			
NTM Reforms	Add / Delete	Reset		
Raw Material	A1XX			
Intermediate Goods	A5XX			
None	None			

- *Year*: indicates when the considered step is implemented. To adjust a year, click on the cell and select in the dropdown list or simply enter a value. Please note that the initial (pre reform) situation corresponds to year 0. For example, if the first step of the reform occurs on the same year, set year to 0 for Step 1, then Step 2 may occur say on year 2 and so on. The Year parameter affects results only when a rate of import growth different from 0 is set for the considered step.
- *Import Annual Growth (%)*: displays the constant rate (read only) if Use constant rate over the reform period is set to Yes. Otherwise a distinct rate value can be entered directly in the cell. Please note that the value must be between -10 and 20 to be valid.
- *Tariff scenarios*: similar to single simulations, this section lists all groups of countries. A tariff scenario is attached to each group of countries for each step of the simulation. Click on a scenario cell to make your selection in the dropdown list. Additional scenarios can be built if necessary (see Build a scenario for more information). The Reset button can be used to reset all tariff scenarios (for all steps) to their default state (No tariff change).
- *Tax scenarios*: similar to single simulations, this section lists all types of taxes included in the trade data. A tax scenario is attached to each type of tax for each step of the simulation. Click on a scenario cell to make your selection in the dropdown list. Additional scenarios can be built if necessary (see Build a tax scenario for more information). The Reset button can be used to reset all tariff scenarios (for all steps) to their default state (No tariff change).
- *Elasticities*: displays the elasticity values as set in TRIST worksheet. TRIST MSS uses constant elasticity values over the reform period. This information is read only.

Control Buttons:

- *Control Panel*: opens TRIST MSS control panel. It allows setting the parameters for the current MSS as displayed in the General Information section of the worksheet.
- *Run Simulation*: executes the current MSS.
- *Help*: opens TRIST help (the current document).

See Also:

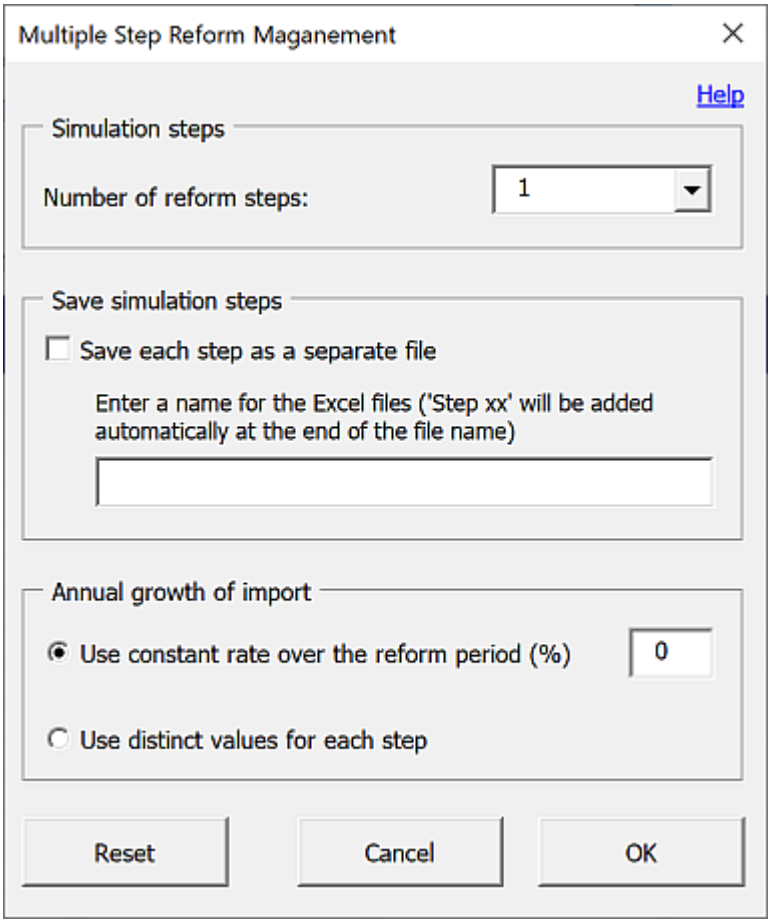
- TRIST MSS - Introduction
- Opening the MSS tool
- MSS interface
- Set MSS parameters
- Set step parameters
- Run the MSS
- View MSS results
- Restoring initial data

8.9.3 Set MSS parameters

TRIST MSS parameters are displayed in the General Information section of the MultiStep Sim worksheet. This section is read only and parameters are adjusted in the Control Panel window.

