



RIO+20, SUSTAINABLE DEVELOPMENT, AND BIODIVERSITY: SEEKING ANSWERS FROM NATURE

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Presented to CSD, 10 January 2011

Human infrastructure



Nature's infrastructure



CONSTITUENTS OF WELL-BEING



ARROW'S COLOR
Potential for mediation by socioeconomic factors

- Low
- Medium
- High

ARROW'S WIDTH
Intensity of linkages between ecosystem services and human well-being

- Weak
- Medium
- Strong

Source: Millennium Ecosystem Assessment

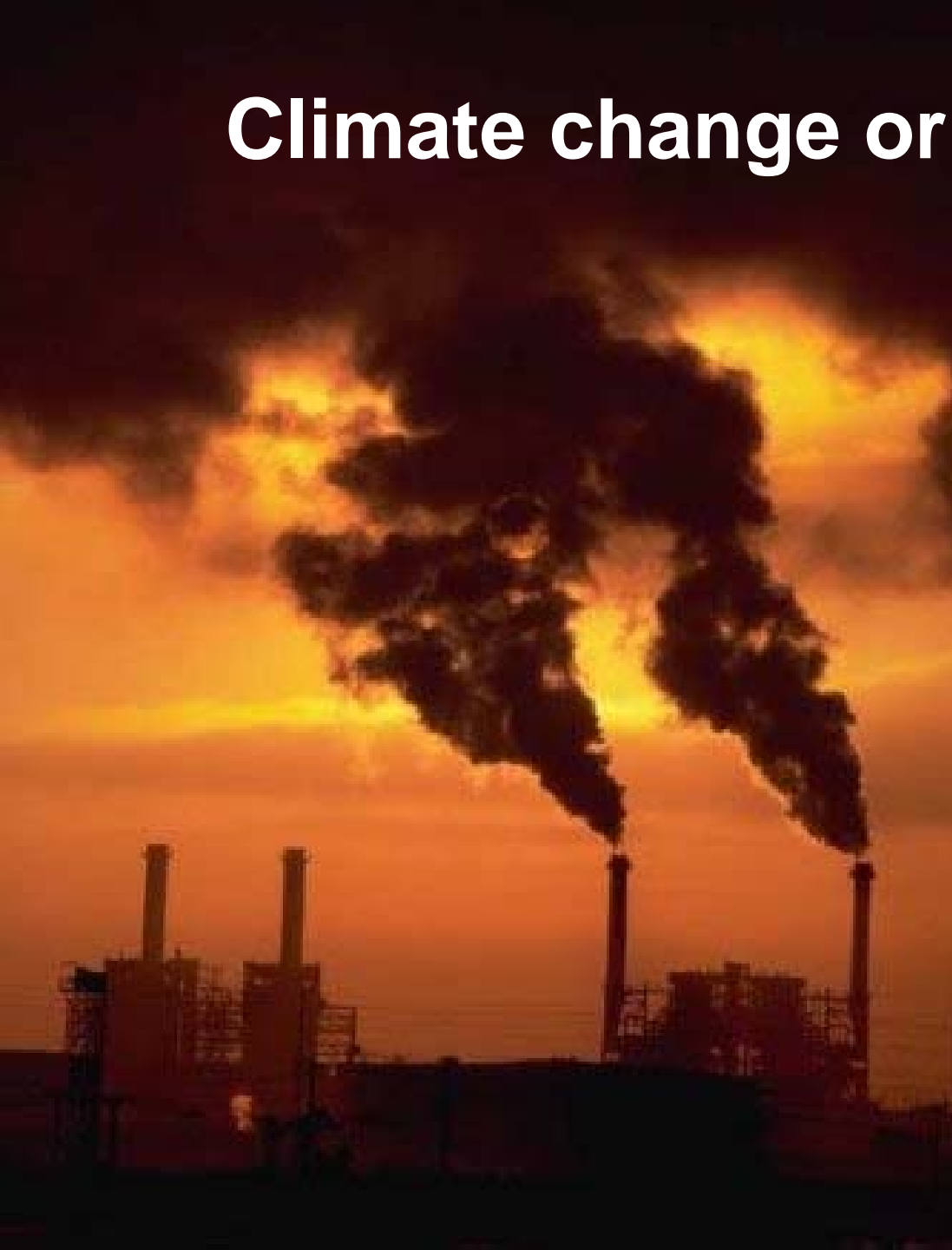
False dichotomies

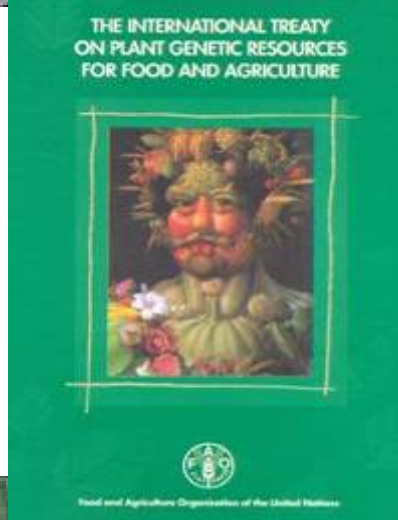
