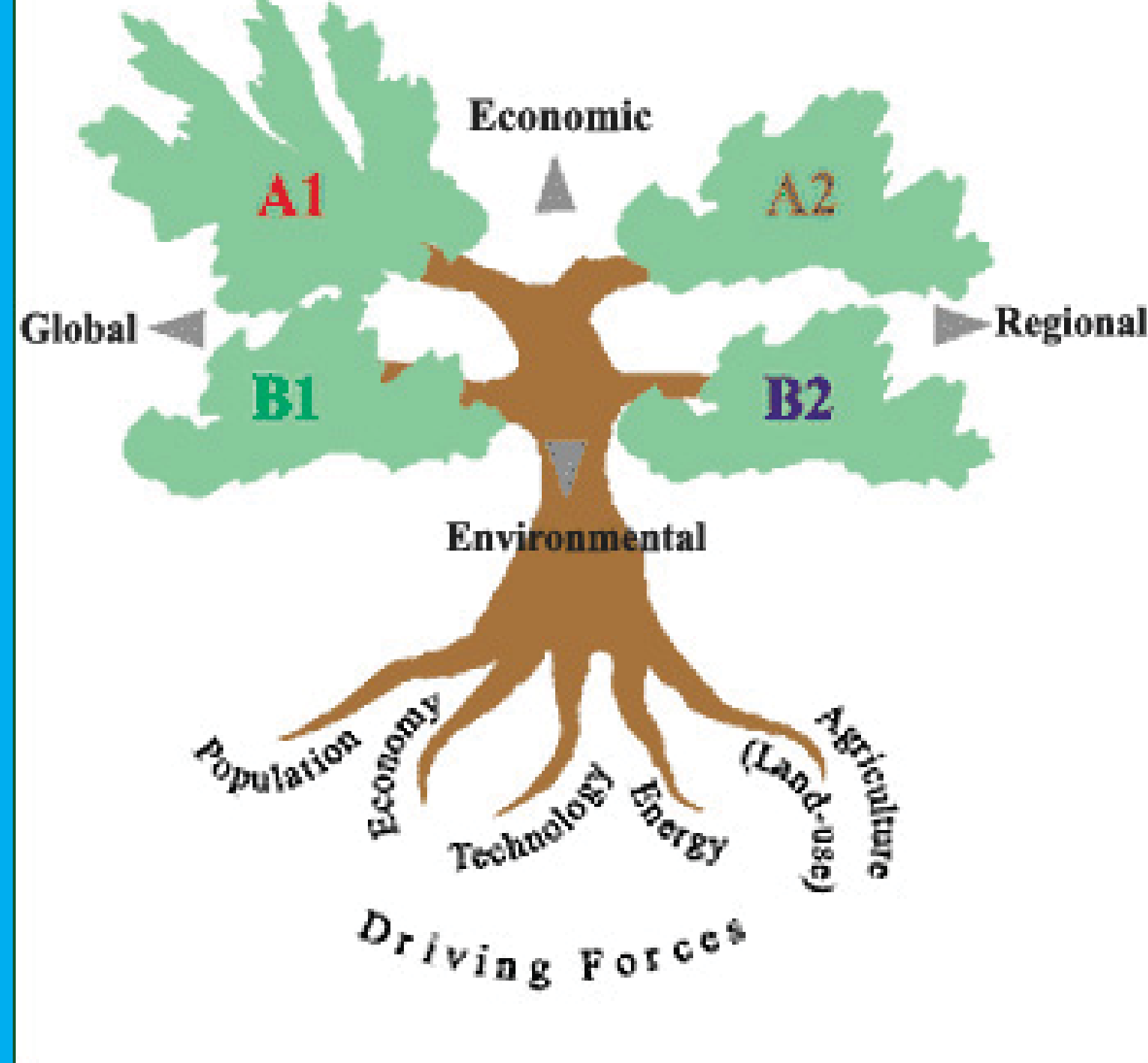


How do scientists predict the consequences of climate change?

IPCC Special Report on Emissions Scenarios: Scenario-Family Tree



Source: IPCC

*The A2 storyline is sometimes referred to as the "business as usual storyline". A2 assumes that the trend of the driving forces of today are the same in the future.

* No one can predict the future. In order to gauge the future impacts of climate change scientists have developed a series of future scenarios.