To set TRIST MSS Parameters:

1. Display the *MultiStep Sim* worksheet.
2. Click the *Control Panel* button.
   The *Control panel* displays:



3. Optionally, click the *Reset* button to start setting the MMS from scratch.
4. Adjust the number of reform steps for your simulation using the dropdown list;

5. If you want individual files to be saved for each step of the simulation, check the corresponding box and enter a file name in the text box. TRIST will add "Step xx" after the name to identify each step (with xx the step number);
6. Enter a value for the constant rate of annual growth of import over the period or select Use disctinct values for each step.
7. Click *OK* to apply the new parameters and close the window, otherwise click *Cancel*.

See Also:

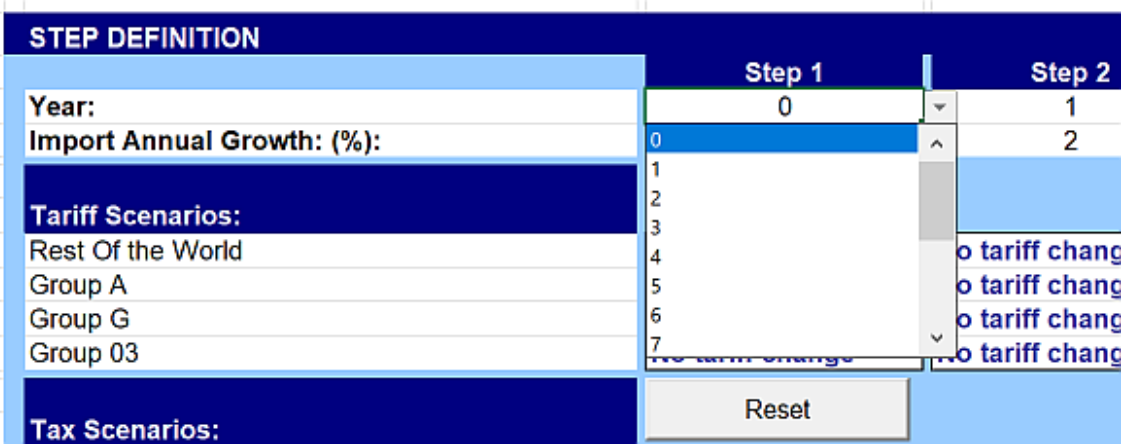
- TRIST MSS - Introduction
- Opening the MSS tool
- MSS interface
- Set MSS parameters
- Set step parameters
- Run the MSS
- View MSS results
- Restoring initial data

8.9.4 Set Step parameters

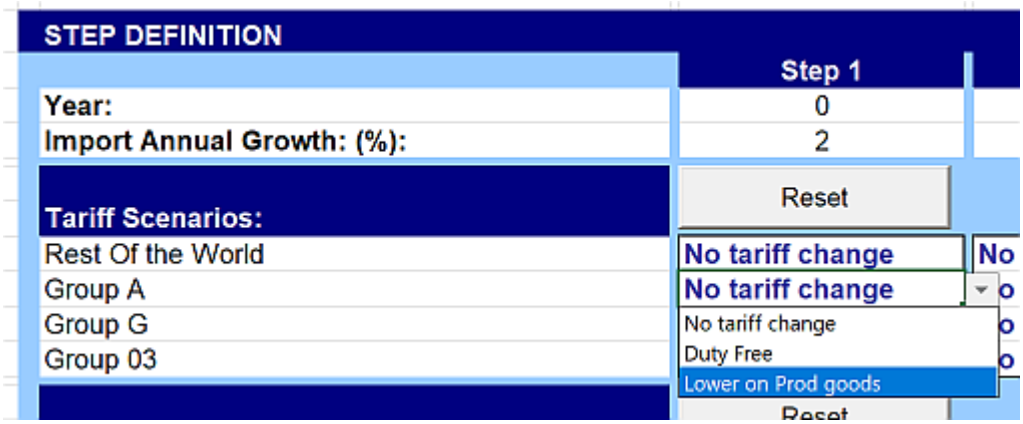
Once MSS general parameters are set, each step of the simulation must be specifed. This is done the same way as in the TRIST (single) simulation tool.

