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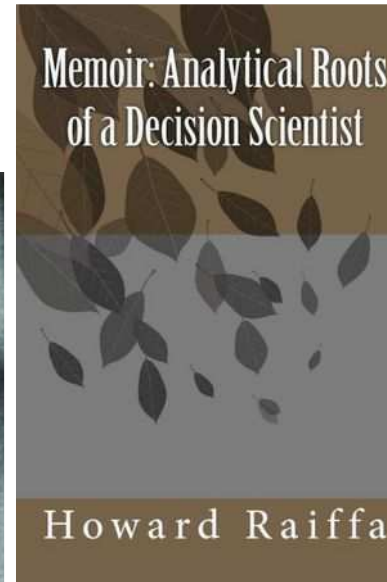
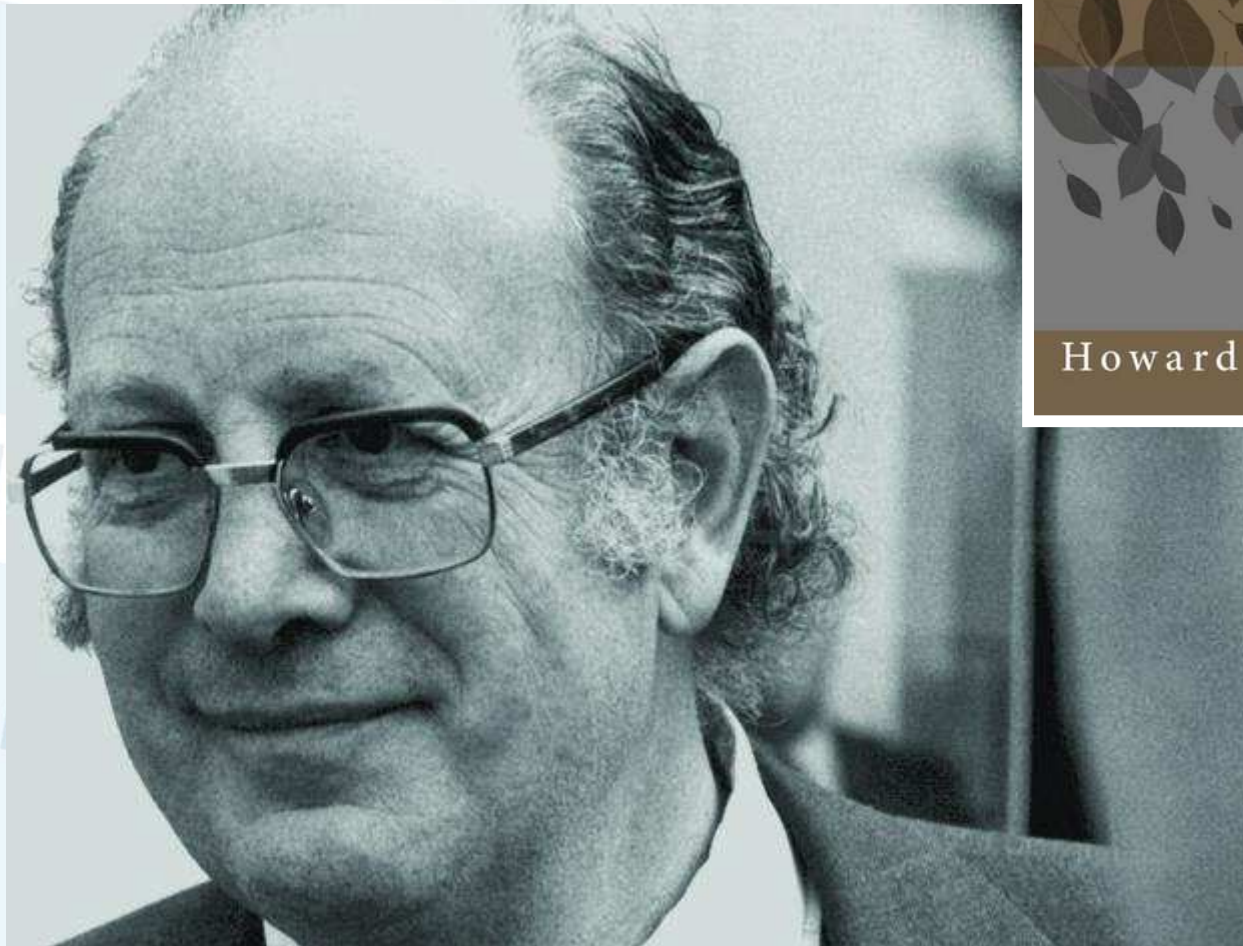
science for global insight

