

The Humanosphere-sustainable Path of Development

-A Global Historical Perspective-



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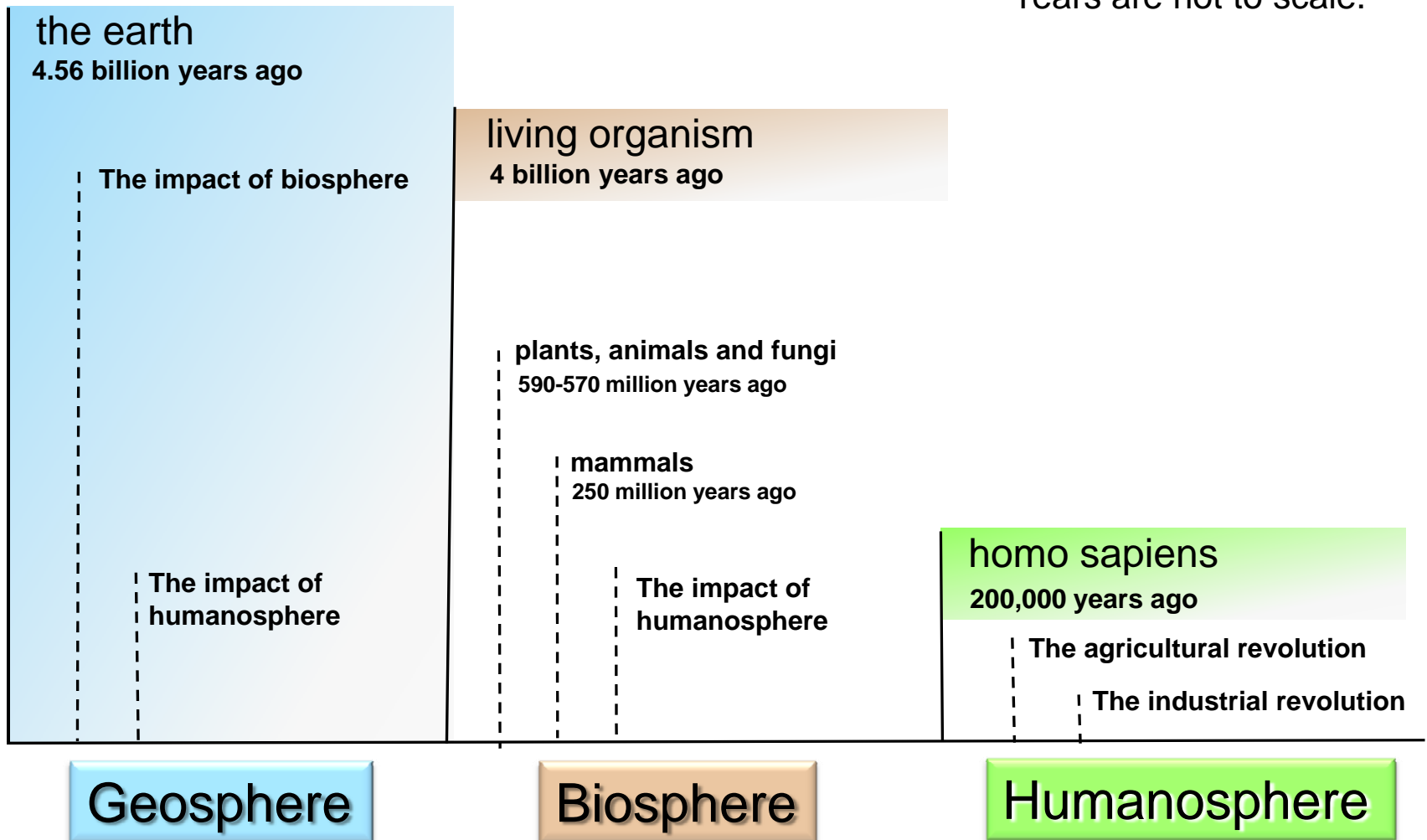