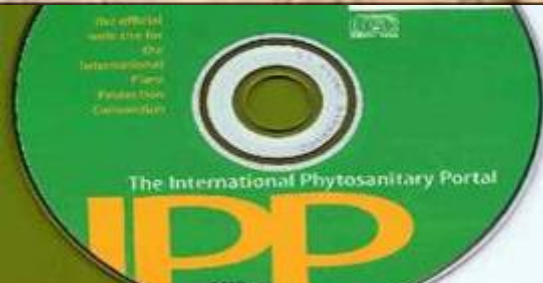


artifice
rich
glib
corrupt
decadence
godless
celebrity
success
the moment

the "natural"
poor
sincere
virtuous
restraint
god fearing
anonymity
failure
eternity

Climate change or biodiversity?







The future:

More effective coordination of international environmental laws, with strong enforcement and implementation measures?

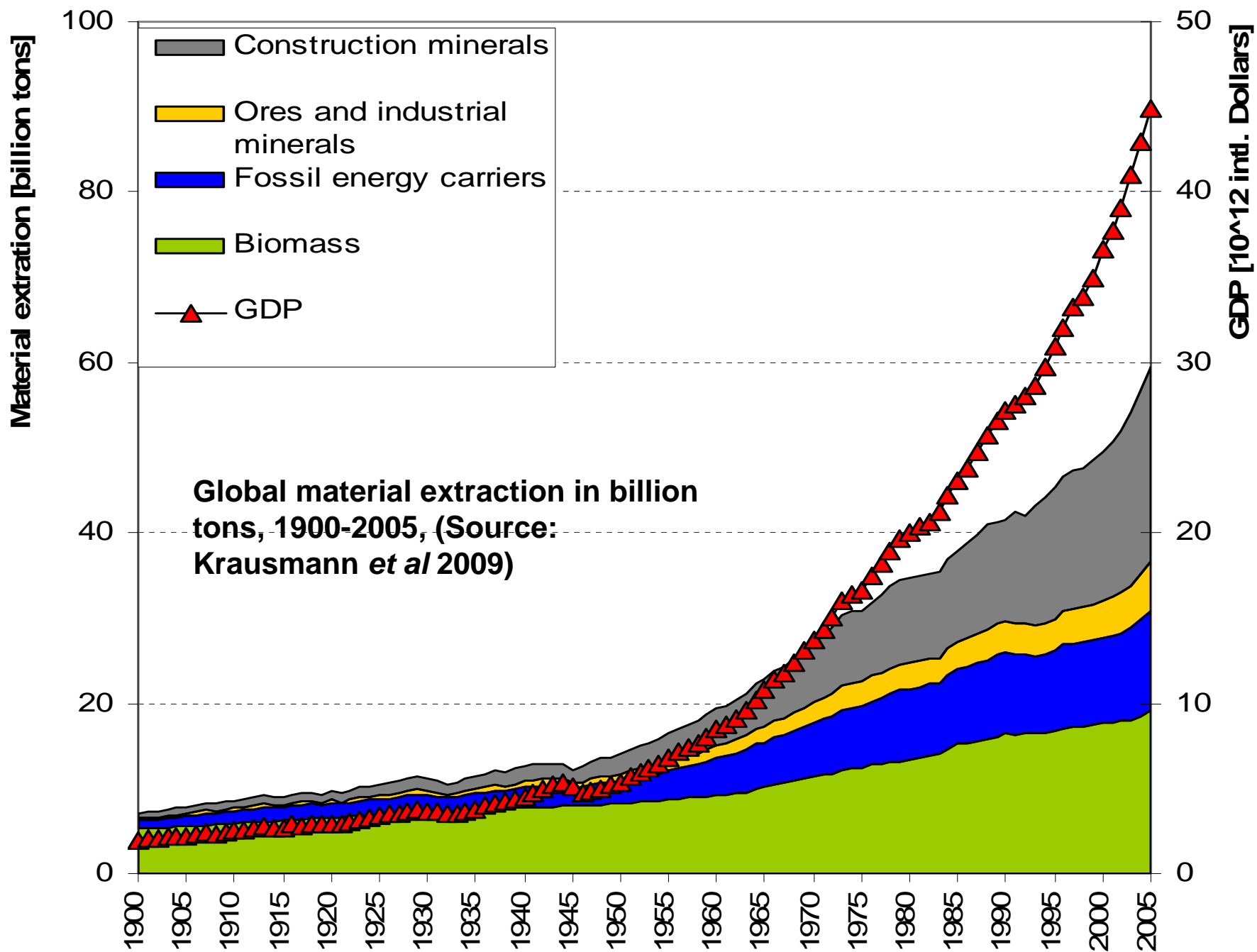
Or a patchwork of uncoordinated conventions, protocols, and agreements that are so soft that significant environmental degradation inevitably has major negative impacts on human well-being?

