



# Guide to Navigating the T21-Papua Model

January 2003

## A. Introduction

The Threshold 21 (T21) Papua 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 T21Papua.exe, 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)

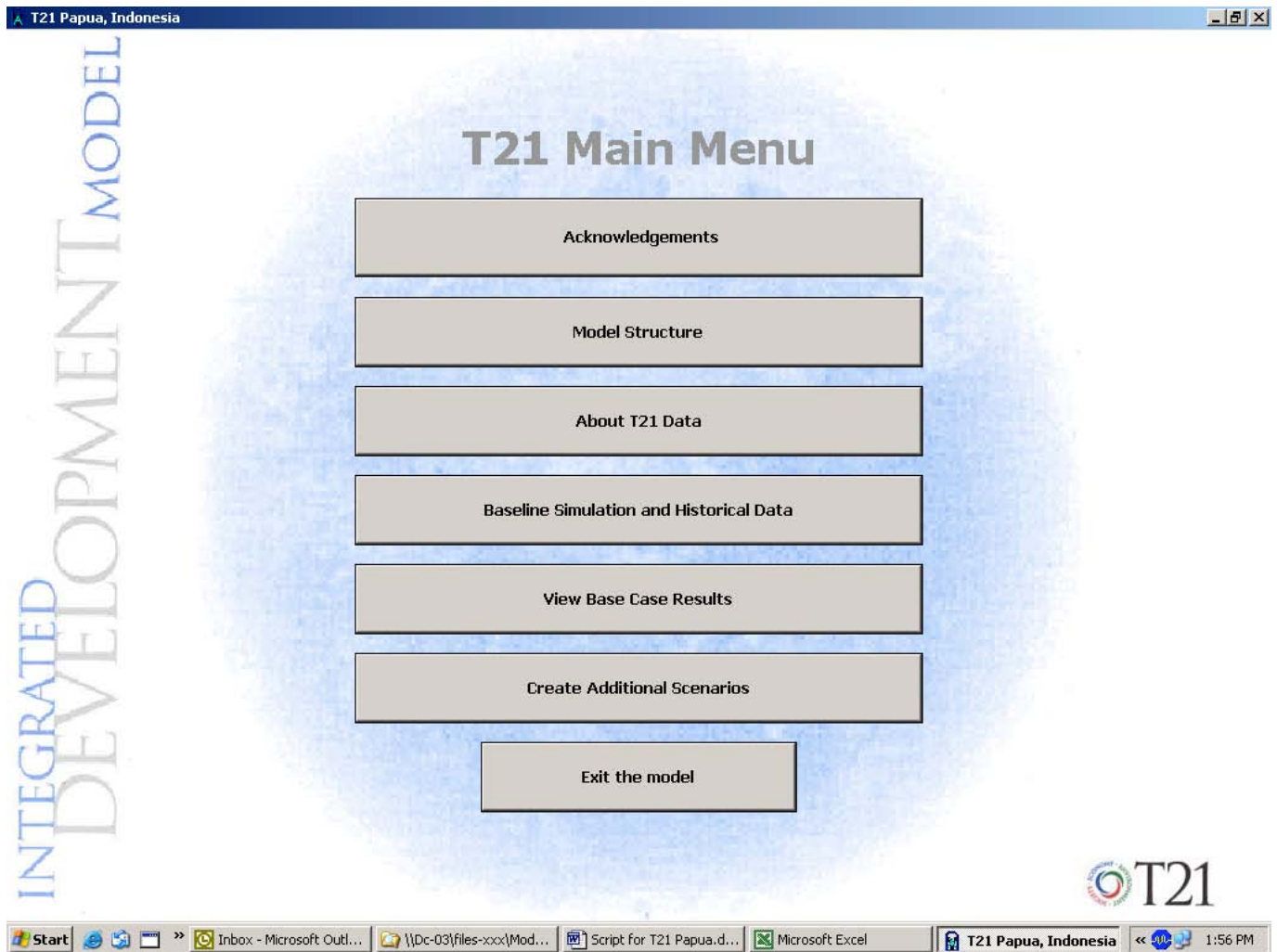
## D. Installing and launching the demo model

- 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 T21PapuaRO
- The model will open to the following screen



## Navigation Tutorial

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



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*

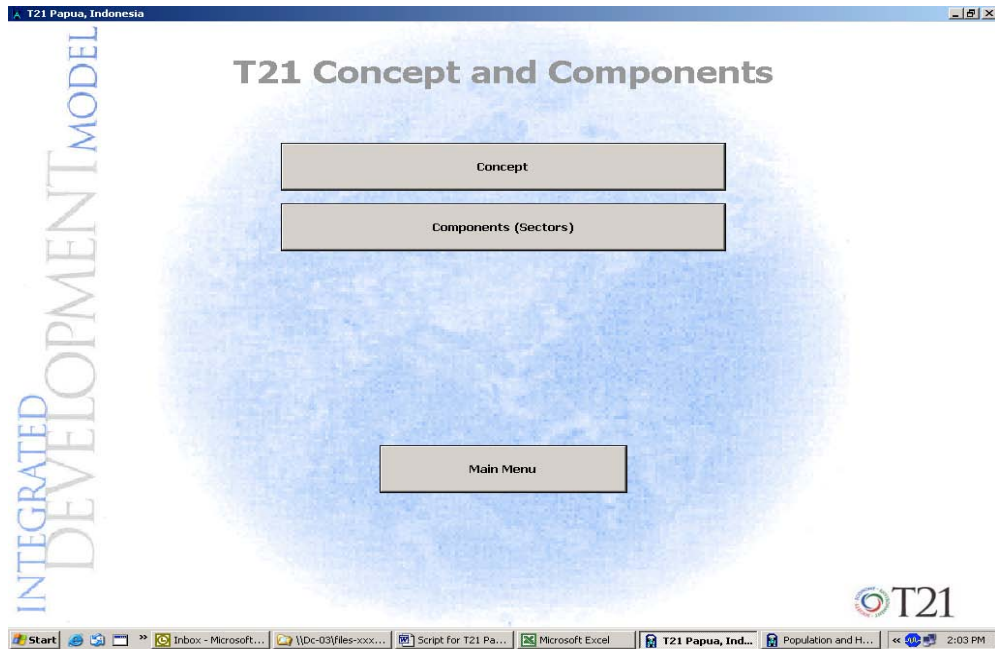
The first button on the Main Menu will take you to lists of major sponsors who have supported the development of T21.

