

FUTURE ENVIRONMENTAL HEALTH ALONG THE LINES OF FOOD, WATER, ENERGY AND CLIMATE: AN INTEGRATED MODELLING APPROACH

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Background Aims: Health can be considered as one of the most important constituents of quality of life. In many of the global assessments, the health dimension was underrepresented. The health module of the Population & health model PHOENIX has been refined and further developed to be able to explore how future health will evolve. The main purpose of it is to describe future health status using of the concept of the health transition, given changes in socio-economic and environmental conditions. The main purpose of the health model is to describe the burden of disease by sex and age.

Methods: The methodology is a multi-state modeling approach which largely follows the approach as described in the World Health Report 2002 (WHO, 2002), the Disease Control Priorities Project (DCPP) (Cairncross and Valdmanis, 2006) in combination with that Global Burden of Disease methodology (Mathers and Loncar, 2005). The states distinguished in the model are exposure, disease states and death. The dynamic and integrated character of the proposed methodology is represented by the risk factor-attributable mortality and morbidity. This component is strongly connected with the socio-economic and environmental domain.

Results: The most relevant health risk factors and the associated diseases have been included, with a special focus on environmental risks. Food and hunger, Water supply and sanitation, climate change and malaria, energy supply and indoor / outdoor air pollution are amongst the risk factors included, covering already a substantial part of the health-related Millennium Development Goals (MDG).

Conclusions: Exploration of existing consistent socio-economic and environmental baseline scenario shows that many of the health-MDGs will not be attained, given current MDG-policy targets. Additional analyses also show that health loss can be substantially reduced by various health policy packages, especially in South Asia and Sub Saharan Africa.

