

Report on

New Approaches and Methods of Population Forecasting

National University of Singapore, Singapore

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Organised by The Asian MetaCentre for Population and Sustainable Analysis

By

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The Asian MetaCentre conducted its second high-level training workshop on New Approaches and Methods of Population Forecasting at the National University of Singapore, Singapore from March 5-16, 2001. The primary objective of the workshop was to introduce participants to probabilistic population forecasting – a new approach in projection methodology. The secondary objective of the training workshop was to solicit expert views on current demographic and socioeconomic trends and its likely impact on the future demographic scenarios, and to make argument-based fertility, mortality and migration assumptions for probabilistic population forecasting. Thirty participants from six countries in Southeast Asia – Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam attended the workshop. The ultimate goal of the training workshop was to prepare a probabilistic population projection for these six countries. The workshop was coordinated by Dr. Serguei Scherbov, Faculty of Spatial Sciences, University of Groningen, The Netherlands, and assisted by Dr. Aris Ananta, Institute of Southeast Asian Studies, Singapore.

The workshop was conducted in two phases. In the first phase, a training workshop was conducted for the officials working in the statistical offices in six countries of Southeast Asia. Of the 16 participants attended, there were 3 each from Indonesia, Thailand and Singapore, 4 from Philippines, 2 from Malaysia and 1 from Vietnam. During this phase, participants were taught the methodology of probabilistic population forecasting; input needed for probabilistic forecasting; smoothing and graduation techniques for age specific fertility, mortality and migration; the concept of uncertainty; and issues related to studying historical data for defining demographic scenarios. The advanced utilities of EXCEL Spreadsheet were also taught to do the demographic analysis. The need and advantages of argument-based expert opinion assumption in the probabilistic population projection over the existing projection methodology were discussed. Results from the projections of world population and selected countries such as Austria, Germany, the European Union and South Africa using the probabilistic forecasting methodology were also discussed during the workshop. At the end of the workshop, participants had learned the various demographic techniques used for preparing input data for population forecasting and prepared the probabilistic population projection for their own countries.

During the second phase of the workshop, experts on Southeast Asia and the head or director of statistical offices of the six countries were invited to work with the workshop participants. Of the 14 experts invited, there were 4 each from Thailand and Philippines, 3 from Indonesia and 1 each from Malaysia, Singapore and Vietnam. The purpose of the second phase of the workshop was to solicit the argument-based expert opinion on future trends in fertility, mortality and migration.

To start off the second phase of the workshop Assoc Professor Brenda Yeoh, Co-Principal Investigator of the Asian MetaCentre reiterated the purpose of the workshop in bringing researchers and policy makers together to discuss future population and sustainable development issues as a forum for considering policy measures.

Professor Wolfgang Lutz, Co-Principal Investigator of the Asian MetaCentre, gave a talk on the uncertainty issues in population forecasting and the possible approaches for dealing with uncertainty. In his illuminating talk, he highlighted how the projections carried out since 17th century went wrong due to uncertainty in predicting fertility, mortality and migration. He has also mentioned in his address, the significant contribution of International Institute for Applied System Analysis (IIASA) for developing new methodologies to deal with uncertainty in the population forecasting. He pointed out that the methodology used in the IIASA population forecasting is different from the projections being carried out by the international organizations such as United Nations, World Bank and other national governments. He has also questioned the variant approach – one of the methods to deal with uncertainty- due to its arbitrary low and high variant interval. He has also discussed the other ways of dealing with uncertainty like time series forecasting and its limitation. During his presentation, he discussed past projection errors from the United Nations population projection. He highlighted that the consistent way of dealing with uncertainty is to make a probabilistic population projection, which has full probabilistic distribution.

Dr. Pertti Saariluoma, Cognitive Scientist, University of Helsinki, Finland presented the role of experts and advantages in argument based method of population projections. He started with discussing various other methods used for forecasting assumptions like judgmental methods and mathematical extrapolation methods and their limitations. He highlighted various concepts in the argument based approach and its utility in science for corrections. During the workshop, Dr. Pertti interviewed the participants based on the set of questions developed for argument based expert opinion projections.

Dr. Serguei Scherbov, coordinator of the training workshop discussed the content of the training workshop and expected benefits from it. He then invited representatives of the participants from respective six countries to present their preliminary population projections. Representatives from six countries made excellent presentations, providing the socioeconomic background and demographic trends and the future population scenarios of their countries.

In the afternoon session on 15 March 2001, the training workshop participants had group discussions with the experts and their bosses in respective countries on the future trends in fertility, mortality and migration with reasons and range of uncertainty. Based on the group discussions, the modified assumptions on fertility, mortality and migration were presented again in different sessions on 15th afternoon and 16th March 2001 to the whole group. During their presentations, a range of issues in deriving assumption for fertility, mortality and migration were discussed. For example, issues related to ultimate fertility level in the Southeast Asian countries and the factors associated with it; the influence of ethnic differentials in vital rates on the overall fertility and mortality assumptions; future population policy and its role on the fertility assumptions; the effect of globalization and market economy on fertility, mortality and migration assumption; the role of religion in influencing the fertility, mortality and migration assumptions; and the influence of HIV/AIDS on the assumption of mortality. The last session was devoted to discussing the relation of probabilistic projections with official national projections. The heads of the statistical offices of the six countries in charge of making country level population projection for planning and policy purposes presented their approach and methodology used in the projection.

In the concluding session, Professor Wolfgang Lutz informed the participants about the follow-up of this workshop. He mentioned that the assumptions derived based on the discussion during the workshop will be studied together with expert opinion derived based on the individual interview during the last two days. The new set of probabilistic population projection will be derived using the revised assumptions and the results will be sent to the respective participants for analysis and interpretation. This report of the six countries probabilistic population projections will be published as a book. It is hoped that some of these findings will be shared during the IUSSP & APN Regional Population Conference on Southeast Asia to be held in the middle of year 2002 in Bangkok, Thailand.