International Institute for Applied Systems Analysis
IIASA www.iiasa.ac.at

science for global insight

Sustainable Development Pathways

Foundations and Frontiers

Narasimha D. Rao

Infrastructure and Living Standards

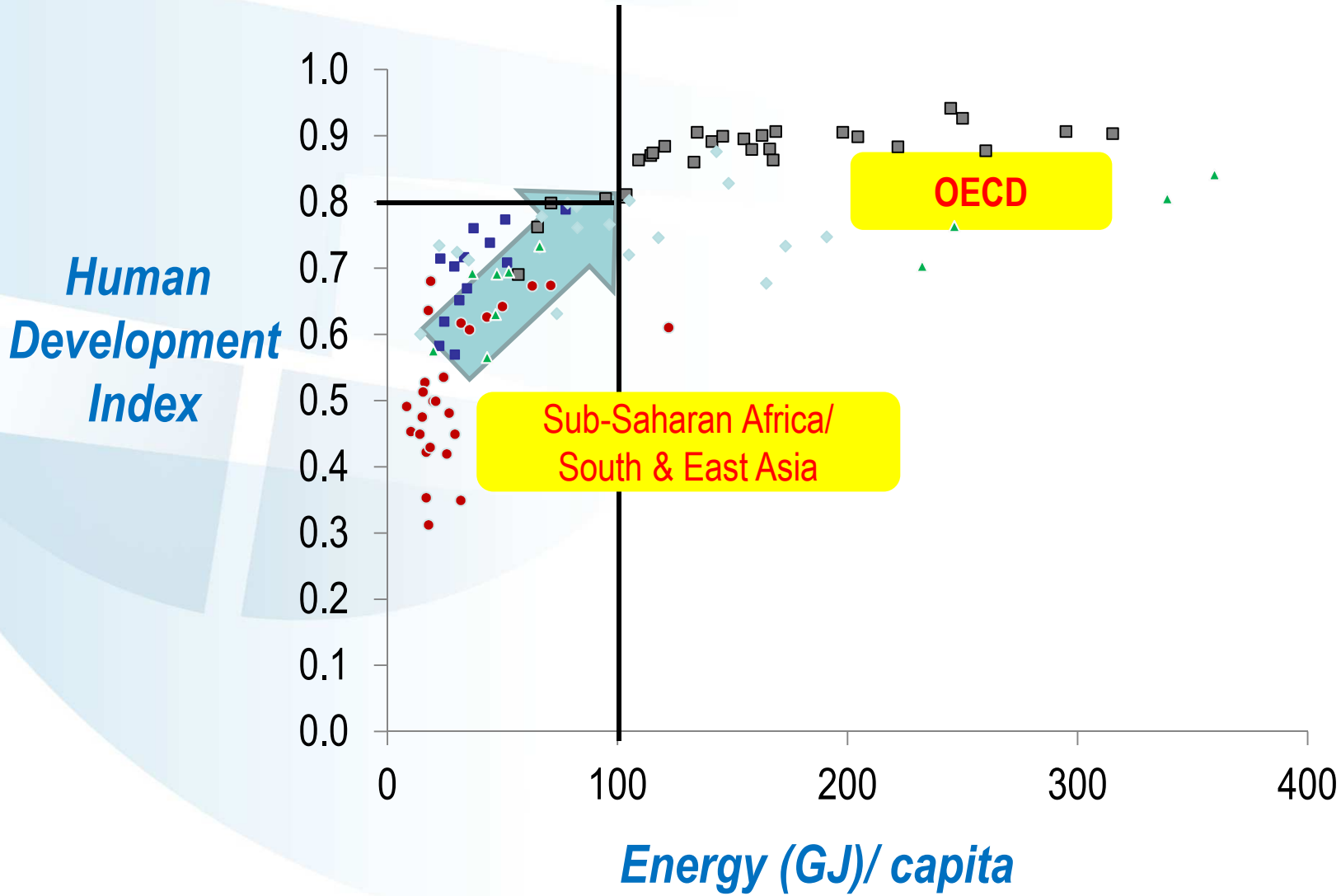
3 billion people burn solid fuels in homes…

