**China**

Self-Paced Exercise

**Questions for Students – Answer Key**

**What data are required to create a new setup and run an analysis?**

If the goal of your analysis is to examine only health impacts, you must load grid definitions, pollutants, air quality data (in either monitor or model form), incidence/prevalence rates, a population dataset, and at least one health impact function. If you would also like to examine economic impacts, you must load a valuation function.

**What is the relationship between the BenMAP data inputs and the grid definitions column/row index?**

All incidence rates and population data must be linked to a grid definition which matches the spatial scale of the data collected. Moreover, the column/row index links the specific input value to the polygon within the grid definition assigned to the incidence or population dataset.

**What is the difference between a pollutant and a metric?**

A pollutant is the air-contaminating substance of interest in your analysis. In this case, the pollutant is PM2.5. A metric expresses the time period over which air quality values are modeled or observed and how the value is calculated (e.g., mean, maximum, minimum). In BenMAP-CE, the Metric field refers specifically to daily values calculated directly from daily observations, or through various mathematical calculations of hourly observations.

**What is the air quality metric for the China PM2.5 monitor data?**

The air quality metric for China PM2.5 monitor data is an annual mean.

**What races are included in the China Population data?**

The 2005 China population data used in this analysis is not broken down by race. All races are included.

**What health endpoints are included in the China Incidence Rates?**

The endpoints included in the China Incidence Rates are all mortality endpoints. There are three unique endpoints:, All Cause; Cardiopulmonary; and Lung Cancer. The All Cause endpoint appears twice- one endpoint is from Pope et al. and the other from Laden et al.

**What are the health endpoints of the Krewski et al. health impact functions?**

The Krewski et al. function that was manually imported has one health endpoint- Mortality, All-Cause.

**What are the sources for the valuation estimates? Why is it necessary to adjust these estimates for use in China?**

The first valuation function converts the U.S. EPA default mean VSL. The second valuation function converts a VSL estimate from the World Bank. We adjust these estimates for three reasons. First, we convert the VSL to be expressed in Renminbi rather than U.S. dollars. Second, the conversion accounts for inflation, or the general upward trend in prices over time. Finally, the VSL is converted to account for differences in income levels across countries and over time. Income has been shown to affect the value individuals place on mortality risk reductions (i.e., the VSL).

**What is the economic value for the benefits of the cap and trade program the Chinese government is considering?**

The point estimate for your pooled valuation results should be about 1.87 trillion Chinese renminbi.

**Based on the analysis you performed, what would your final policy recommendation be to the Chinese government as to whether they should implement the cap and trade policy? What information makes you support this recommendation?**

The final policy recommendation would be, yes, the Chinese government should implement a program to reduce PM2.5 concentrations by 10% throughout the country. Since the monetary benefits of the rollback outweigh the cost of the program, China will gain economically from passing this legislation.