**I consume,
therefore
I am**



SE

20th century advances in technology based largely on physics, chemistry, and fossil fuels led to a quadrupling of the human population and a 16-fold increase in consumption.





**The life and high times
of our petroleum party**



0

1000

2000

3000

4000

This Ferrari F430 runs on biofuel





A post-petroleum future?

Resource decoupling

Human well-being

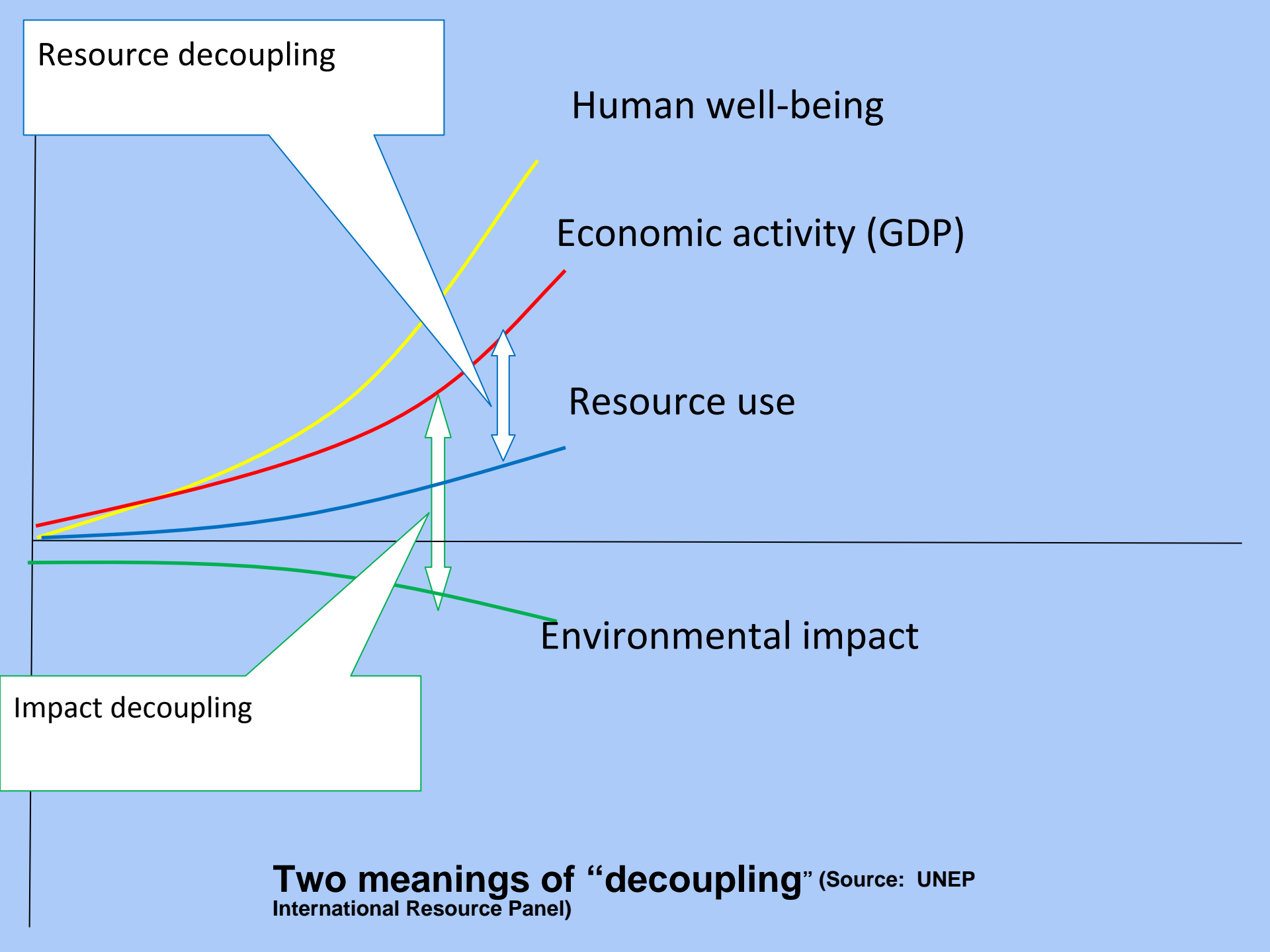
Economic activity (GDP)