2.2 million deaths in 2005

1.4 billion people lack electricity access…

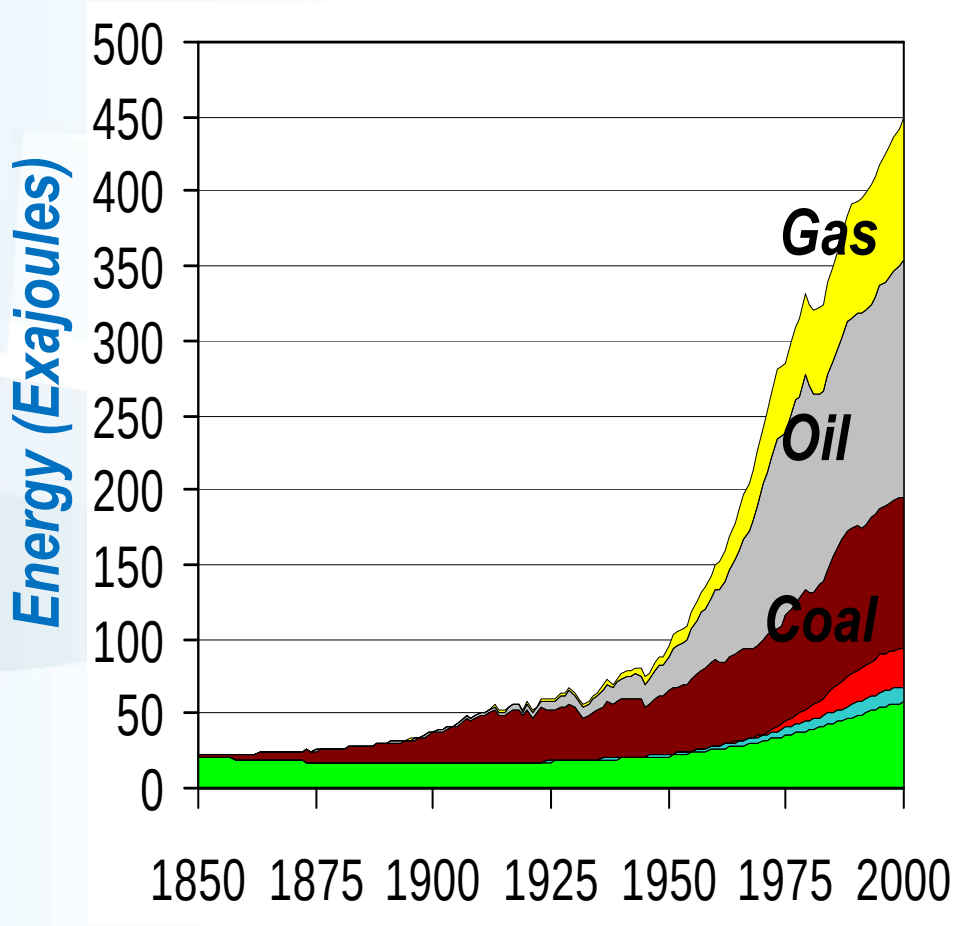
1.7 billion people face water shortages due to a lack of delivery infrastructure..