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Historical evolution of three spheres

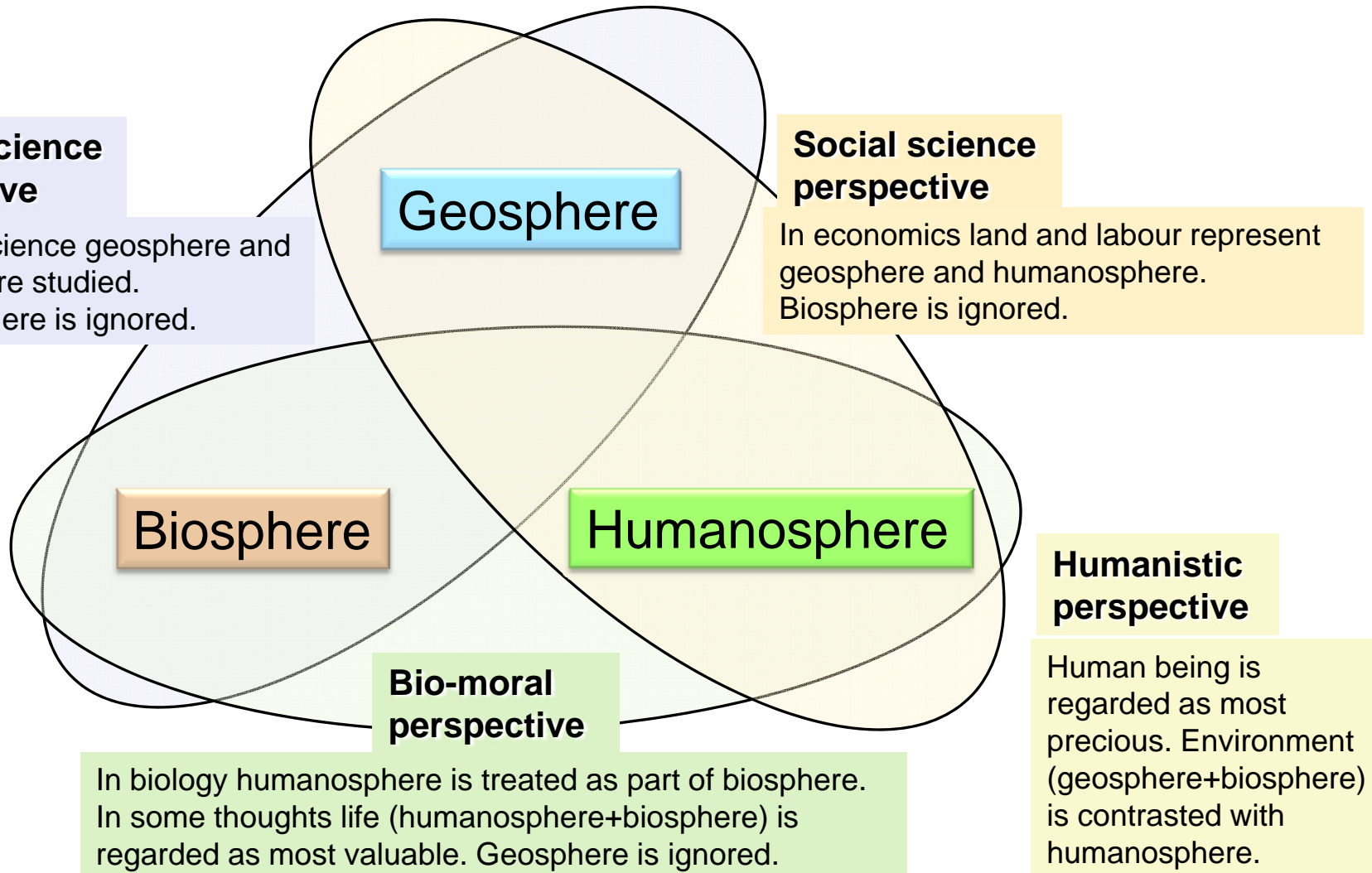
Years are not to scale.