### 2. Main Menu Second Button - *Model Structure*

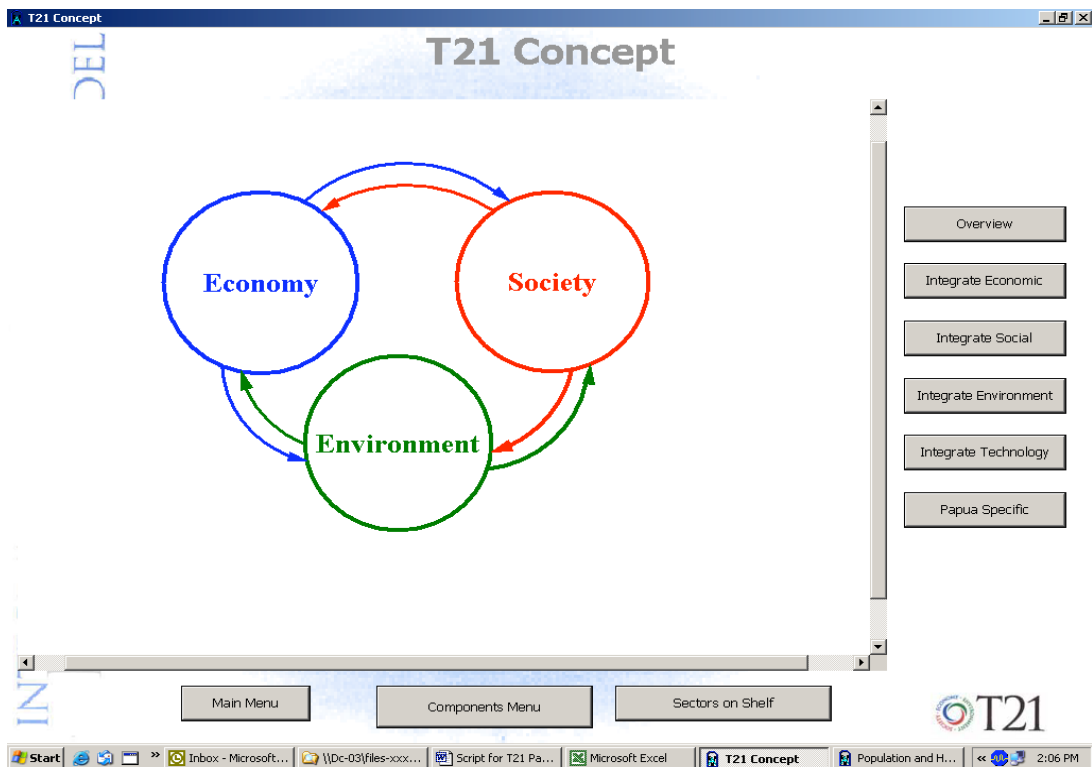
This button allows you to study the basic concept and structure of the model. It does so by showing you sketches of the model components and their relationships. Click on the *Model Structure* button and follow the tutorial below.

### *Tutorial - Exploring the Model Structure*

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

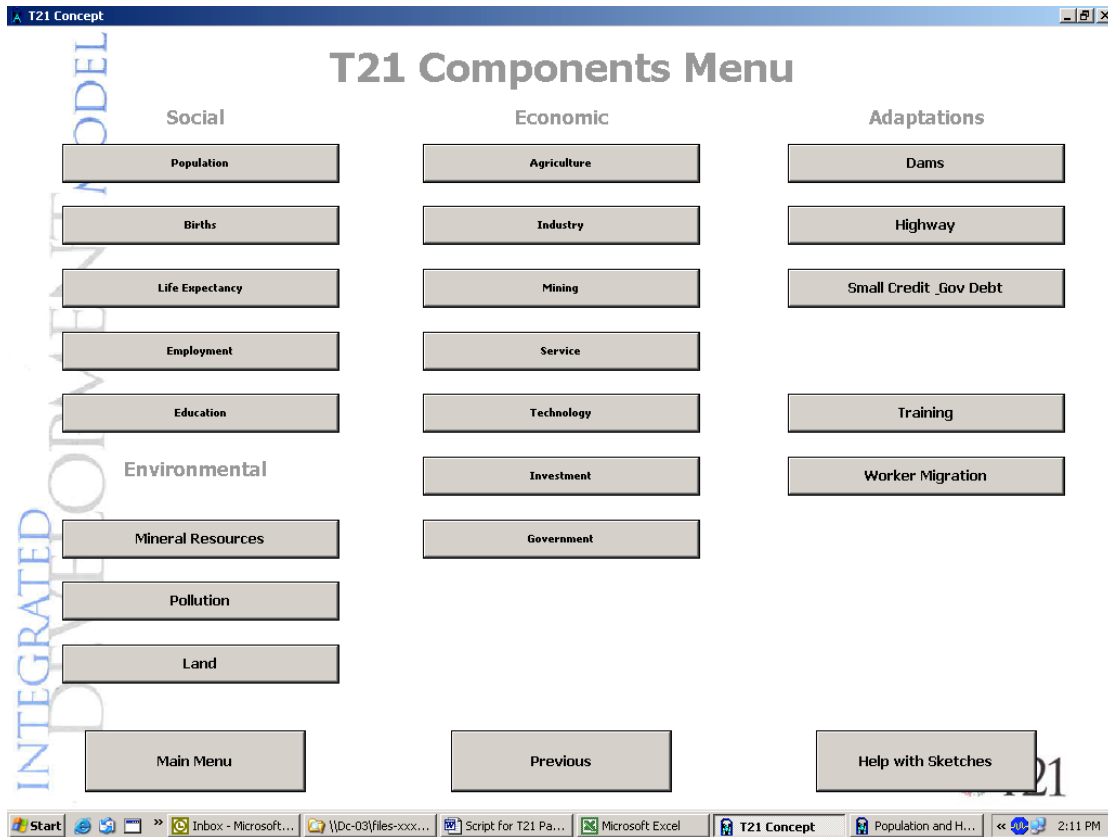


- Click the **Concept** button, the following concept screen will appear.