Energy (Services) Growth is Imperative



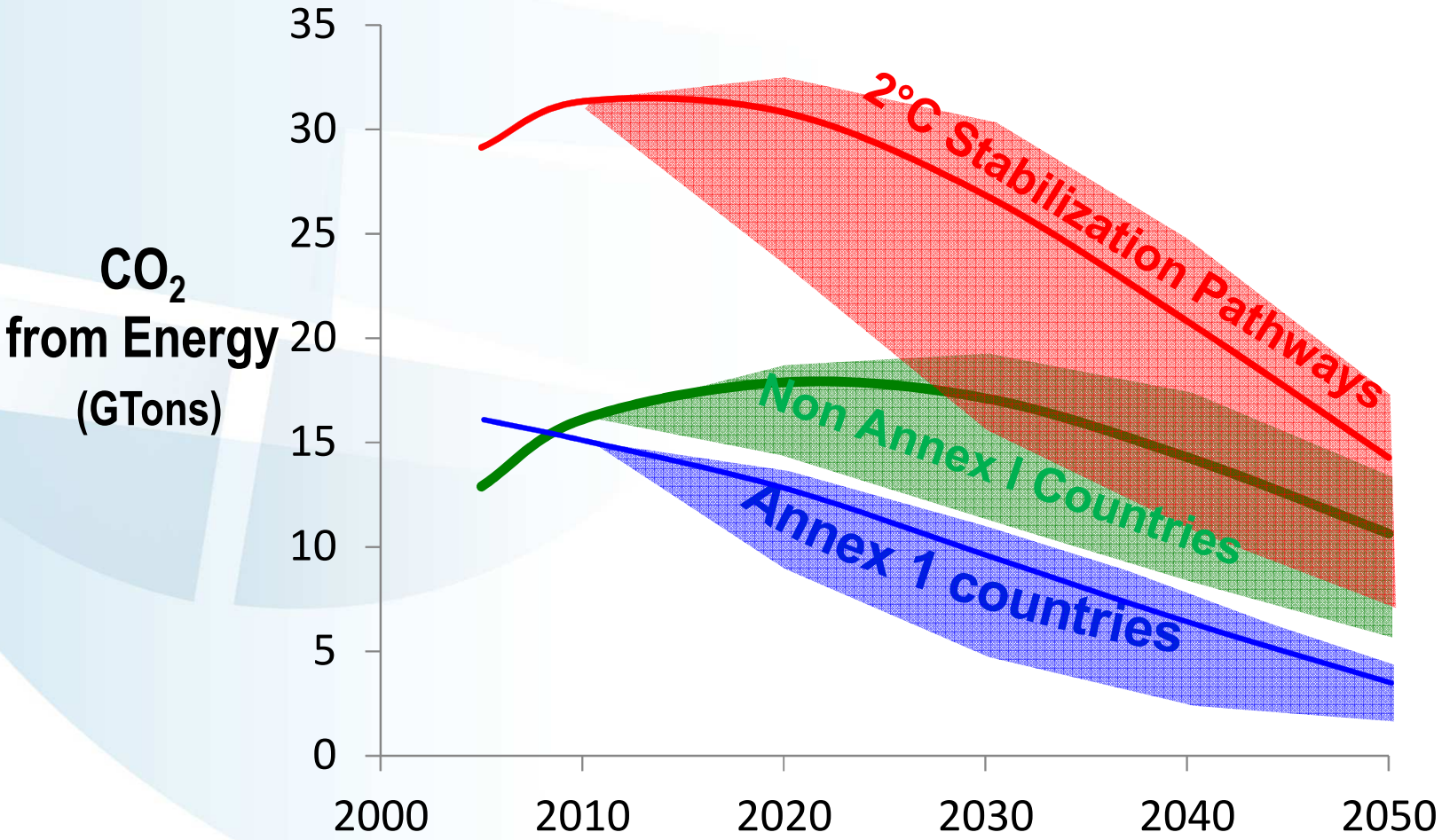
Data: World Development Indicators, UNDP

