

The Nuclear Renaissance in a Global Context

***John Ritch
Director General***

*American
Nuclear Society*

*2007
Annual Meeting*

Plenary Session

*"It's All About People:
The Future of Nuclear"*

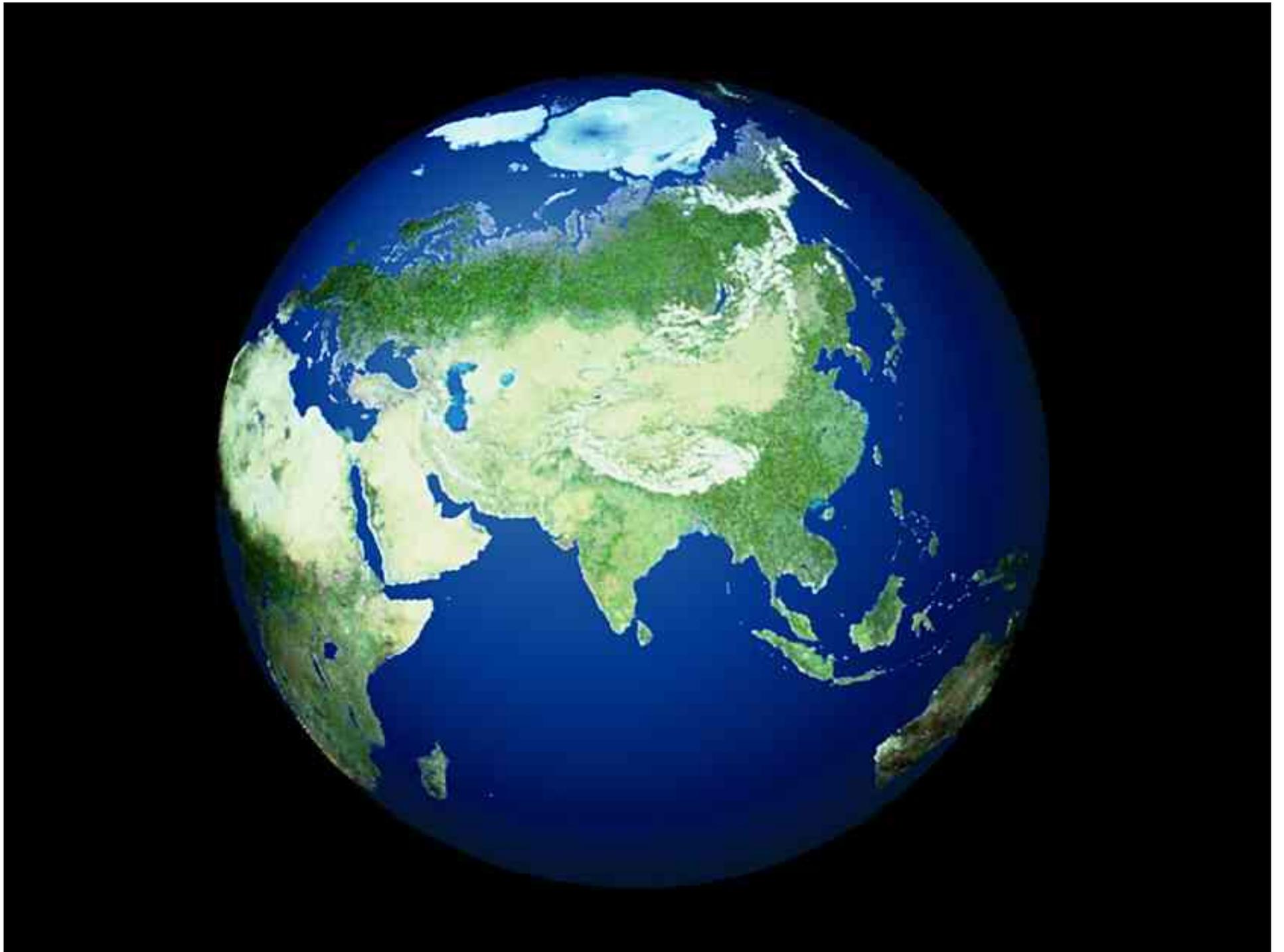
*Boston
25 June 2007*









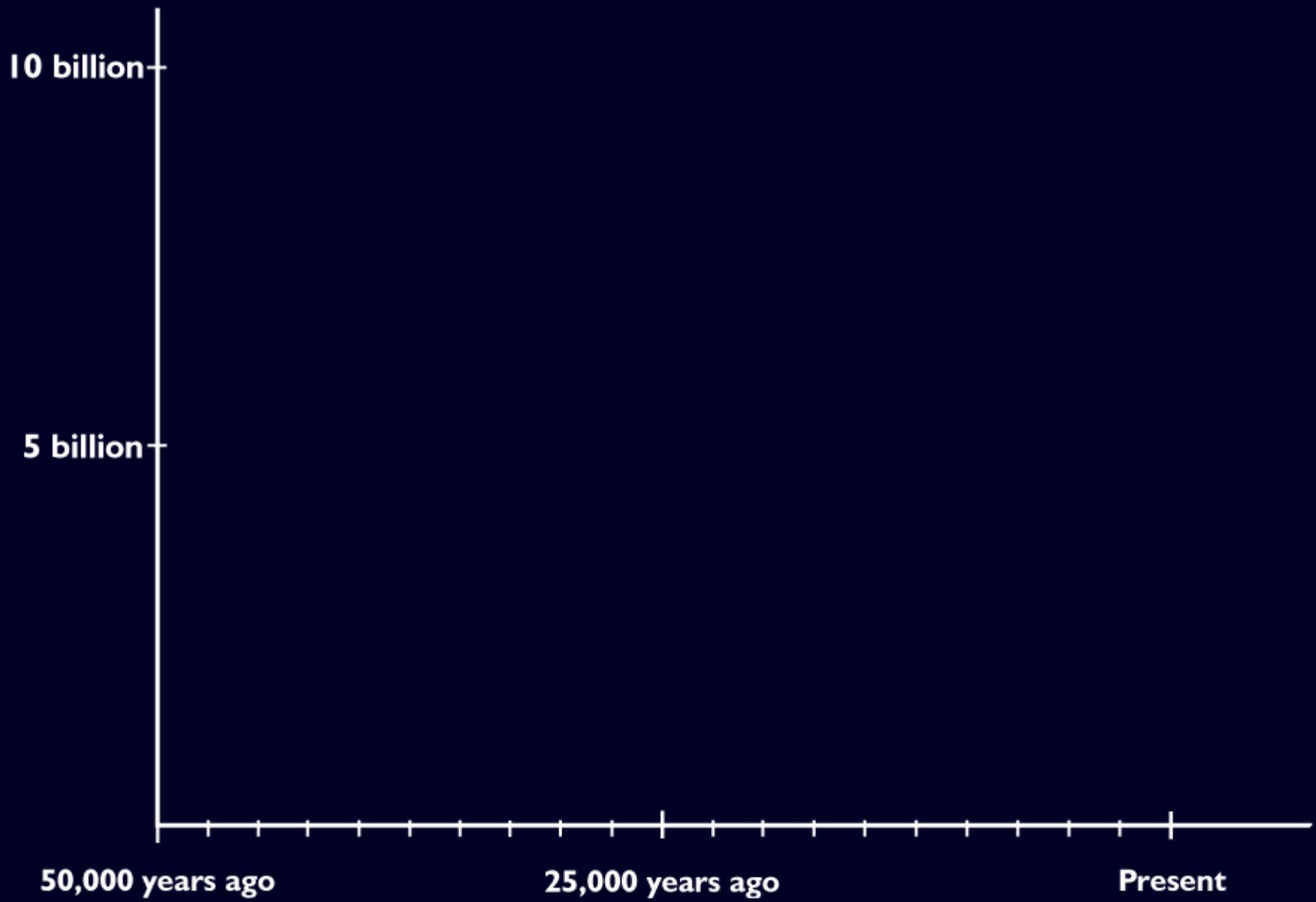






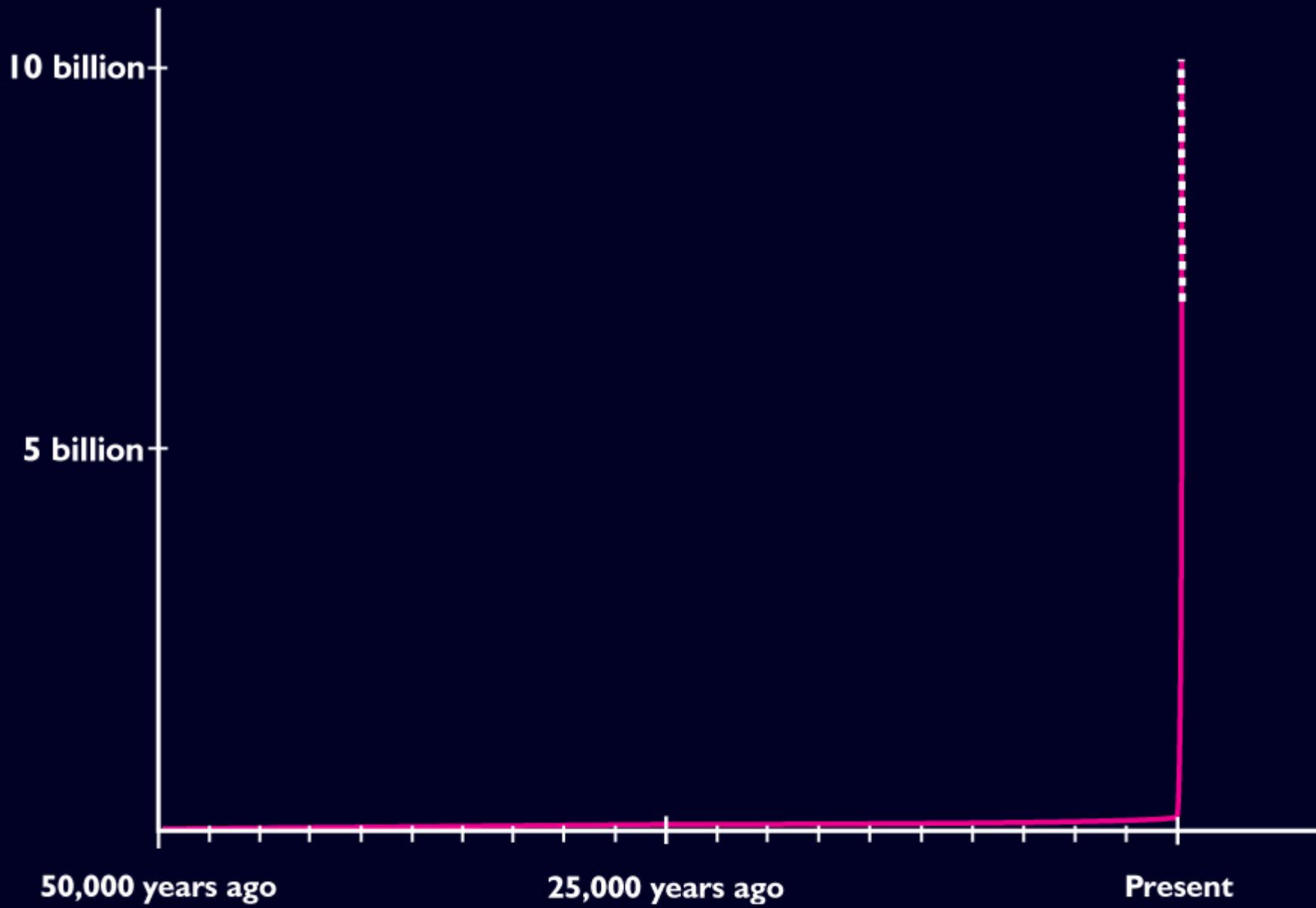
Earth and Humanity

- The Universe was created 12 -15 billion years ago.
- Life on Earth began nearly 4 billion years ago.
- Hominids appeared 7 million years ago.
- Homo erectus mastered fire 400,000 years ago.
- Homo sapiens developed 50,000-100,000 years ago.
- All told, some 60-100 billion people have lived on Earth.
- For most of human history, global population did not exceed 10 million.



