



Guide to Navigating the T21-Malawi Model

November 2003

A. Introduction

The Threshold 21 (T21) Malawi is an analytical tool for strategy development and policy analysis. It integrates economic, social, and environmental considerations into a single, transparent computer model.

B. System Requirements

- System requirements necessary
 - PC format
 - 10MB of hard disk space
 - 32MB RAM
 - Windows 95 or later

C. Installation Instructions

- With the CD in your drive, go to Start and then Run
- Enter the CDrom drive label (default is usually D)
- When you see T21MLW31RO.exe file, click twice on that file name
- You will be led through the Installation, License Agreement, and Registration processes
- Target Directory – Here is where you indicate where the model will reside (the default is usually c:\Program Files). It is important to remember *where* you install the model.
- Program Menu Choice - Choose where you'd like the model icon to reside (a common place is Accessories)

D. Installing and launching the demo model

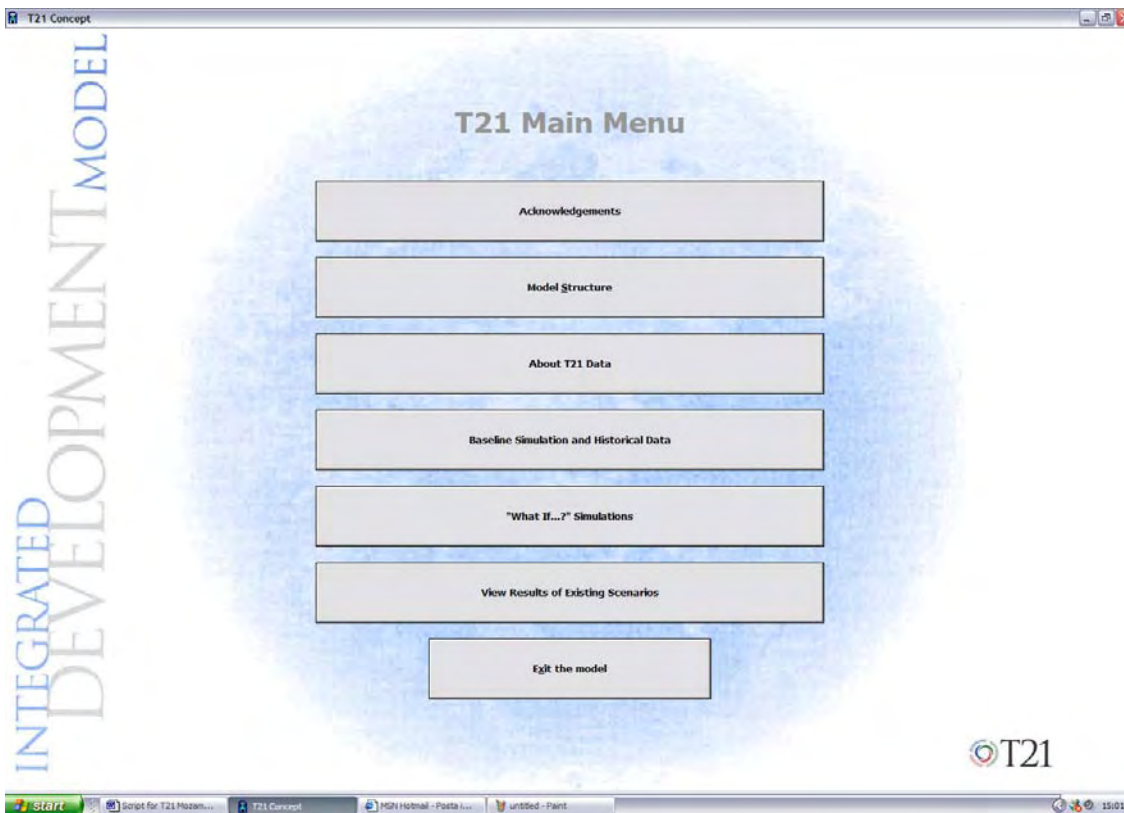
- Install the demo model (see instructions above)
- To launch the demo, click on the Start Menu, select Programs, select Accessories (if that's where you saved it), and click the icon that displays T21MLW31RO
- The model will open to the following screen



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Press any Key to Continue

Click anywhere or press any button to continue from the opening screen to the Main Menu:

Navigation Tutorial



The main menu is the launch site to begin navigating through the model. To begin your launch you will want to know where each button will take you and that is where we will begin. Buttons 1 and 3 are straightforward. We have included a tutorial for buttons 2, 4, 5, and 6. Most every screen throughout the model has a button allowing you to return to the Main Menu.