Historical Growth was Fossil-Driven

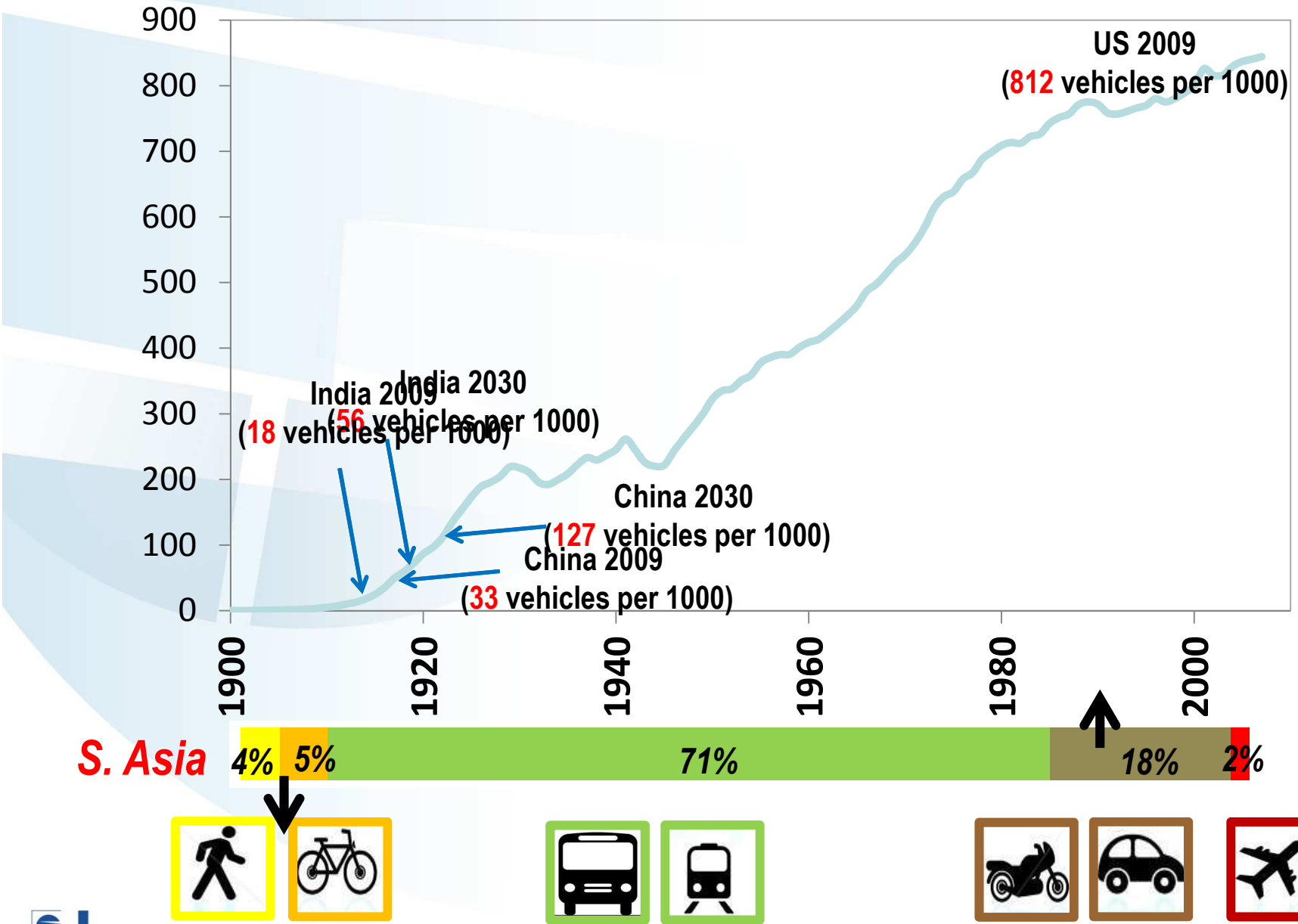


Schneider, 2010

Developing Countries Don't Have That Option !

