

*Report on*

**Projections of Human Capital**

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Organized by Asian MetaCentre for Population and Sustainable Development Analysis

Hosted by College of Population Studies,  
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By  
Professor Sergei Schebov  
International Institute for Applied Systems Analysis (IIASA),  
Austria

The workshop had two main goals. The first goal was to teach participants how to make population projections when population is classified by several categories of educational statuses.

The second goal was to produce the aggregate fertility trends for the whole country that result from the combination of the education specific projections. The knowledge about the variance in aggregated fertility trends will help at a later stage to define the uncertainty in future fertility for probabilistic population projections.

During the first week participants were introduced to the field of projections by the level of education. The model that is used to describe the dynamics of population disaggregated by educational status was discussed. Participants learned how to work with the software package, "PopEd", that implements this model.

In order to produce projections by the level of education several steps had to be undertaken:

1. Preparation of baseline data.
2. Definition of scenarios for future levels of fertility, mortality and migration. Incorporation of educational status in population projections requires definition of scenarios for transitions between educational categories.

Preparation of baseline data requires smoothing (in case of age heaping) and graduation of baseline population data by single year of age. Age-specific fertility and mortality have rates also to be graduated by single year of age. If age-specific rates were not available the model fertility and mortality schedules had to be used.

Since the major goal of the first week was to learn how to work with "PopEd", the simplest methods of baseline data preparation were used initially. Participants practiced manipulating input and output data. Two sets of scenarios were also discussed and defined for each country. The first set consisted of several paths of fertility change up to 2030 with a constant proportion of people moving from one educational status category to another. The second set of scenarios also considered the change in educational composition of population (ICDP+ scenarios).

In the second week participants learned some advanced methods and technique for dealing with demographic data. The main focus was on the methods of data smoothing and graduation. Among these were the use of cubic splines for graduation of population age composition by single year of age; the use of the Gamma fertility model for graduation or generation of age specific fertility rates; and the use of the Helligman-Pollard mortality schedule to graduate age specific mortality rates. Participants also learned the basic procedures from Mortpak required to prepare mortality baseline data. Participants were provided with the necessary computer programs.

To be able to efficiently prepare baseline data and to analyze the results of the model participants received a short intensive training in the use of the advance features of Excel particularly suitable for working with demographic data.

During the second week participants prepared baseline data using advanced methods and produced population projections that corresponded to the two sets of scenarios described above. Country specific scenarios were also defined by each group of participants to reflect their own views on the future trends of demographic and educational indicators. Those scenarios were also used to produce projections by educational status.

At the end of the second week participants from each country made short presentations where they presented the results of their projections by the level of educational status.