1. Main Menu First Button – Acknowledgements

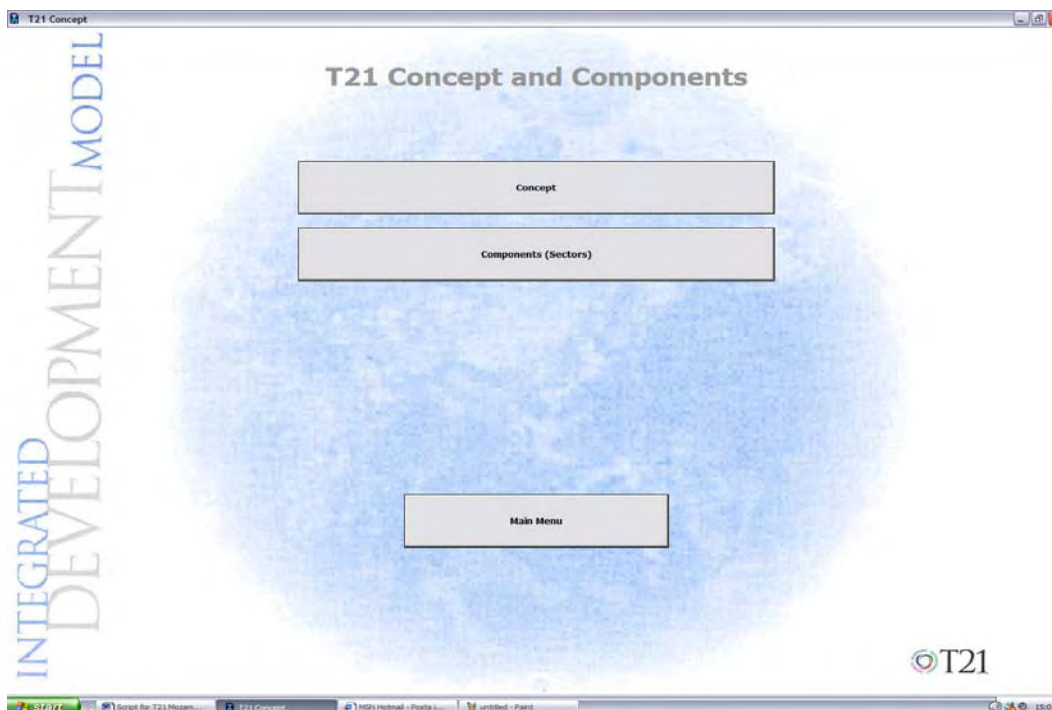
The first button on the Main Menu will take you to a brief description of T21, its purpose, and a list of major sponsors who have supported the development of T21.

2. Main Menu Second Button - Model Structure

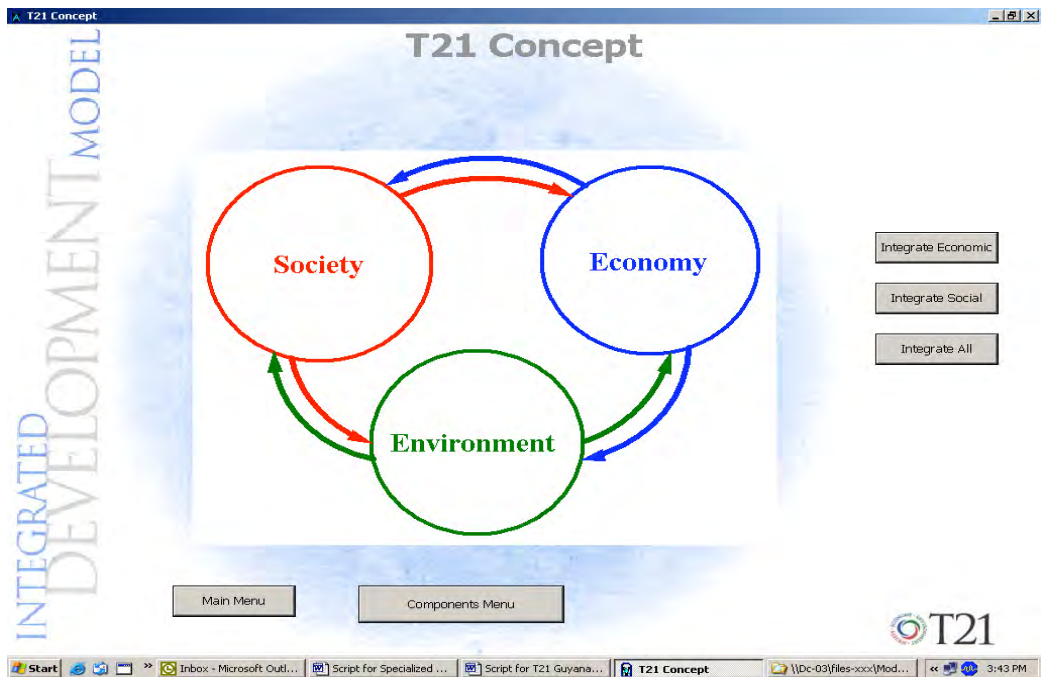
This button allows you to study the basic concept and structure of the model. It does so by showing you sketches of the model components and their relationships. Click on the *Model Structure* button and follow the tutorial below.

