**Expert Group Meeting: Population Dynamics and Climate Change**

**24-25 June, 2009, London, UK**

# Demographic Component in the Development of New IPCC Emissions Scenarios and Climate Modeling

**Leiwen Jiang, Population Action International**

## Abstract

The impact of population on the climate system has increasingly attracted attentions of climate modelers, and was regarded as one of the root cause of anthropogenic climate change in the scenarios of future GHGs emissions, used in the development of the existing IPCC assessment reports. However, the process of developing emissions scenarios, particularly the demographic component in those scenarios and climate models in the past has a number of shortcomings which should be improved for the development of the Fifth IPCC Assessment Report.
Starting with a brief review and critic of the limitations in the IPCC emissions scenarios concerning its treatment of demographic variable, this paper will discuss existing researches that have significantly improved our understandings of the interactions between population and climate change, indicating the needs of new treatment of demographic component in order to more accurately account for the demographic impacts. The paper then discusses the new process of scenario development of the IPCC Fifth Assessment Report, how population modules will be developed in the new scenarios, and the use of the scenarios in climate model community (CMC), integrated assessment modeling (IAM) and impact, adaptation and vulnerability (IAV) community. After discussing the advantage and limitation (caveat) of the new approach, the paper will stress one of the most important changes in the parallel process - it will not constrain, and to a great extent will rely on, the future work of IAM community. IAM teams will take the lead and have complete freedom to develop new scenarios across the full range of possibilities, based on the understandings of alternative demographic, socioeconomic, technological, and political futures. Based on the current researches using iPETS, the paper will discuss future works on population and emission for the development of new scenarios. The work includes exploring influence of alternative population growth scenarios on emission (such as explicit policy analysis and the outcomes of a low population assumption), influence of aging and urbanization on future emissions (the full range of aging outcomes and fast vs. slow urbanization), and alternative spatial distribution of population and its influences on both emissions and vulnerability. Beyond the core demographic analysis, the future work will integrate aspects of well being (e.g. energy poverty, education, geographic distribution) into the discussion.