To set step parameters:

1. Set the year for Step 1. The rule is that for any given step, the year must be equal to or higher than the year of the previous step, and equal to or lower than the year of the next step.

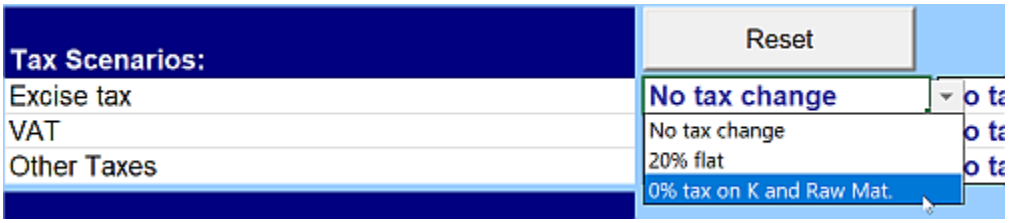


2. If Use constant rate over the reform period is set to No, enter the growth rate value for step 1. The rate must be between -10 and 20.
3. For each country group, select in the dropdown list the tariff scenario to be applied at step 1.
   If necessary the Reset button can be clicked to revert all tariff scenarios to their default state (No tariff change).



Note: the number of country groups and their labels depend on the considered data set.

4. For each type of taxes, select in the dropdown list the tax scenario to be applied at step 1.
   If necessary the Reset button can be clicked to revert all tax scenarios to their default state (No tax change).



5. Repeat points 1 to 4 above for any additional step.
6. To change the elasticity values, go back to TRIST worksheet and adjust as seen before (see Manage Simulation Elasticities).

See Also:

- TRIST MSS - Introduction
- Opening the MSS tool
- MSS interface
- Set MSS parameters
- Set step parameters
- Run the MSS
- View MSS results
- Restoring initial data

8.9.5 Run the MSS

Once all parameters are specified (see Set the MSS parameters and Set step parameters) the MSS simulation is ready for execution.

Please note that depending on the size of the data set (typically several thousands of tariff lines) and the number of steps, products groups and scenarios involved, the completion of the MSS could take a substantial amount of time during which the computer will be practically unusable (MS Excel hardly shares resources with other software when it operates intensive

calculation). Saving each step as a separate file (often over 100 Mb each) also induces additional time before the completion of the simulation. With a full dataset, our tests showed each step may take up to 5mn to complete.

To run the MSS, click the *Run Simulation* button.

The *Please wait* window displays during the process.

See Also:

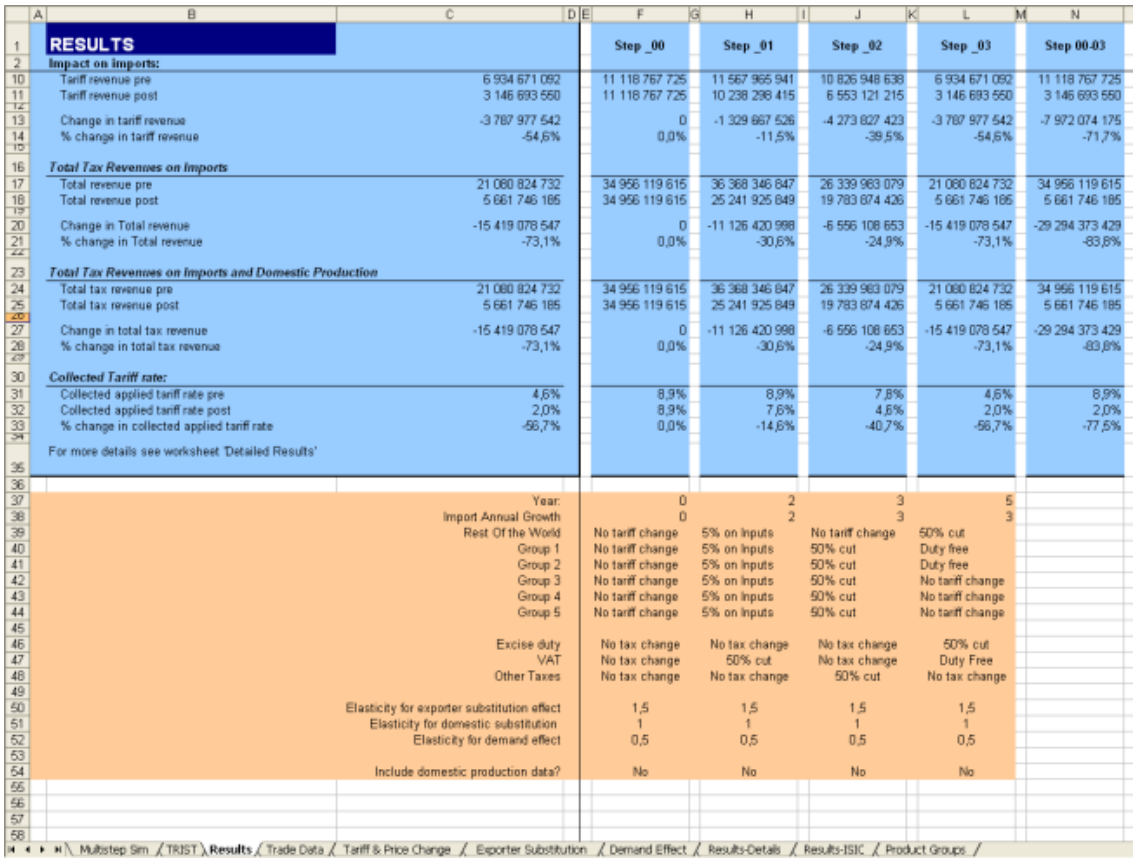
- TRIST MSS - Introduction
- Opening the MSS tool
- MSS interface
- Set MSS parameters
- Set step parameters
- Run the MSS
- View MSS results
- Restoring initial data

8.9.6 View Results

When each step of the MMS is saved as a separate file (see Set the MSS parameters), all information that is available for a single simulation (see The Worksheets) is available for each and every step of the MSS in its respective file. These files are saved in the same location as your initial TRIST file. In addition, the `Results` worksheet gathers the results of all steps as they are simulated.

Otherwise, TRIST saves only one file which reflect the cumulative effect of all steps at the end of the process. The `Results` worksheet gathers the results of all steps as they are simulated.

After the MSS is completed, the Results worksheet looks like the following screenshot:



RESULTS		Step _00	Step _01	Step _02	Step _03	Step 00-03
Impact on imports:						
Tariff revenue pre	6 934 671 092	11 118 767 725	11 567 965 941	10 826 948 638	6 934 671 092	11 118 767 725
Tariff revenue post	3 146 693 550	11 118 767 725	10 238 298 415	6 553 121 215	3 146 693 550	3 146 693 550
Change in tariff revenue	-3 787 977 542	0	-1 329 667 526	-4 273 827 423	-3 787 977 542	-7 972 074 175
% change in tariff revenue	-54,6%	0,0%	-11,5%	-39,5%	-54,6%	-71,7%
Total Tax Revenues on Imports						
Total revenue pre	21 080 824 732	34 956 119 615	36 368 346 847	26 339 983 079	21 080 824 732	34 956 119 615
Total revenue post	5 661 746 185	34 956 119 615	25 241 925 849	19 783 874 426	5 661 746 185	5 661 746 185
Change in Total revenue	-15 419 078 547	0	-11 126 420 998	-6 556 108 653	-15 419 078 547	-29 294 373 429
% change in Total revenue	-73,1%	0,0%	-30,6%	-24,9%	-73,1%	-83,8%
Total Tax Revenues on Imports and Domestic Production						
Total tax revenue pre	21 080 824 732	34 956 119 615	36 368 346 847	26 339 983 079	21 080 824 732	34 956 119 615
Total tax revenue post	5 661 746 185	34 956 119 615	25 241 925 849	19 783 874 426	5 661 746 185	5 661 746 185
Change in total tax revenue	-15 419 078 547	0	-11 126 420 998	-6 556 108 653	-15 419 078 547	-29 294 373 429
% change in total tax revenue	-73,1%	0,0%	-30,6%	-24,9%	-73,1%	-83,8%
Collected Tariff rate:						
Collected applied tariff rate pre	4,6%	8,9%	8,9%	7,8%	4,6%	8,9%
Collected applied tariff rate post	2,0%	8,9%	7,6%	4,6%	2,0%	2,0%
% change in collected applied tariff rate	-56,7%	0,0%	-14,6%	-40,7%	-56,7%	-77,5%
For more details see worksheet 'Detailed Results'						
Year:		0	2	3	5	
Import Annual Growth		0	2	3	3	
Rest Of the World		No tariff change	5% on Inputs	No tariff change	50% cut	
Group 1		No tariff change	5% on Inputs	50% cut	Duty free	
Group 2		No tariff change	5% on Inputs	50% cut	Duty free	
Group 3		No tariff change	5% on Inputs	50% cut	No tariff change	
Group 4		No tariff change	5% on Inputs	50% cut	No tariff change	
Group 5		No tariff change	5% on Inputs	50% cut	No tariff change	
Excise duty		No tax change	No tax change	No tax change	50% cut	
VAT		No tax change	50% cut	No tax change	Duty Free	
Other Taxes		No tax change	No tax change	50% cut	No tax change	
Elasticity for exporter substitution effect		1,5	1,5	1,5	1,5	
Elasticity for domestic substitution		1	1	1	1	
Elasticity for demand effect		0,5	0,5	0,5	0,5	
Include domestic production data?		No	No	No	No	

Multistep Sim / TRIST / Results / Trade Data / Tariff & Price Change / Exporter Substitution / Demand Effect / Results-Details / Results-ISIC / Product Groups /

The upper part (in blue) gathers in columns results for each step of the MSS. First, Step 00 column is built. It corresponds to the initial situation, before the reform starts and before any annual growth rate is applied to the imports data. Next, one column is built for each step (Step 01and 02 in this example). Finally, the system builds a last column (here Step 00-02) which reflects the changes between the inital situation and the post reform (all steps) situation.

For each column, the lower part (in orange) displays the parameters used for the corresponding simulation step.

See Also:

- TRIST MSS - Introduction
- Opening the MSS tool
- MSS interface
- Set MSS parameters
- Set step parameters
- Run the MSS
- View MSS results
- Restoring initial data

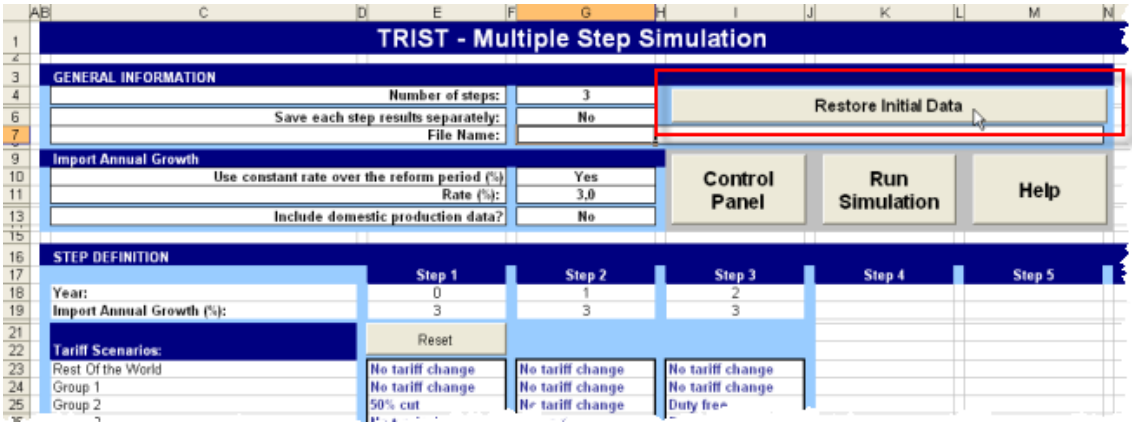
8.9.7 Restoring initial data

When an MSS is run, the file containing the initial data is saved first to protect the original data sets. Then, TRIST runs each step of the MSS in sequence by replacing the initial data of the current step with the post data of the previous step. Therefore, once the MSS is completed the Pre data are not the original data anymore but are replaced with the post data of the next to last step.