Tutorial - Exploring the Model Structure

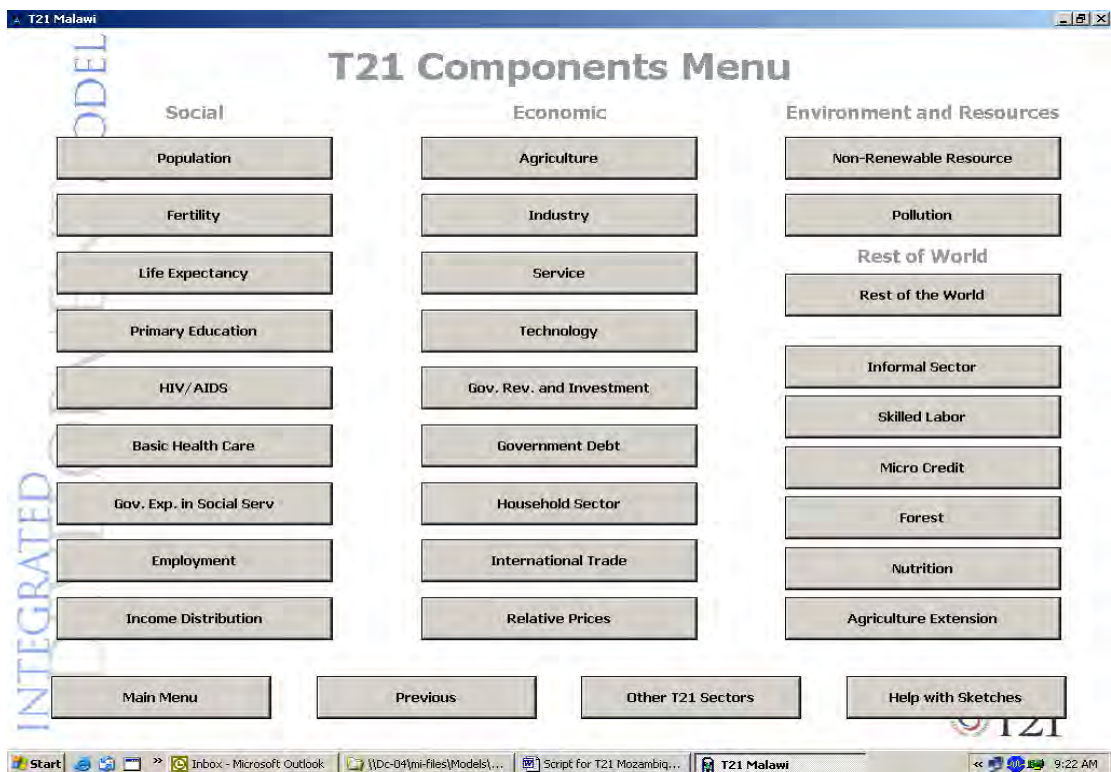
- Once you've clicked the *Model Structure* button, the following T21 Components menu will appear as shown below:



- Click the *Concept* button, the following concept screen will appear.



- This is the overview of the T21 model. Clicking the buttons at the right column, you will see an expansion of this overview. When you finish, click the **Components Menu** button to return to the previous screen.
- Now click the **Components (Sectors)** button. The three components (social, economic, and natural resources) plus rest of world will appear as shown below:



- The above screen shows the major sectors in T21 Malawi. Click on any of the buttons to view how each sector is being modeled.
- Click on the **Population** button to see a sketch of the Population sector:

- Click on the **Previous Screen** button to return to the Components Menu and explore some of the other sketches to understand how other components in the model are designed.
- When you have finished, click on the **Main Menu** button to return to the Main Menu.

