

## Global Vision, Inc.

### Demonstration Global Model Development Steps

<b>step:</b>	<b>element:</b>	<b>status:</b>
1	USA military forecast study <sup>(1)</sup>	done
2	7-major nations military forecast study <sup>(1)</sup>	done
3	all-nations military sub-model <sup>(2)</sup>	underway
4	all-nations economic sub-model <sup>(3)</sup>	underway
5	global shell <sup>(4)</sup>	underway
6	graphical user interface <sup>(5)</sup>	underway
7	post-demo extensions <sup>(6)</sup>	not started

#### Notes:

<sup>(1)</sup> Preliminary studies to examine alternative modeling techniques.

<sup>(2)</sup> Forecasts annual changes in number of military personnel, by nation.

<sup>(3)</sup> Forecasts annual changes in inflation, unemployment, prime interest rates, and national product, by nation.

<sup>(4)</sup> Orchestrates all the sub-models; receives, stores, and sends input, intermediate, and output information.

<sup>(5)</sup> Will allow the user to operate the forecast program from

[www.globechange.org](http://www.globechange.org) .

<sup>(6)</sup> After completion of the demo model and as resources permit, to move incrementally toward a fully functional global forecasting model: (a) other societal and natural environmental elements will be added, (b) model elements will be re-calibrated using additional data and modeling concepts.

#### Further discussion of the demonstration model

This project—our focus at present—will result in a very abbreviated version of a fully functioning global societal-natural environmental forecasting tool. In this pilot project, the emphasis is on combining and forecasting economic factors and domestic and international war events and war hazards. To the extent permitted by resources, other

elements such as climate variability and epidemiological factors will be included in more skeletal form.

The project makes use of currently existing analytic and modeling techniques, algorithms, data, and other elements that are presently available, but have not previously been combined for the indicated forecasting purpose. The project involves 4 steps: 1) First, is acquiring, developing, and preparing data. Data so far used have come from the Correlates of War project (at University of Michigan, Pennsylvania State University, and other locations) and from the World Bank. 2) Second is testing various models using these data. Linear and artificial neural network model types have so far been tested for ability to emulate annual changes in military personnel, first for the USA only, then for all nations, worldwide. Work currently is underway to develop and test linear and artificial neural network models of annual changes in gross domestic product (GDP) for all nations, worldwide. 3) The third step is to write computation code to simulate short-term (on the order of 1 year) changes, using the model results. 4) Once written and tested, the forecasting algorithms and data will be embedded in a graphical user interface (GUI). The resulting forecasting tool will be mounted on the Global Vision, Inc. web site. This web site will link to the GUI, from which the user—this means *any* person with access to the web—will launch his or her exploration of the computational forecasting tool.