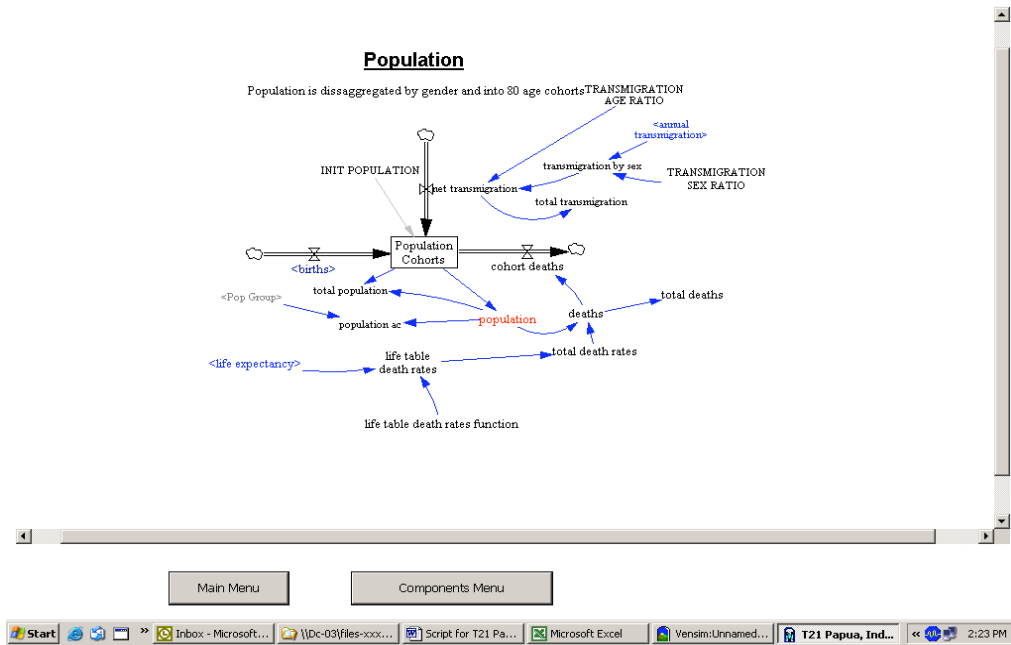
- This is the overview of the T21 model. Click the buttons at the right column from top down, you will see expansion of this overview. When you finish, click the **Components Menu** button to return to the previous screen.

- Now click the **Components (Sectors)** button. The following T21 Components menu will appear as shown below:



- The above screen shows the major sectors in T21 Papua. 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:

# Population Sector

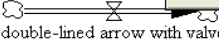


- Notice some of the major variables that are modeled in the Population Sector
  - *Population Cohorts*
  - *Births*
  - *Deaths* and
  - *Life expectancy*.
  
- The blue arrows connecting the variables represent causality. For example, from the sketch you can see that *life expectancy* determines *life table death rates*. *Life table death rates* determine the *total death rate*.
  
- Click on the **Components Menu** button to return to the list of sketches (the Components Menu appears on page 4).
  
- Click on the **Help with Sketches** button to display a key, explaining the meaning of the symbols, colors and fonts used in the sketches (as below):

Population and HIV/AIDS

# Help with Sketches

## Key for Sketches and Symbols

VARIABLE FORMAT	MEANING
ALL CAPS	variable is pre-determined (exogenous) outside of the model
lowercase letters	variable is determined (endogenous) within the model
<blue letters with brackets>	variable is an input from another sector
red letters	variable is an output to another sector
Inside box with first letter capitalized	variable is a stock variable
 double-lined arrow with valve	variable is a flow variable ie adds to or subtracts from a stock

Previous Screen

- 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 (region)-specific historical data.

#### *Tutorial - Exploring the Baseline Simulation and Historical Data*

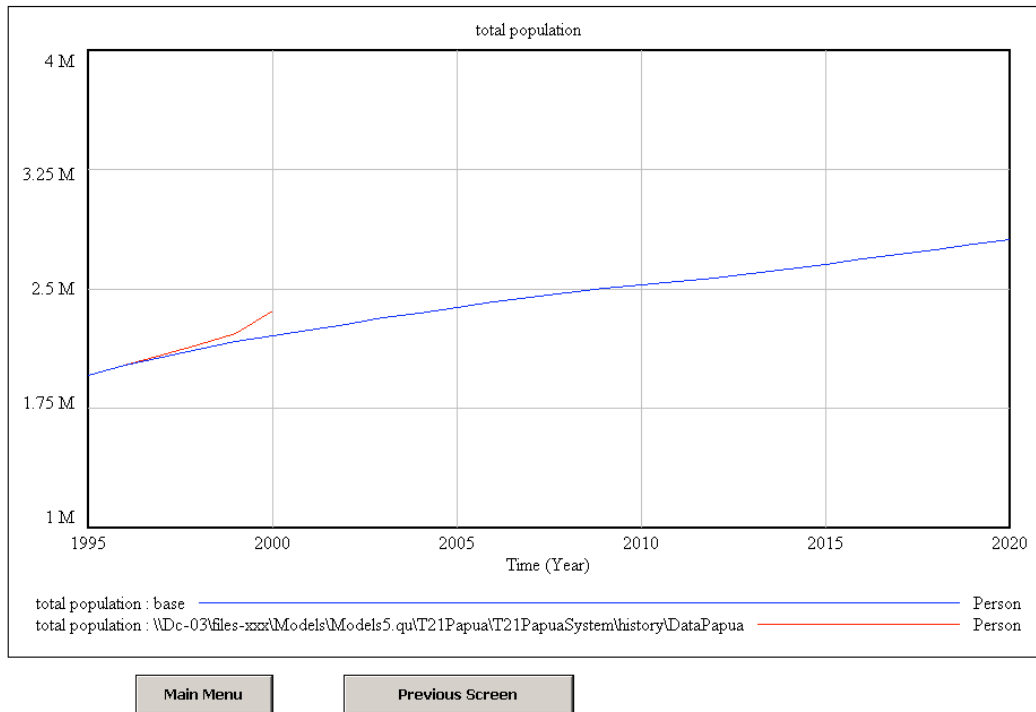
- Click on the *Baseline Simulation and Historical Data* button, and a graph as below will appear.

The screenshot shows the 'Baseline Simulation and Historical Data' interface for T21 Papua, Indonesia. The interface is organized into three columns: Social, Economic, and Environmental. Each column contains a list of data items, each represented by a button. A 'Main Menu' button is located at the bottom left. The T21 logo is in the bottom right corner. The Windows taskbar is visible at the bottom of the screenshot.