3. Main Menu Third Button – *About T21 Data*

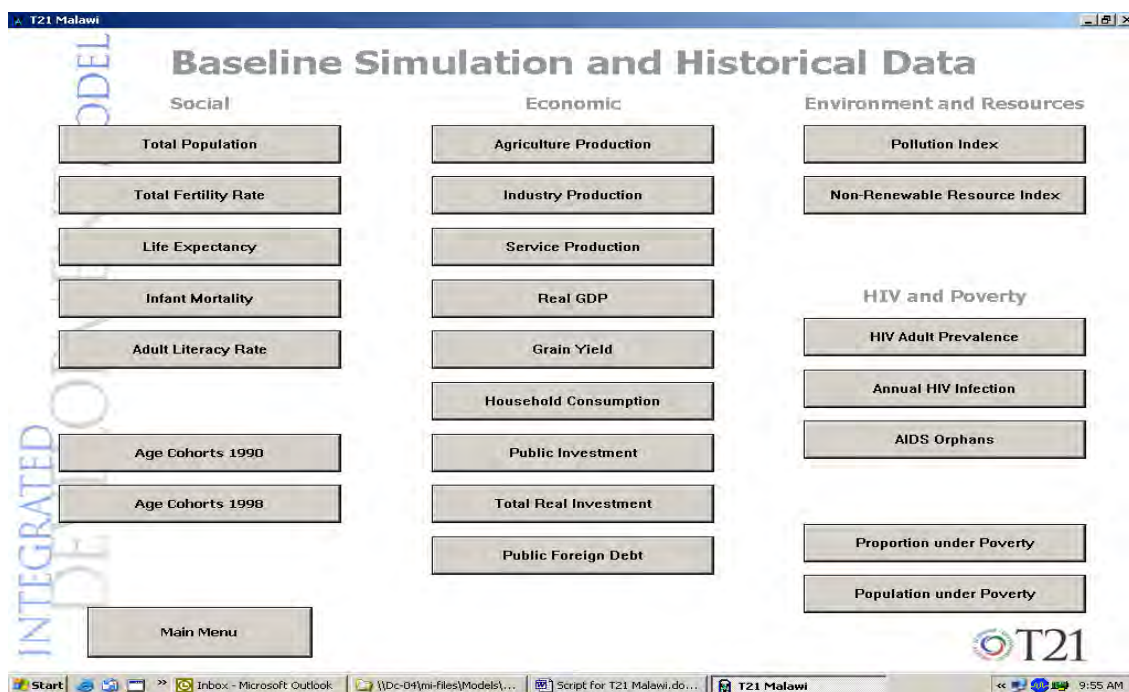
This button will demonstrate the major data sources and data items used in the T21 Model. When you finish, click the **Main Menu** button.

4. Main Menu Fourth Button - *Baseline Simulation and Historical Data*

This button will demonstrate how the model is calibrated and validated using country-specific historical data.

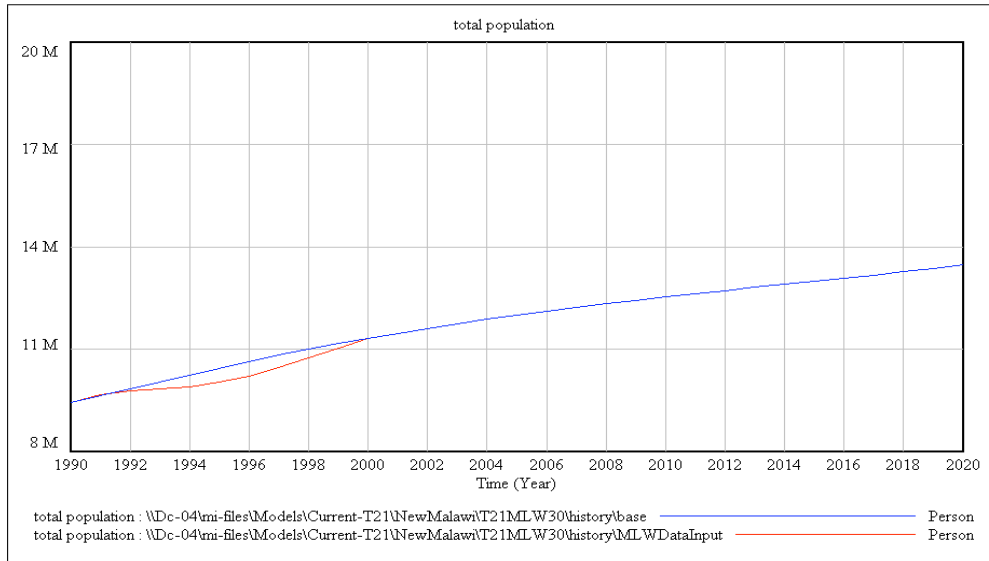
Tutorial - Exploring the Baseline Simulation and Historical Data

- Click on the **Baseline Simulation and Historical Data** button, and a graph as below will appear. Indicators (variables) are grouped into three components of social, economic, and natural resources. HIV and poverty are also separately portrayed.