Resource use

Environmental impact

Impact decoupling

Two meanings of “decoupling” (Source: UNEP International Resource Panel)



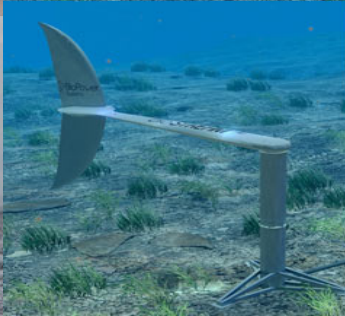
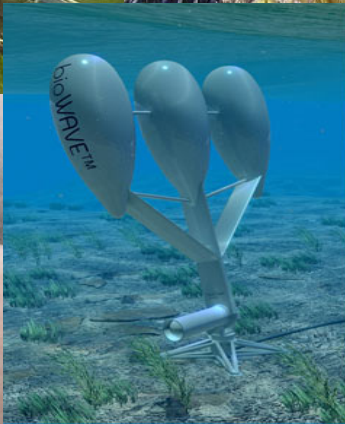
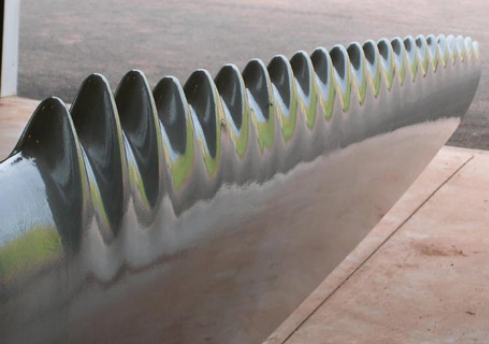
A scenic landscape featuring a clear blue sky with light clouds, snow-capped mountains in the distance, a dense forest of evergreen trees in the mid-ground, and a calm body of water in the foreground. The text is overlaid in a bright yellow color.

We need a new approach.