Global Transformations Toward Sustainable Futures

Nebojsa Nakicenovic
naki@iiasa.ac.at



IIASA, International Institute for Applied Systems Analysis

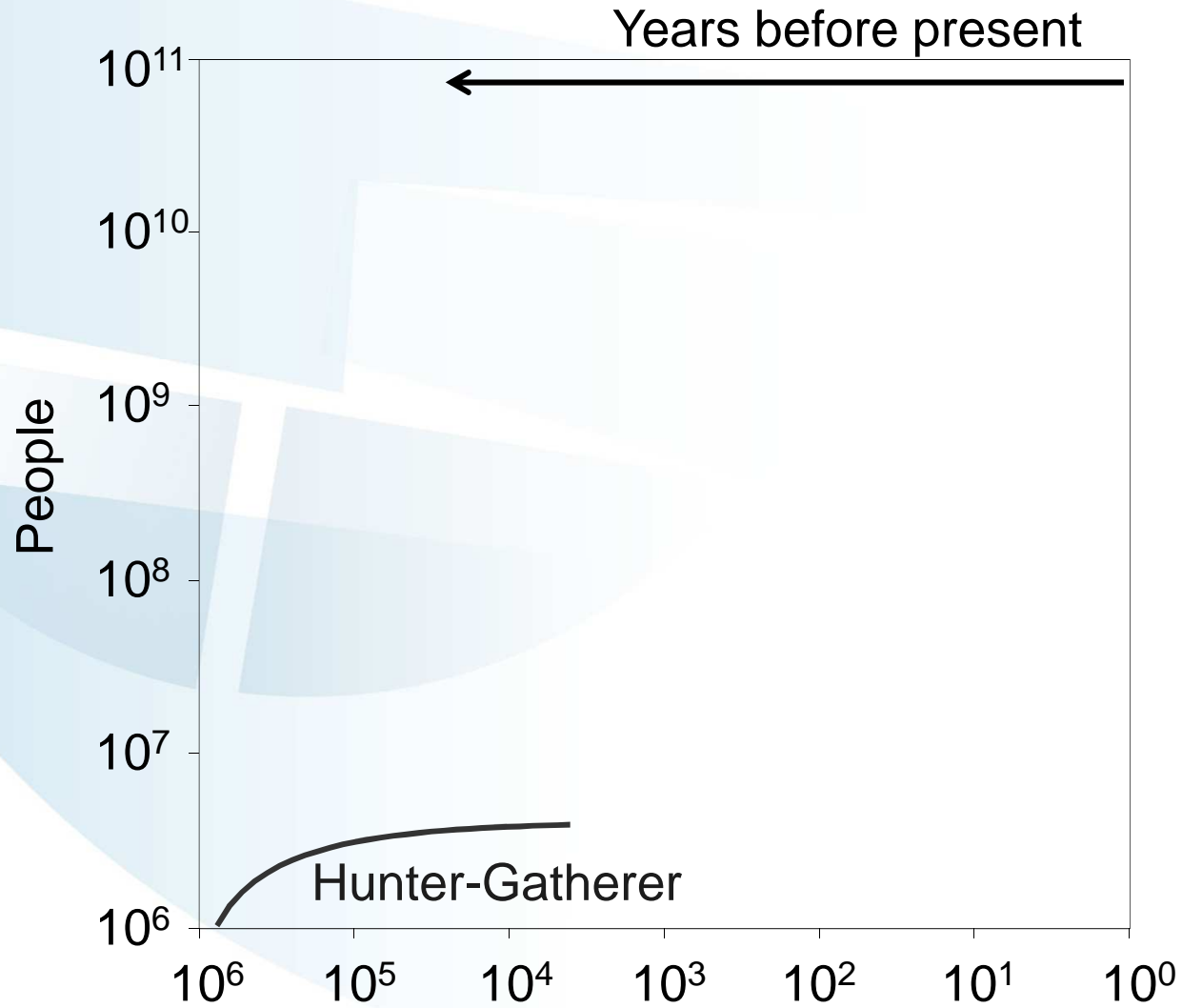


Professor Howard Raiffa

IIASA Directors

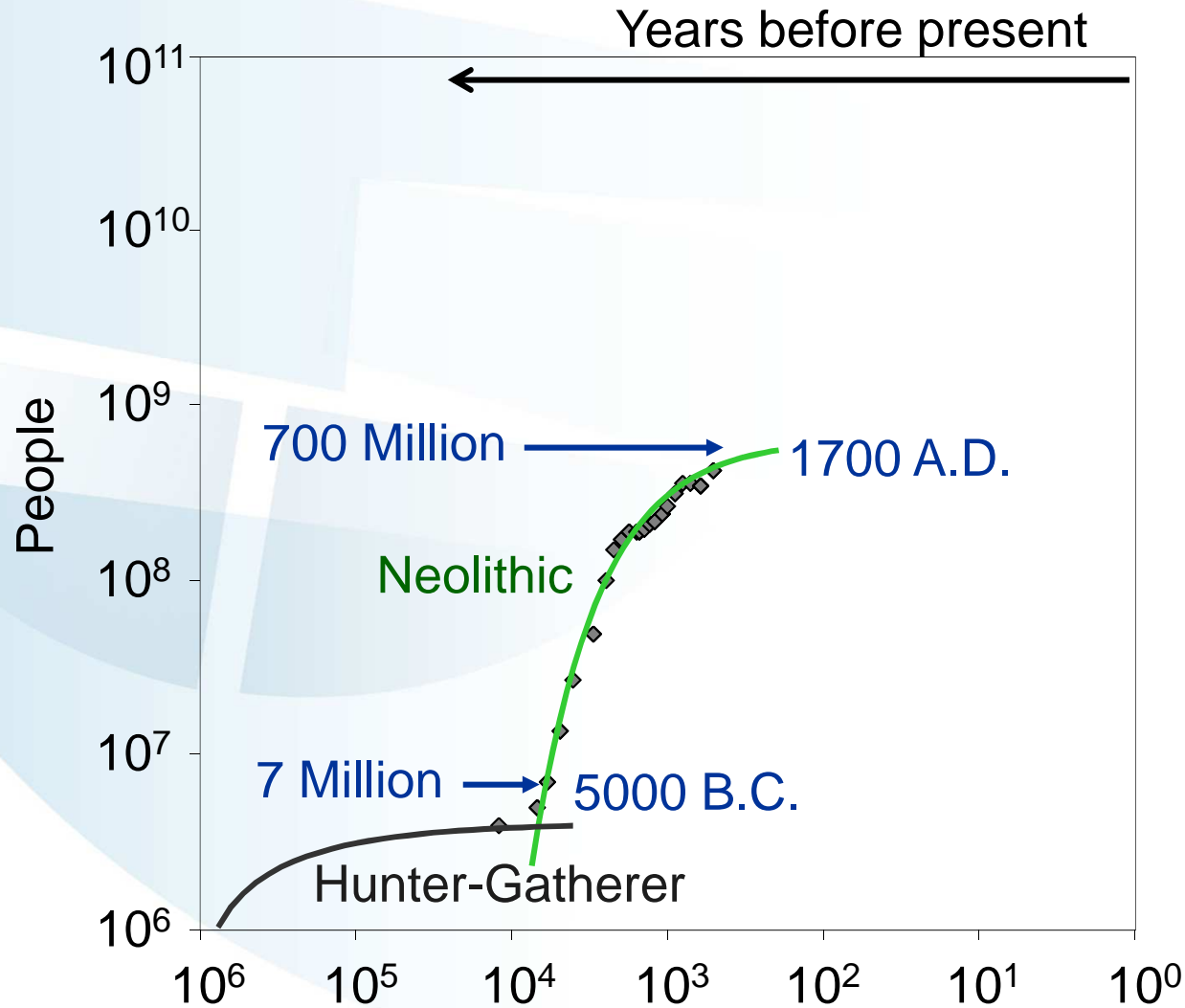
1972-1975	Professor Howard Raiffa
1975-1981	Dr. Roger Levien
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1984-1987	Professor Thomas H. Lee †
1987-1990	Dr. Robert H. Pry †
1990-1996	Dr. Peter E. de Jánosi †
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2002-2008	Professor Leen Hordijk
2008-2009	Professor Sten Nilsson
2009-2012	Professor Detlof von Winterfeldt
2012-	Professor Pavel Kabat