- Click on the **Total Population** button, and a graph will appear which includes both the baseline model results and the historical data for total population. The red line is data from UN, and the blue line is the simulation results from the model, which is calibrated to the data we collected from Malawi.

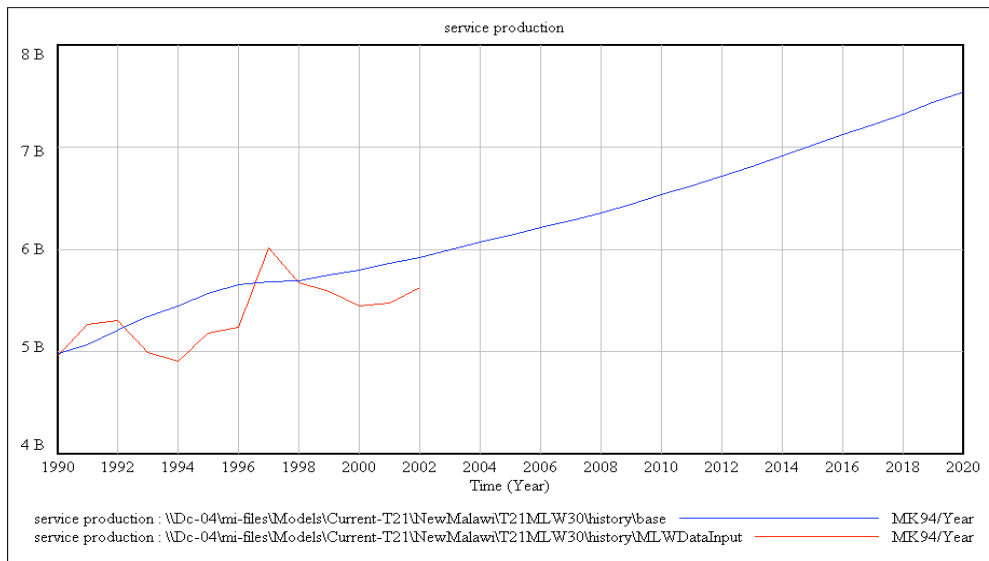
Scenario comparison for total population



Main Menu Previous Screen

- This model baseline simulation is compared to actual historical data to validate the model and its ability to reflect the “reality” of the country. Notice, how the model calculations of the past (blue line) correspond to the available historical data (red line). Notice, also, that for many countries population and some other data are not available, or not of good quality.
- Click on the **Service Production** button and notice how the model calculations for service production (blue line) match actual data on service production (red line).

Scenario comparison for service production



Main Menu Previous Screen

- Click on other buttons to view the comparisons of model results with historical data. Notice that data is not available for some buttons.
- When you have finished exploring the **Baseline Projections and Historical Data** click on the **Main Menu** button to return to the Main Menu and we will continue with the fifth button.