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Prevailing perspectives of three spheres





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(1) Geo/biosphere-sensitive humanosphere

Geosphere

We need to be sensitive to:

- #energy flows from outside the biosphere (heat energy from the sun and fossil fuels)
- #energy circulation within the geo/biosphere

Biosphere

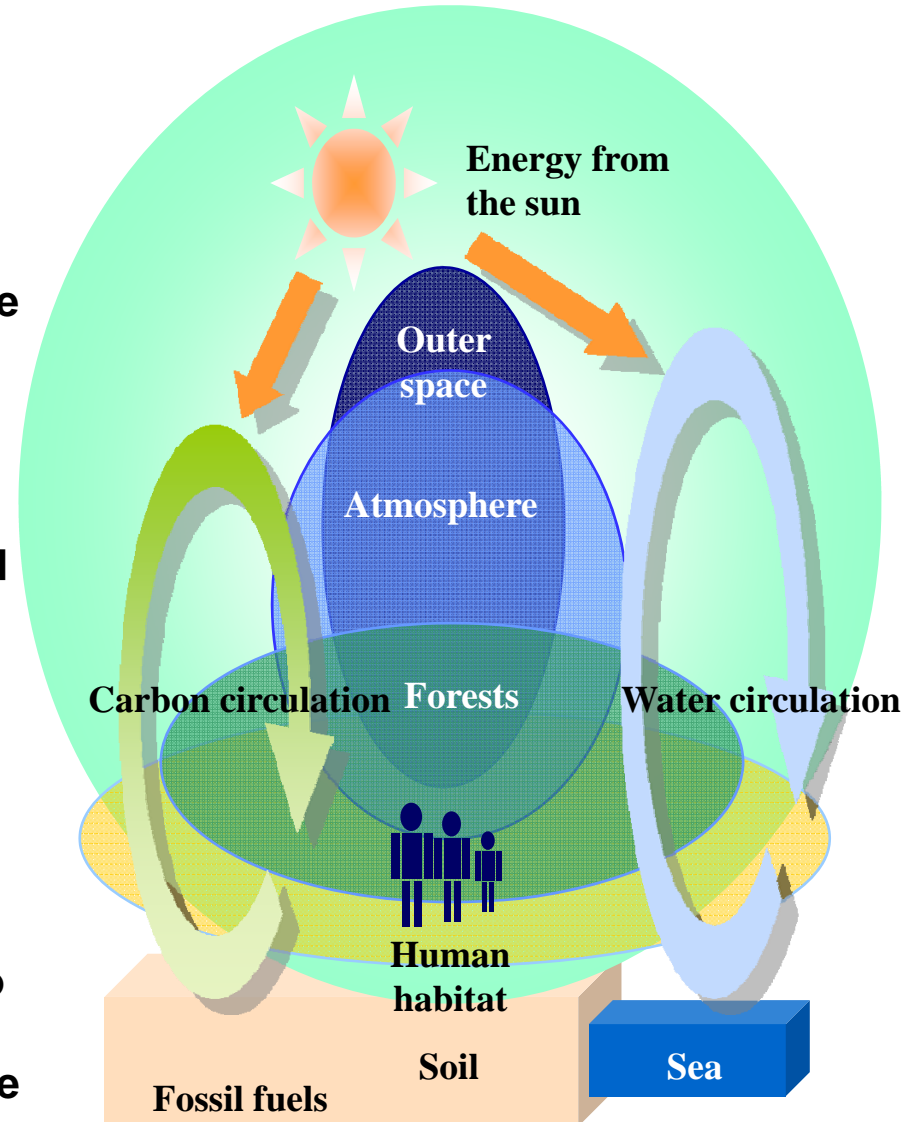
We need to be sensitive to:

- #material flows and conversions within and outside the biosphere (including carbon)
- #water and atmospheric circulation within the geo/biosphere

Humanosphere

We need to be sensitive to:

- #technology and institutions responsive to the stability of the geo-biosphere
- #traditional governance by local knowledge





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(2) Tropics-centered view of the globe

Geosphere

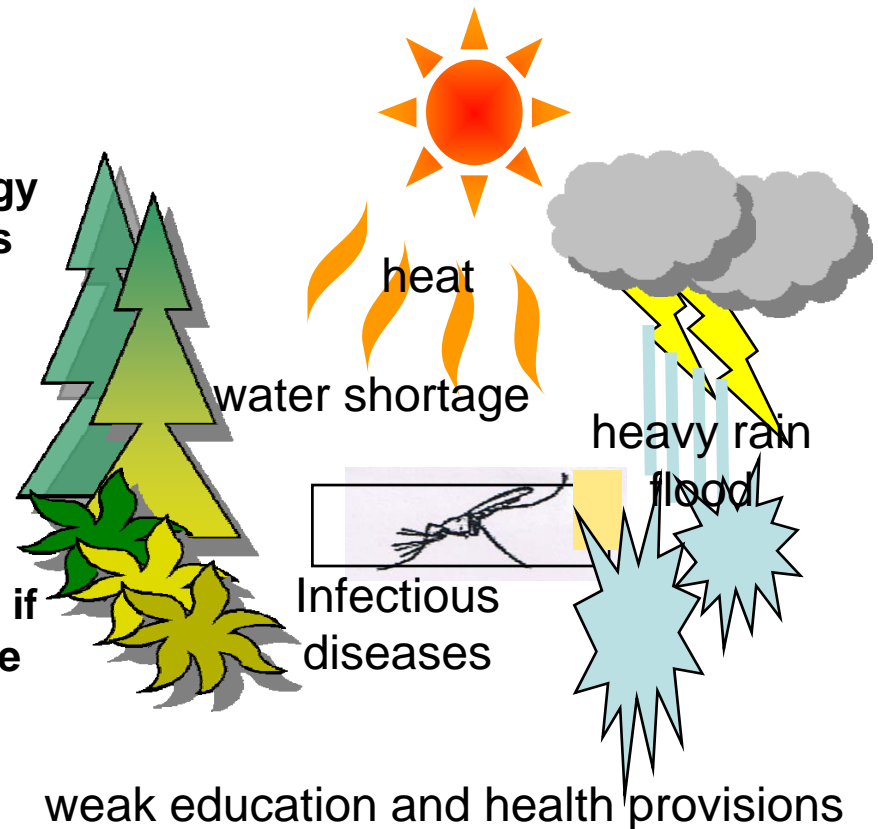
The tropics receives most of the heat energy the earth gets from the sun, and distributes it to other parts of the globe.

Biosphere

Biota activities are greatest in the tropics. We should begin with tropical biodiversity if we want to fully explore the potential of the biosphere.

Humanosphere

Most of the technologies and institutions have been created with the temperate zones in mind. We need to redefine them.