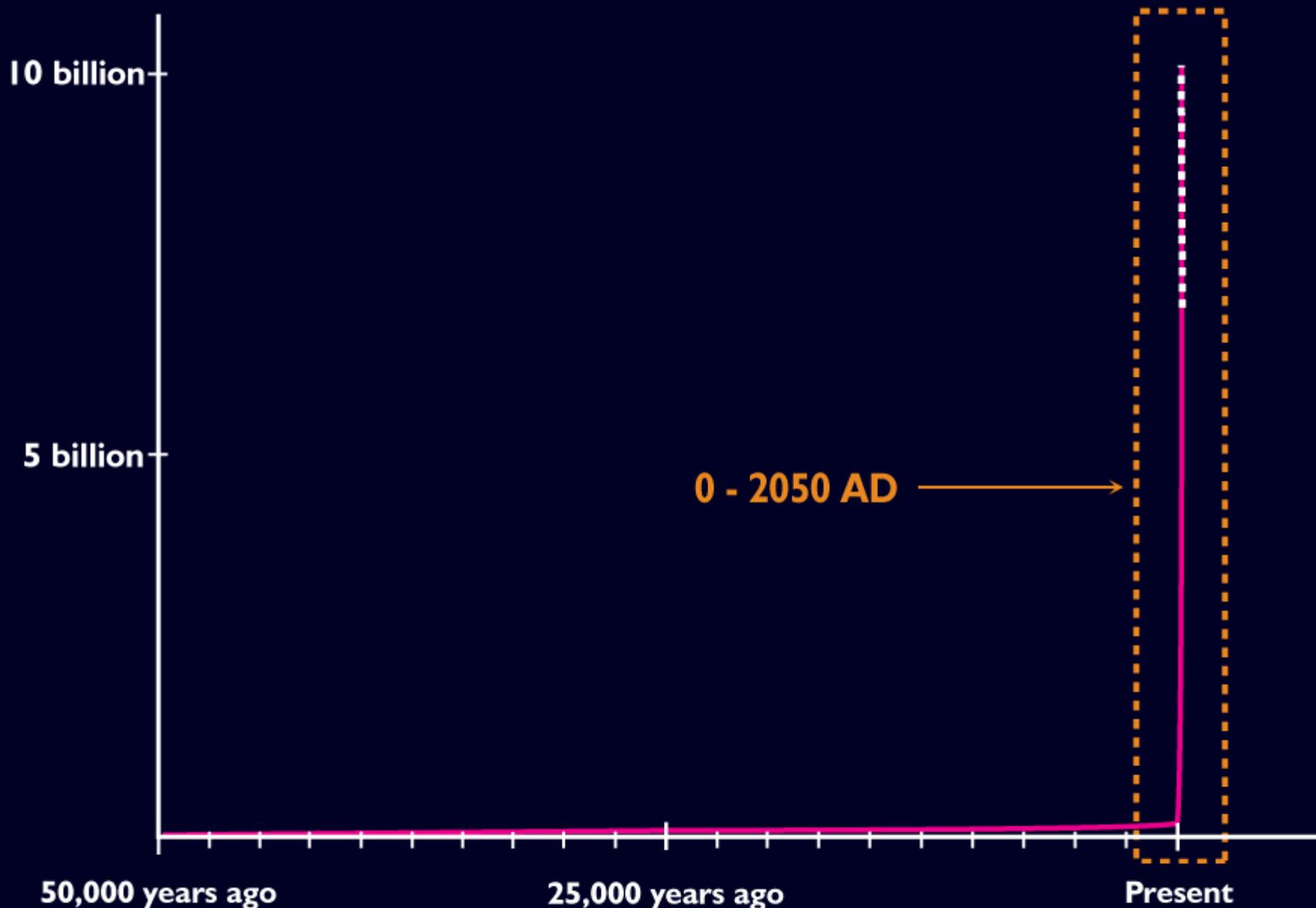
Global Population through 50 Millennia





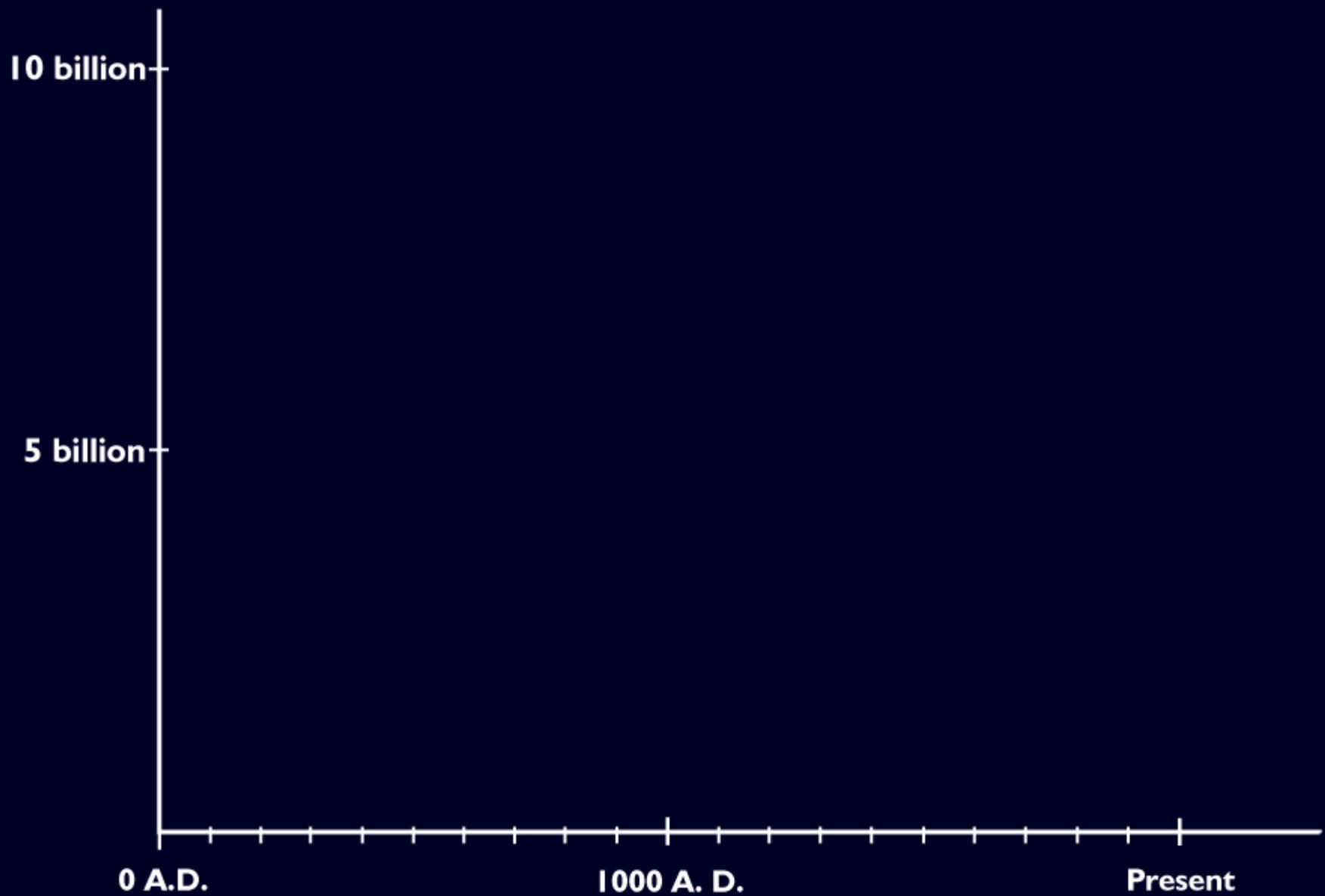
Global Population through 50 Millennia





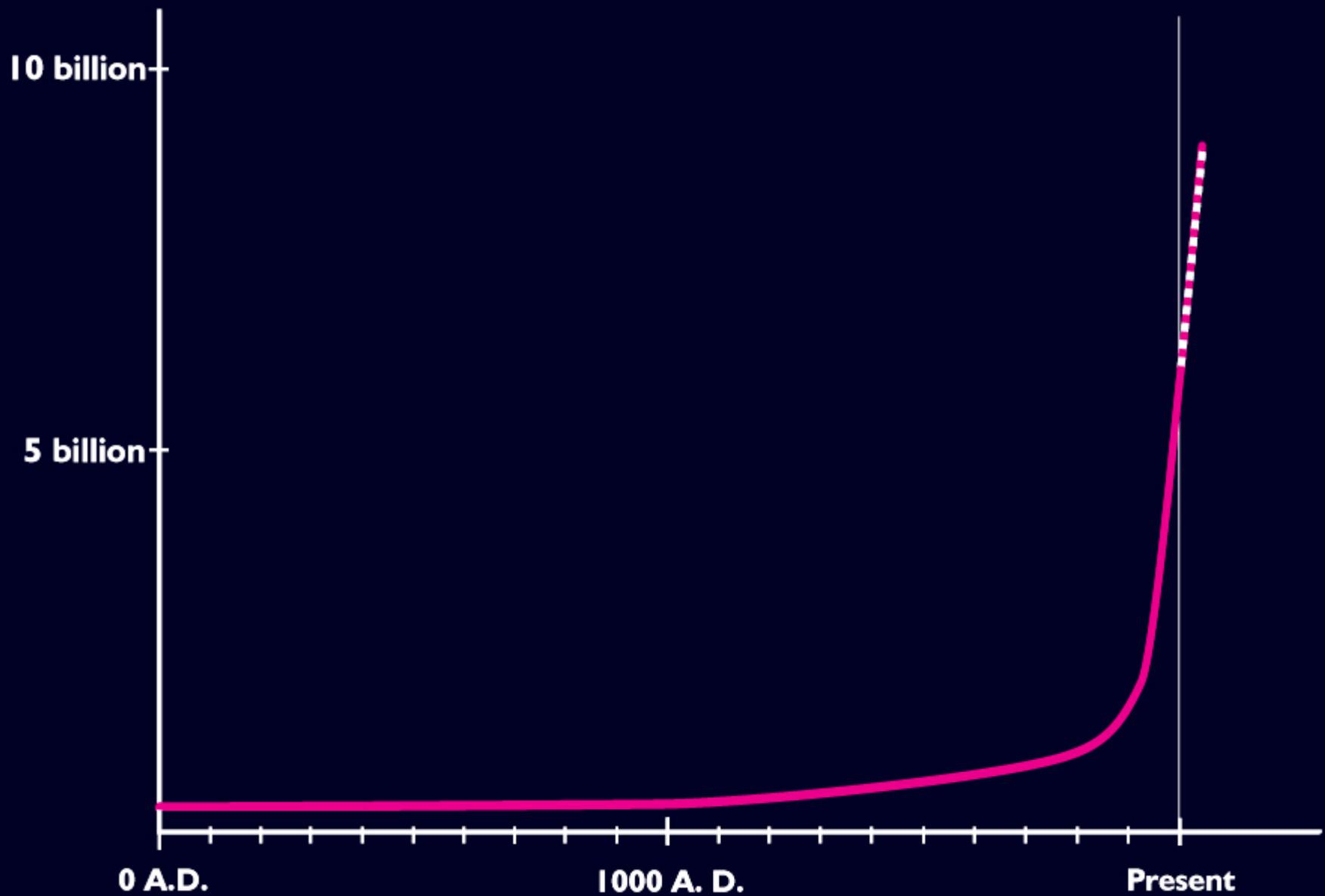
Global Population through 50 Millennia





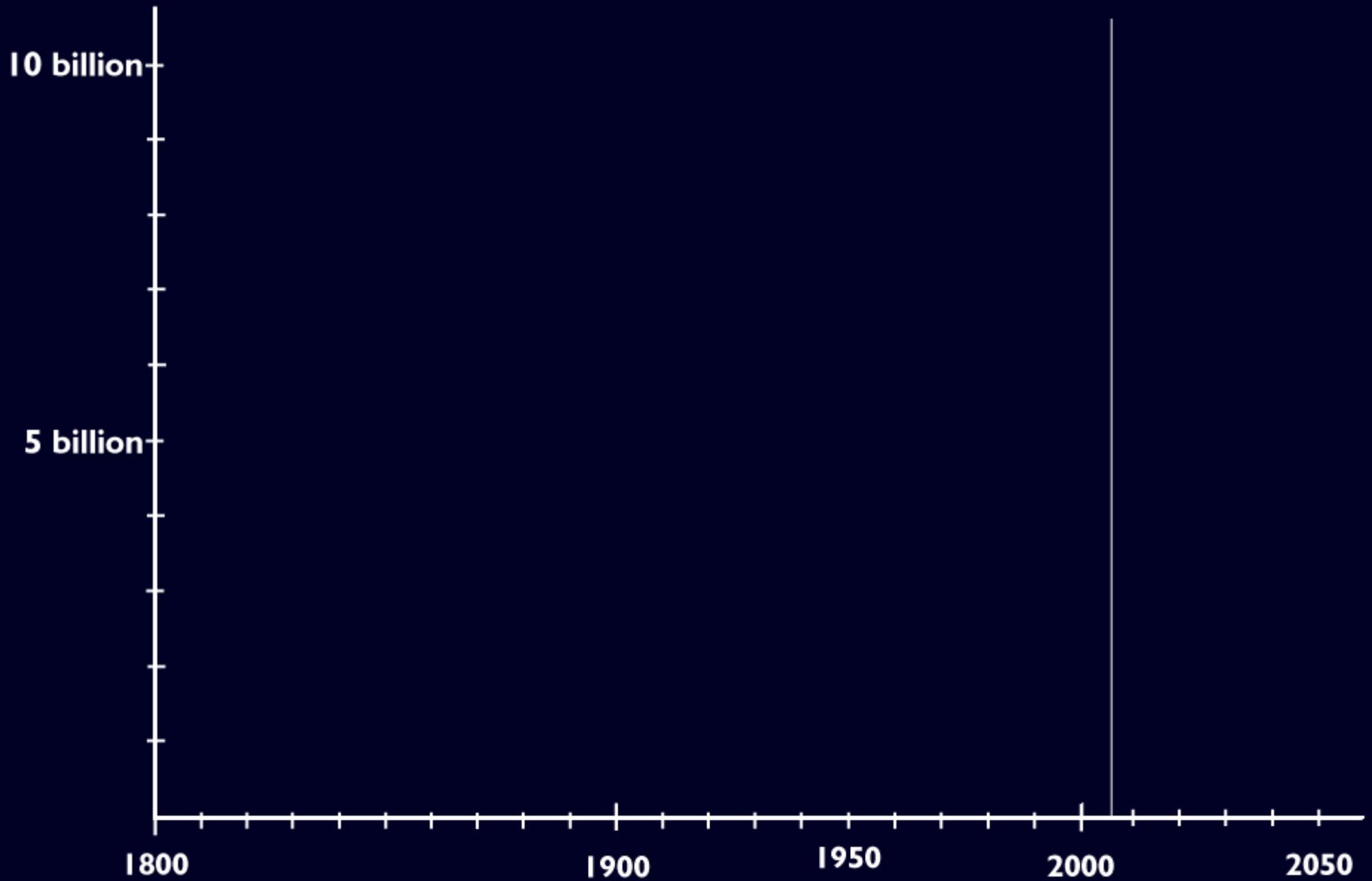
Global Population in the Last Two Millennia





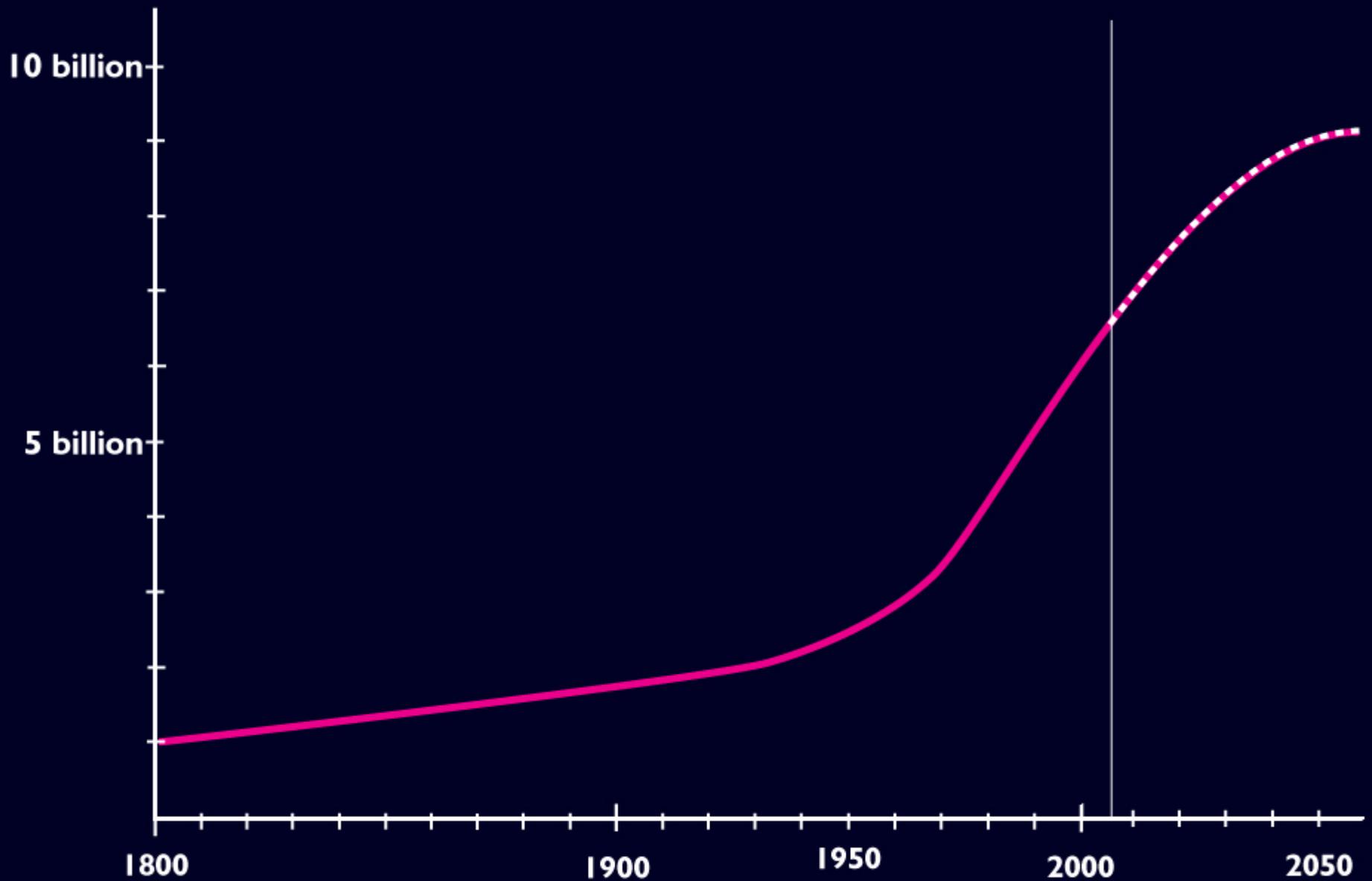
Global Population in the Last Two Millennia