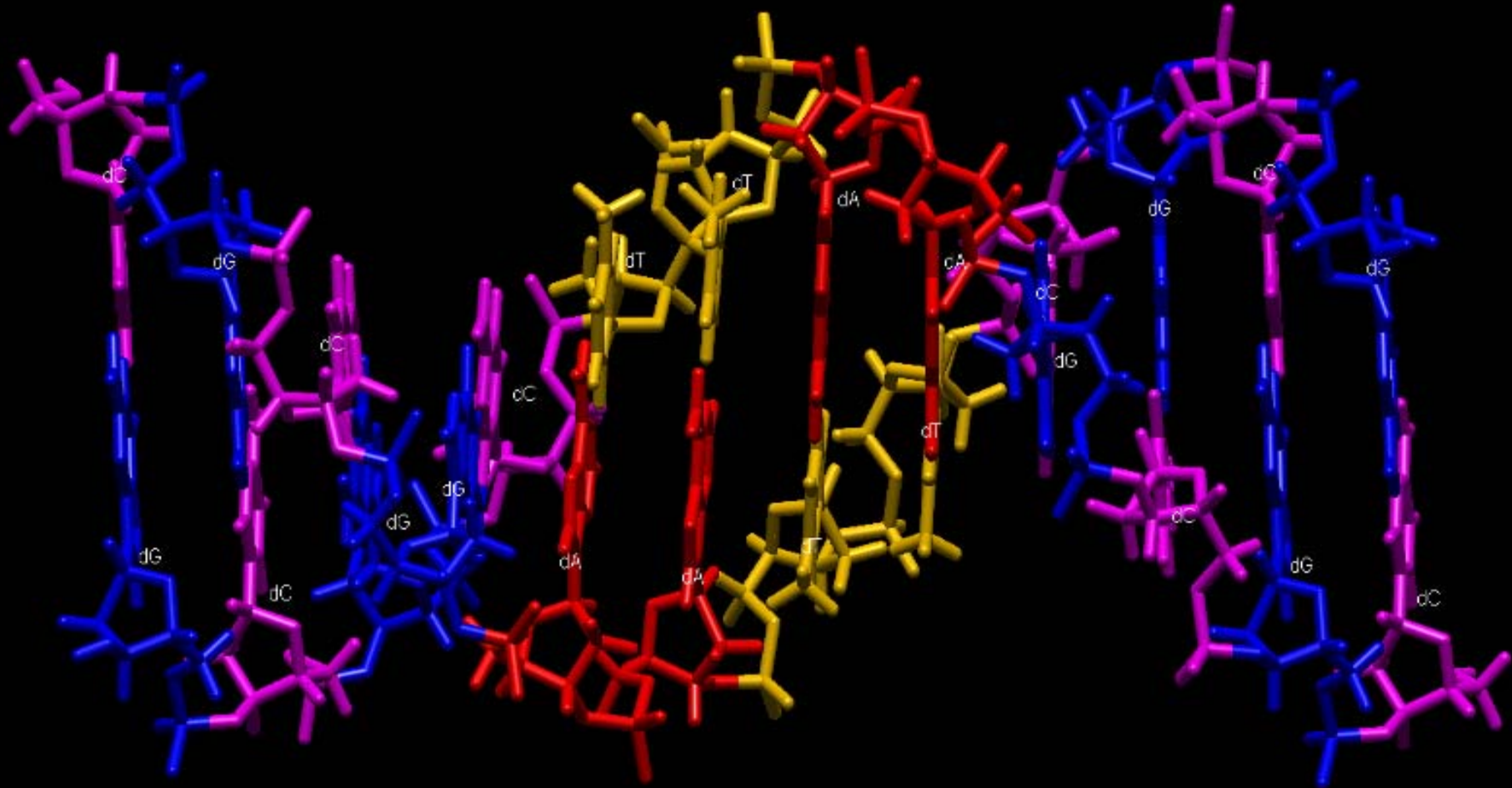
Can this be the Biological Century?