Global Transformations



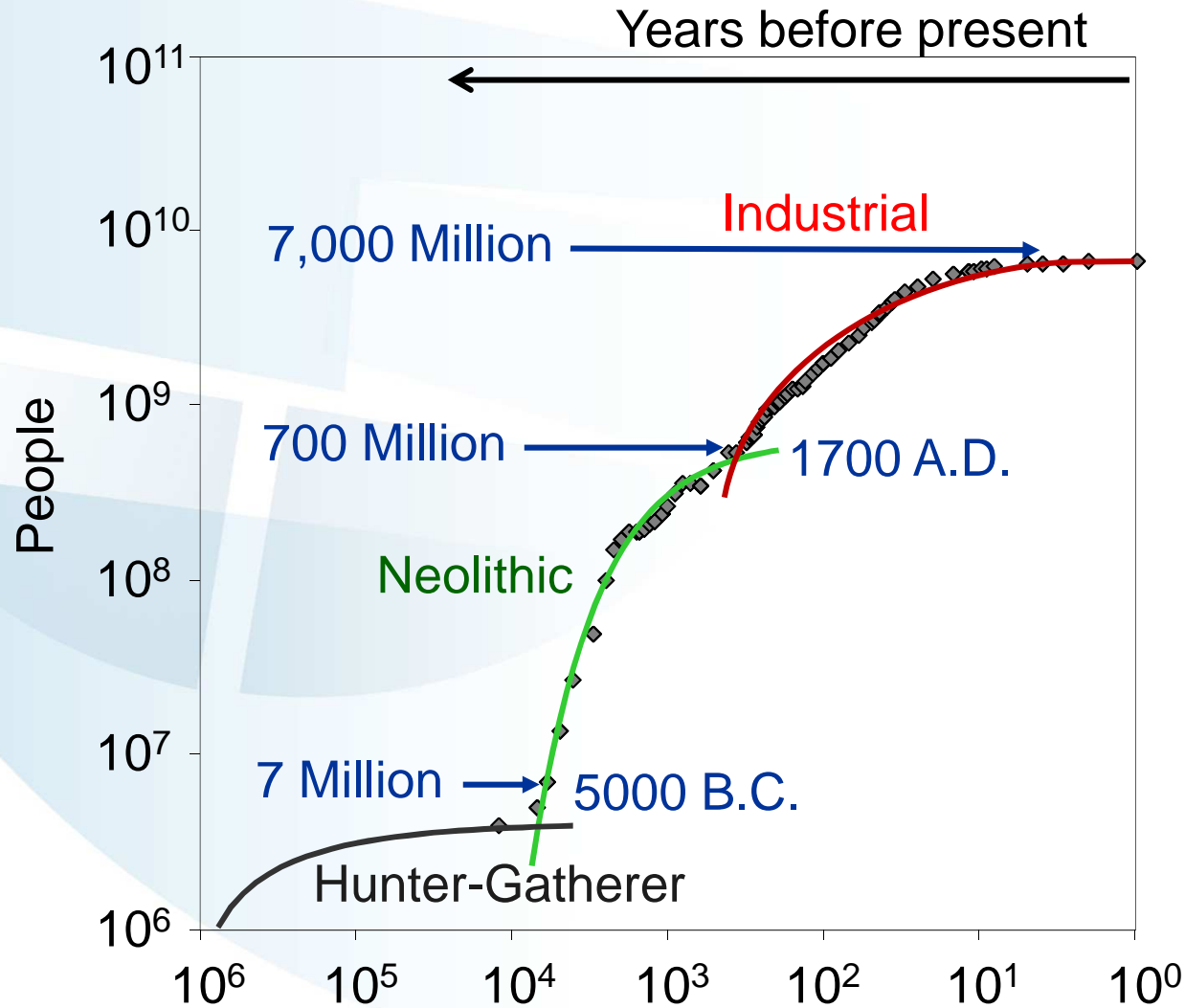
Global Transformations

Neolithic Revolution



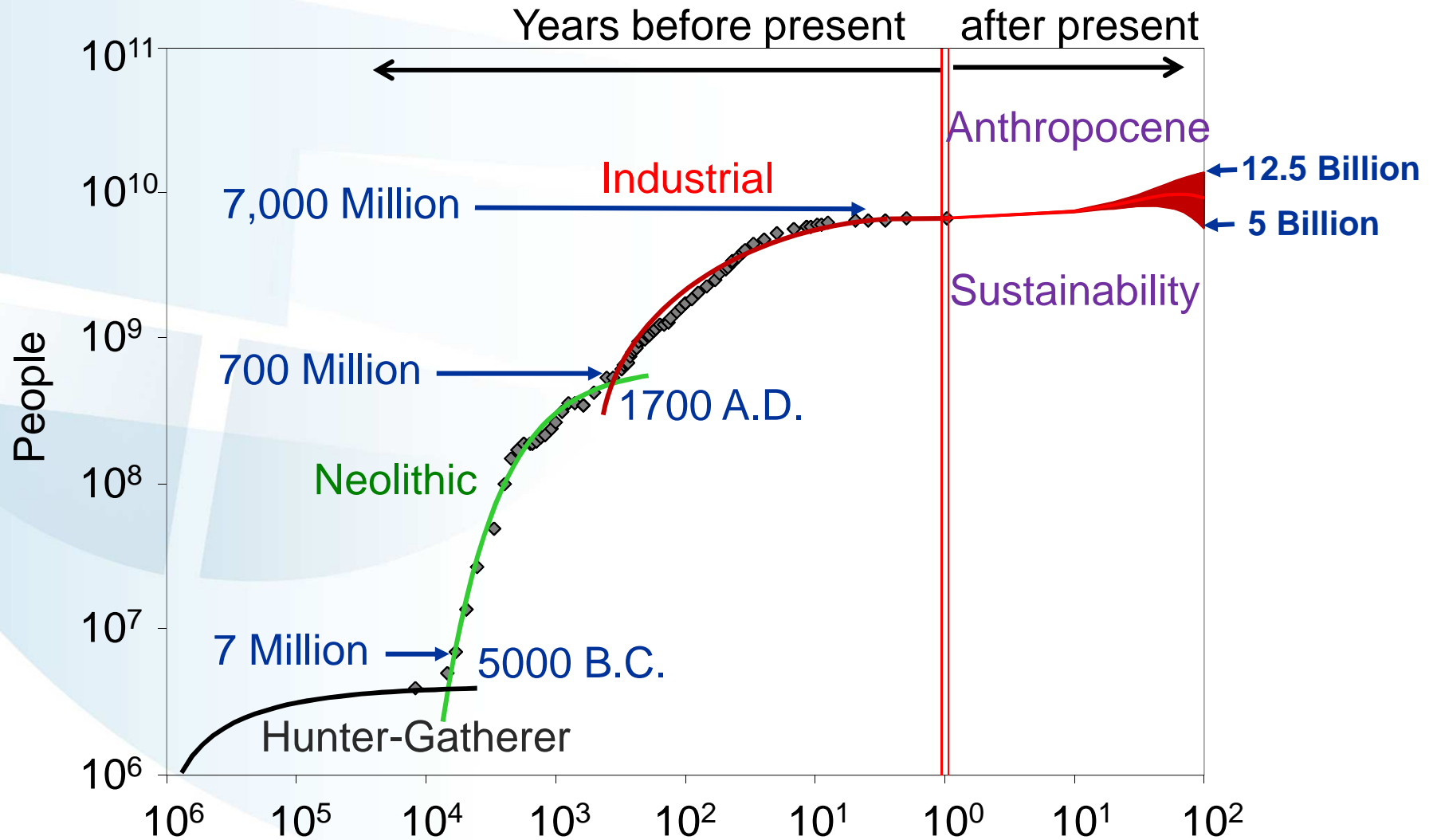
Global Transformations

Neolithic and Industrial Revolutions



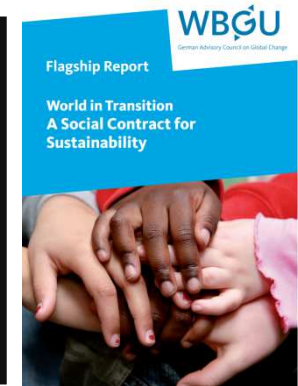
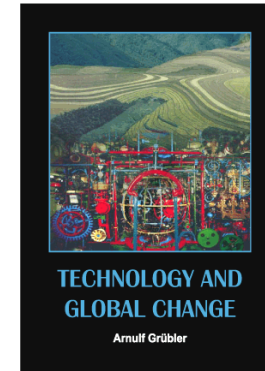
Global Transformations