Global Population in the Industrial Age





Global Population in the Industrial Age



2,000 years ago



10 million



1,000 years ago



300 million



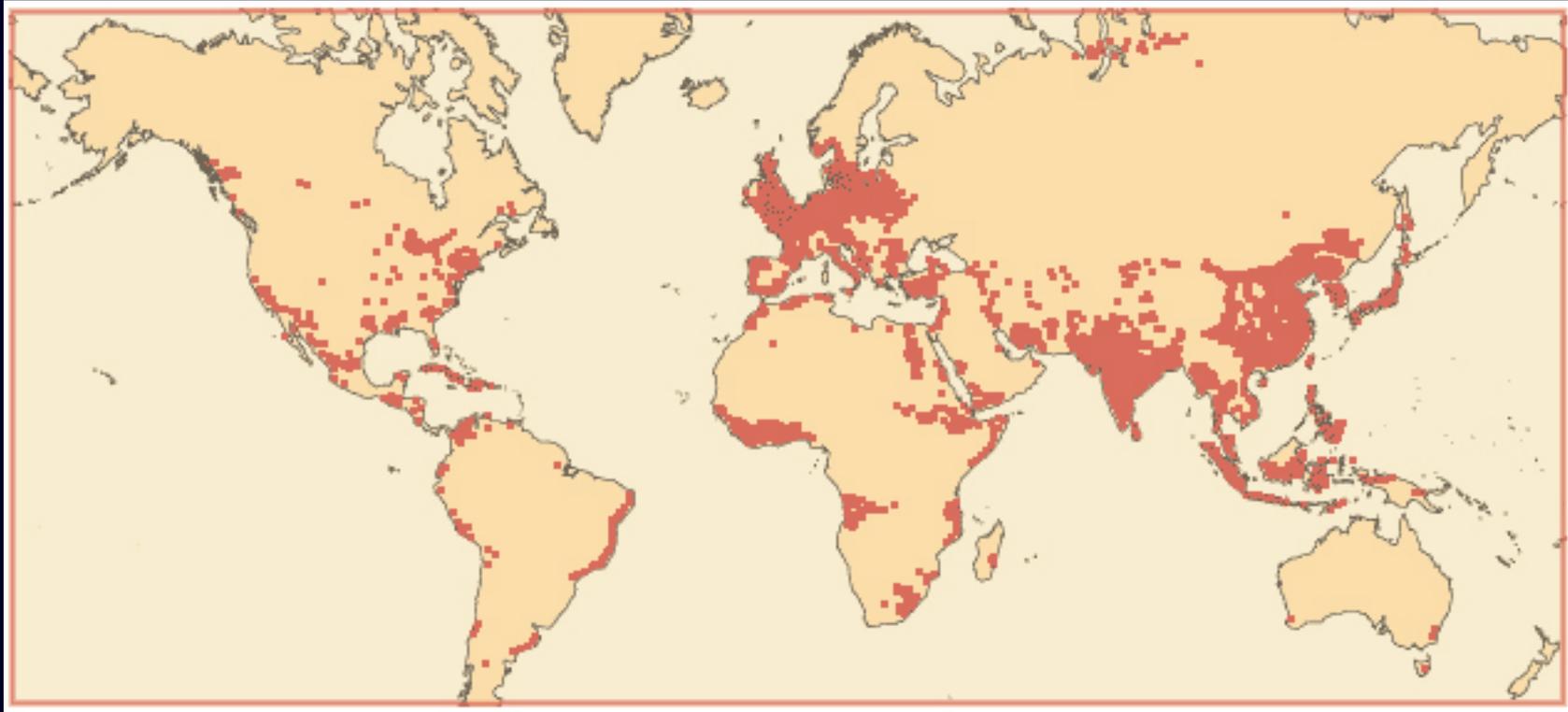
1800



1 billion



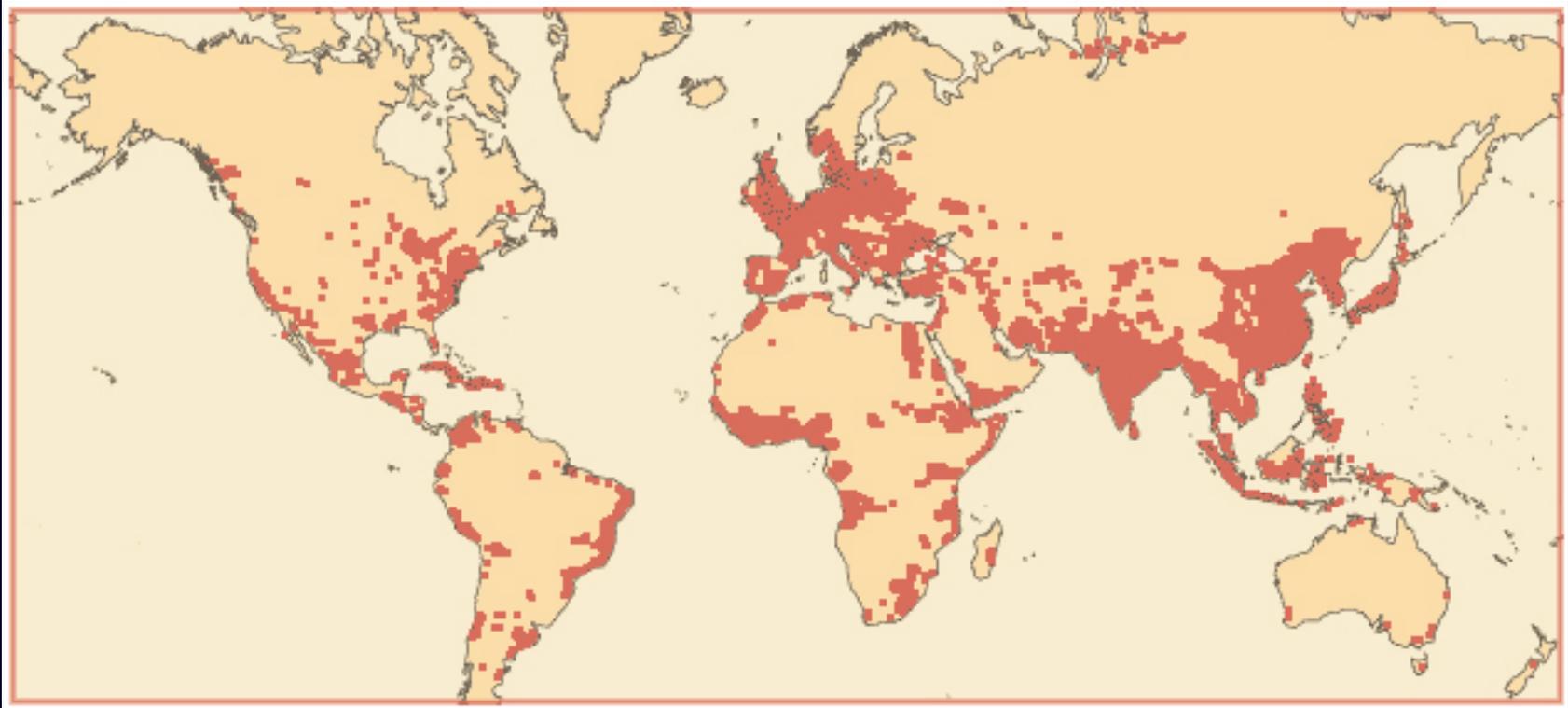
1927



2 billion



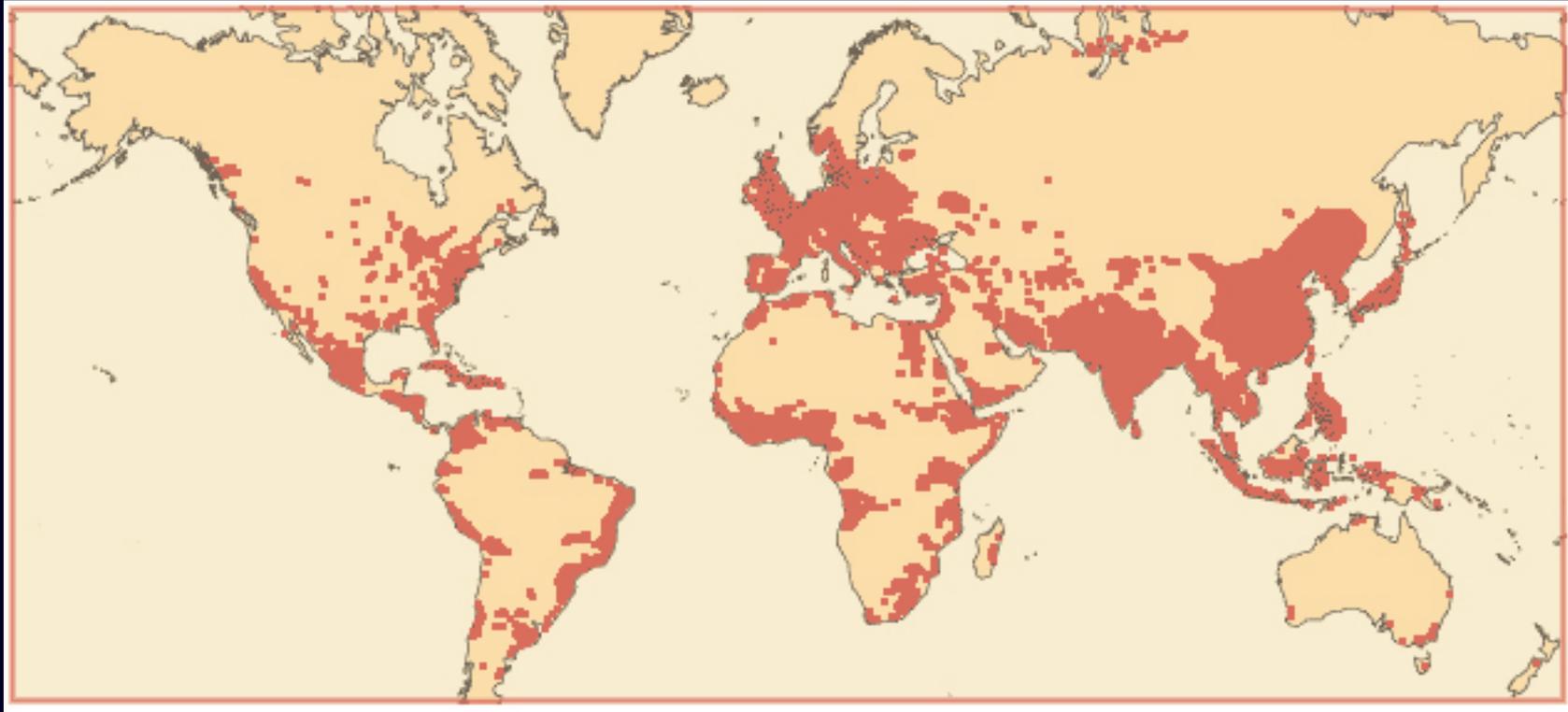
1960



3 billion



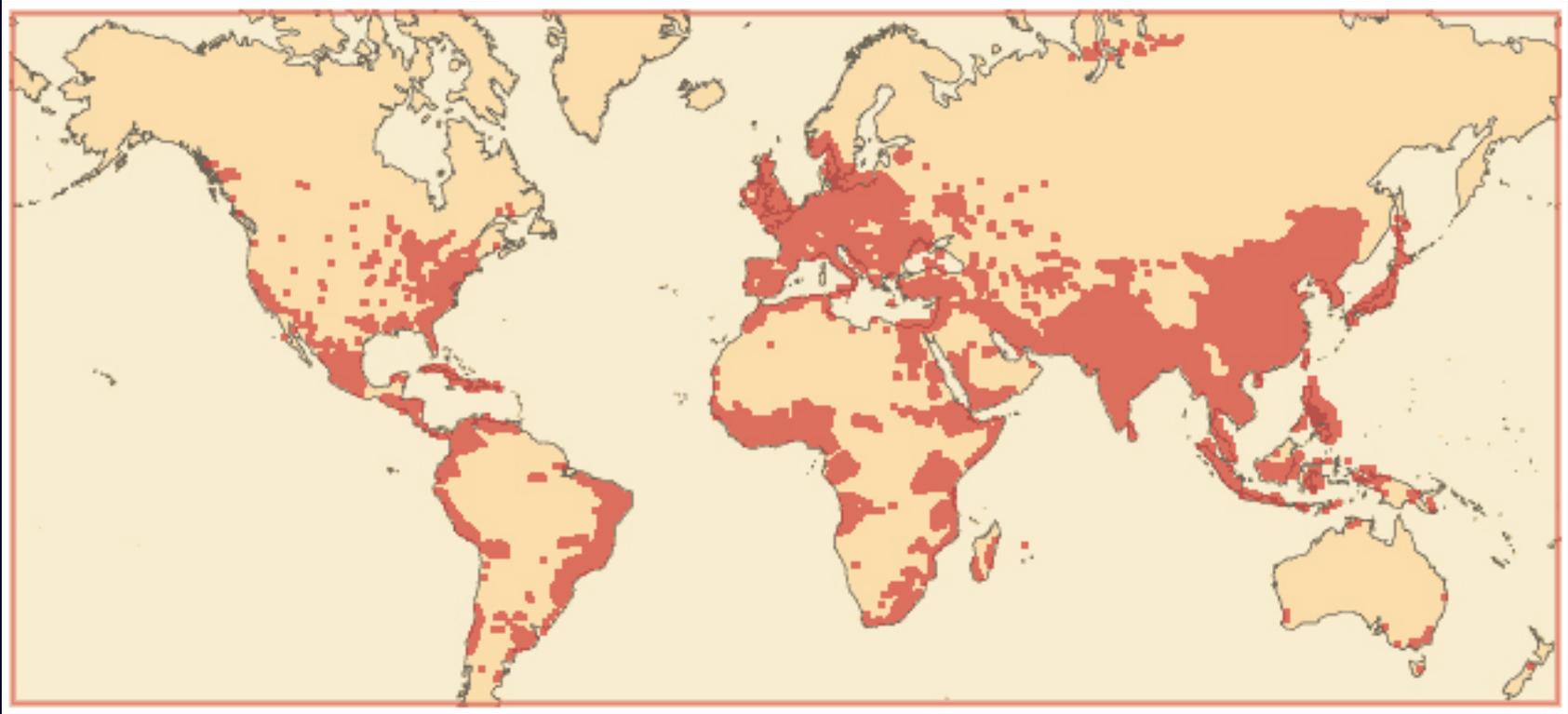
1974



4 billion



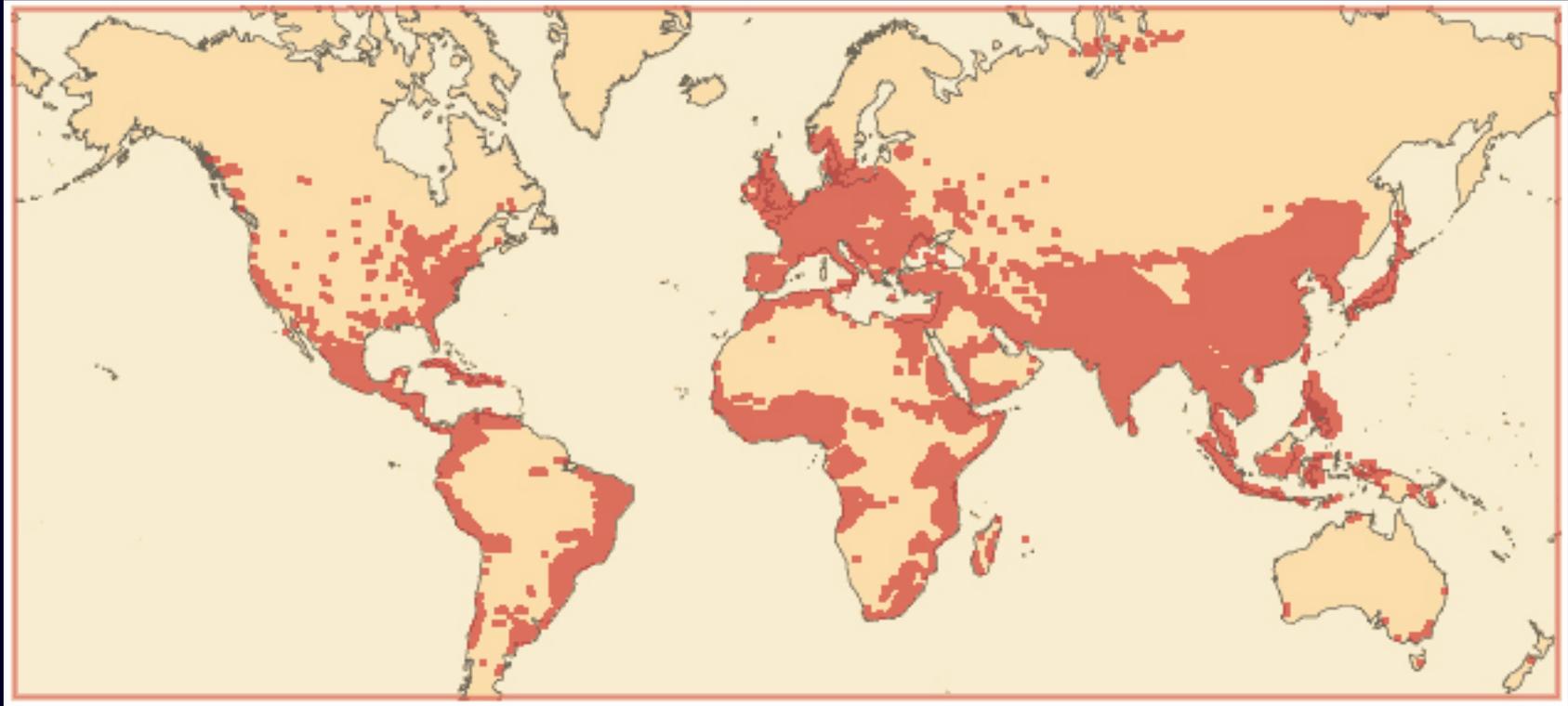
1987



5 billion