Social	Economic	Environmental
Total Population	Agriculture Production	Total Energy Demand
Total Fertility Rate	Industry Production	Total Forest Land
Life Expectancy	Service Production	Total Fallow Land
Infant Mortality	Mining Production	Total Waste Land
Male Literacy Rate	Real GDP	Total Agricultural Land
Female Literacy Rate	Government Revenue	Total Urban Land
Industry Employment	Government Expenditures	Air Pollution Index
Mining Employment	Total Transmigration	Water Pollution Index
Service Employment		Land Pollution Index

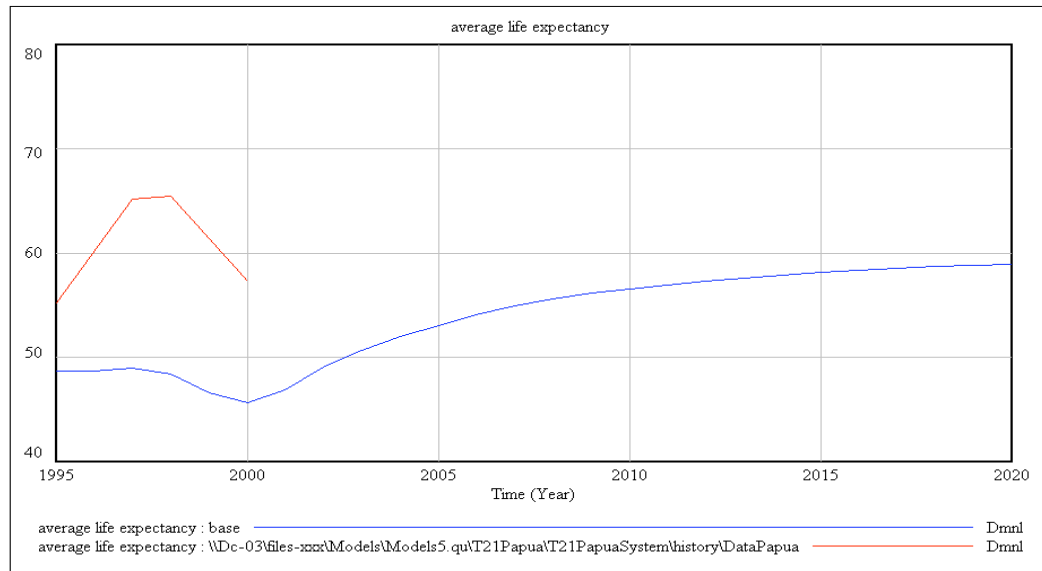
- Click on any of the buttons, and a graph will appear which includes both the baseline model results and the historical data (wherever it is available). Click the *Total Population* button, and the following graph will appear:

## Base and data comparison for total population



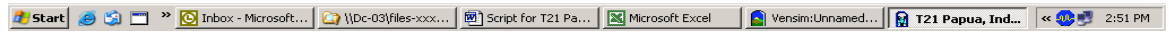
- During model customization, various country (region) specific parameters and historical data are entered into the model. The model carefully calibrated to establish the appropriate structure of the model for the individual country (region). Then, the calibrated model is used to generate scenarios. In the graph, above, the blue line (total population) is model calculations for a specific country (region) from 1995 to 2020, and the red line is from available.
- This model baseline simulation is compared to actual historical data to validate the model and its ability to reflect the “reality” of the country (region). Notice, how the model calculations of the past (blue line) correspond to the available historical data (red line). Notice, also, that for many countries (regions) population and some other data are not available, or not of good quality.
- Click on the **Life Expectancy** button and notice how the model calculations for life expectancy (blue line) match actual data on life expectancy (red line). The difference is quite big. The reason of this difference is that we do not have life expectancy data for Papua, so we used the life expectancy data for Indonesia from the World Development Indicators published by the World Bank.

## Base and data comparison for average life expectancy



Main Menu

Previous Screen



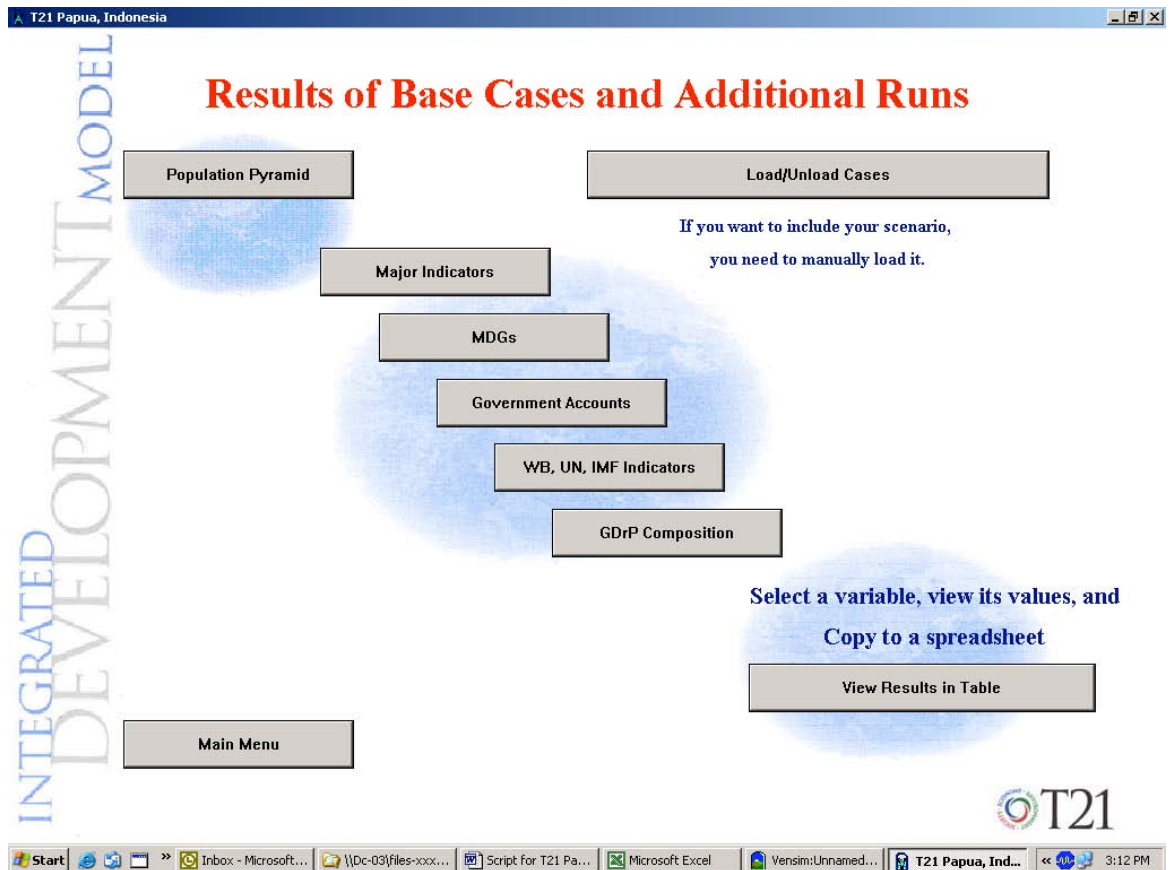
- Click on other buttons to view the comparisons of model results with historical data. Notice that data is not available for some buttons, such as *Infant Mortality*.
- When you have finished exploring the **Baseline Projections and Historical Data** click on the **Main Menu** button to return to the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

## 5. Main Menu Fifth Button – *View Base Case Results*

Four scenarios are created for T21 Papua: Base, BigM (Mamberamo), MoreRoad, and Urban. (Please refer to the report prepared by MI for their descriptions.) This button takes you directly into exploration of the major results where you may obtain more detail on these scenarios. You can see graphs or tables of dozens of indicators.