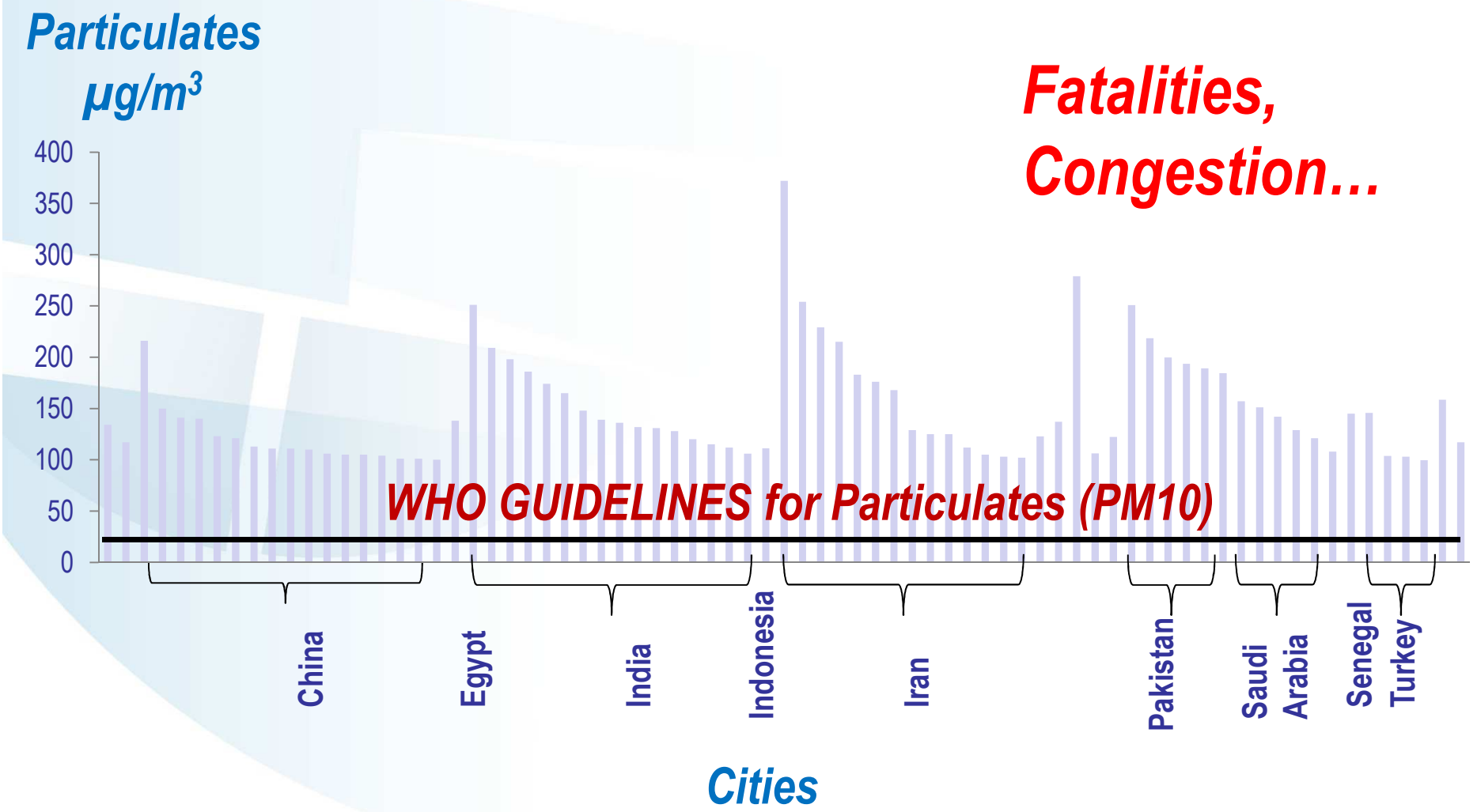


Vehicle Growth is Explosive in Asia



Rao et al, 2009; International Energy Agency

Urban Pollution Severe TODAY



Data: World Health Organization 2012

How do we Leapfrog to Sustainable Growth?