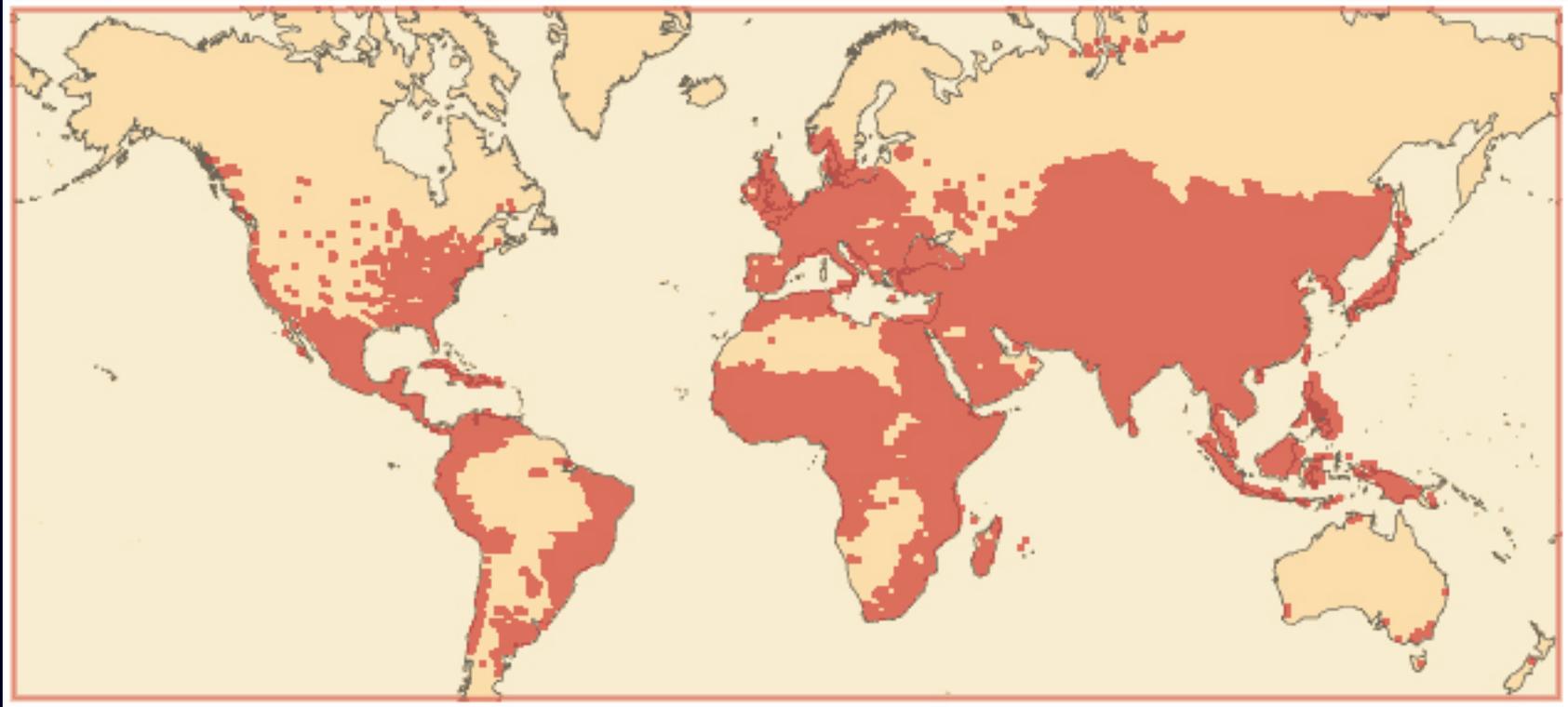
1999



6 billion



2050



9 billion



2,000 years ago



10 million



1,000 years ago



300 million



1800



1 billion



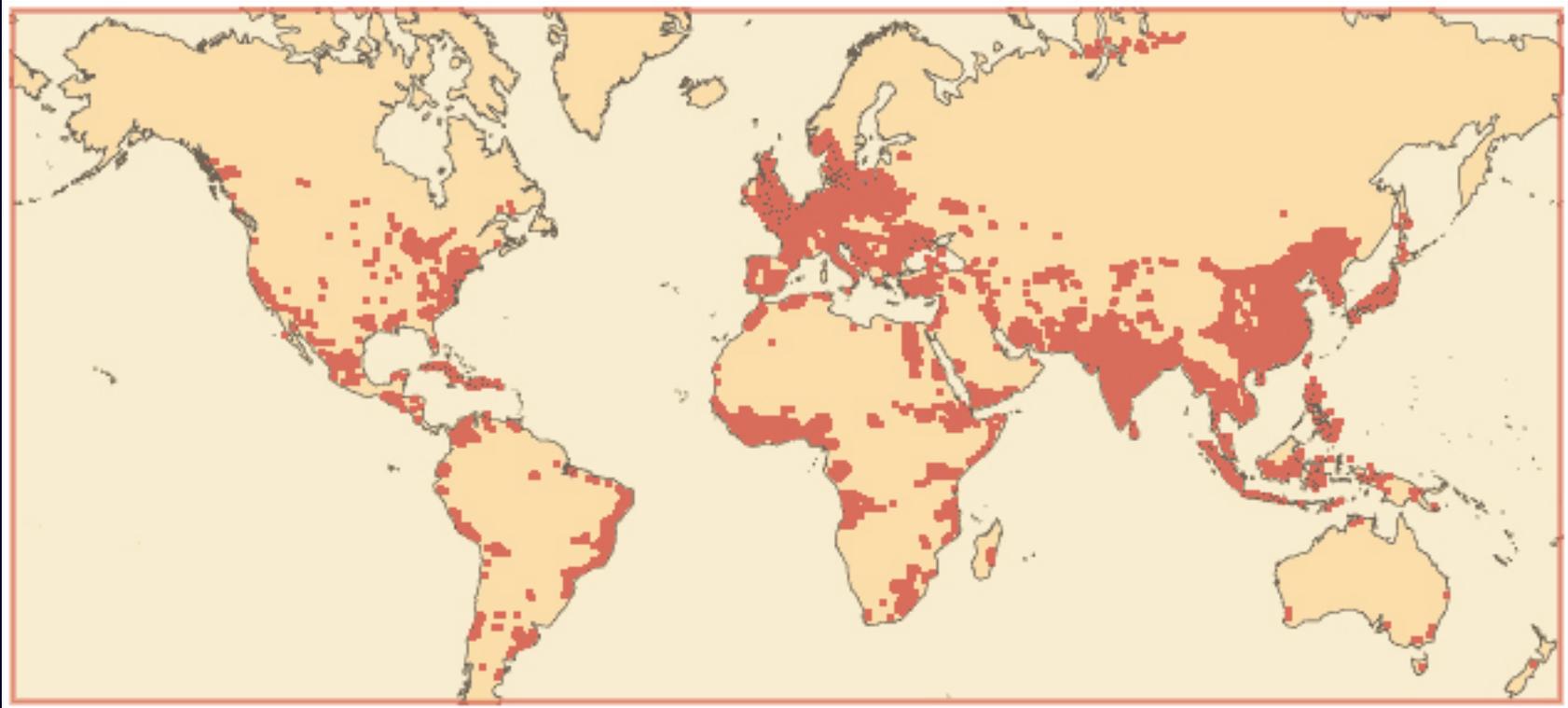
1927



2 billion



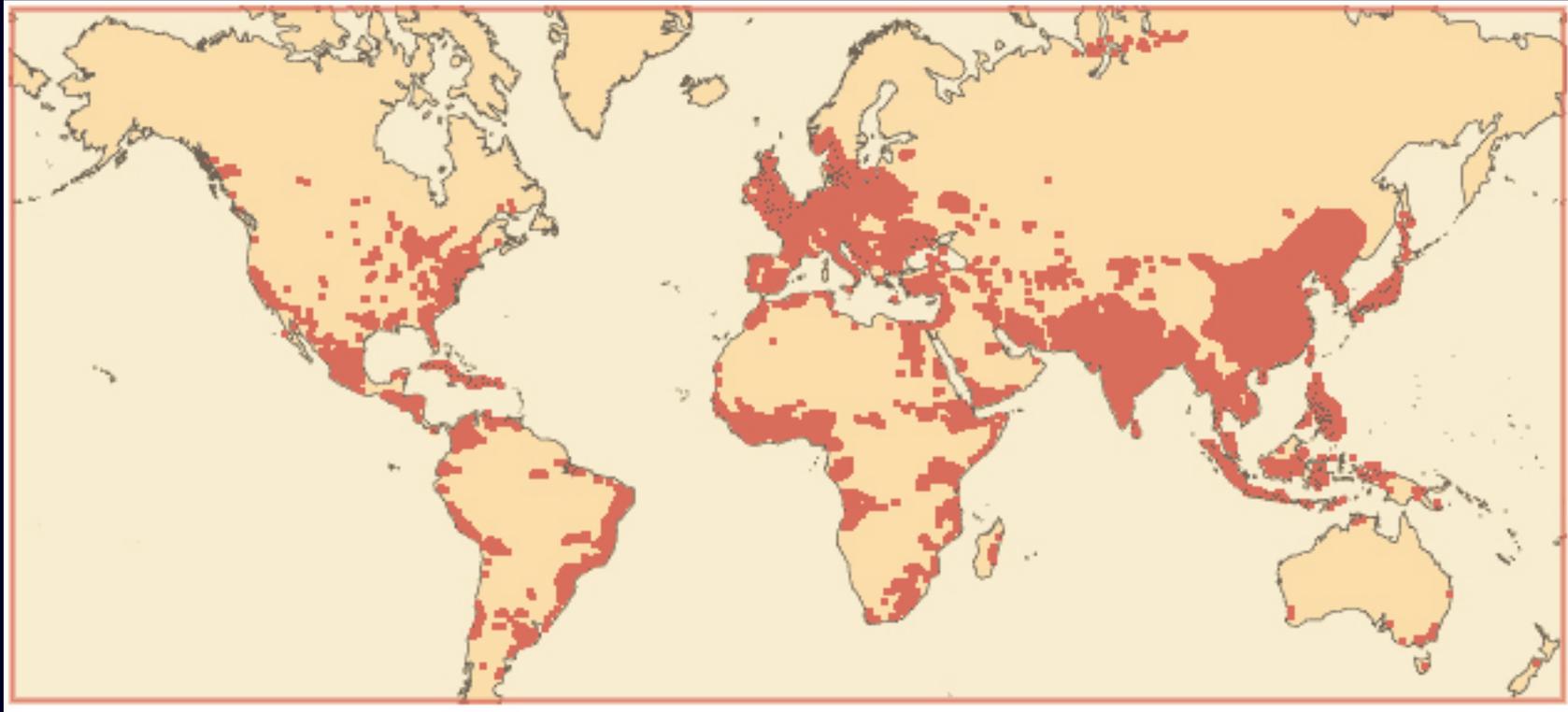
1960



3 billion



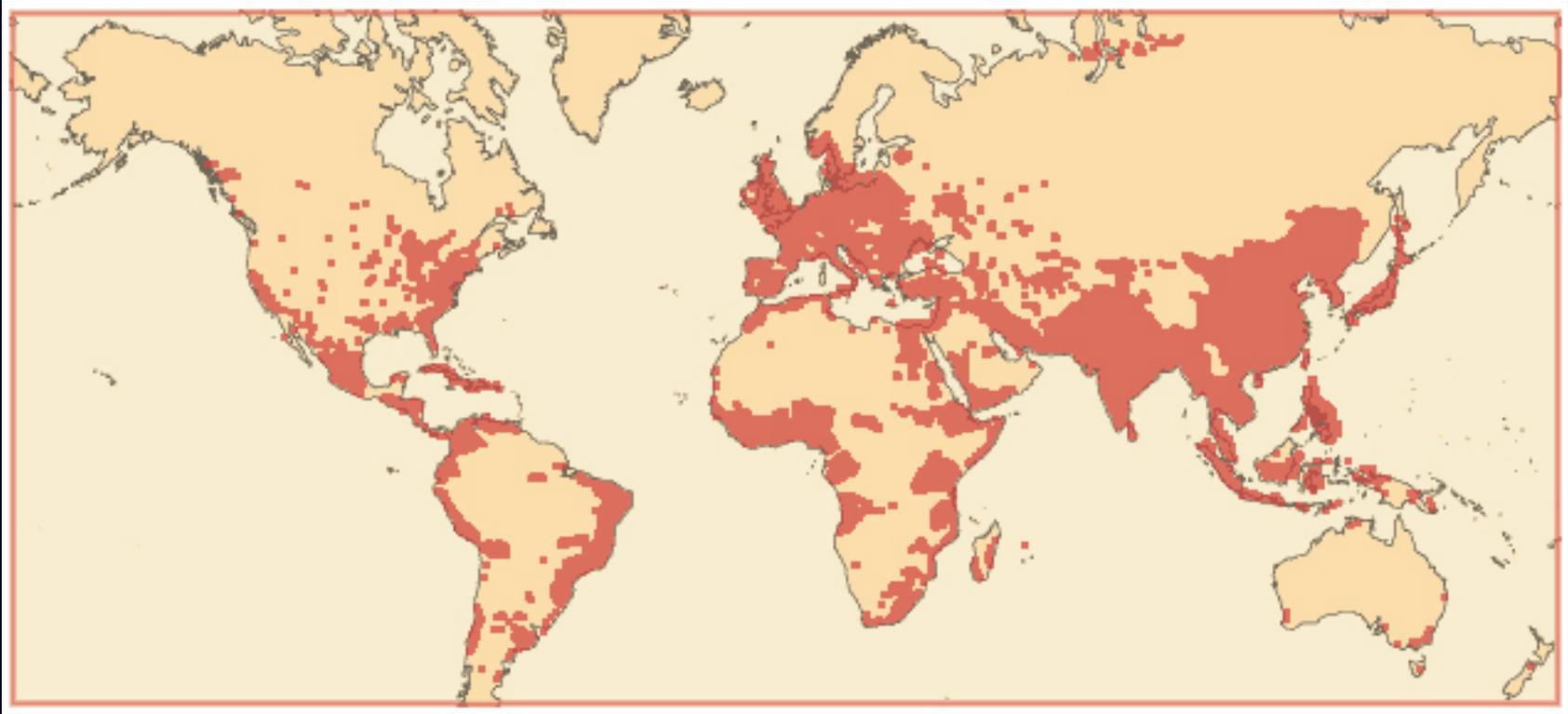
1974



4 billion



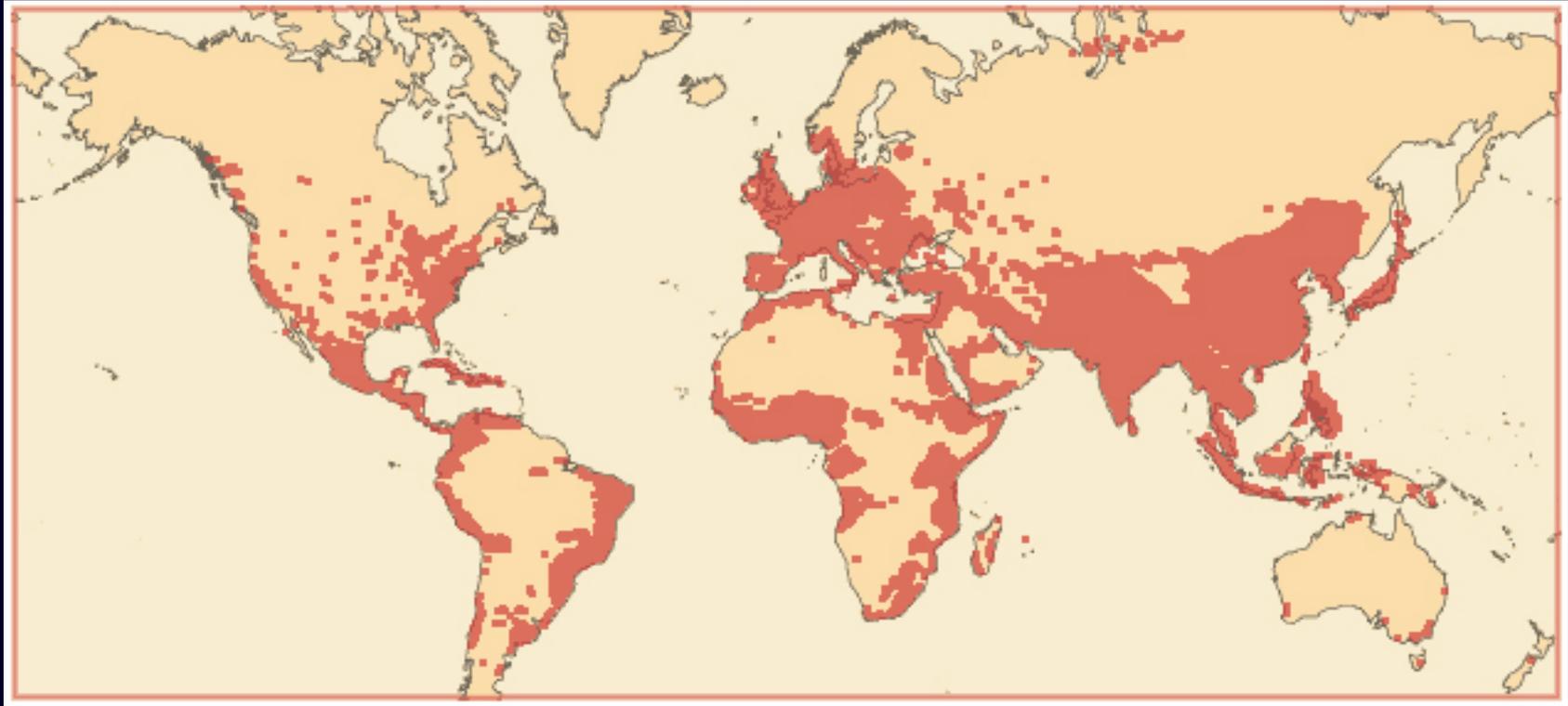
1987



5 billion



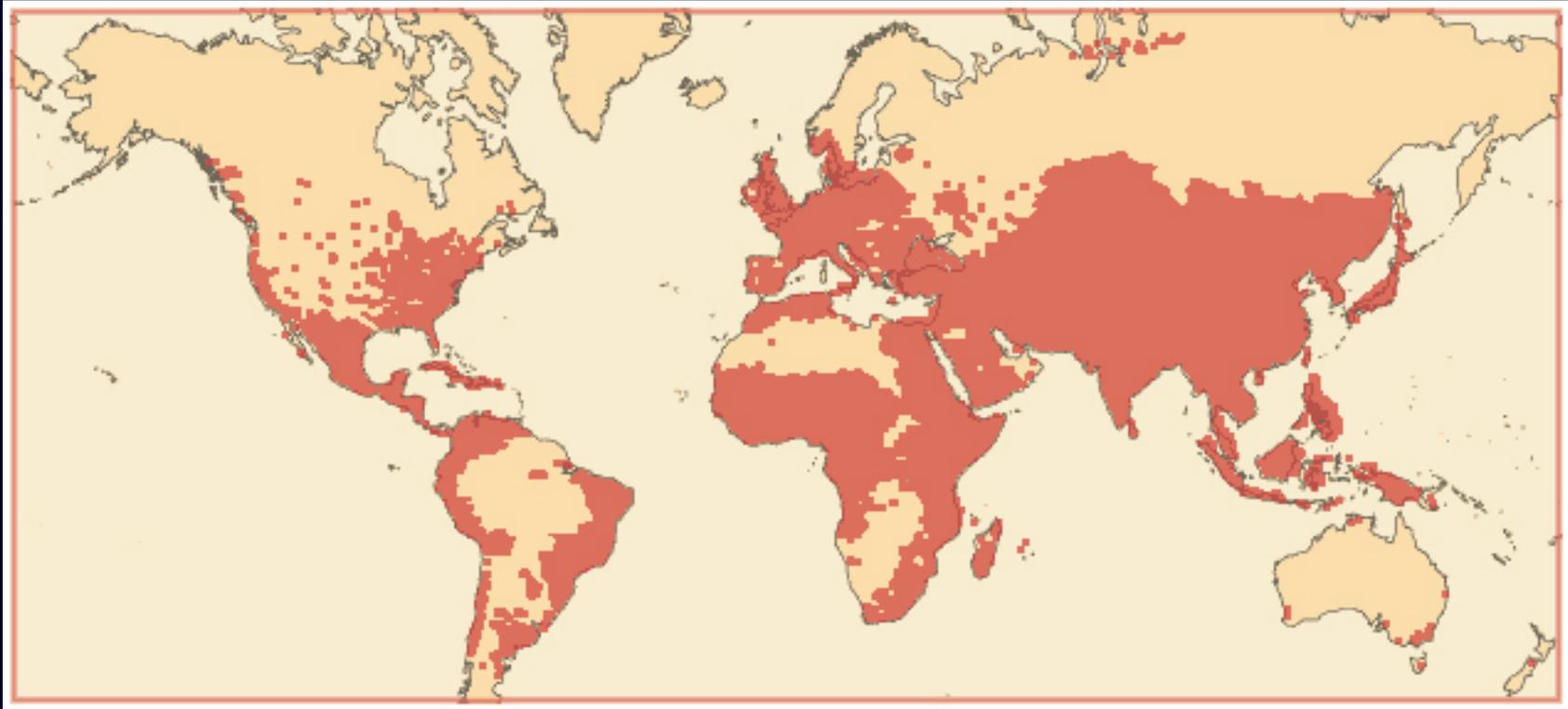