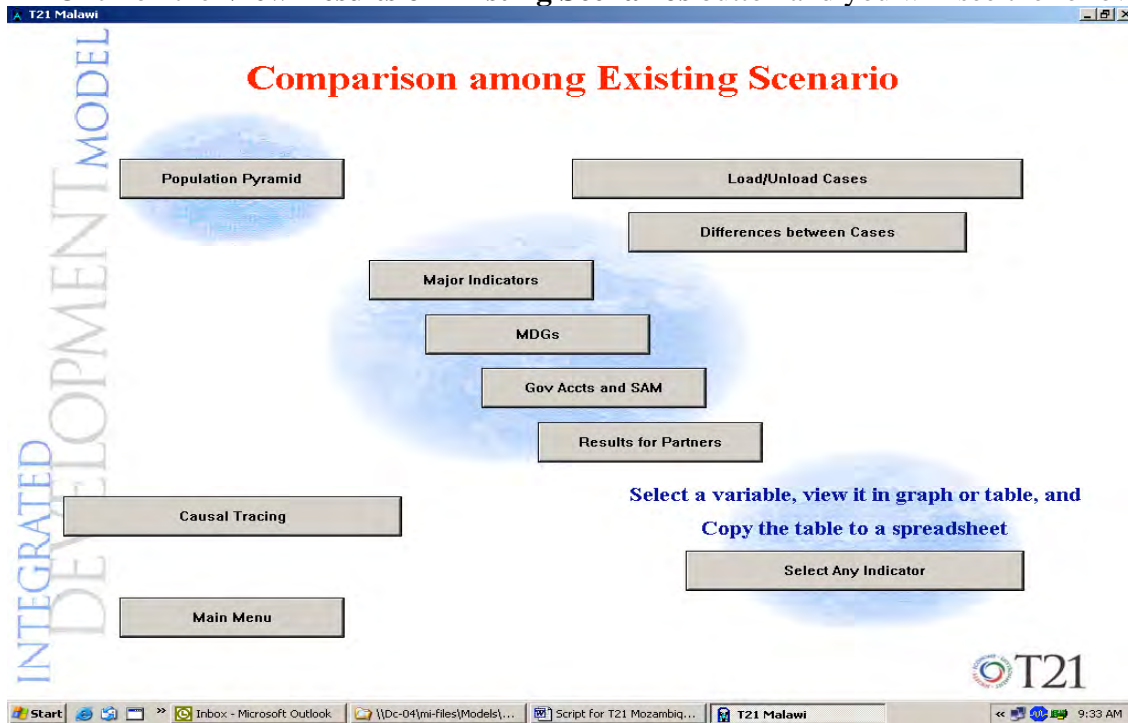
5. Main Menu Fifth Button – “What if...?” Simulation Button

We will return to this button in Item 7.

6. Main Menu Sixth Button – View Results of Existing Scenarios

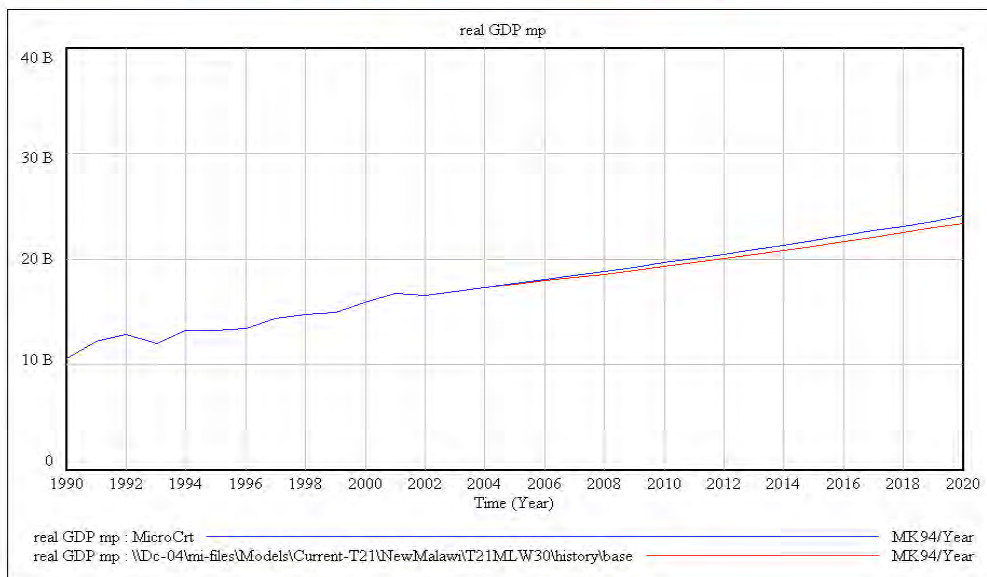
Tutorial - Exploring View Base Case Results

- Click on the **View Results of Existing Scenarios** button and you will see the following screen:



- First click on the **Load/Unload cases** button to load the scenarios you want to compare. Move scenarios you want to load to the right hand side of the window that will appear, and keep unwanted scenarios to the left hand side. Suppose you loaded two scenarios: Micro, Road.
- Then click the **Major Indicators** button, and select the variable you want to display.
- Click on the **GDP** button to see a comparison of the real GDP at market price for the two scenarios.