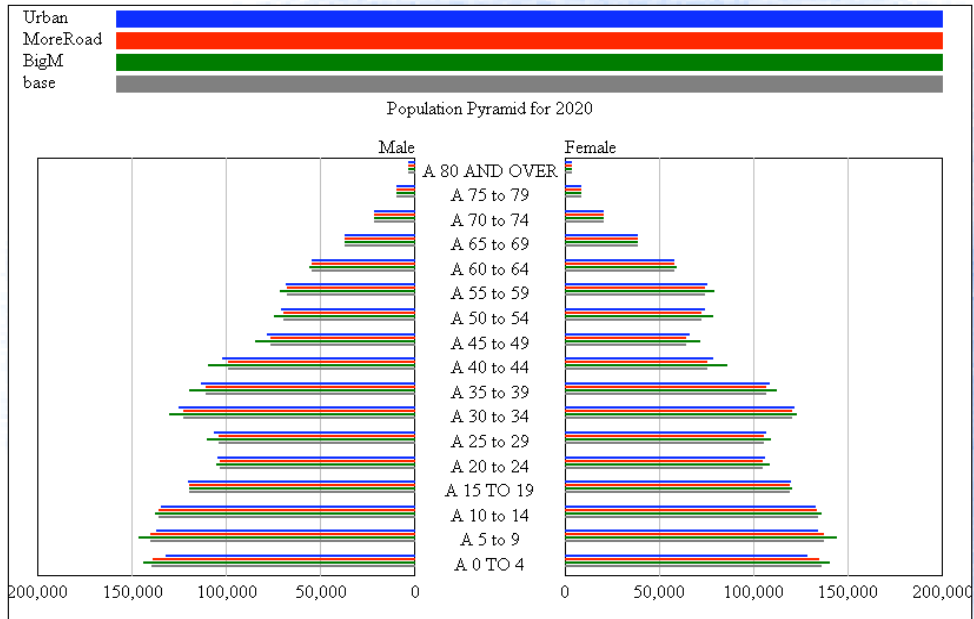
### *Tutorial - Exploring View Base Case Results*

- Click on the **View and Analyze Results** button and you will see the following screen:



- All the four scenarios are loaded. If you want to unload some of them, click on the **Load/Unload cases** button to do that. (Left window has unloaded scenarios, and right window has loaded ones.)
- Click on the **Population Pyramid** button to see a comparison of the population pyramid (at 2020) for the four scenarios. The Urban scenario (blue) has fewer young people (due to lower total fertility rate), but more middle-aged due to higher life expectancy.

## Population Pyramid for 2020

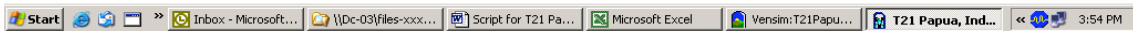
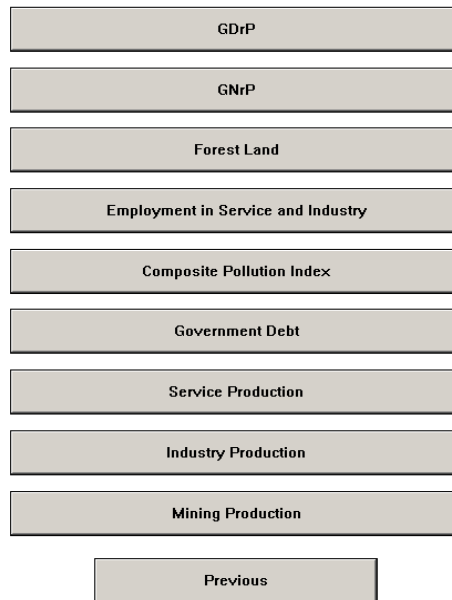


- Pyramid 2000
- Pyramid 2005
- Pyramid 2010
- Pyramid 2015
- Pyramid 2020

Previous

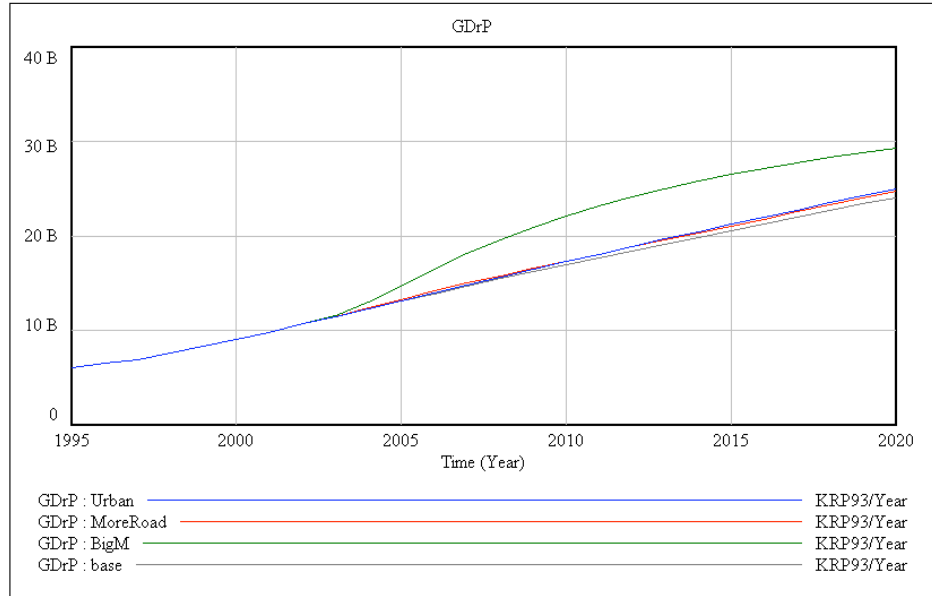
- Click on the buttons to the right to see the population pyramid for other years. You'll see that the population pyramids for the four scenarios are much closer in previous years.
- When you have finished, click on the **Previous** button to return to the **Results** screen.
- Click on the **Major Indicators** button to see a list of major indicators from which to choose:

## Papua, Indonesia Major Indicators



- Click on **GDrP** button to see how the total GDP in Papua differ among the four scenarios. It seems that the BigM scenario performs best.