Anthropocene - Toward Sustainability



Transformation Drivers

Learning from the Past



- **Normative goals, visions**

Abolition of slavery, participatory governance, EU

- **Crises, “gales of creative destruction”**

The Great Depression, financial crises, disasters

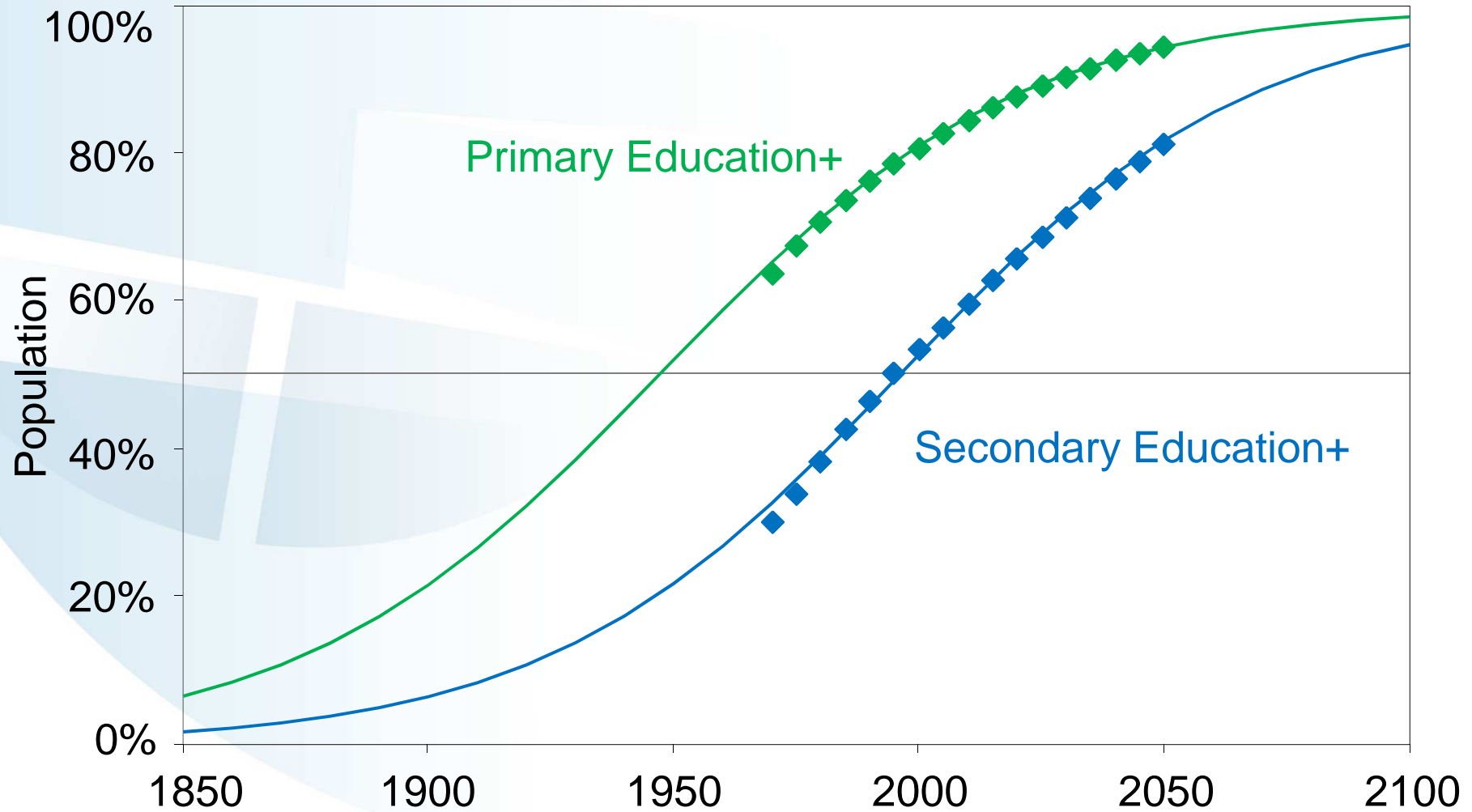
- **Technology, rapid innovation diffusion**

Substitution of carriages by cars, IT-revolution

- **Knowledge, research-driven society**

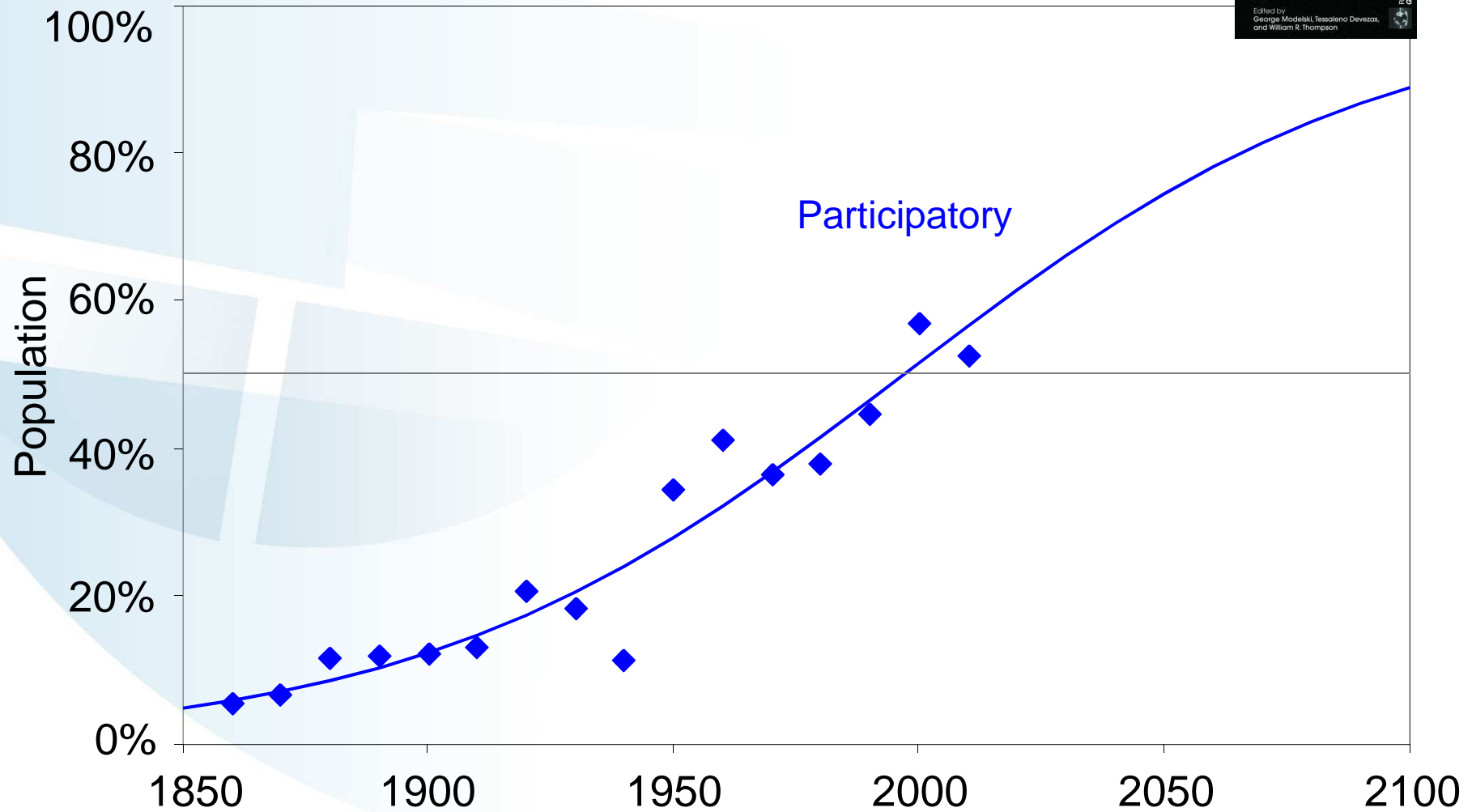
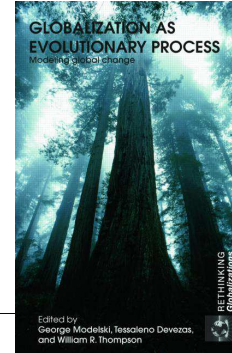
Precautionary principle - ozone layer, climate change