Scenario comparison for real GDP mp



- Click on the other buttons below to see the comparison for other major indicators.
- When you have finished, click on the *Previous* button to return to the **Simulation Results** screen.
- The button on the top-left, **Population Pyramid**, allows you to see the dynamic changes in population pyramid. The four buttons in the middle, MDGs, Government Accounts and Results for Partners display more indicators from the last scenario (either created latest, or loaded last). The button on lower-left, **Causal Tracing**, allows you to examine the causes of each variable, either in graphical or tabular form. The button on lower-right, **Select Any Indicator**, allows you to select any variable in the model, and then display its result in either graphical or tabular form. When it is in tabular form, you can export the result to the Window's clipboard, and then paste it to a spreadsheet for further study.
- Click on the **Main Menu** button to return to the Main Menu.

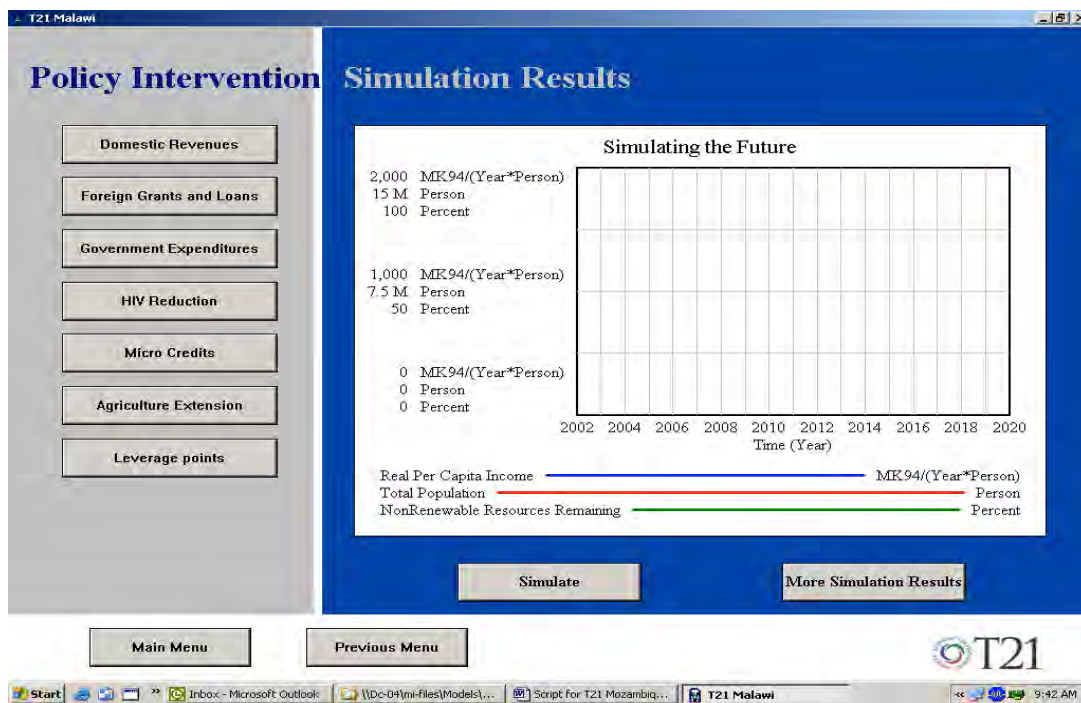
7. Main Menu Fifth Button – “What if...?” Simulations

In addition to the above scenarios, you have limited capacity to create your own scenarios based on any of them. In this area you will be able to:

- Create your own scenarios;
- Select and modify the existing scenarios;
- Make limited changes to many policy variables;
- Simulate the model into the future to study the consequences, or effects of your policy change.

Tutorial - Exploring the Create Additional Scenario

- Click on the “*What if...?*” *Simulations* button, followed by the *Create and Name the Simulation* button.
- At this point a window will pop up and you will be asked to either select an existing scenario or create a new scenario that will be saved to a file for future reference. Either type in a name of your choice in the File Name box, or select any of the existing scenarios (files), followed by clicking on the **Save** button.
- Assume you entered (created) Current.vdf, followed by clicking on the **Save** button.
- If Current is already existing, Vensim will ask you if you want to overwrite the existing file Current.vdf. Click Yes.
- You will now see a screen entitled Policy Intervention and Simulation Results:

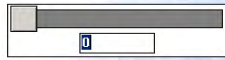


- Click for example on the Micro Credit button, which allows you to see the consequences of an increase in government expenditure for micro credit.
- This will bring up a screen that contains different policy variables.