inadequate policy response

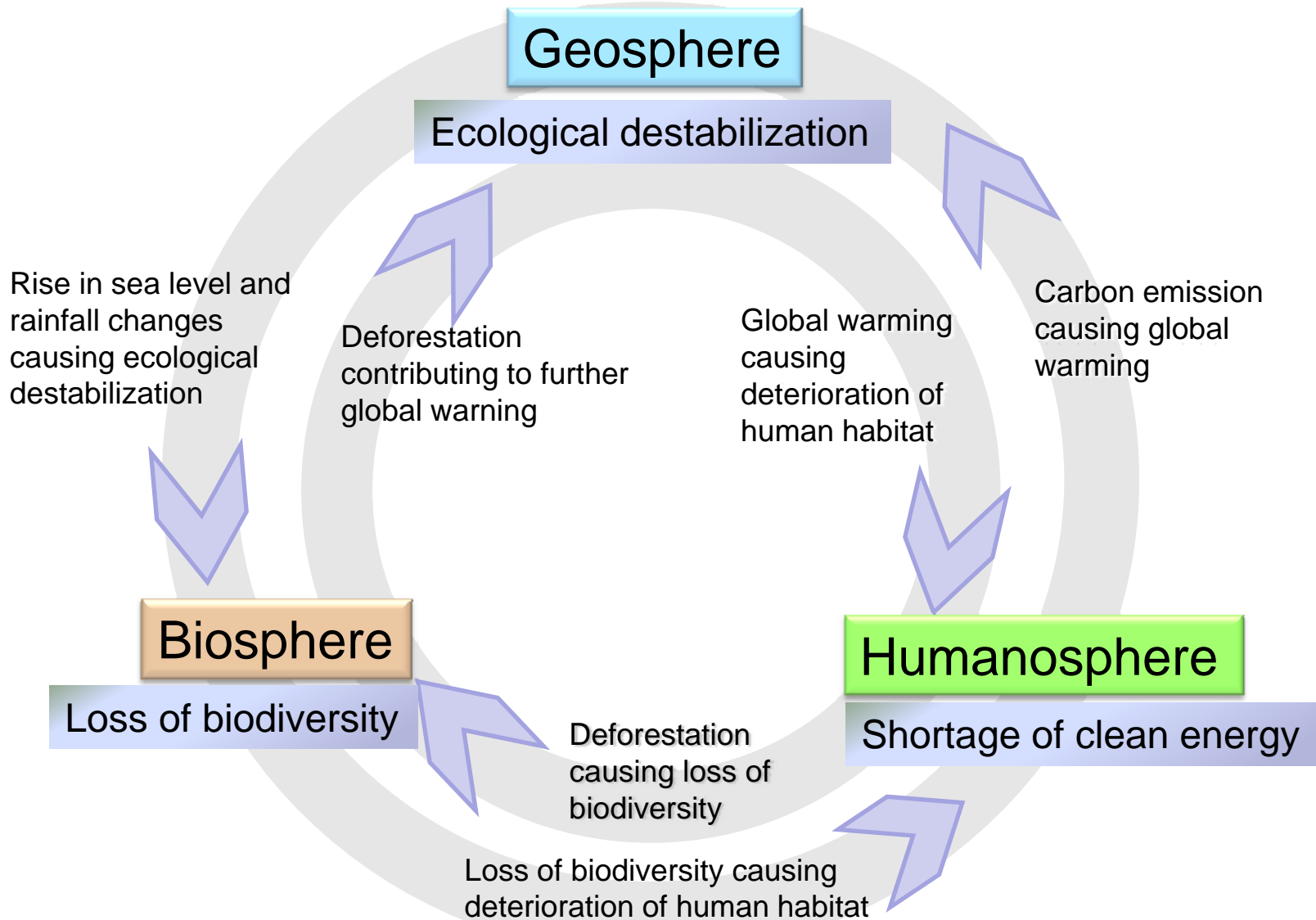
weak infrastructure

Prevailing view of the tropics



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Climate change: vicious circles