Technology R & D

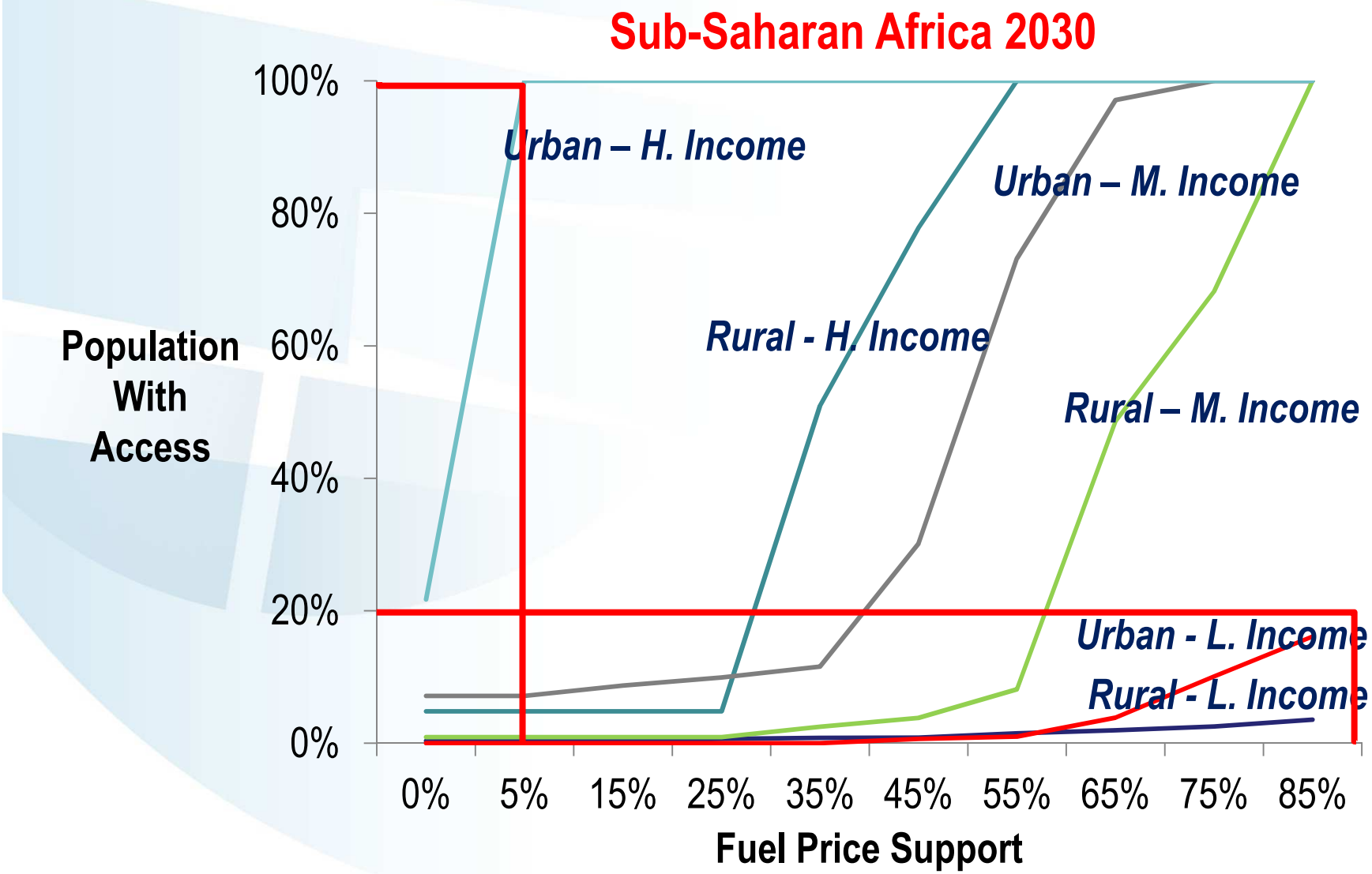
& Deployment

Lifestyles

International cooperation

Context-driven

Affordability of Modern Household Fuels



How do we Leapfrog to Sustainable Growth?