1999



6 billion



2050



9 billion



A World of Extremes

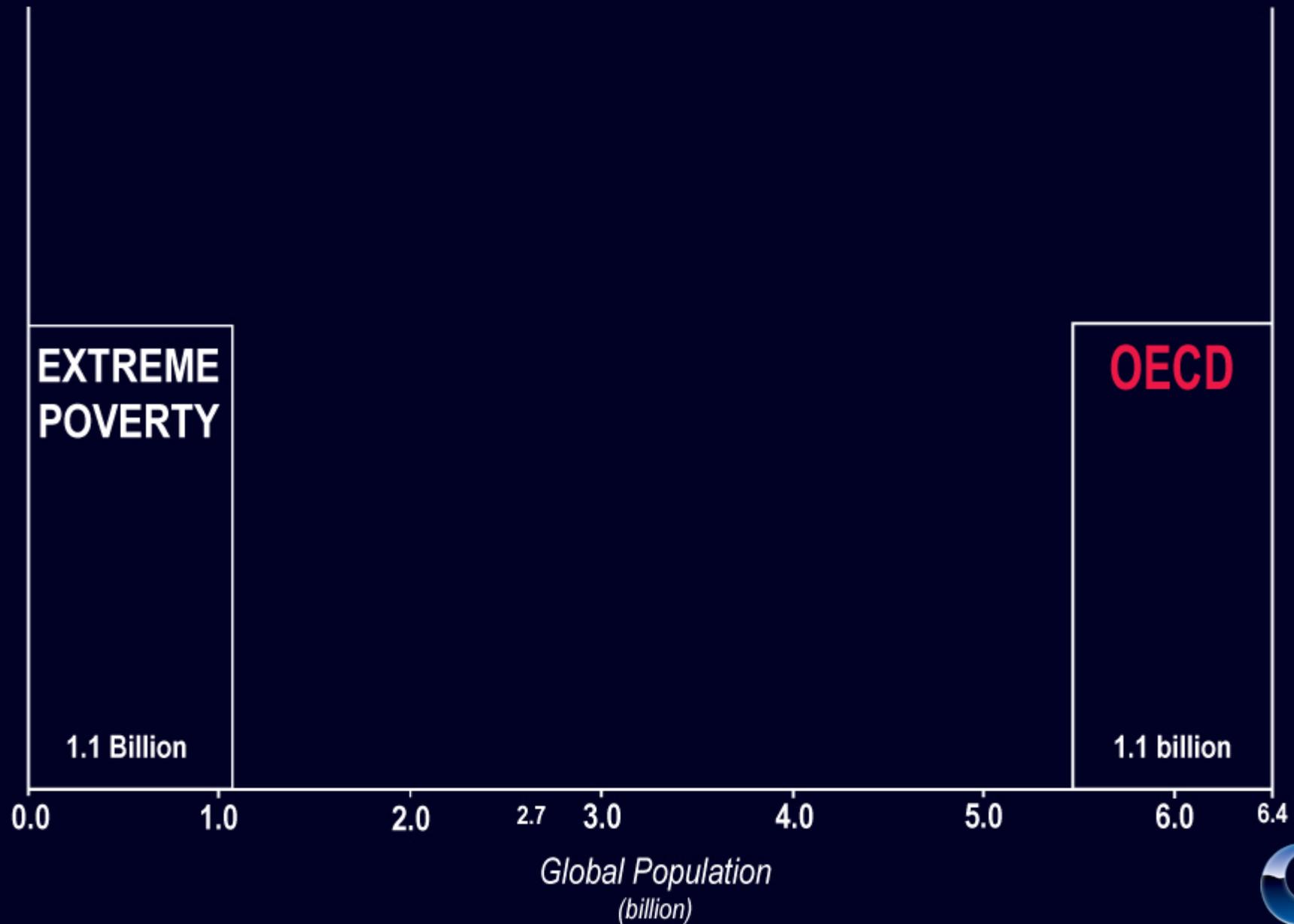
6,400,000,000 people

0.0 1.0 2.0 2.7 3.0 4.0 5.0 6.0 6.4

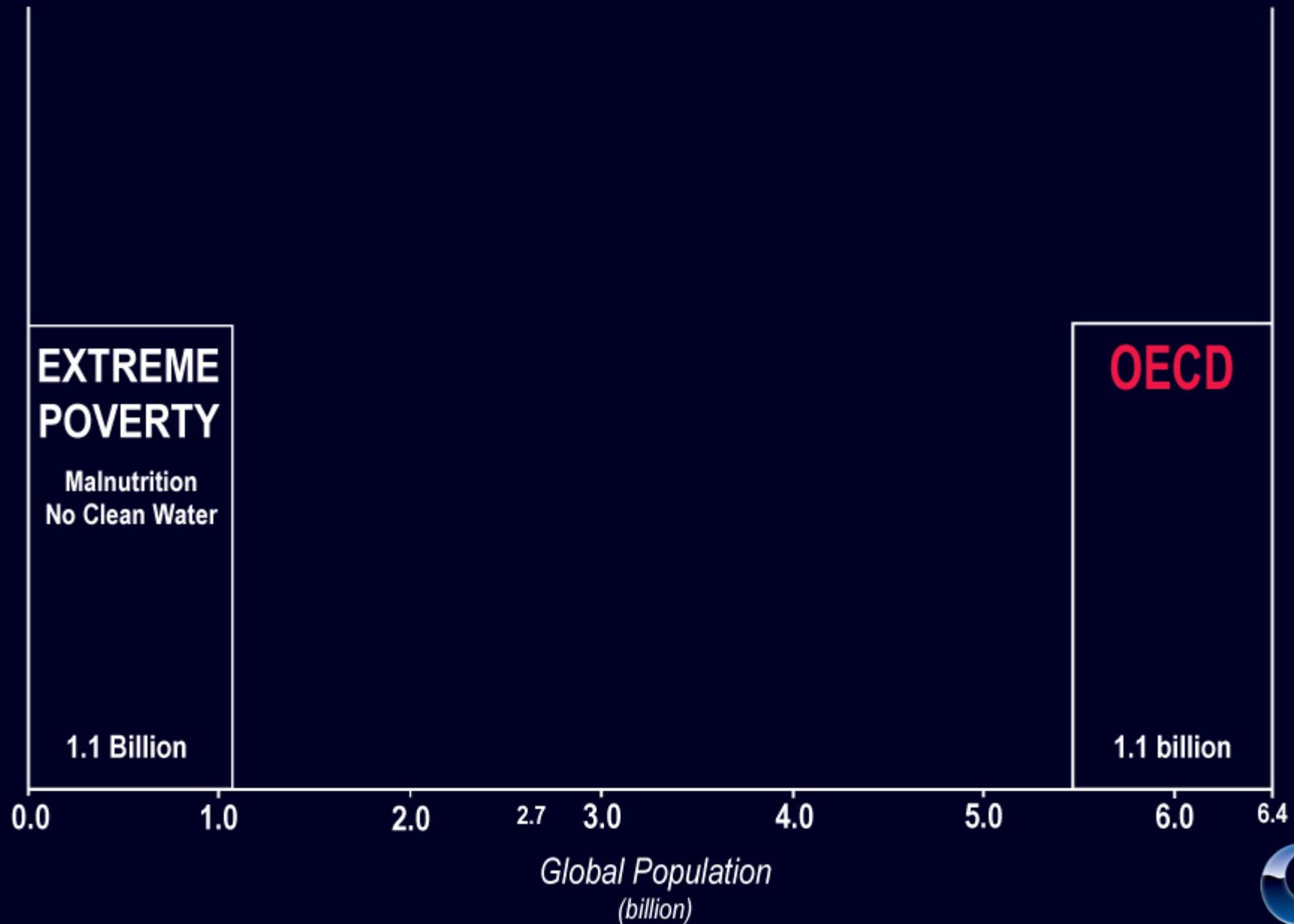
*Global Population
(billion)*



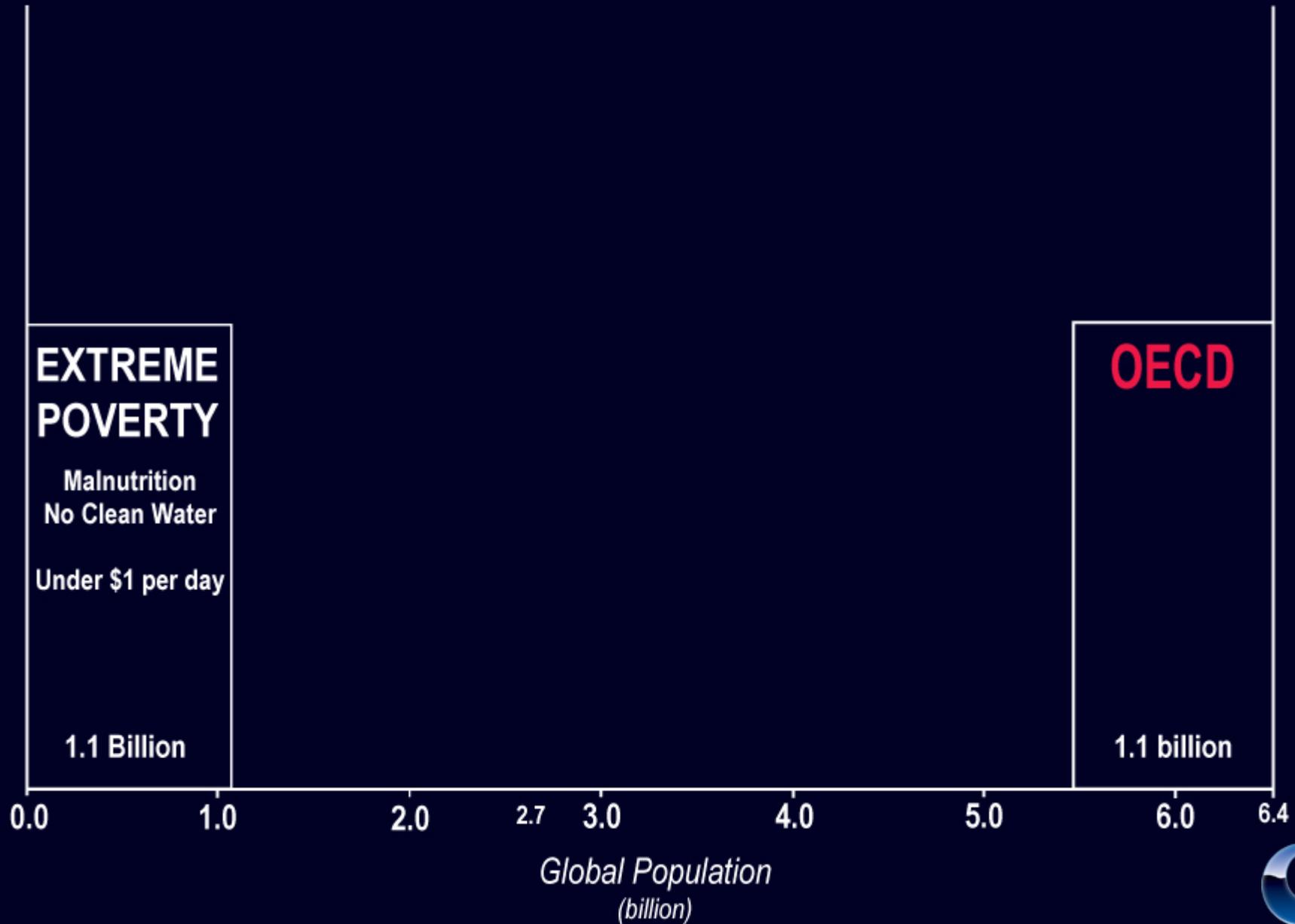
A World of Extremes



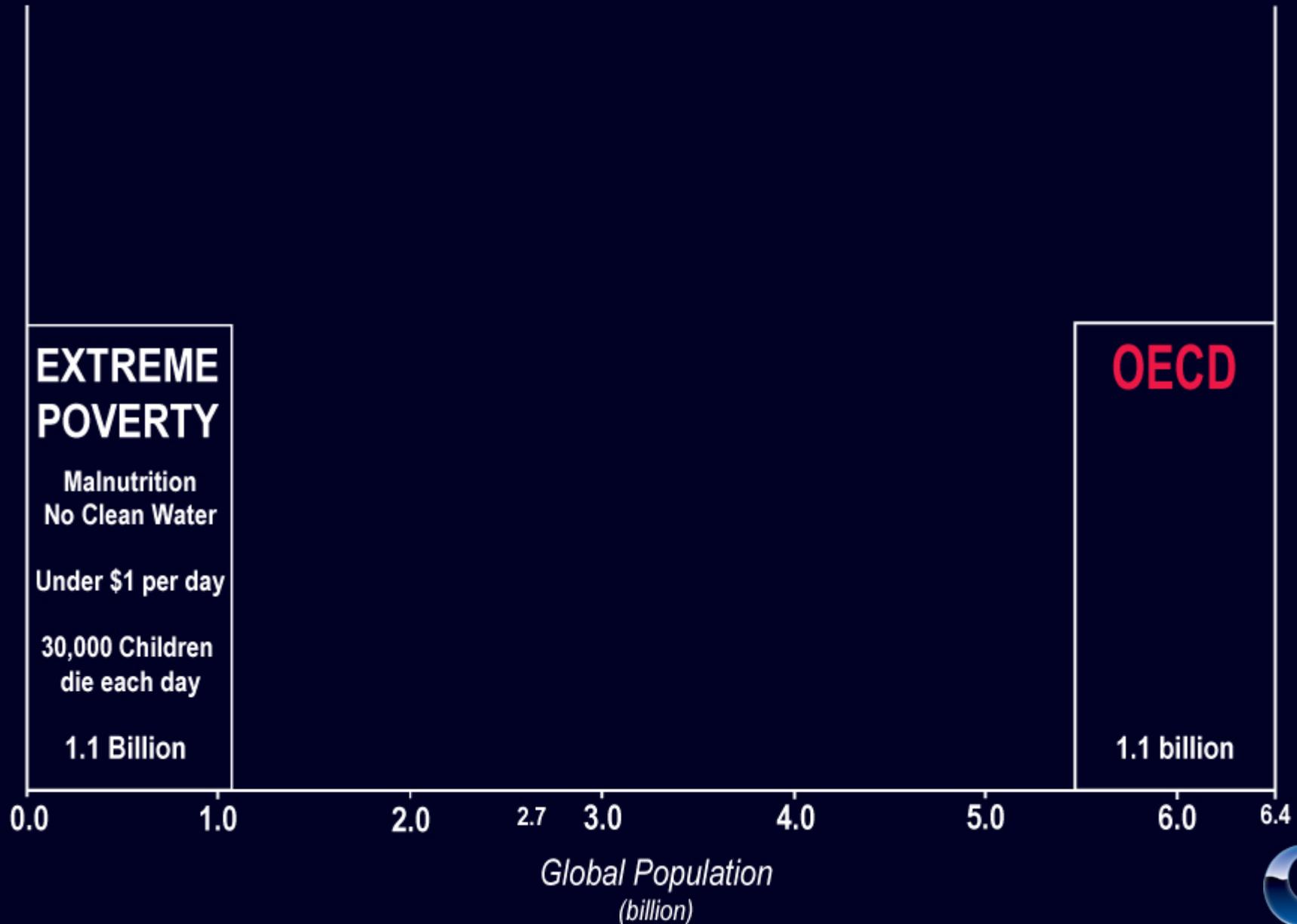
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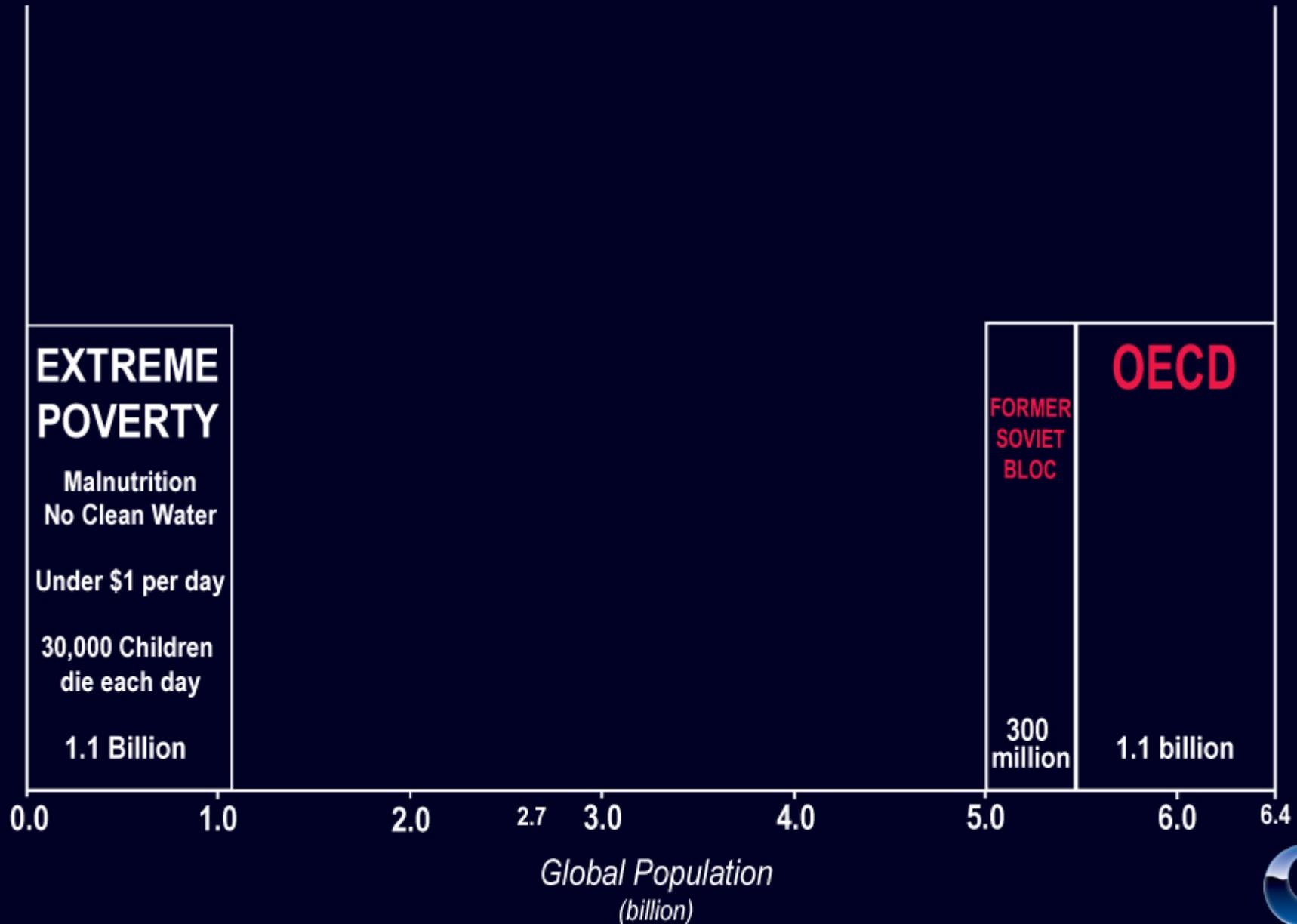
A World of Extremes