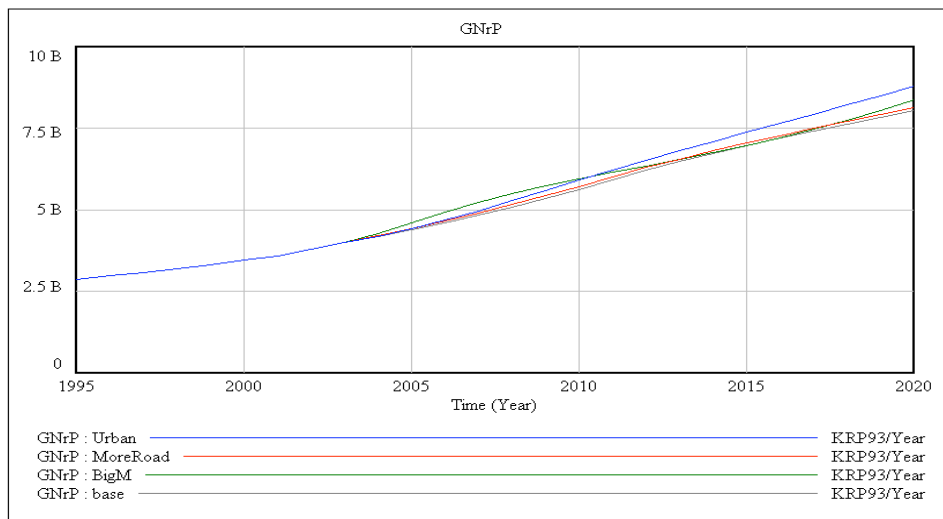
### Case Comparison for **GDrP**



Previous

- Click on the **Previous** button to return to the Major Indicators screen.
- Now click on **GnrP** button to see the part of GDP that actually goes into local people and government. Urban is the scenario that generates the most benefits to local people.

### Case Comparison for **GnrP**



Previous

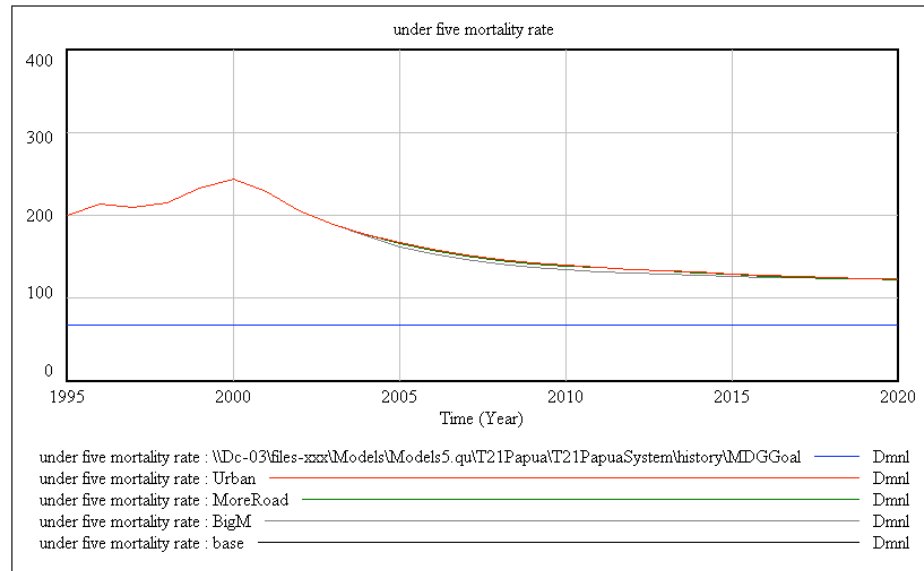
- Explore some of the other Major Indicators to compare the four scenarios.
- Click on the **Previous** button to return to the **Results** screen.
- Click on the **MDG** button to analyze the four scenarios relative to the Millennium Development Goals.



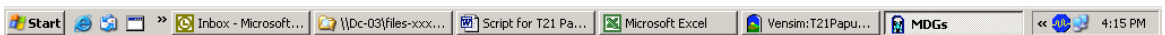
- Click, for example, on the Under-five mortality rate. You'll see a graph of under five mortality for the four scenarios and the Millennium Development Goal (blue line).

## Millennium Development Goals

*Target: Reduce by two thirds, between 1990 and 2015*



[Click to return to previous menu](#)



- Click below the graph to return to the Millennium Development Goals screen. Click on other MDG lines of your choice to view how these scenarios perform relative to MDG Goals.
- Click on **Previous** button to return to the View and Analysis screen.
- After viewing the Millennium Development Goals, you'll click on **Load/Unload** cases to unload history\MDGgoal.vdf before continuing your analysis.
- You can also click on the buttons of "Government Accounts", "UN, WB, IMF Indicators", or "GNrP Composition", to see their values.
- Click on **View Results in Table** to see the actual projected values for any of the variables in the model. You can also copy these values to the clipboard to export them to another application (a spreadsheet, for example).