* Each storyline describes a demographic, social, economic, technological, environmental, and policy future for one of these scenario families

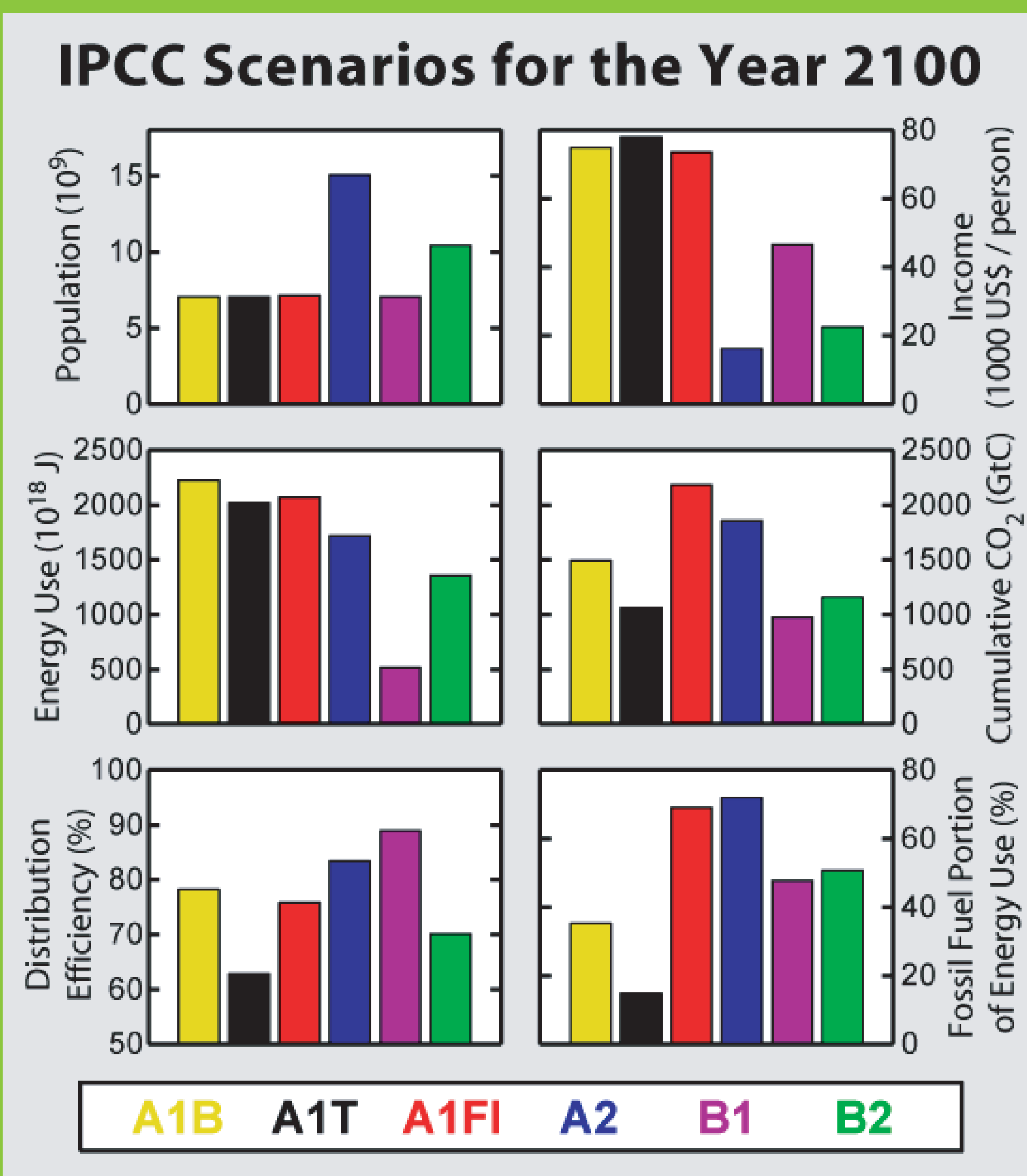
Main Points

*Future story lines help scientists predict the impacts of global warming

*Future population, energy infrastructure, and economics will determine the extent of global temperature increase

*Terrestrial and marine ecosystems will undergo irreversible change beyond 2.0°C (~ 4.0° F) of warming

Storylines for the future



Many factors affect how these scenarios are constructed. The four most important factors are emissions, population growth, technological development and economic growth. Some other factors that are important for future scenarios are average global income, worldwide energy consumption, and the efficiency of energy delivery.