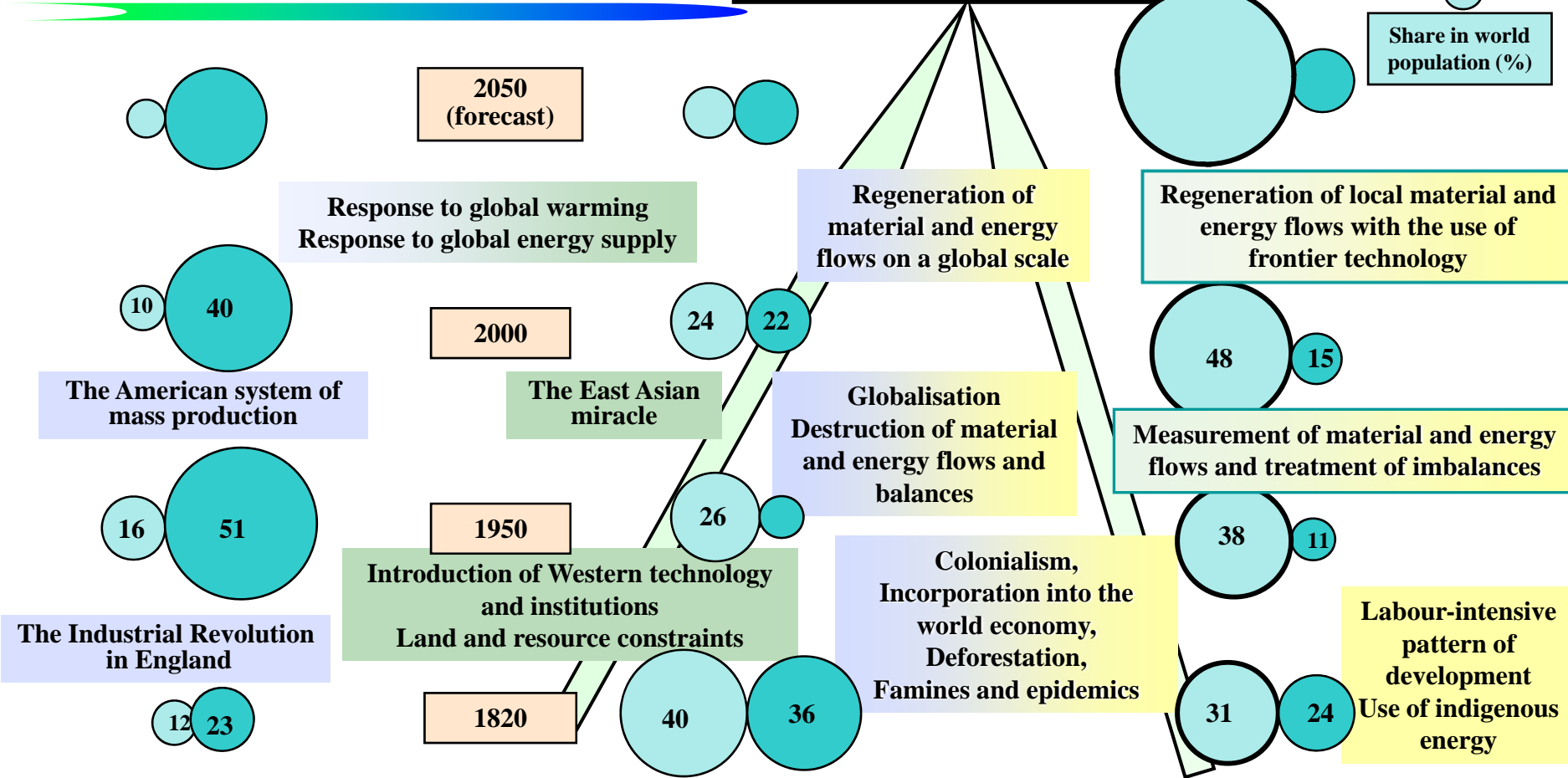
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The Multiple Paths

Humanosphere-sustainable path of global development

Share in world GDP (%)

Share in world population (%)



Labour productivity driven path (the West)
Capital-intensive technology
Resource- and energy-intensive technology

Land productivity driven path (East Asia)
Labour- and human resource-intensive technology
Resource- and energy-saving technology

Humanosphere driven path (Southeast/ South/ West Asia, Africa)
Risk reducing devices
Battle against environmental constraints
Labour-intensive technology
Resource- and energy-recycling technology

Sustainability concerns have been overwhelmed by productivity concerns.