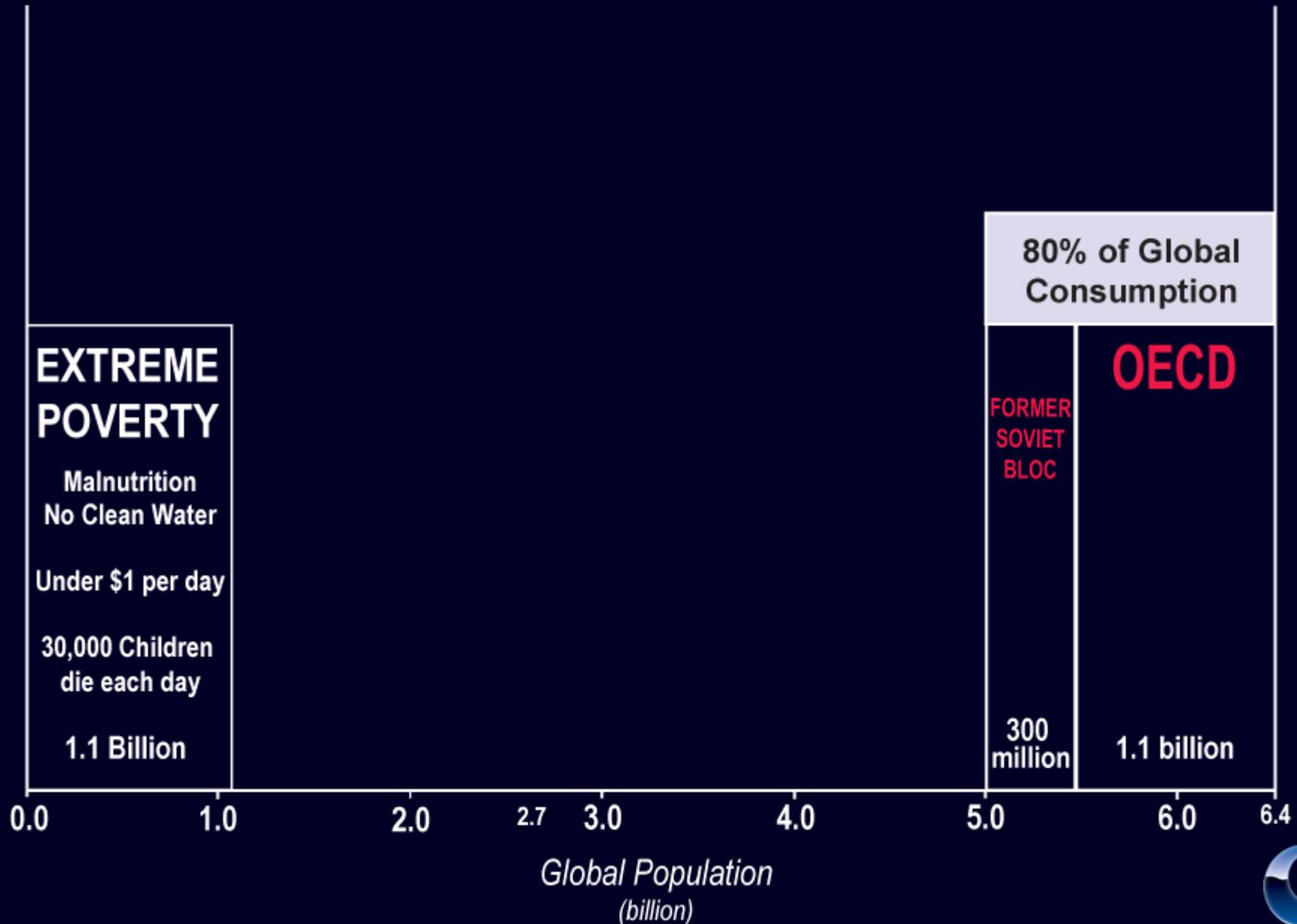
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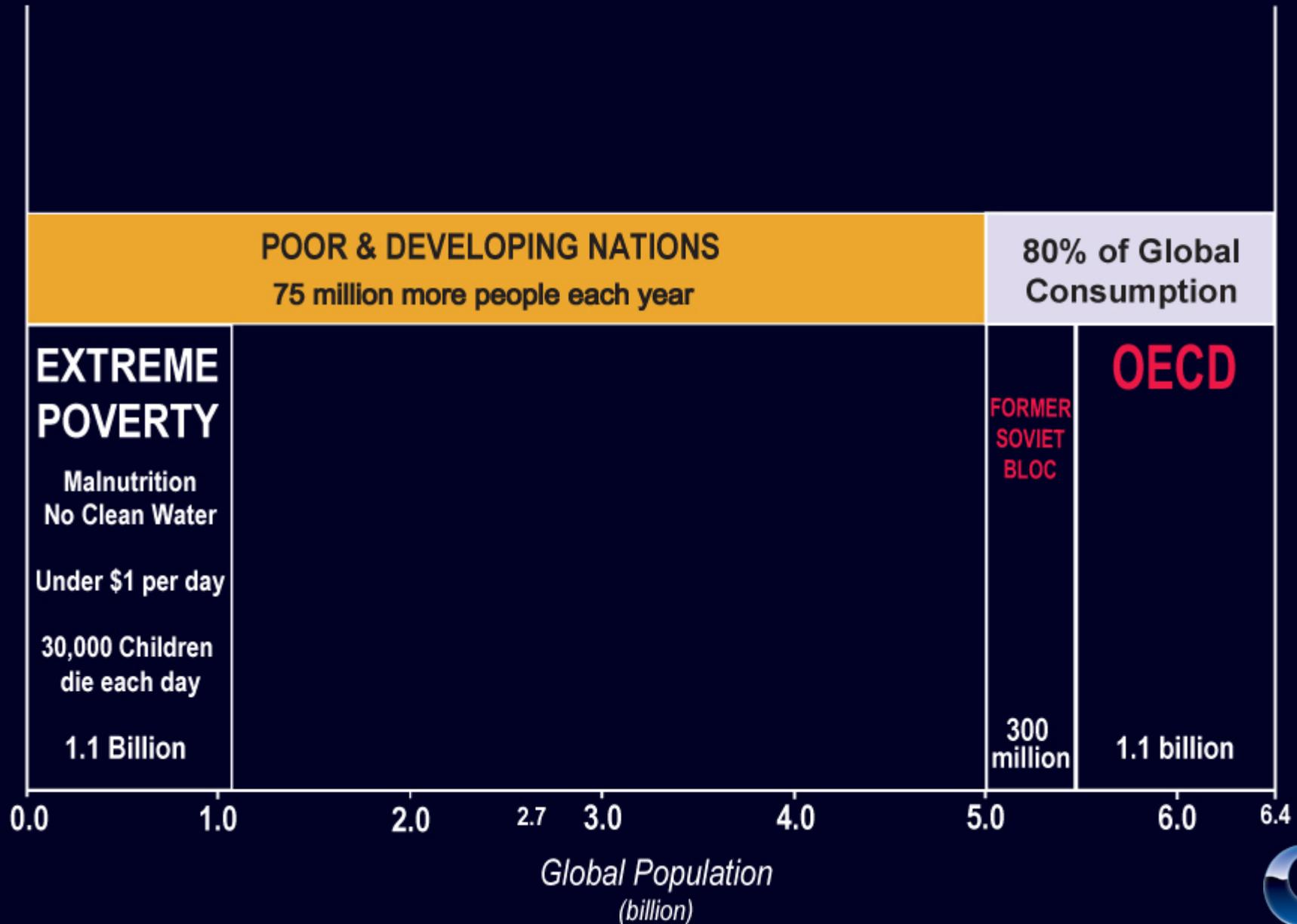
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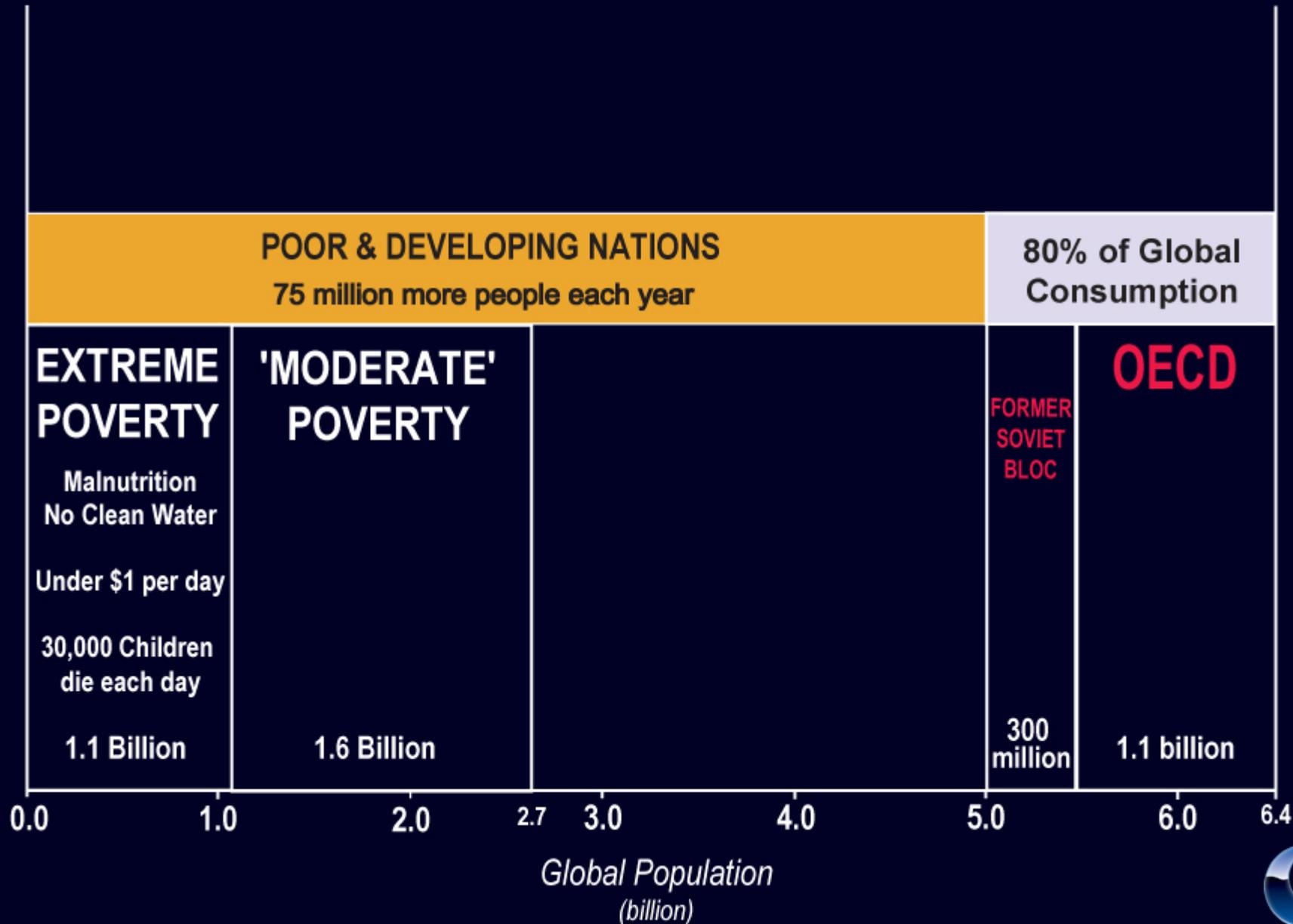
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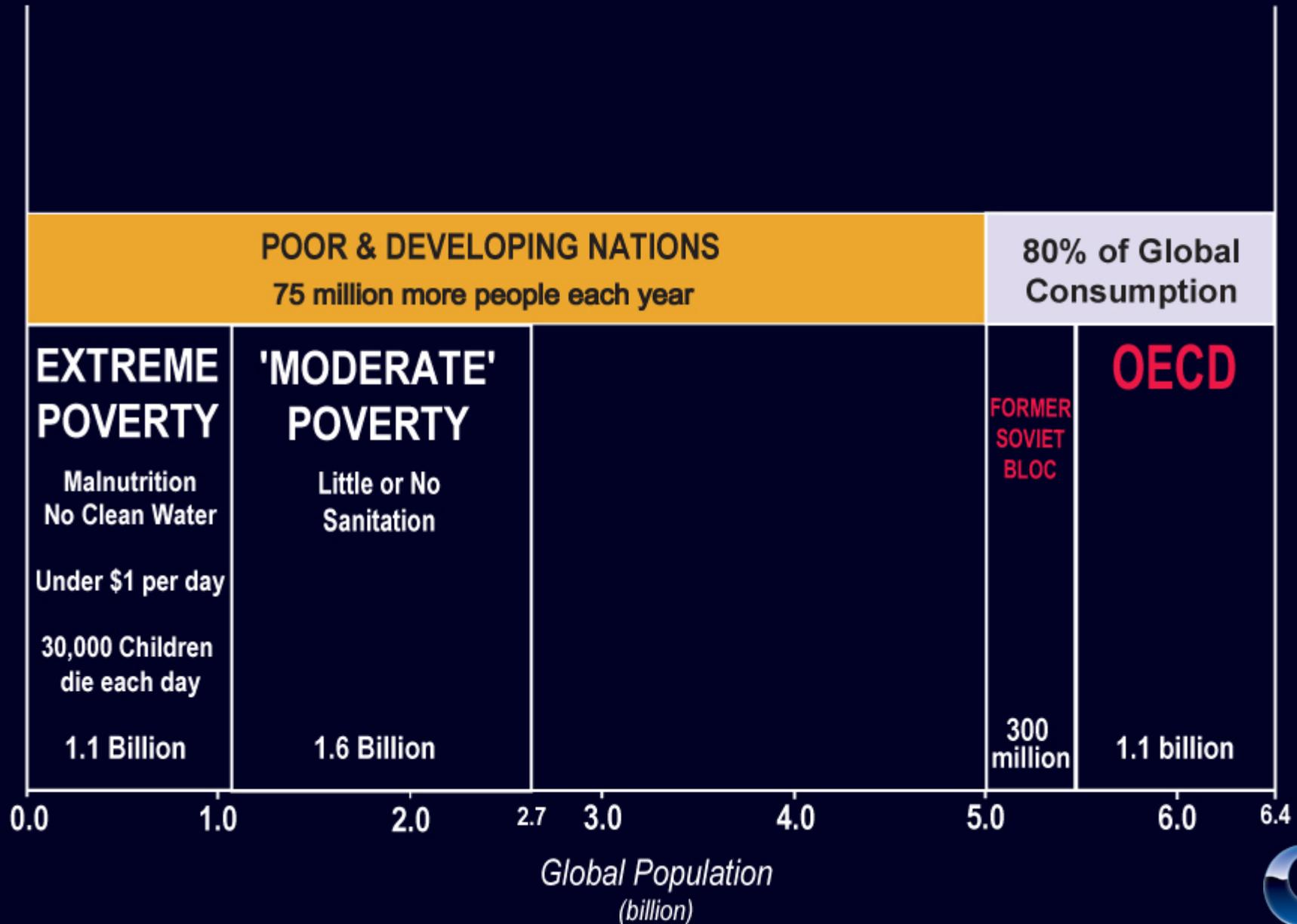
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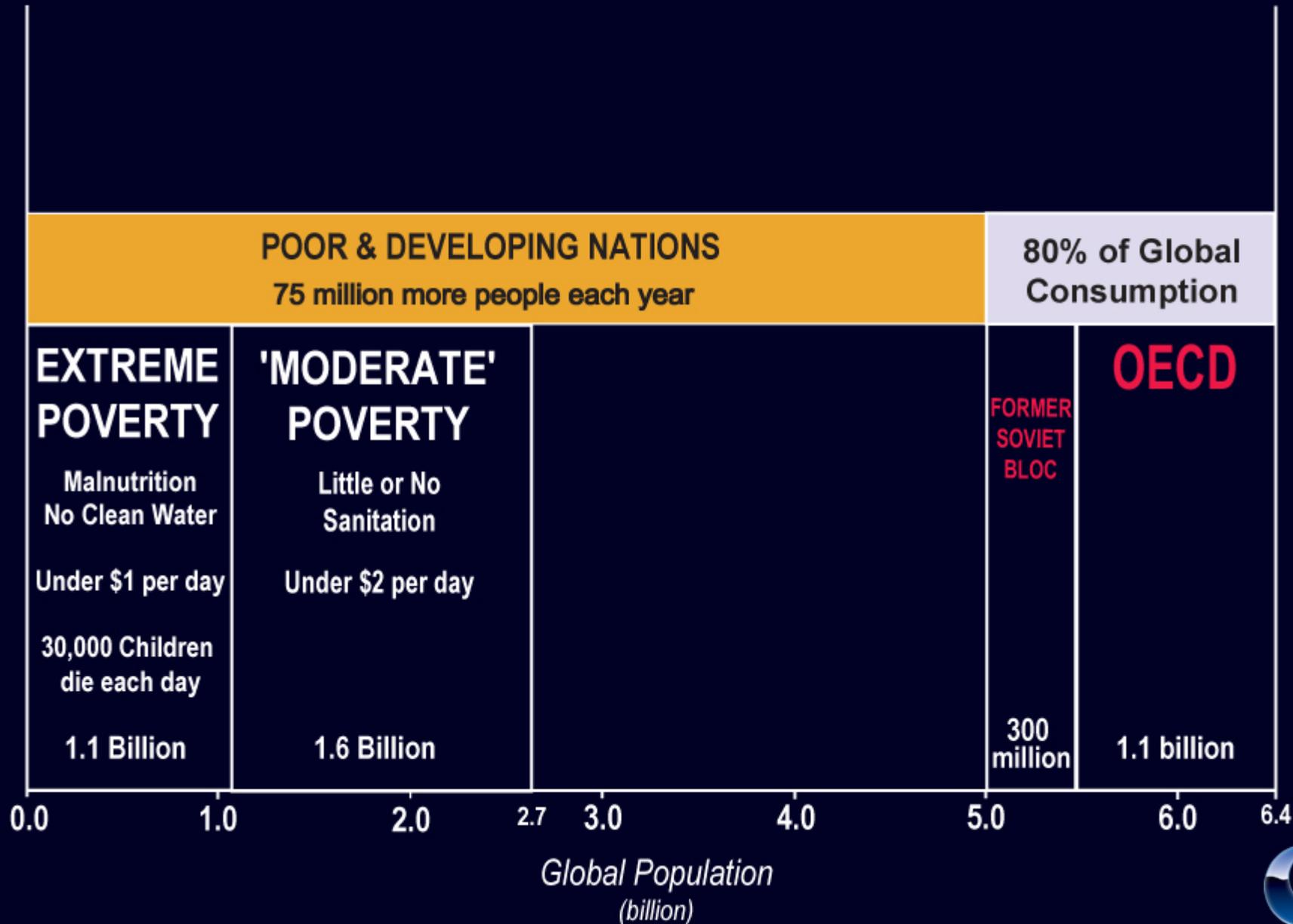
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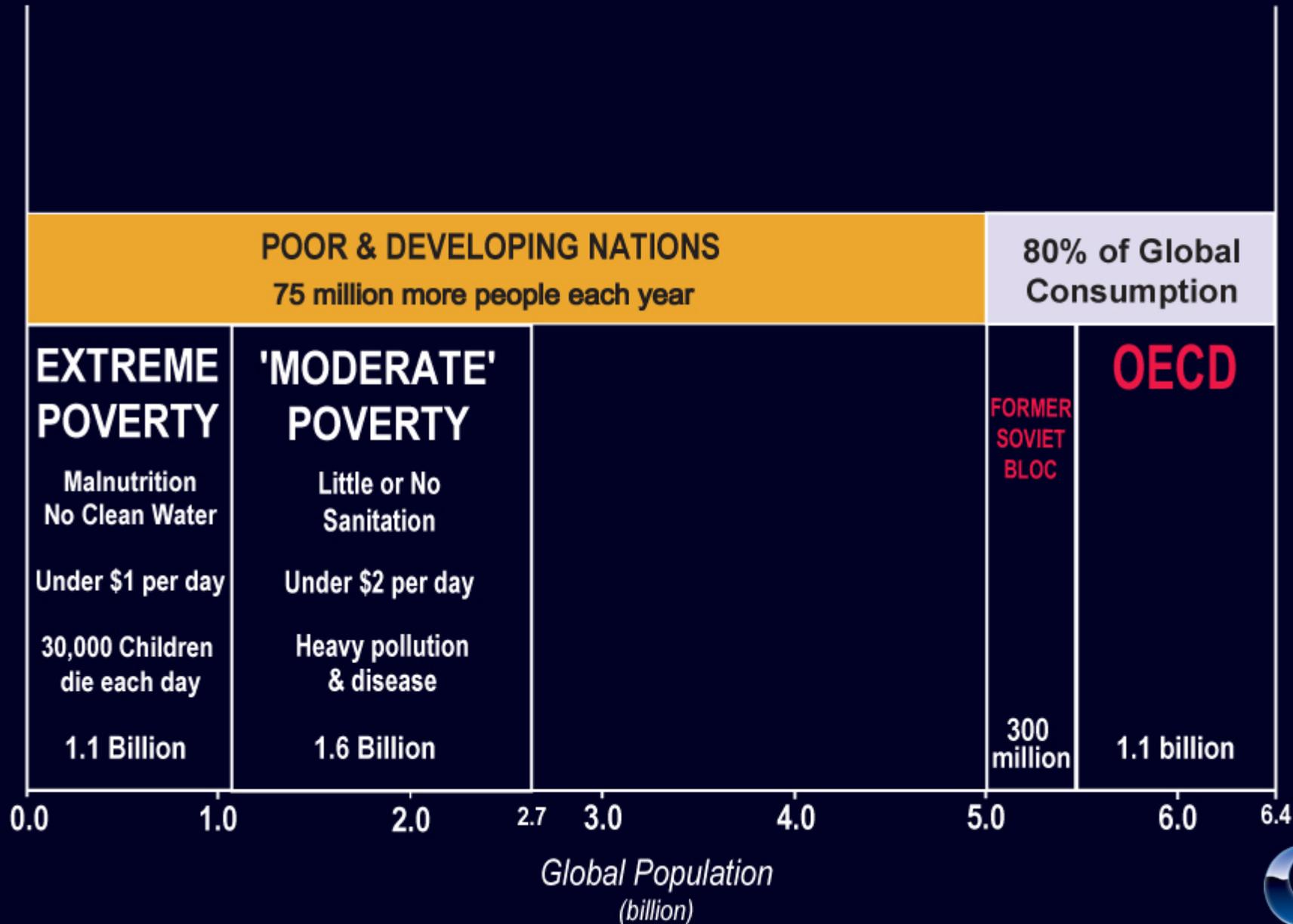
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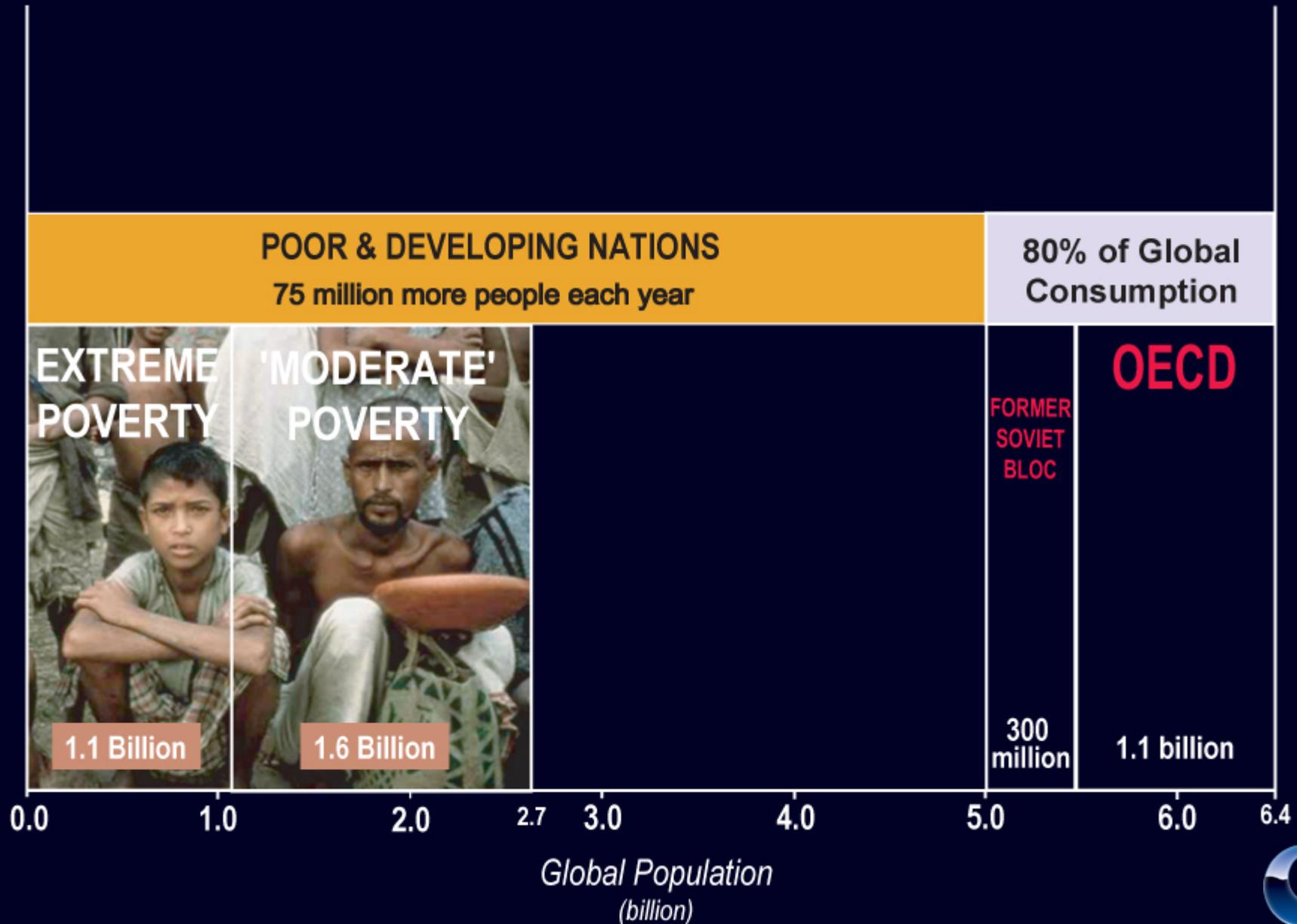