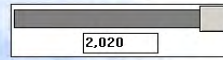
Micro Credit Expenditure

Percentage of Government

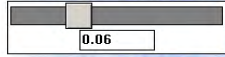
Expenditures for Micro Credits



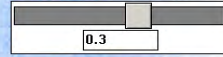
Micro Credit Starting Year



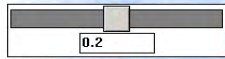
Micro Credit Interest Rate



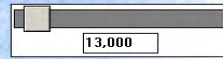
Productivity of Micro Capital



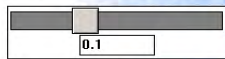
Fraction allocated to Administration



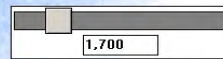
Capital needed to employ one person (8700 MK94 is about \$1000)



Fraction Allocated to Training



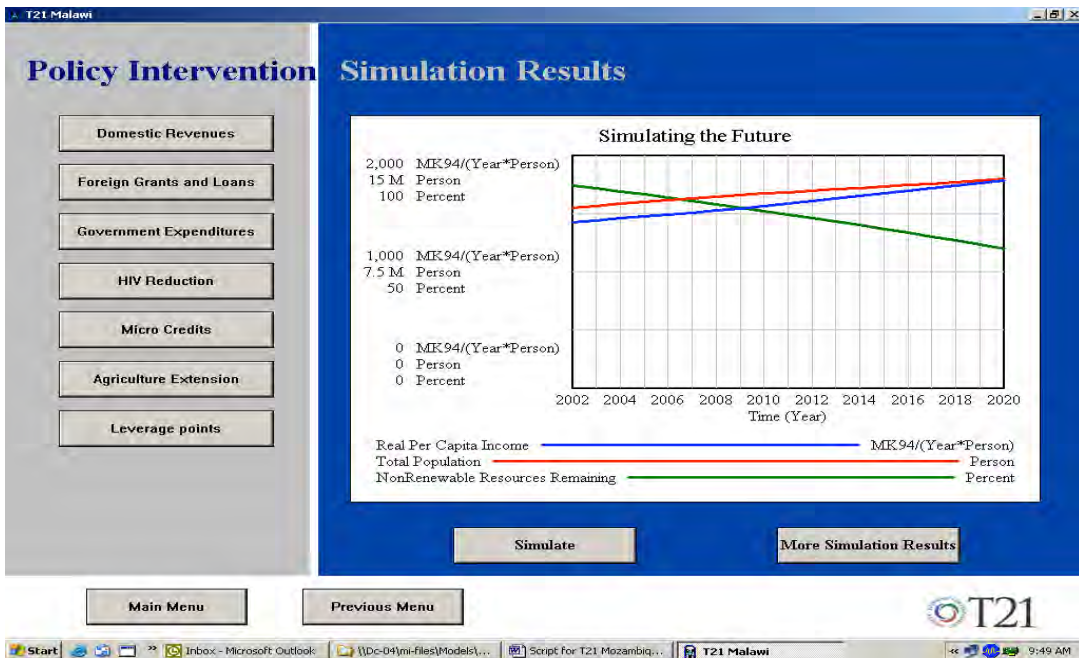
Per Person Training Cost in MK94



Previous Screen



- Type in a number, or slide the bar until it reaches the desired value. Assume you changed *Percentage of Government Expenditures for Micro Credits* to 0.05 (top-left slide bar) and *Micro Credit Starting Year* to 2003 (top-right slide bar). Thus in your Current.vdf scenario, you want to see what would happen if you introduce the new policies.
- Click on *Simulate* button to simulate the model to 2020. You will see three lines extending quickly from 2002 to 2020. These three lines are three variables selected from over a thousand variables to represent your scenario. They are per capita income (blue), total population (red), and an index showing non-renewable resource remaining (green).



- Click on the **More Simulation Results** button and a familiar screen will appear (Results of Base Cases and Adjustment cases, explained in Main Menu Sixth Button).
- You can then load other scenarios to compare their results with what generated by the Current one you just created. You can load other scenarios by simply clicking on the Load/Unload cases button, as already explained.
- Click on **Previous** button to return to the Simulation Results screen, and click on **Majors Indicators** button, you can compare your scenario with the Base on many indicators in social, economic, and natural resources areas.
- Click on the **Previous** button to return to the Simulation Results. We have completed the first round of running the model.

A downloadable full version of T21 is available on our website (www.threshold21.com).

We will also answer questions e-mailed to us at info@threshold21.com. You can also find out more about how we can build a country-specific model of T21.

Find out more about the Millennium Institute at www.millenniuminstitute.net .