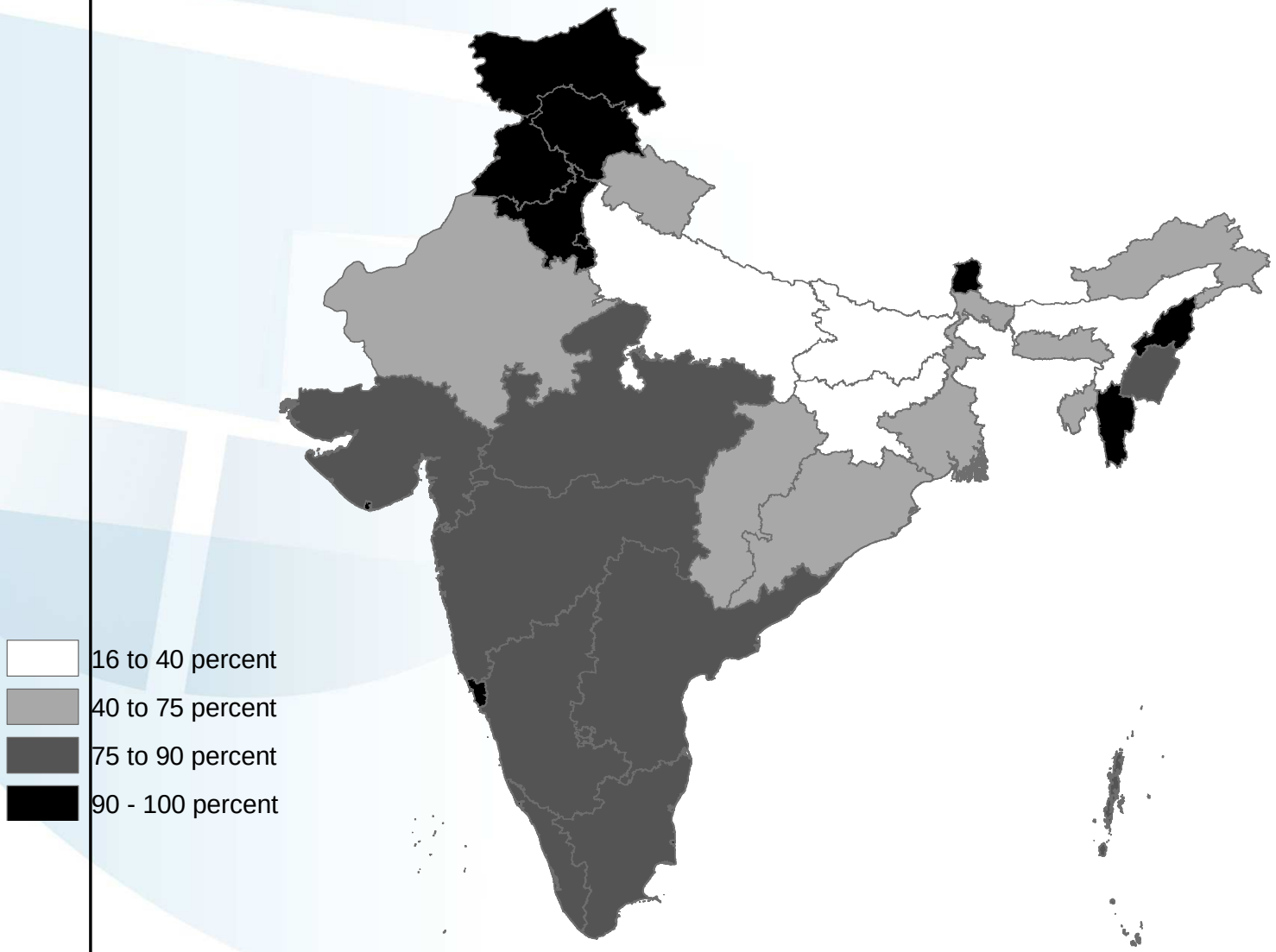
Technology R & D

& Deployment

Context-driven

Well-governed

Disparity in Electricity Access is known



Electricity *reliability* is neglected

- **Rural Outages (Hrs/day)**

Fewer businesses, less income…

Rao 2012 forthcoming, IIASA

How do we Leapfrog to Sustainable Growth?