Global Educational Attainment



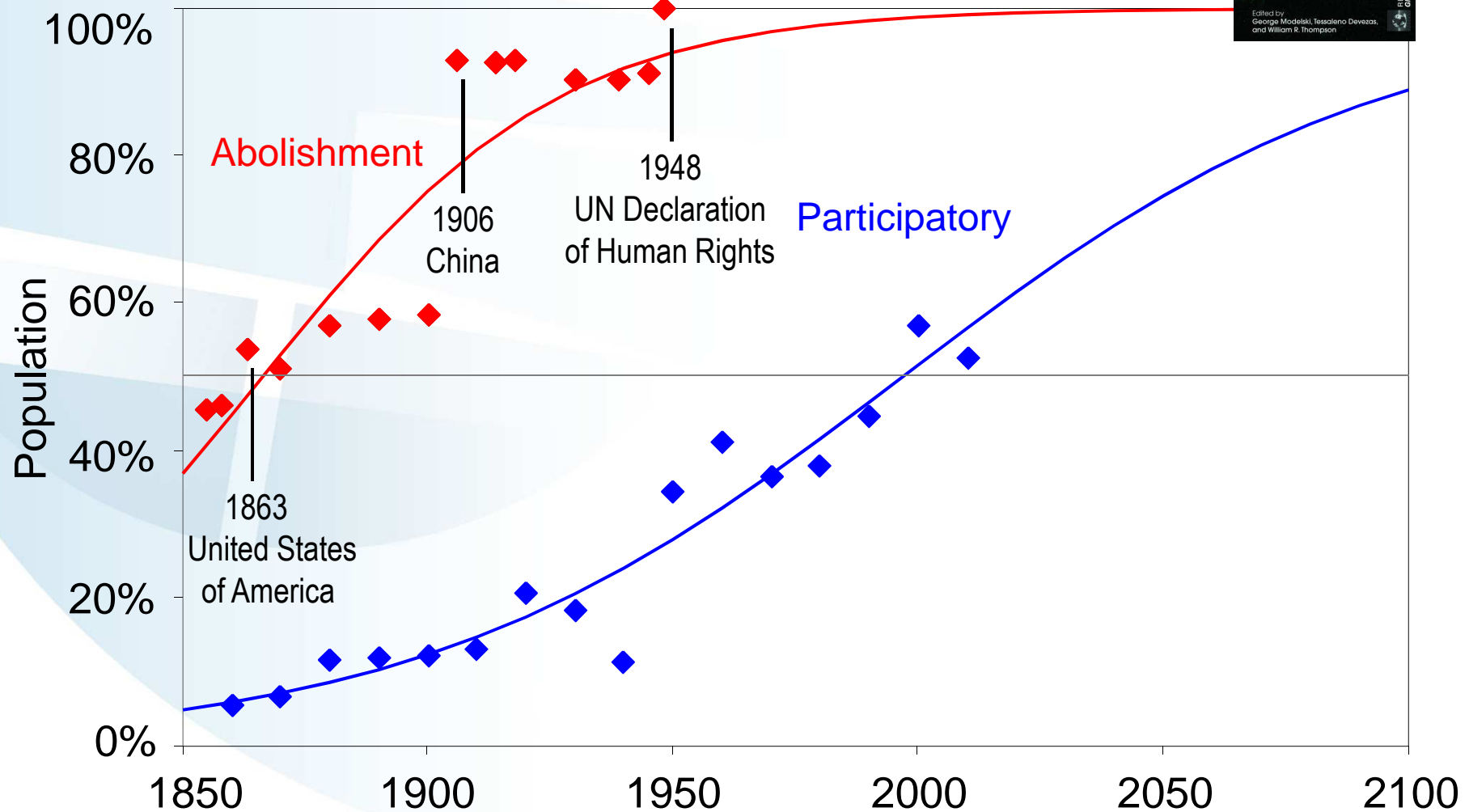
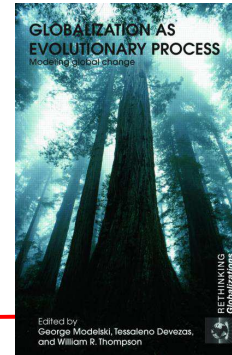
Source: Lutz et al., 2007

Participatory Governance



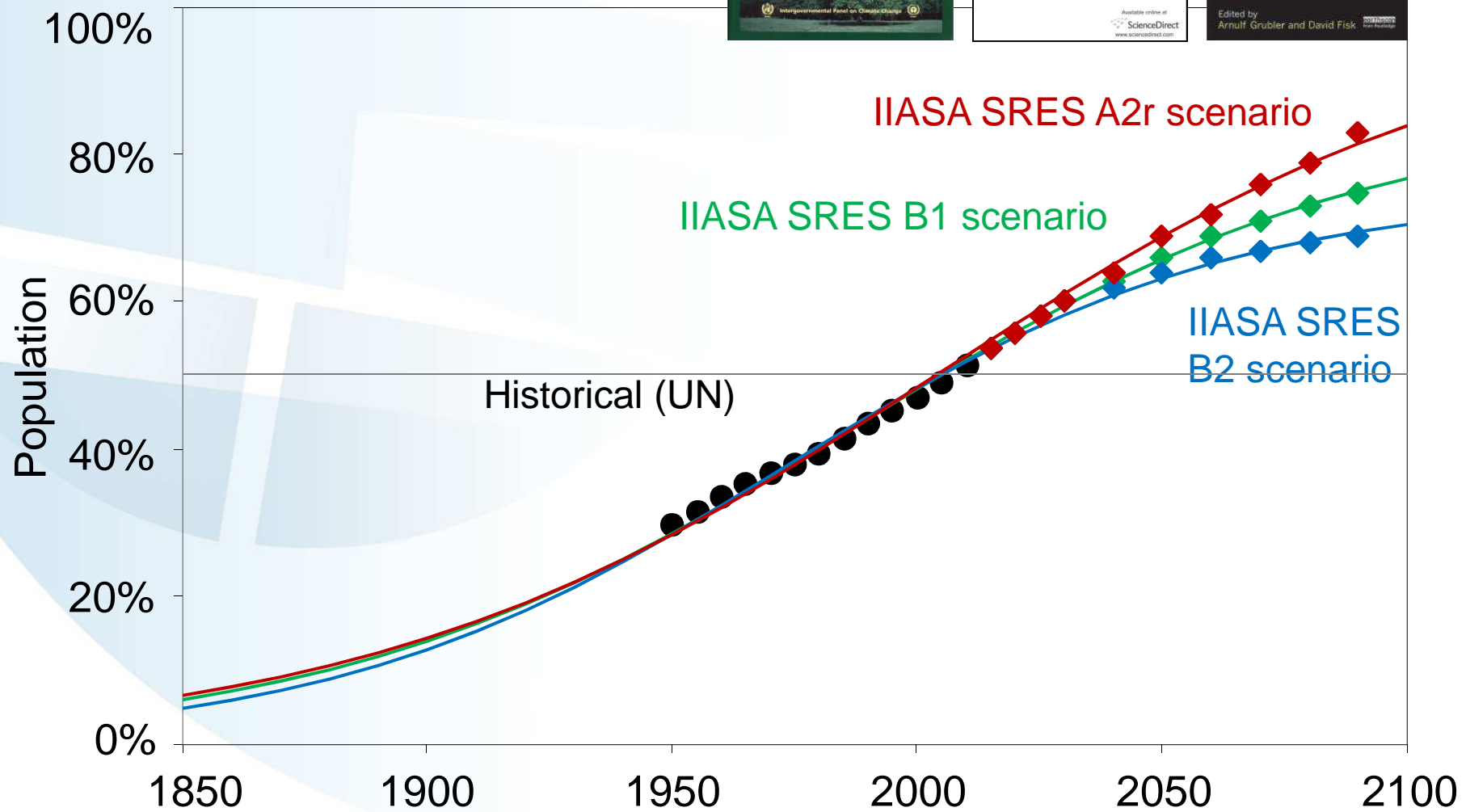
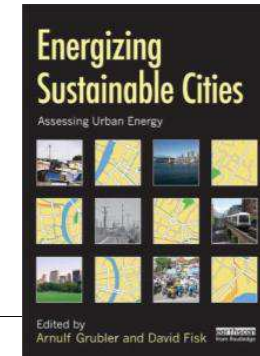
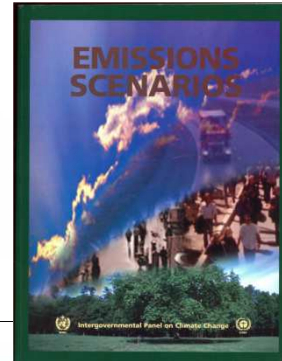
Source: Modelski & Perry, 2008; 2010