The file containing the initial data should be restored before running another simulation.

To restore initial data:

1. Display the `Multistep Sim` worksheet;
2. Click the `Restore Initial Data` button;



As a result, TRIST saves and closes the current file (the one containing the data corresponding to the last step of the MSS) and reopens the file containing the original data.

Note: the `Restore Initial Data` button displays only when the original data were overwritten during an MSS process.

See Also:

- TRIST MSS - Introduction
- Opening the MSS tool
- MSS interface
- Set MSS parameters
- Set step parameters
- Run the MSS
- View MSS results
- Restoring initial data

9. Simulation Add-Ons

Add-ons extend TRIST simulation capabilities.

They are additional simulations modules which computation usually happens in a separate Excel workbook before results are included back into TRIST Simulation main file.

- TRIST trade diversion/correction add-on

9.1 Trade diversion add-on

This add-on distinguishes between trade diversion and trade correction and calculate both.

A preferential liberalization will reduce prices and increase imports from the beneficiary country. But at the same time it will displace imports from other (potentially more efficient) sources. Thus, a preferential liberalization affects not only the overall price level of the goods affected but also the relative price of goods from different sources. There will be a change in the aggregated level of spending on the goods affected as well as changes in the composition of the sourcing of these goods. Thus, there is a potential source of trade diversion.

It is straightforward to determine the amount of imports from trading partner B that is replaced by imports from trading partner A in response to a preferential trade reform. However, trade diversion by definition refers to a (welfare decreasing) substitution of imports from a more efficient source to a less efficient source because of a preferential reduction in tariffs. Trade diversion thus occurs, for example, if the EU gets duty free access to the US market and only thereby can sell its products at a lower price than other more efficient exporters who are not granted the same preferences. Yet, there are also situations in which diverted trade cannot be classified as trade diversion. Consider the following example: after the EU is granted tariff free market access it takes over some of the market share that was previously held by other trading partners who already enjoyed tariff free market access prior to the EU being granted the tariff reduction. This would not be trade diversion as it would actually reflect a move of consumption towards a more efficient producer that was previously disadvantaged in terms of market access. In order to fix language, we use the term trade correction for this phenomenon. In order to accurately assess the adverse impact of preferential trade agreements relative to, say, a reduction in MFN tariffs it is important to take into account this distinction. For TRIST, an additional Excel file has been developed that sources information from the simulation tool and calculates estimates of trade diversion volumes that are amended for 'trade correction'. The tool uses a simple and intuitive methodology. A detailed explanation is available upon request.

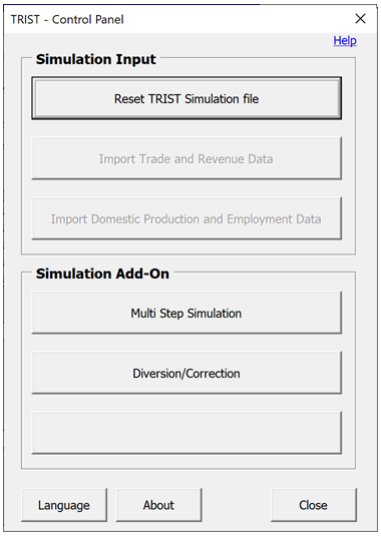
See also:

- Manage the Trade Diversion/Creation Add-on
- Run the Trade Diversion/Creation Add-on

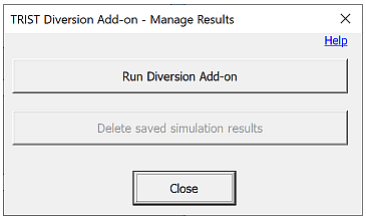
9.1.1 Manage the Trade Diversion/Creation Add-on

To access the Trade Diversion/Creation add-on:

1. Display the *TRIST* worksheet.
2. Click the *TRIST Menu* button to open *TRIST - Control Panel* .



3. Click the *Diversion/Correction* button in the *Add-On* section.



Here you can choose to run a new Diversion computation or to manage any previously saved diversion results.