### 6. Main Menu Sixth Button – *Create Additional Scenarios Button*

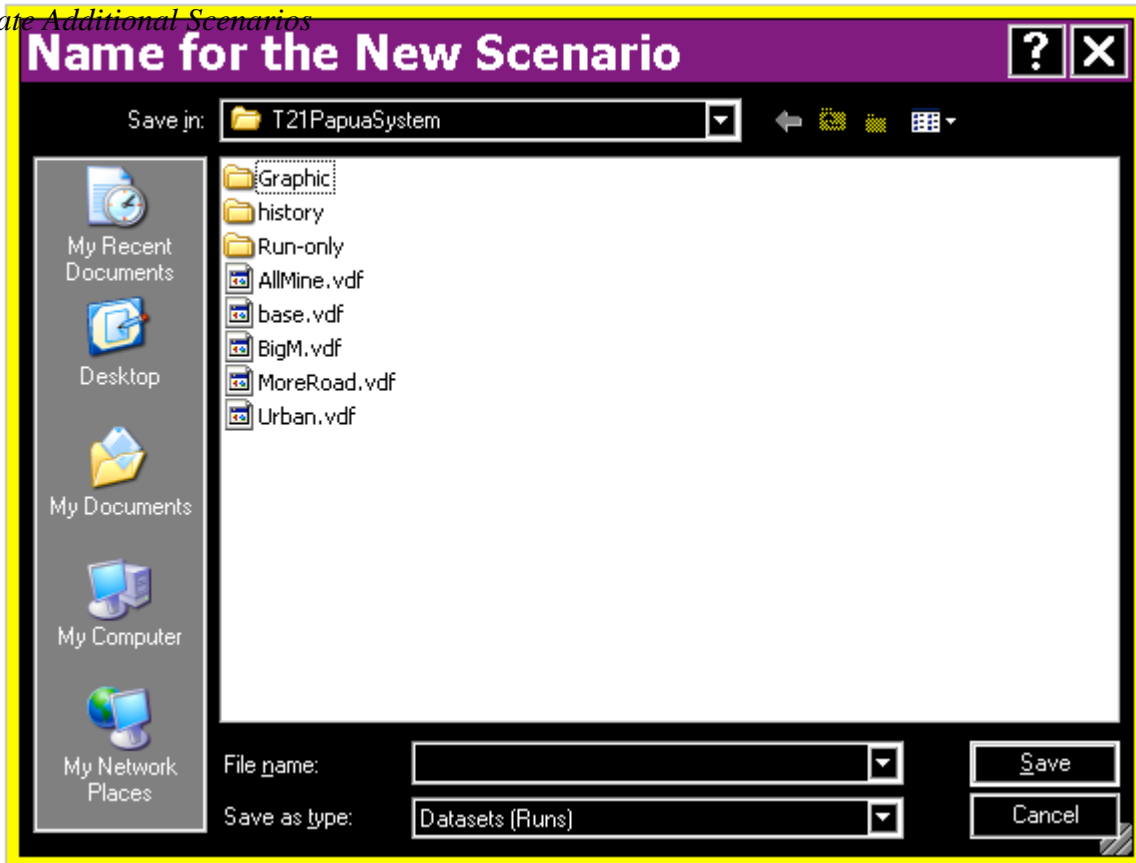
In addition to the four scenarios, you can create your own scenarios based on either the BigM, the MoreRoad, or the Urban scenario. In this area you will be able to:

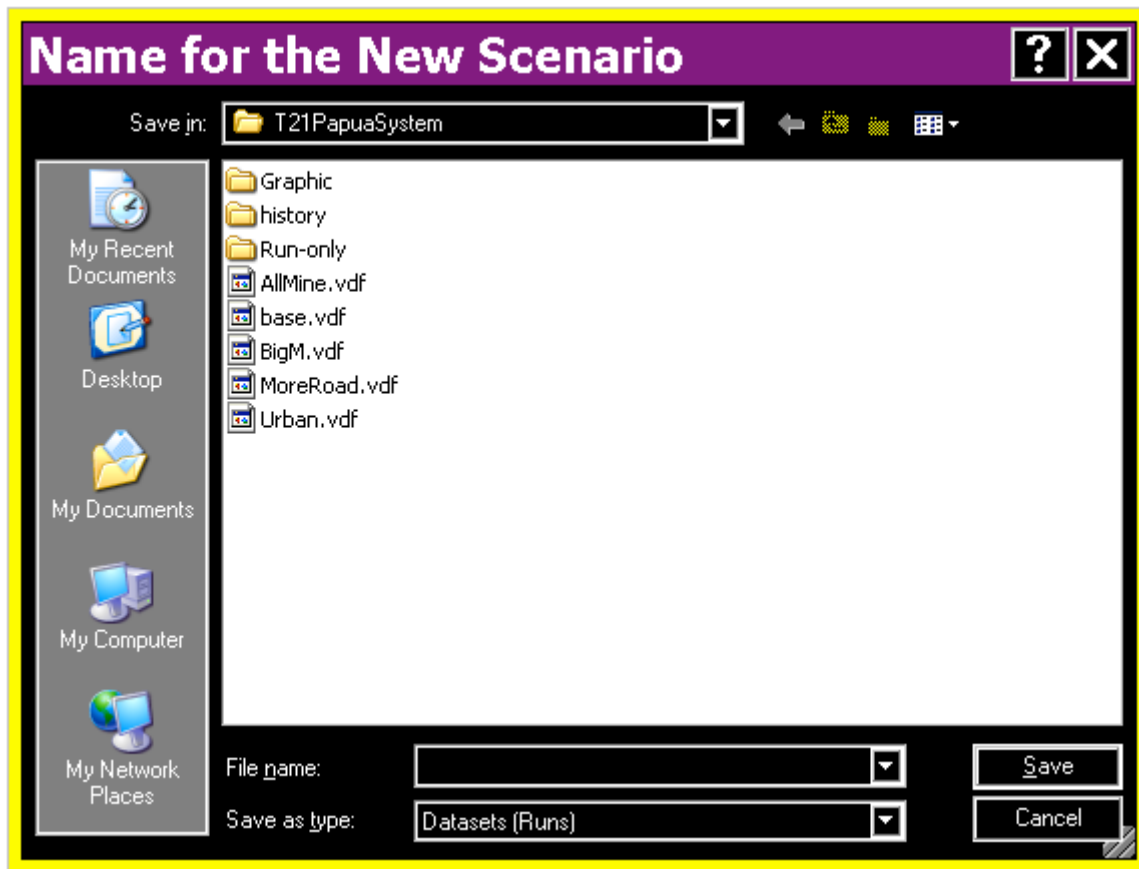
- Selected one of the three options (BigM, MoreRoad, and Urban);
- In the option you select, make limited changes to a specific policy variable;
- Simulate the model into the future to study the consequences, or effects of your policy change.

