**BMARIA-H2O - User guide**

The BMARIA-H2O is an interregional computable general equilibrium (ICGE) model, implemented using GEMPACK and designed for policy analysis in Brazilian hydrographic regions. RunGEM is a windows program that makes it easy to run any CGE model created with GEMPACK. Customized RunGEM is a particular version of RunGEM that has been hard-wired to work only with one or a few particular models (such as BMARIA-H2O ICGE). This document assumes that a recent version of Customized RunGEM (dated March 2001 or later) that contains the BMARIA-H2O ICGE model is installed.

RunGEM uses a tabbed notebook or card index interface. Model/Data page contains information about files used by the BMARIA-H2O ICGE model. For simulations, the last pages Closure - Shocks - Output files - Solve - Results are usually accessed in that order (from left to right).

Take a look at RunGEM’s Model/Data page. It gives two pieces of information:

* The model is BMH2O.EXE, an executable program. This has been produced by the GEMPACK program TABLO using, as input, the text file BMH2O.TAB. To change the model specifications, you need to (a) edit BMH2O.TAB, and (b) run TABLO to make BMH2O.EXE. That procedure is not covered in this introductory document, and TABLO is not supplied with the Customized RunGEM package.
* There are five input data files. MDATA1.HAR contains the database with interregional input-output and parameters information. PDATA1.HAR contains data about population and labour force. WDATA.HAR contains data about water and raw water demand by sector and hydrographic region and parameters related to water demand (elasticities). Terminal\_LR.HAR is a database used in closure. BMH2O.TAB is the code file of the BMARIA-H2O model.

In the Closure page, there is a list of the exogenous variables in the currently selected closure. You can choose between several different closures when running a simulation. The panel below shows which variables are exogenous in the selected closure. RunGEM allows you to load different closures already prepared. To see this, use the Load Closure button to load the long-run closure file (BMH2O.CLS).

Now go to the Shocks page. Click on the Clear Shocks List button to remove whatever shocks are shown. Now you will specify a shock list. Copy the information present in SHOCK\_LIST45.txt (RCP 4.5) or SHOCK\_LIST85.txt (RCP 8.5) and paste it into the edit box.

Output controls the names of output files produced by the simulation. Don’t change anything now. Go to the Solve page of RunGEM. First, click on the Change button (the one with the Solution method before it). Click on Johansen to select Johansen’s method (or Euler/Gragg method). You will learn more about the different solution methods available later in this document. Now click on the Solve button. A “Please Wait” window will appear while the model is solved. Then RunGEM will show you a box telling you how long the solution took. Just press OK. The next natural step is to look at the results.

The Help menu item gives access to extensive online help about RunGEM. Customized RunGEM is a slightly simplified version of RunGEM, so some of the options described there may not apply. There is a Help menu item, “Customized RunGEM Help”, dealing with these differences.