Participatory Governance Slavery Abolishment



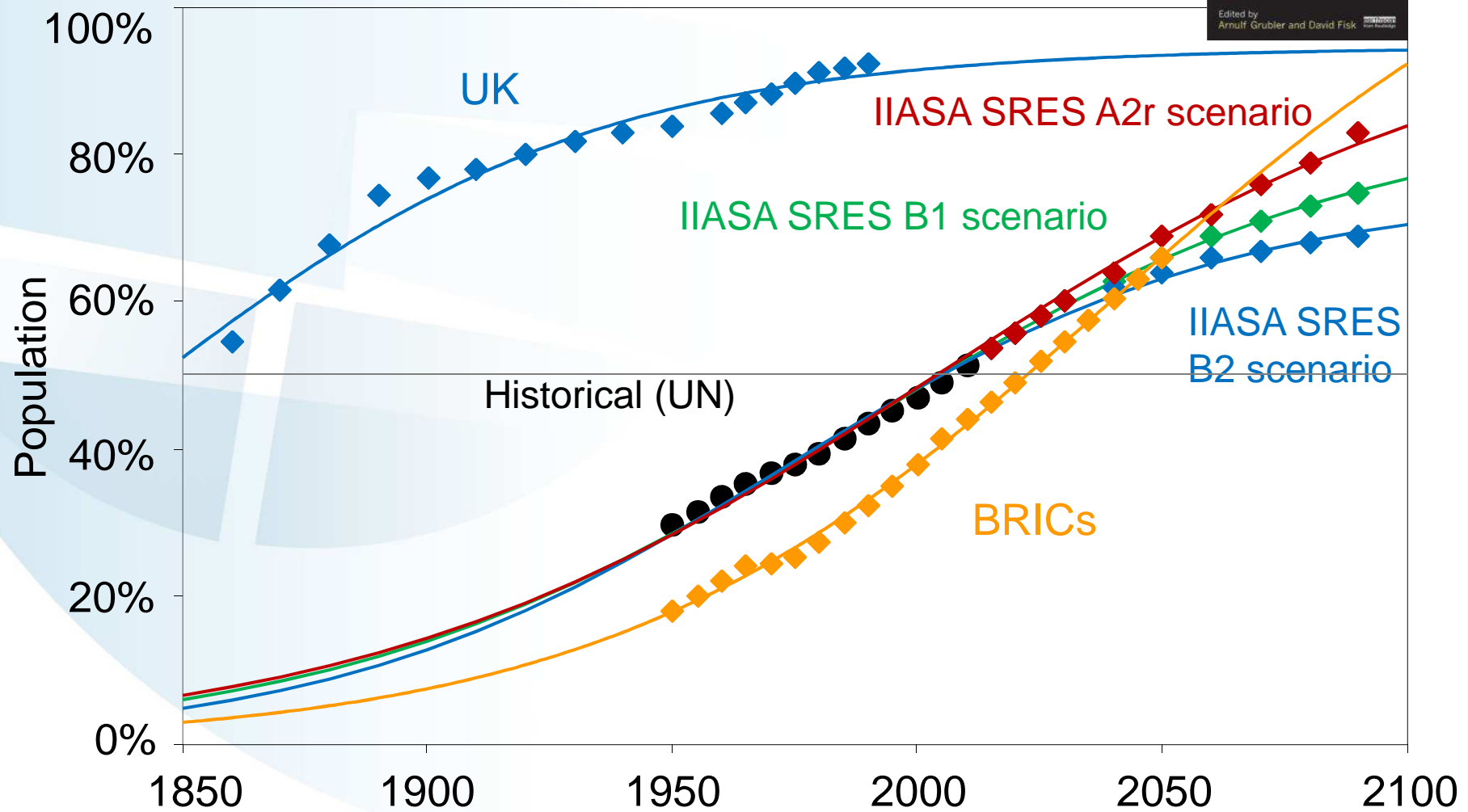
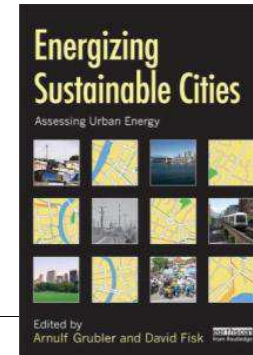
Source: Nakicenovic & Rogner, 2012; Modelski & Perry, 2002; 2010

Urbanization World



Source: Nakicenovic et al., 2000; Riahi et al., 2007; Grubler et al. 2012

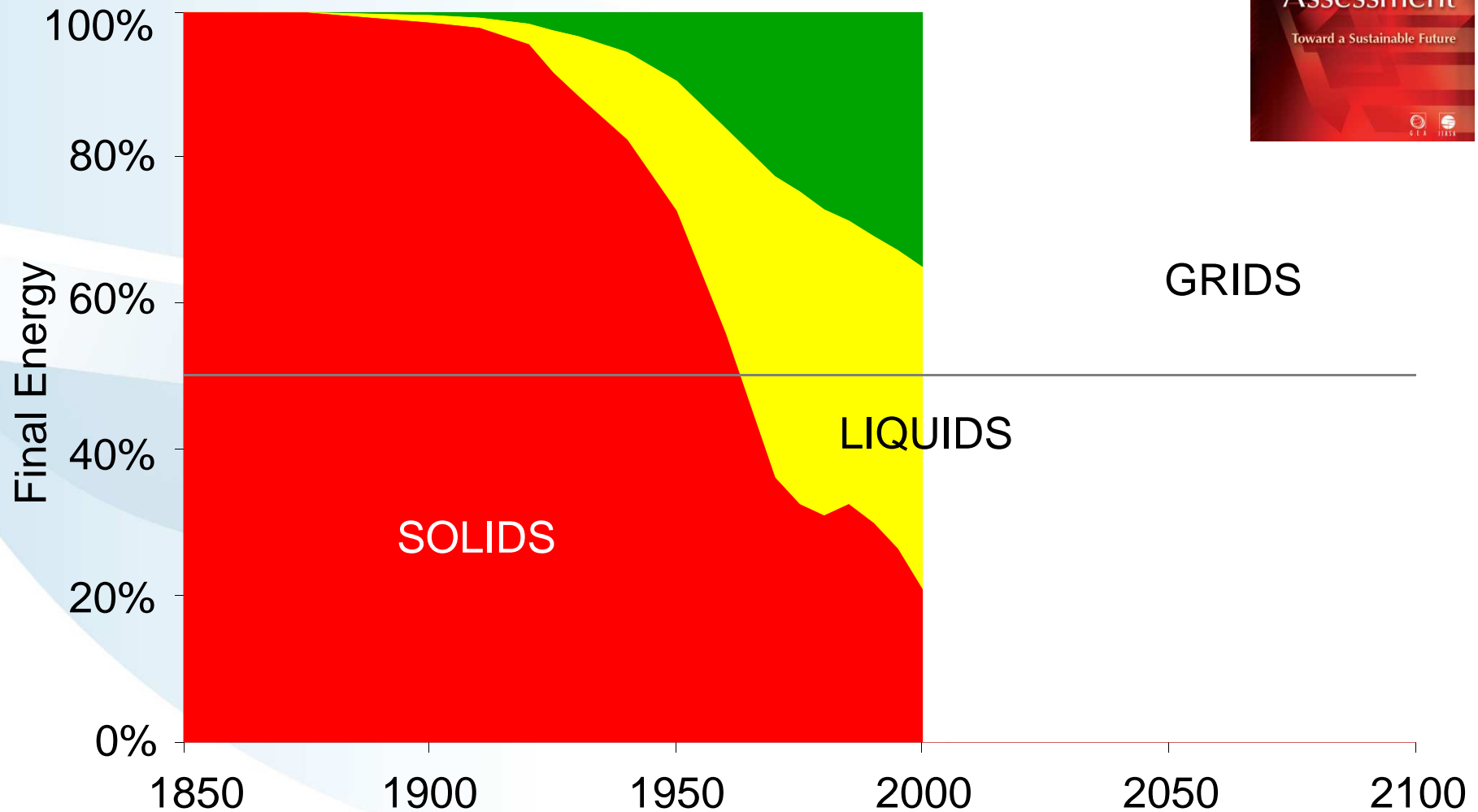
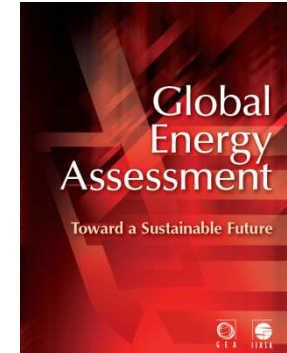
Urbanization World, UK, BRICs