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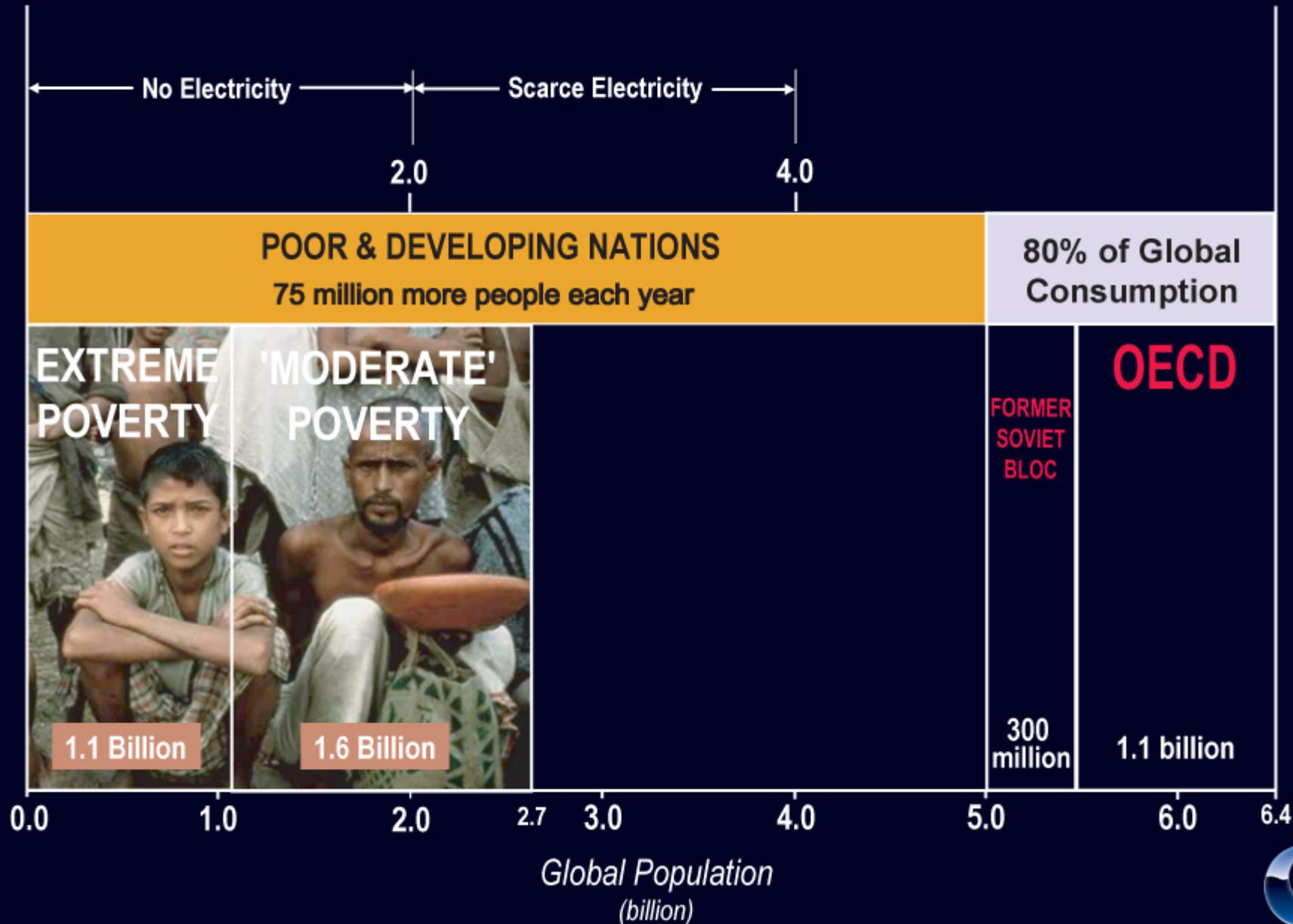
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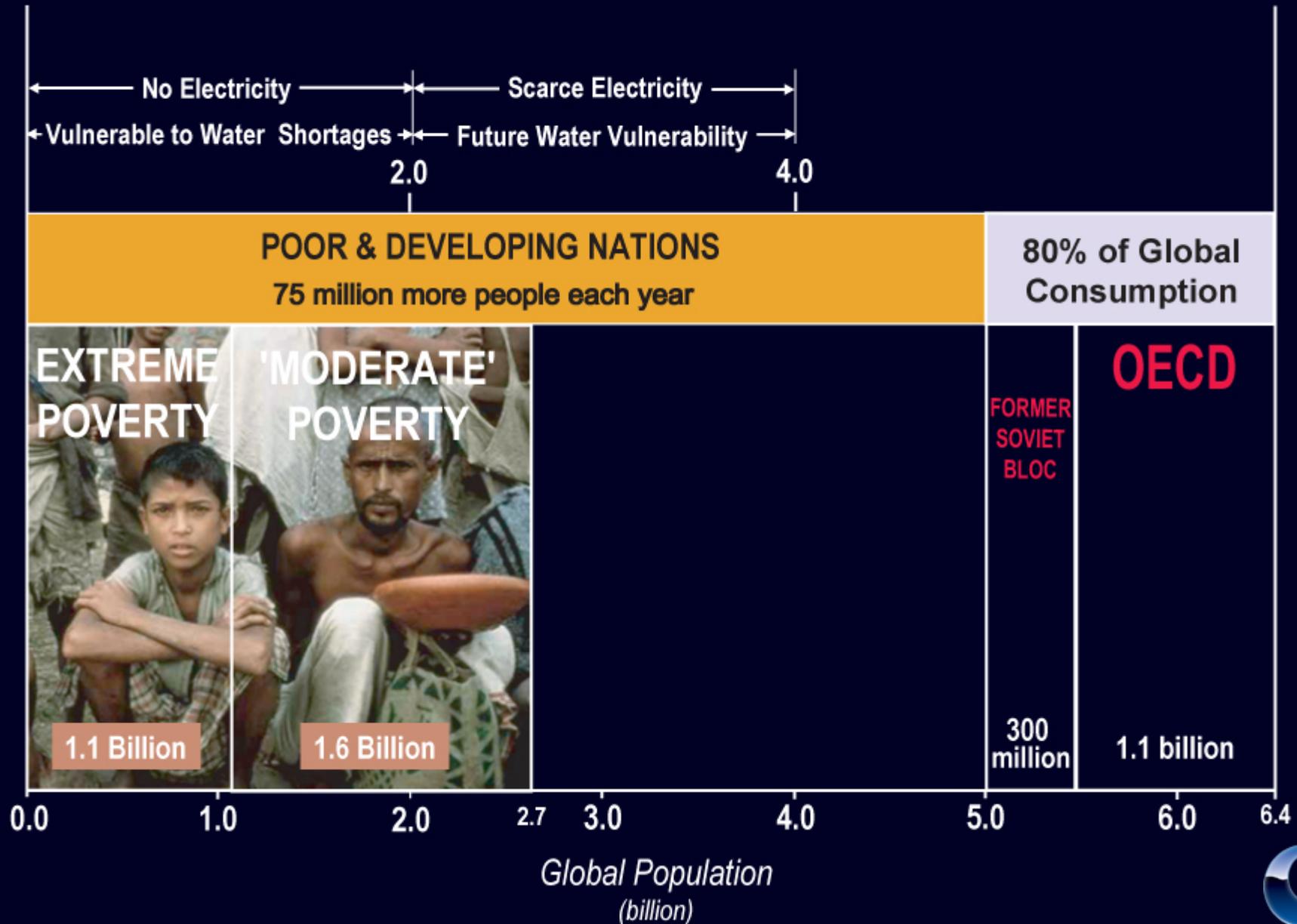
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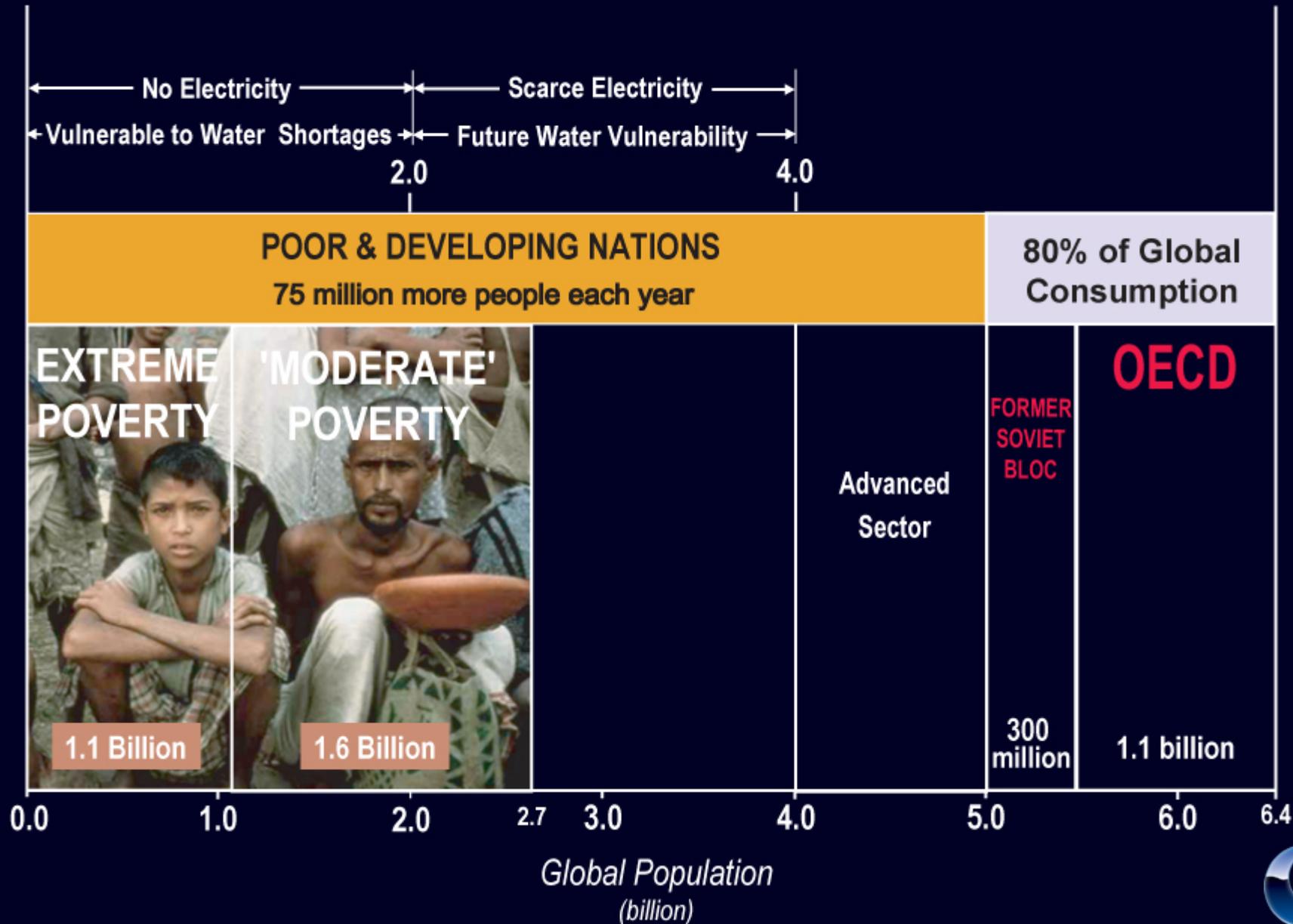
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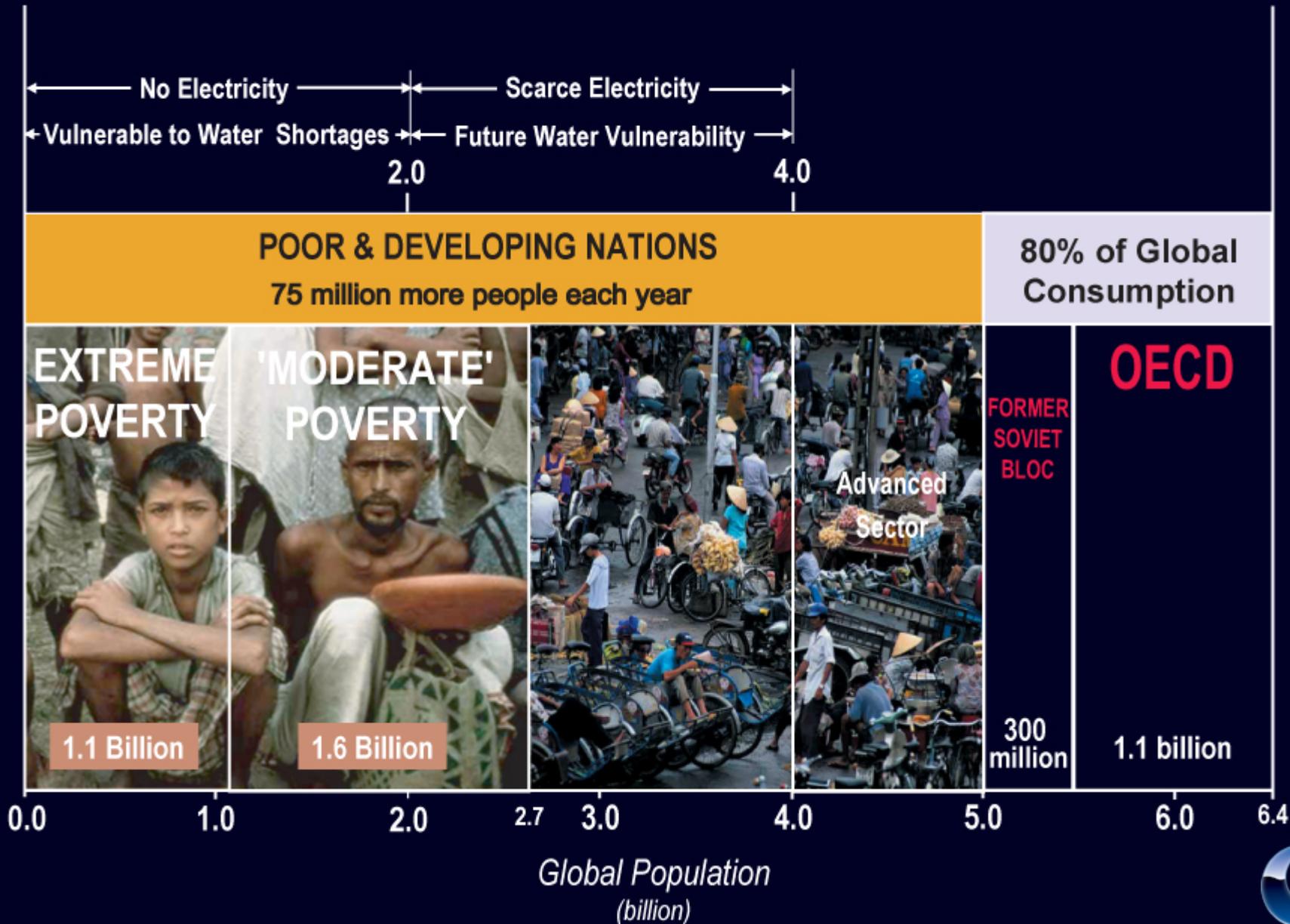
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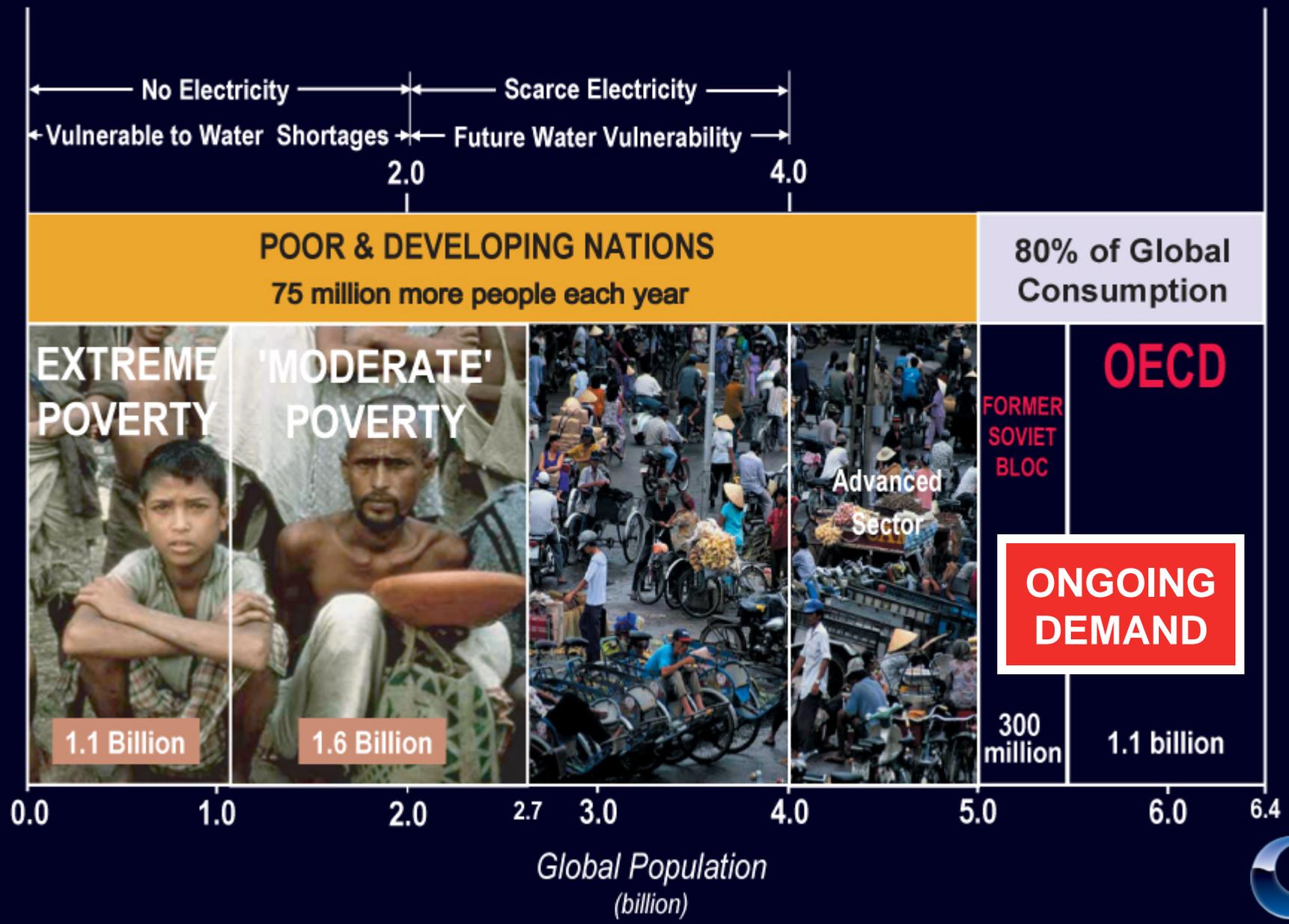
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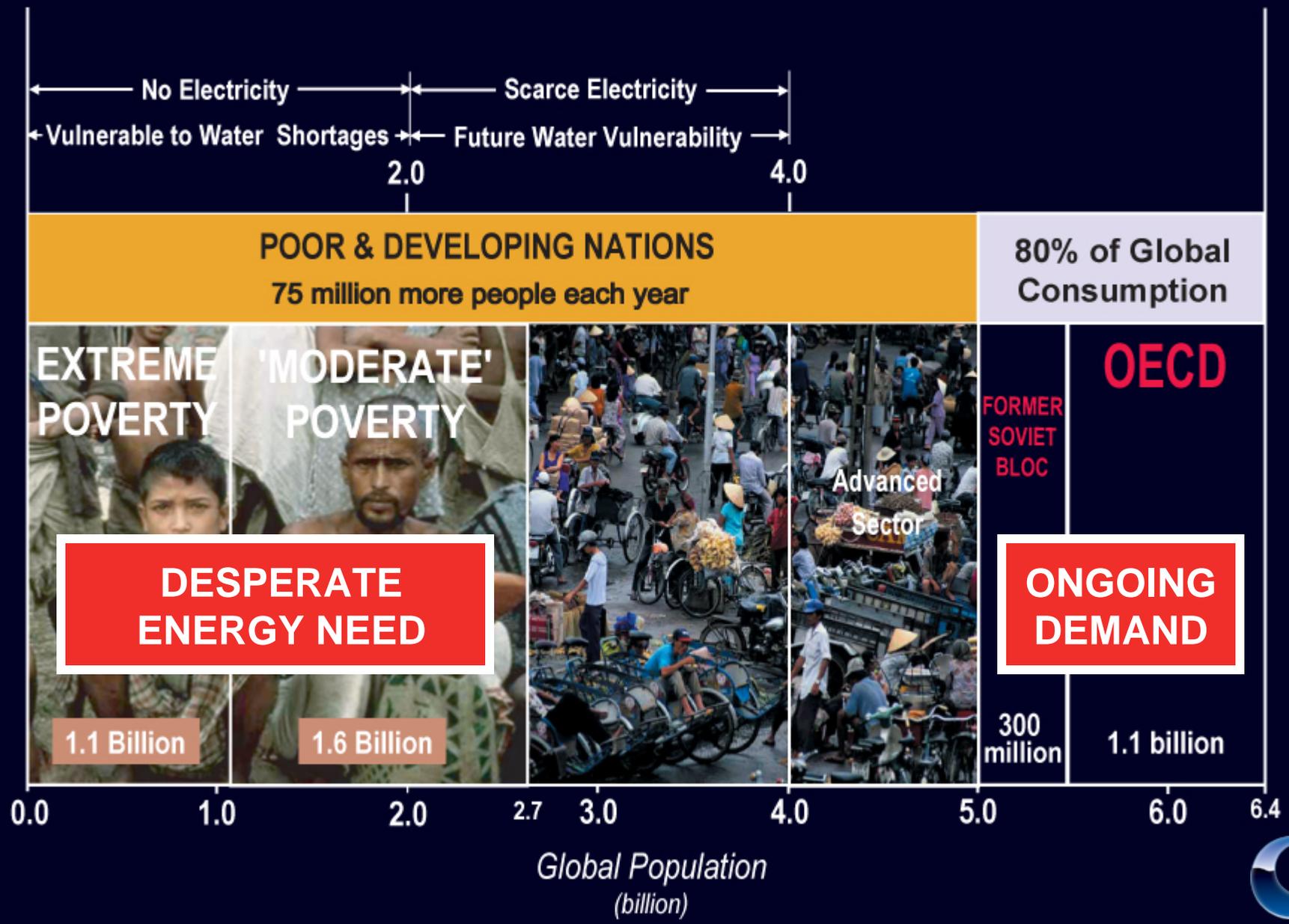
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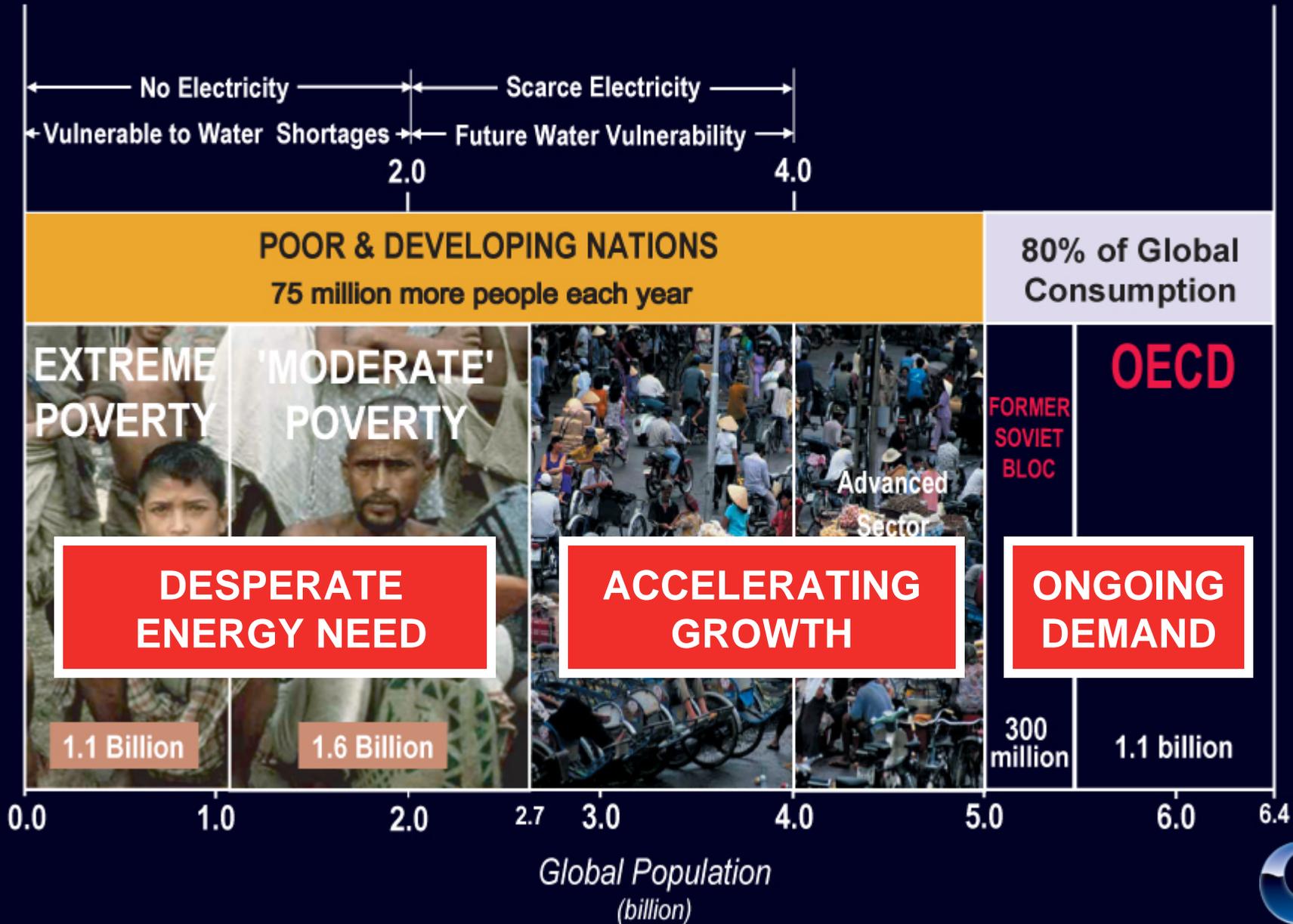
A World of Extremes