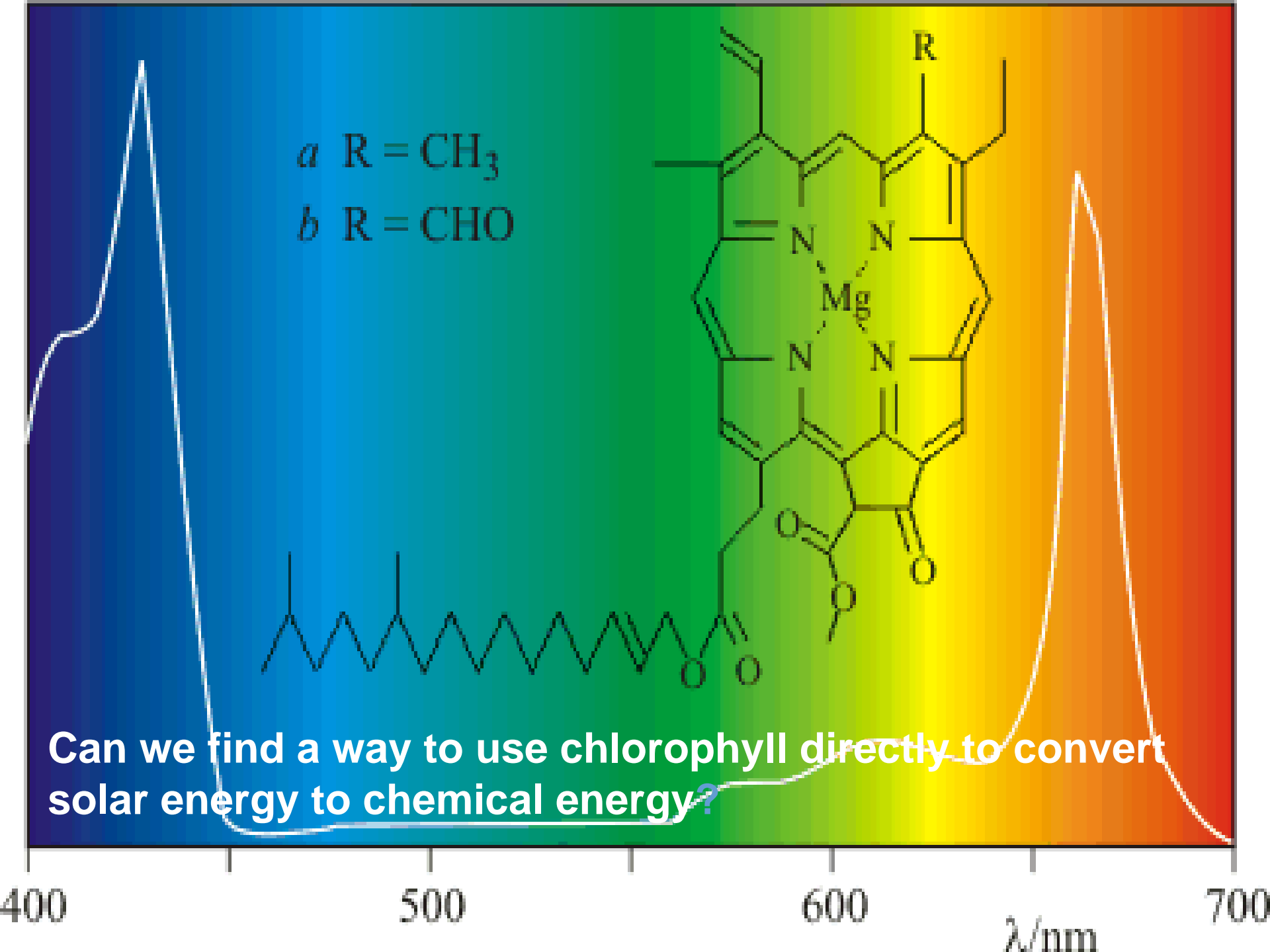
Can we use the metaphors and approaches of biology, and its cornucopia of technology, to help drive the principal social, ethical, and economic issues of the coming century? Can biology be an answer to the challenge of sustainability?

Nature has many answers to sustainability challenges



DNA is information that we are only just beginning to understand







The Biological Century offers a new metaphor for action, based on four principles:

- **Conservation of biodiversity is an expression of human culture, and essential to sustainability.**
- **Biodiversity needs active management if it is to provide the goods and services people desire.**
- **Biodiversity management needs to include some areas where natural ecosystems are enabled to continue their evolution as a reservoir of creativity.**
- **New technologies based on biodiversity may be the best answer to sustainability in a time of growing demand and rapid change.**

Protocole de Montréal 20th Montreal Protocol



Keys to success: Clear and convincing science; serious public concern; economically viable solutions; support from industry and other interest groups; and a strong legal basis