Source: Nakicenovic et al., 2000; Riahi et al., 2007; Grubler et al. 2012

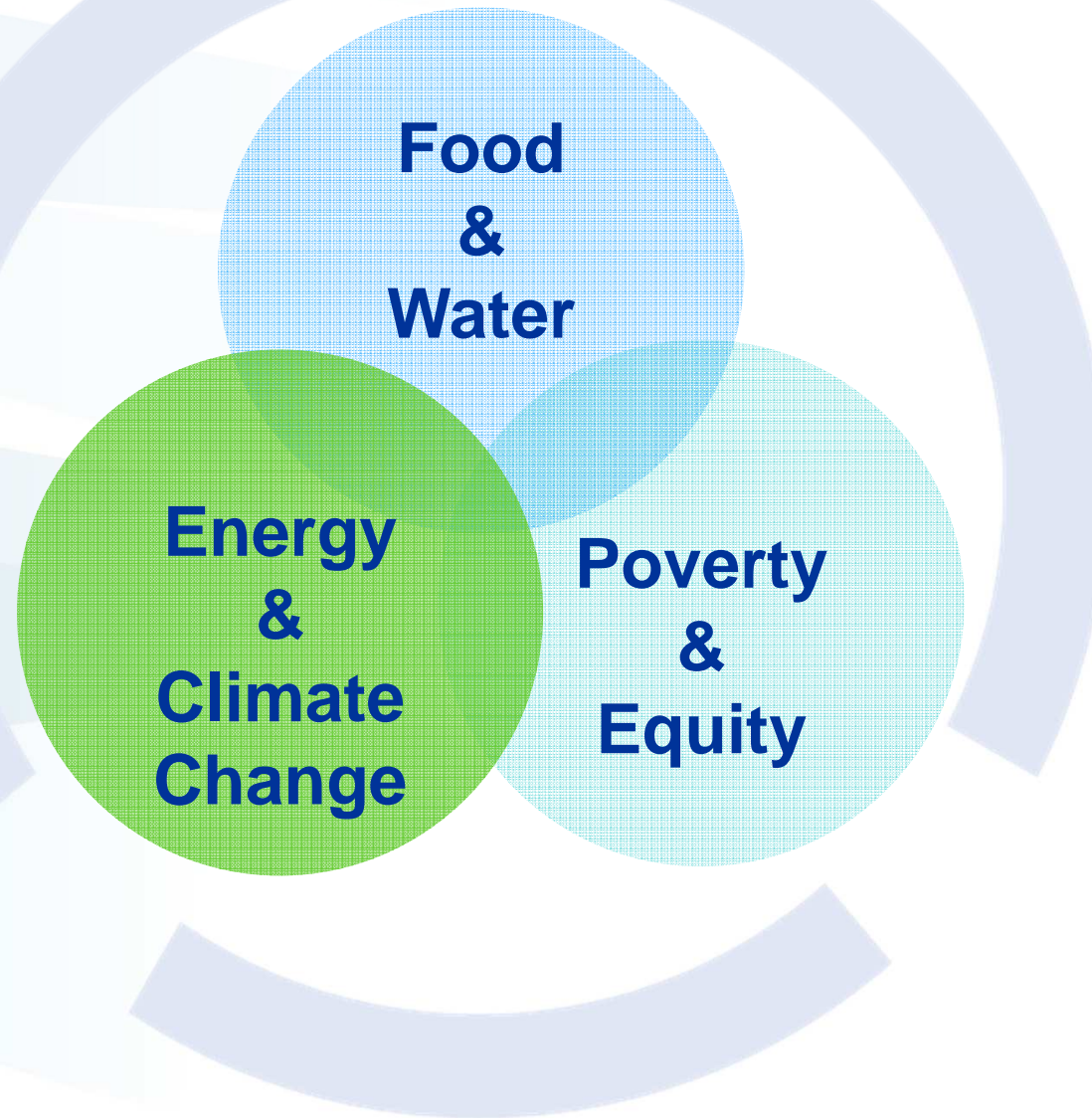
Transformation of Energy Systems

One of 41 GEA Pathways

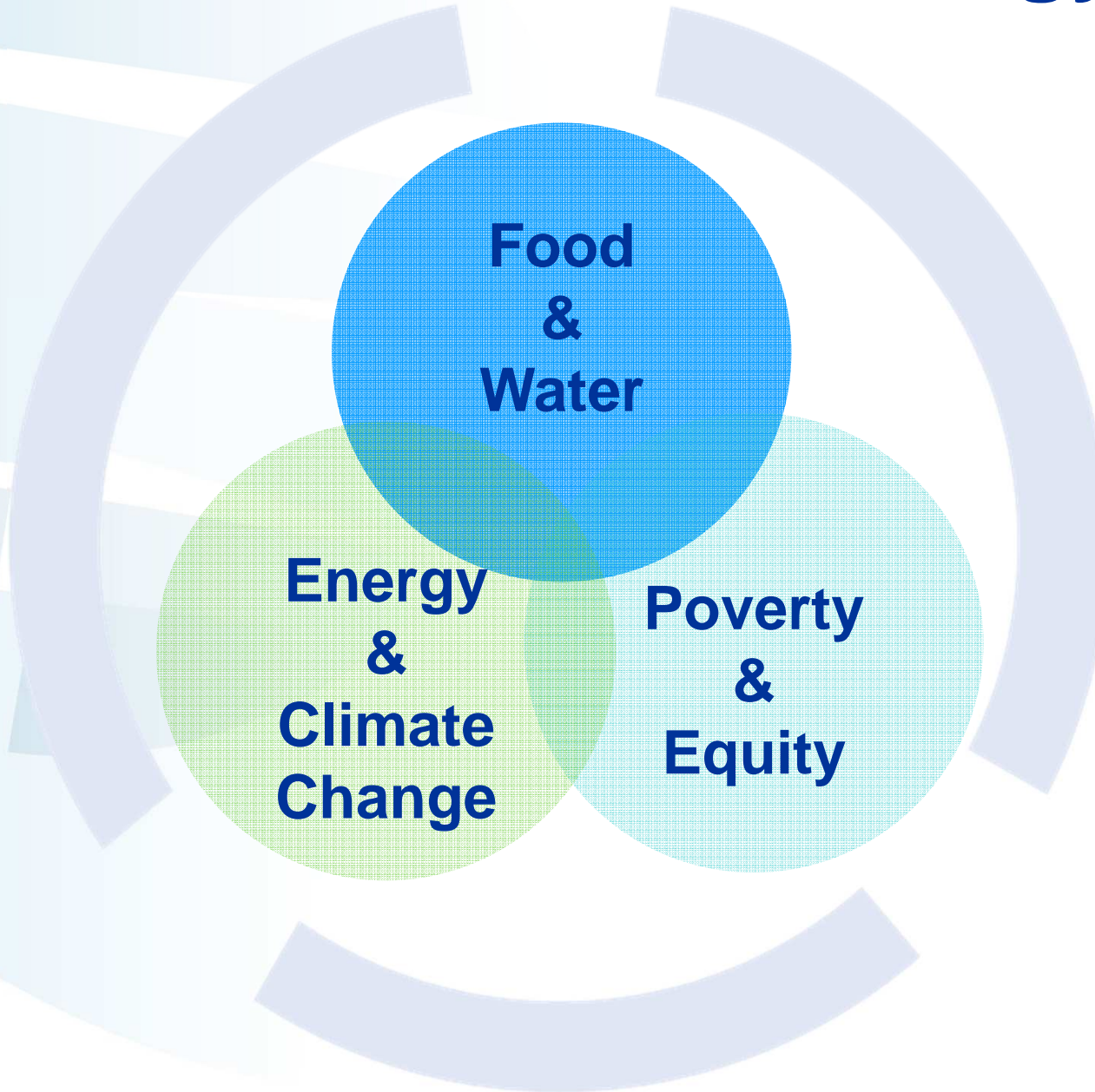


Source: Global Energy Assessment, 2012

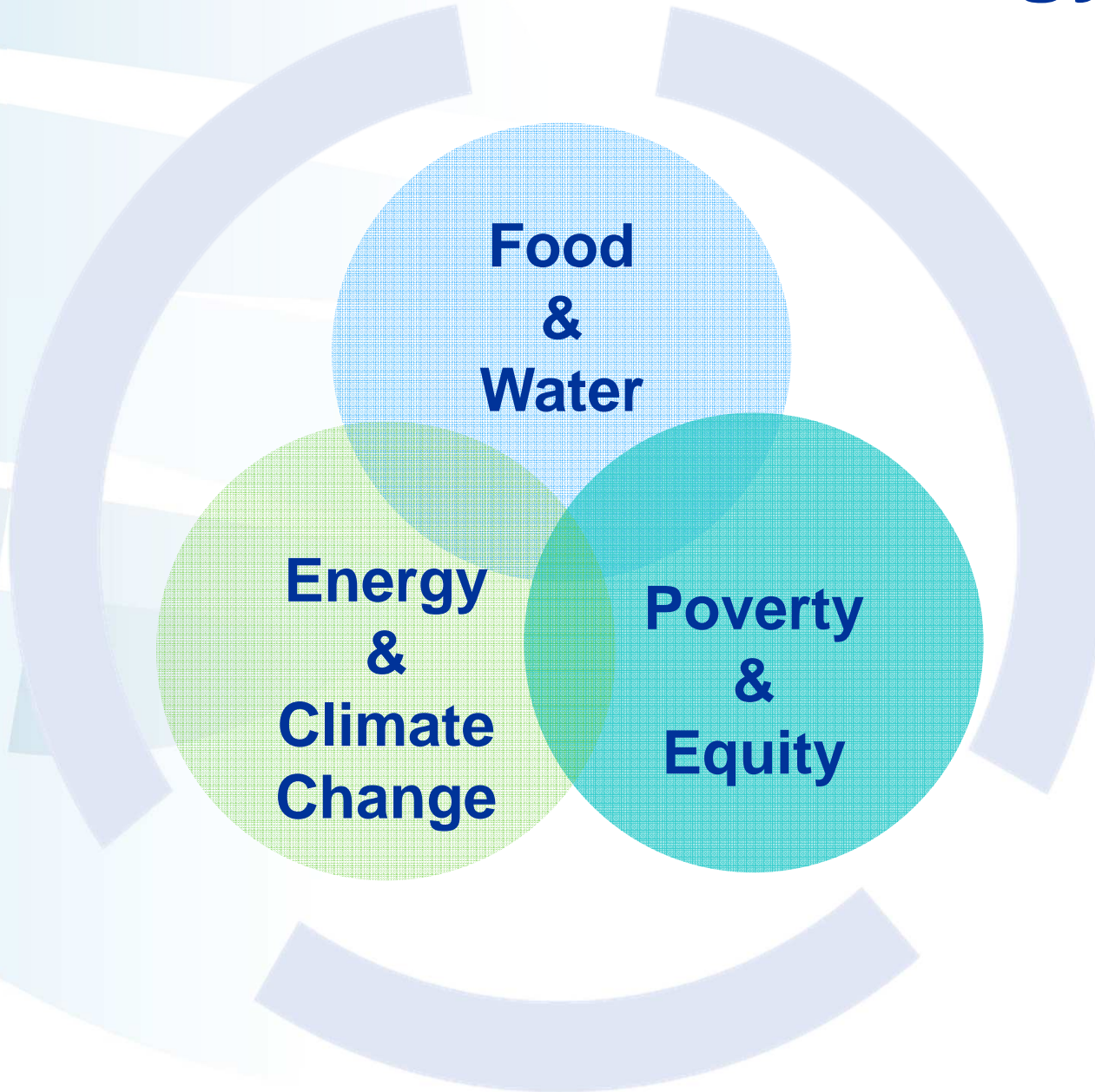
IIASA Research Strategy