Technology R & D

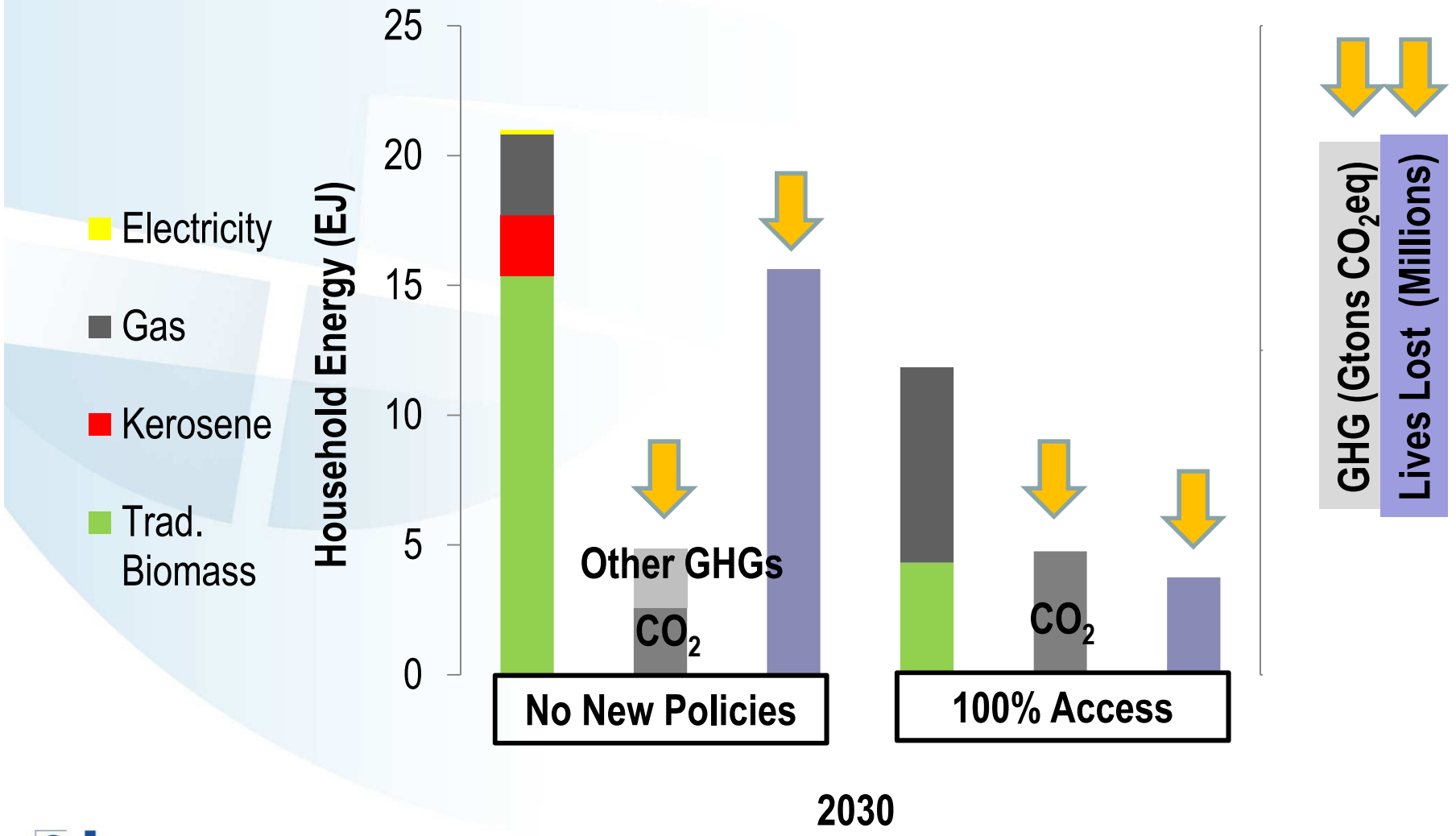
& Deployment

Context-driven

Well-governed

Support Policy Objectives

Global Transition to Modern Cook Stoves



Riahi et al, 2012, IIASA

Unless we change direction, we are likely to end up where we are going.

Anonymous

THANK YOU