Source: Globalwarming art.com

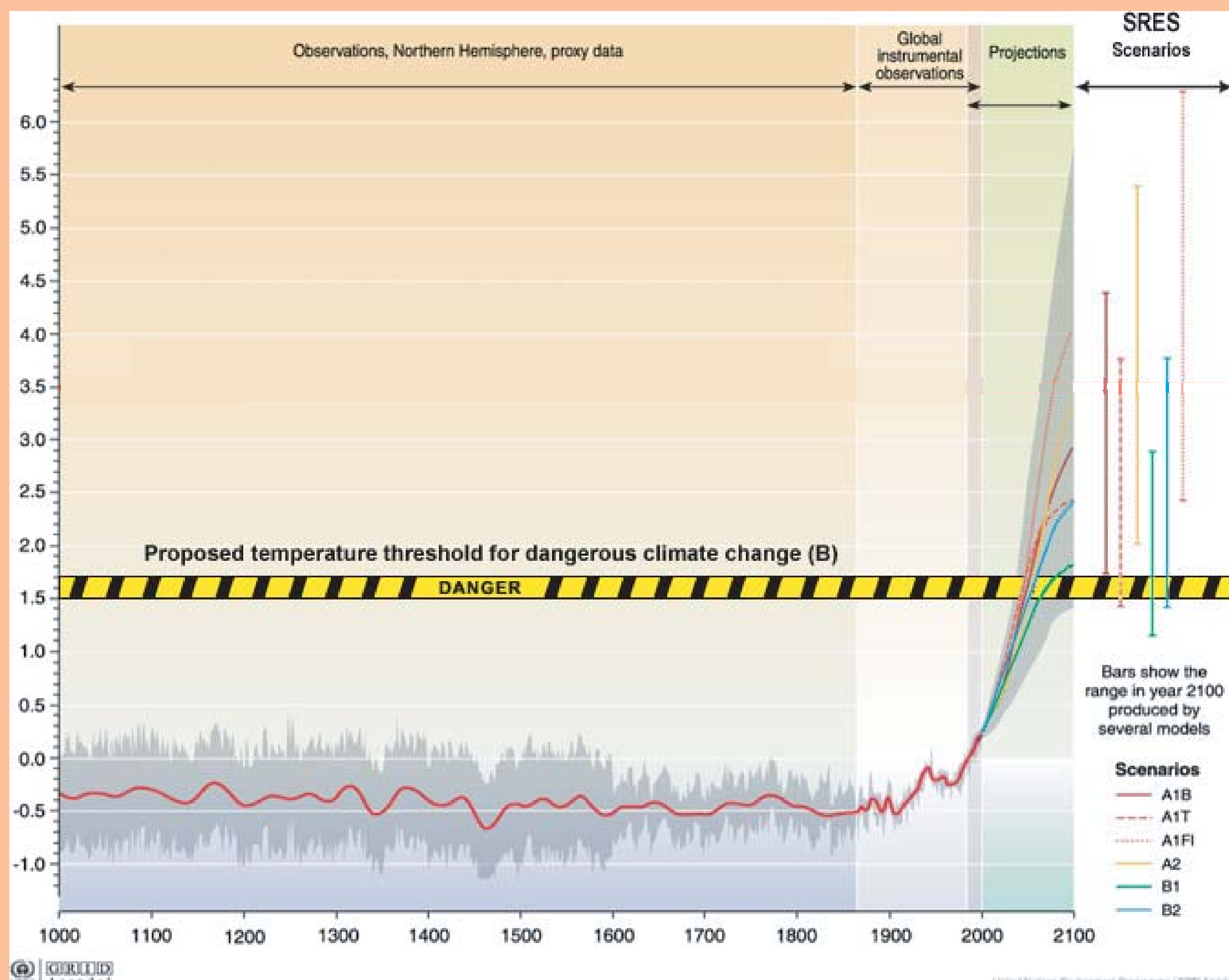
A brief description of the Storylines

Economic emphasis →	
A1 storyline World: market-oriented Economy: fastest per capita growth Population: 2050 peak, then decline Governance: strong regional interactions; income convergence Technology: three scenario groups: • A1FI: fossil intensive • A1T: non-fossil energy sources • A1B: balanced across all sources	A2 storyline World: differentiated Economy: regionally oriented; lowest per capita growth Population: continuously increasing Governance: self-reliance with preservation of local identities Technology: slowest and most fragmented development
B1 storyline World: convergent Economy: service and information based; lower growth than A1 Population: same as A1 Governance: global solutions to economic, social and environmental sustainability Technology: clean and resource-efficient	B2 storyline World: local solutions Economy: intermediate growth Population: continuously increasing at lower rate than A2 Governance: local and regional solutions to environmental protection and social equity Technology: more rapid than A2; less rapid, more diverse than A1/B1
← Environmental emphasis	

Figure TS.2. Summary characteristics of the four SRES storylines [F2.5]

Source: IPCC

The B2 and B1 storylines are ideal for the preservation of current climate. In these scenarios the world population is decreasing, energy sources are carbon-free and/or carbon neutral, and there is a high level of cooperation between nations and communities.



Source: IPCC

How much will the earth warm?

Future temperature increase depends on how quickly societies transition from a fossil fuel based economy to carbon free and carbon neutral energy technologies.

This diagram illustrates projected paths of warming for the year 2100. After 2.0 °C (~ 4.0° F) of warming terrestrial and marine ecosystems will have undergone irreversible change.