## Tutorial - Exploring the Create Additional Scenario

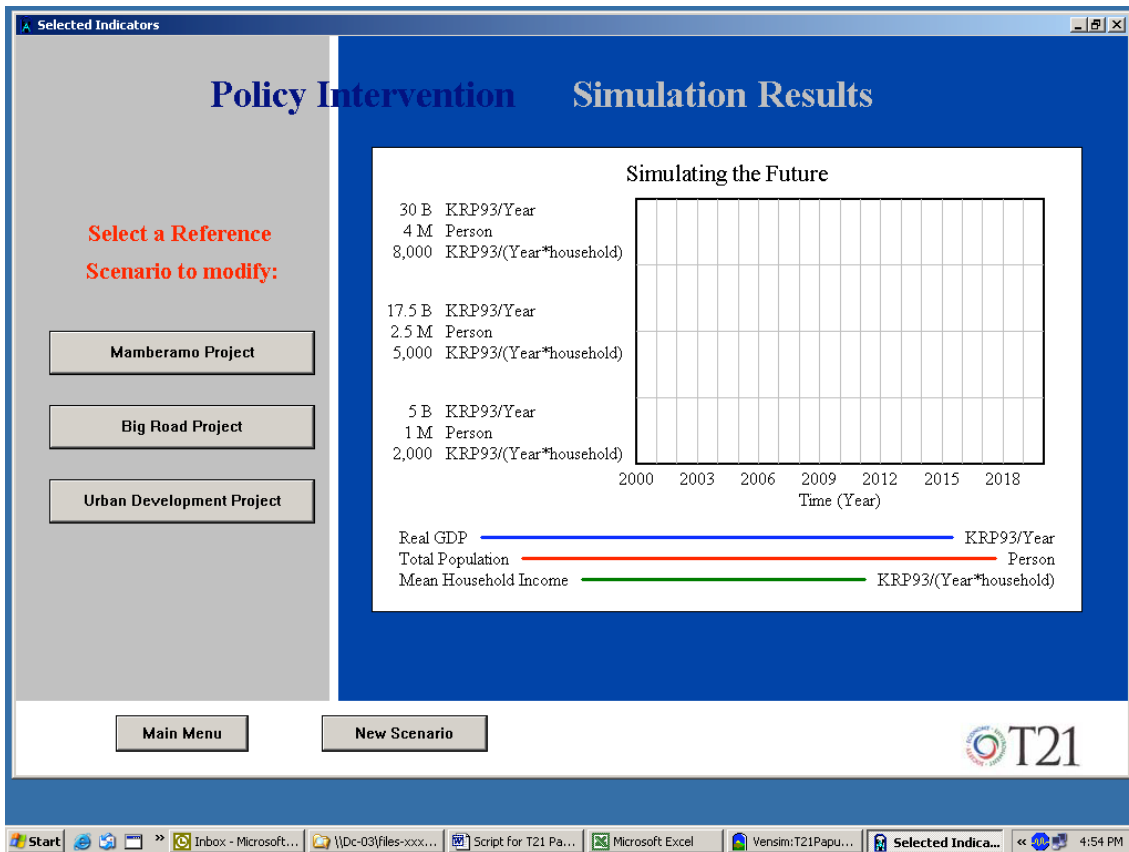
- Click on the *Create Additional Scenarios* button
- Click on the **Select or Create Simulation** button
- At this point you will be asked to either select an existing scenario or create a new scenario that will be saved to a file for future reference. Either select AllMine.vdf or create a new scenario by typing *myscenario* or another name of your choosing in the File Name box.

*Create Additional Scenarios*

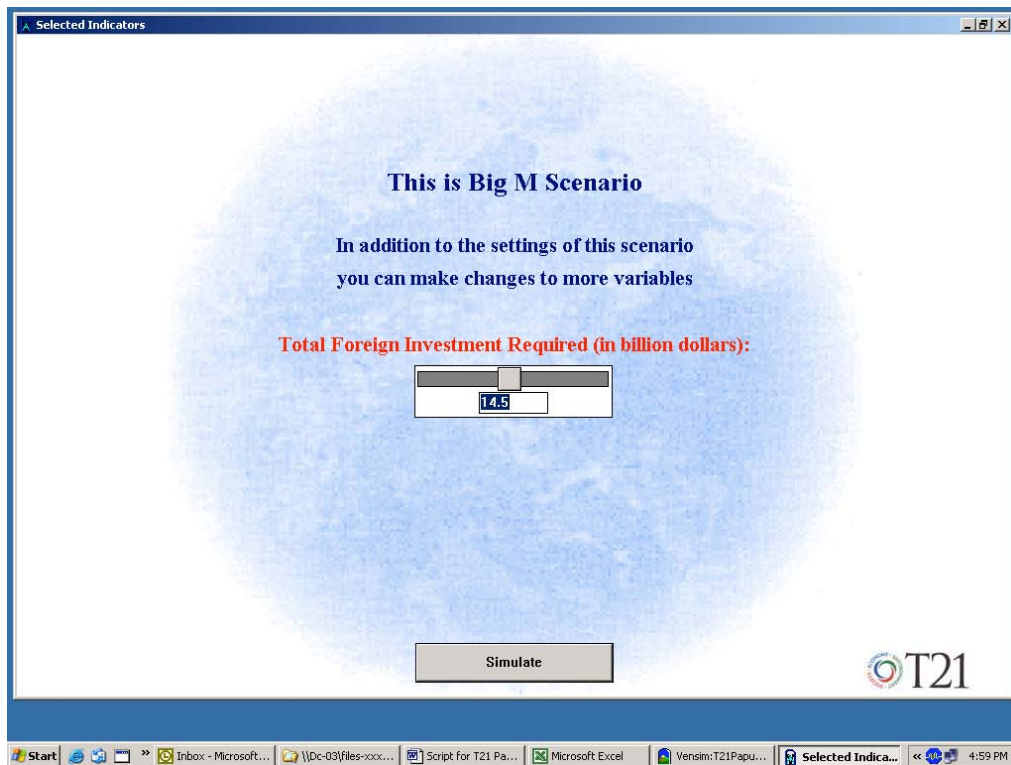




- Assume you selected AllMine.vdf, followed by clicking on the **Save** button.
- Vensim will ask you if you want to overwrite the existing file AllMine.vdf. Click Yes.
- You will now see a screen entitled Policy Intervention and Simulation Results:



- This screen lists three areas that you can choose:
  - Mamberamo Project
  - Big Road Project
  - Urban Development Project
  
- Click on the Mamberamo Project, which means that you want to select the Big M project. Within this project, you may want to make some changes.
  
- This will bring up a screen that contains the Total Foreign Investment Required (in billion dollars) for the BigM Scenario. You can change the total foreign investments for this scenario.



- Beneath Total Foreign Investment Required (in billion dollars), type 8.5, or slide the bar until it reaches 8.5. Thus in your AllMine.vdf scenario, you choose to do the BigM Project with less foreign investment.
  
- Click on *Simulate* button to simulate the model to 2020. You will see three lines extending quickly from 2000 to 2020. These three lines are three variables selected from over a thousand variables to represent your scenario. They are real GDP (blue), total population (red), and mean household income (green).