A World of Extremes



A World of Extremes



The Crucial Premise for Action

Humankind cannot conceivably achieve a global clean-energy revolution without a huge expansion of nuclear power -

- to generate electricity
- to produce battery power and possibly hydrogen for tomorrow's vehicles
- to desalinate seawater in response to the world's rapidly emerging fresh-water crisis

The True Environmental Problem

Nuclear power is not yet growing fast enough

to play its needed role in the clean-energy revolution our world so urgently needs.

Accelerating the Nuclear Renaissance

1) Construct a Comprehensive Global Regime

- Must employ “contraction & convergence” concept

2) Elevate Nuclear Investment to a National and International Priority

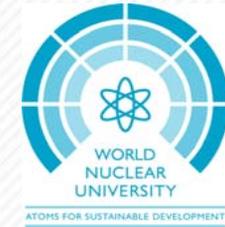
- Temporary pump-priming at the national level
- Focus UN development agencies on nuclear energy

3) Build the Nuclear Profession

The World Nuclear University



World Nuclear University



A Global Partnership committed to enhancing education and leadership in nuclear science and technology

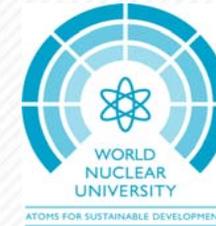
The WNU is animated by a small multinational secretariat at the WNU Coordinating Centre (WNUCC) in London

The WNUCC fosters cooperation among the WNU's worldwide partners:

- Global organizations of the nuclear industry (WNA and WANO)
- Inter-governmental nuclear agencies (IAEA and NEA-OECD)
- Leading institutions of nuclear learning in some 30 nations



World Nuclear University



WNU activities underway or in preparation:

- Leader-building Summer Institute for young professionals
- Executive-level seminars on the future of nuclear energy
- Policy forums for nuclear policy-makers and leaders
- Training in key professional skills (pilot: WNU School on Uranium Production)
- Scientific seminars on policy-relevant topics
- Projects to improve education in nuclear-related disciplines



2006 WNU Fellows



Accelerating the Nuclear Renaissance

1) Construct a Comprehensive Global Regime

- Must employ “contraction & convergence” concept

2) Elevate Nuclear Investment to a National and International Priority

- Temporary pump-priming at the national level
- Focus UN development agencies on nuclear energy

3) Globalize the Nuclear Profession

- Build leadership
- Develop massive scholarship support



The Nuclear Renaissance in a Global Context

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Director General***

*American
Nuclear Society*

*2007
Annual Meeting*

Plenary Session

*"It's All About People:
The Future of Nuclear"*

*Boston
25 June 2007*



WNA Report

Ensuring Security of
Supply in the
International Nuclear
Fuel Cycle



Nuclear Power and Global Security

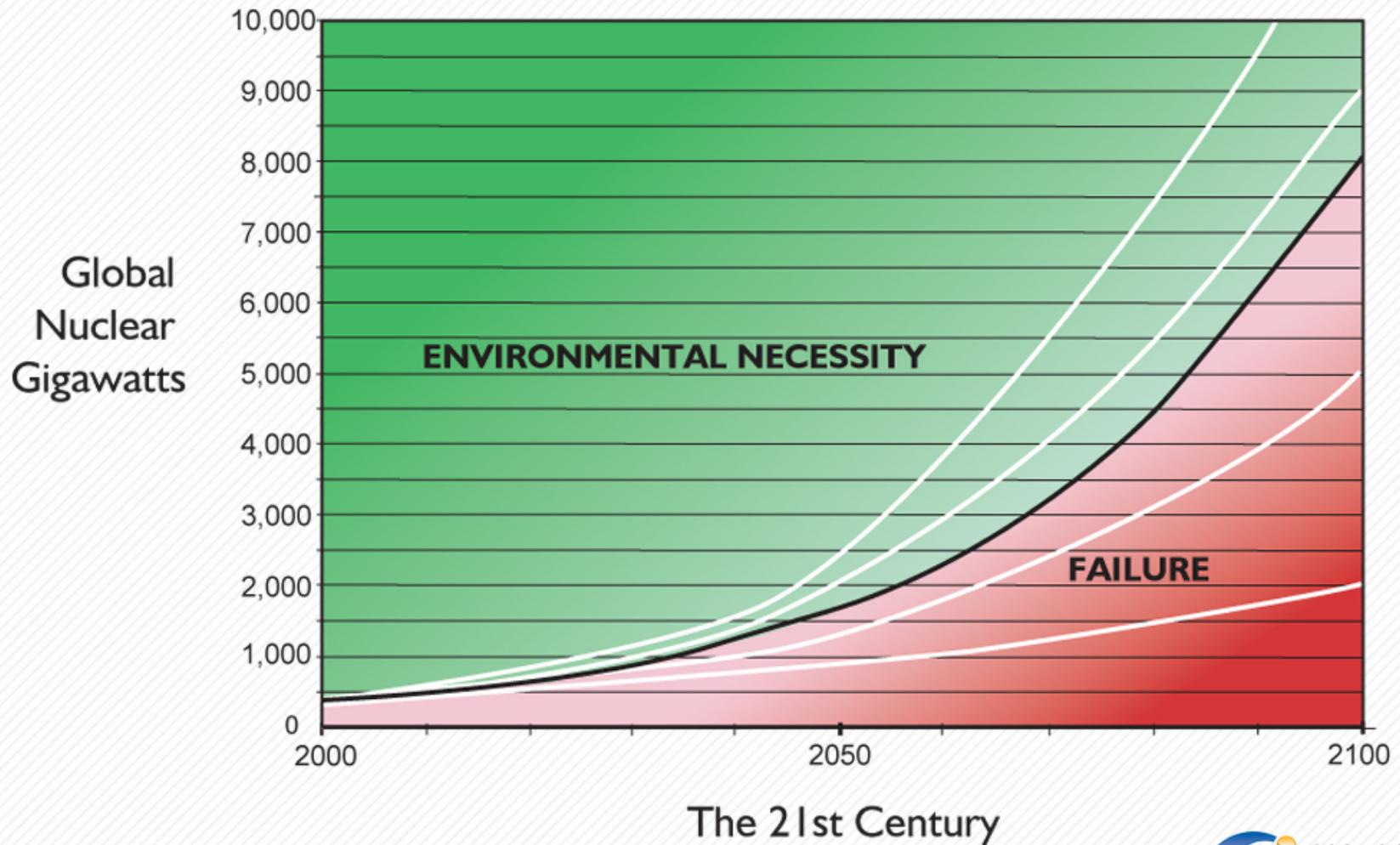
Proliferation Risk

- Depends mainly on the potentially illicit intent of a few states
- Largely independent of the number of worldwide facilities

The Nuclear Renaissance is itself a top-priority global security measure

- Efforts to strengthen the NPT regime should not delay civil nuclear energy development

The Environmental Imperative: An Expansive Nuclear Renaissance



Meeting History's Greatest Challenge

Life is a race between
education and catastrophe.

- H.G. Wells