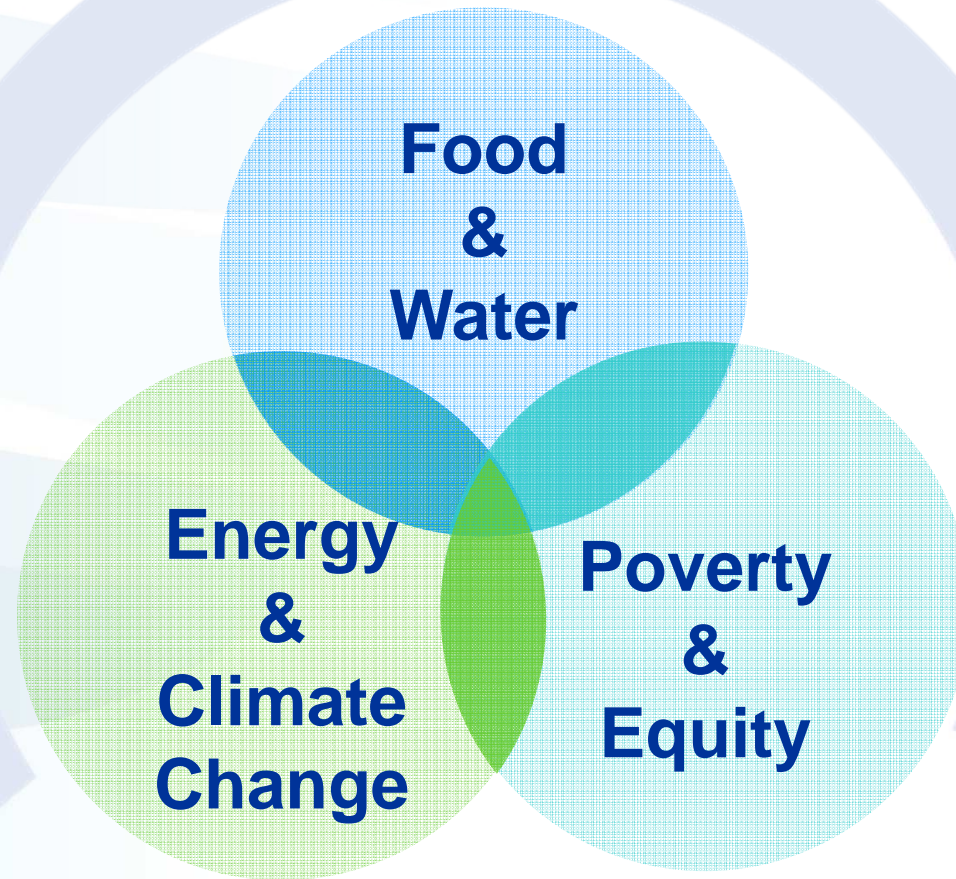
IIASA Research Strategy



IIASA Research Strategy



IIASA Research Strategy



IIASA Research Strategy

Drivers of Global Transformations

Advanced Systems Analysis

Food
&
Water

Energy
&
Climate
Change

Poverty
&
Equity

Policy and Governance

Vision of a Sailing Monorail Proposed by Henry R. Palmer in 1824