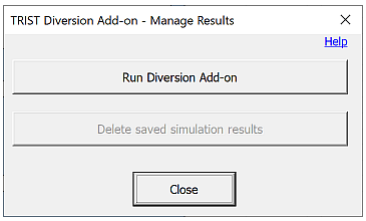
Next: Run the Diversion/Creation add-on

9.1.2 Run the Trade Diversion/Creation Add-on

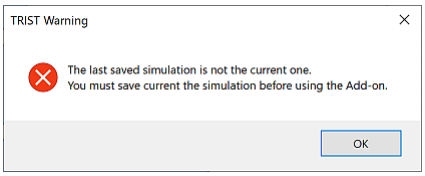
The add-on applies to TRIST simulation current results that must be saved before running the add-on.

To run the add-on:

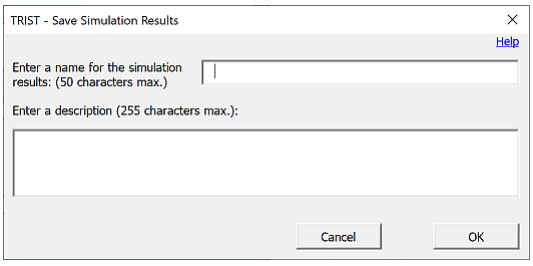
1. Click the 'Run Diversion Add-on' button



2. TRIST checks and warns you if the current simulation is not saved yet.



3. Click 'OK' to open the following window



See Manage Simulation Results from step 4 to learn more about saving simulation results.

Once the current simulation is saved, TRIST runs the add-on computation in a new workbook.

Next: the Diversion/Creation add-on workbook

9.1.3 Diversion/Creation add-on workbook

TRIST automatically creates a new workbook and builds the following worksheets:

- Raw Data: copy of the simulation data required to compute the Diversion/Creation effect.
- re-sourcing, bil re-sourcing, bil TD-share and bil TD details the various computation steps.
- Detailed results: displays the diversion/creation effect by tariff line.
- Results: summarizes the results for the current simulation diversion/Creation calculation.

The add-on workbook is automatically saved in the same directory as your RIST simulation file, using the TRIST simulation file name with the suffix "-Diversion-Add-on-" followed by the name of the current simulation.

Example:

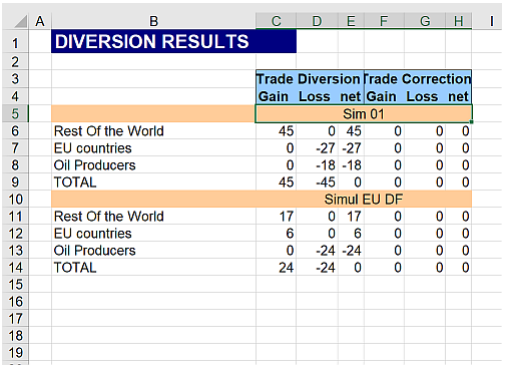
TRIST Simulation file name: "TRIST Simulation - Country X"

Simulation name: "Simulation 3"

Diversion/Creation add-on workbook name: "TRIST Simulation - Country X-Diversion-Add-on-Simulation 3"

9.1.4 Diversion/Creation add-on Results in TRIST

Once the add-on computation is completed, aggregated results are automatically copied to the Diversion worksheet in TRIST simulation file. The Diversion worksheet can store multiple diversion/creation aggregated results as shown below:



		Trade Diversion			Trade Correction		
		Gain	Loss	net	Gain	Loss	net
		Sim 01					
	Rest Of the World	45	0	45	0	0	0
	EU countries	0	-27	-27	0	0	0
	Oil Producers	0	-18	-18	0	0	0
	TOTAL	45	-45	0	0	0	0
	Simul EU DF						
	Rest Of the World	17	0	17	0	0	0
	EU countries	6	0	6	0	0	0
	Oil Producers	0	-24	-24	0	0	0
	TOTAL	24	-24	0	0	0	0

In this example the add-on was run on two simulations, namely "Sim 01" and "Simul EU DF". A separate add-on file was saved for each computation.