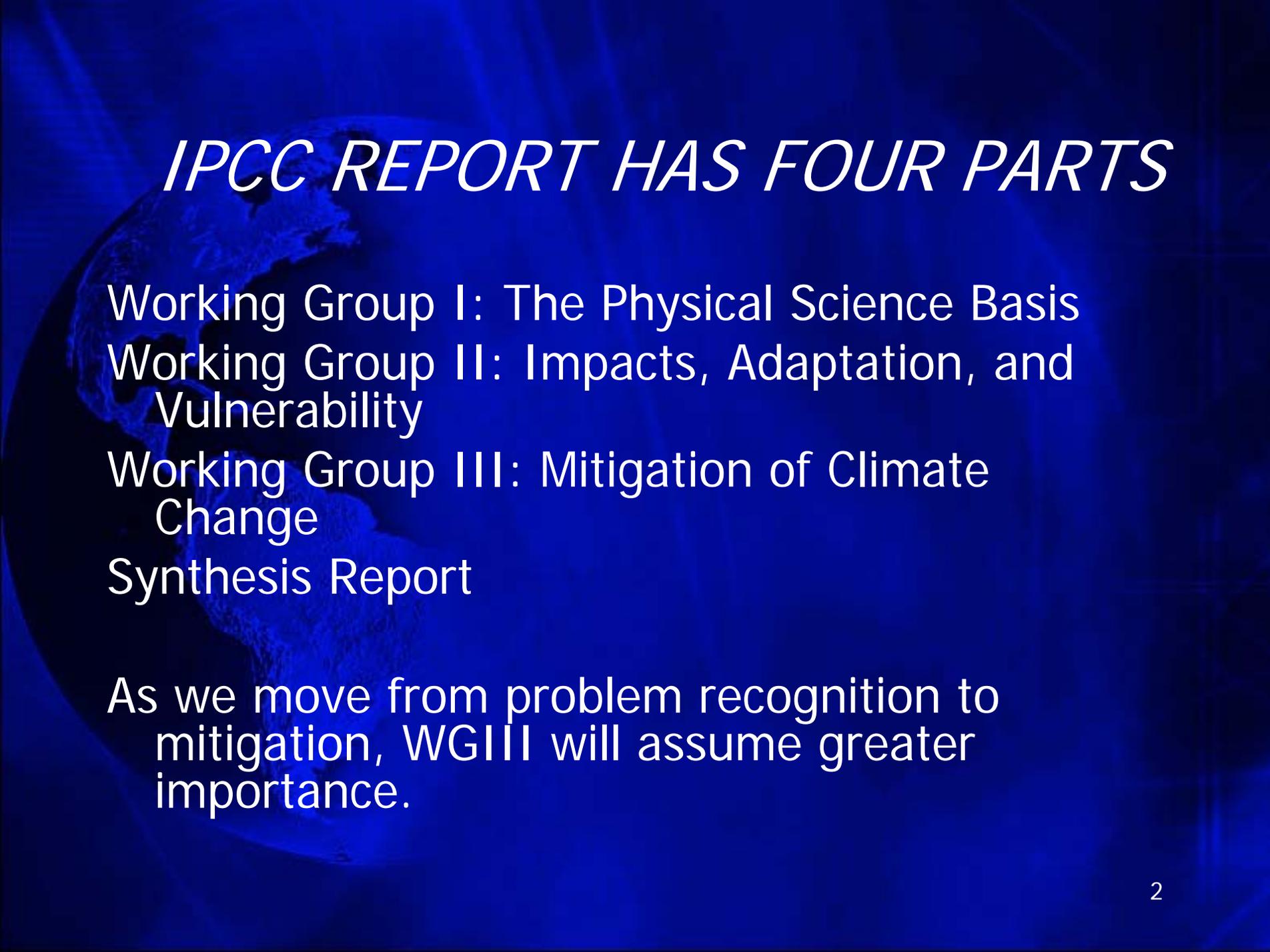


*ENERGY EFFICIENCY AND  
CONSERVATION AS ETHICAL  
RESPONSIBILITIES:  
SUGGESTIONS FOR FUTURE WORK  
OF IPCC WORKING GROUP III*

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# *IPCC REPORT HAS FOUR PARTS*

Working Group I: The Physical Science Basis

Working Group II: Impacts, Adaptation, and  
Vulnerability

Working Group III: Mitigation of Climate  
Change

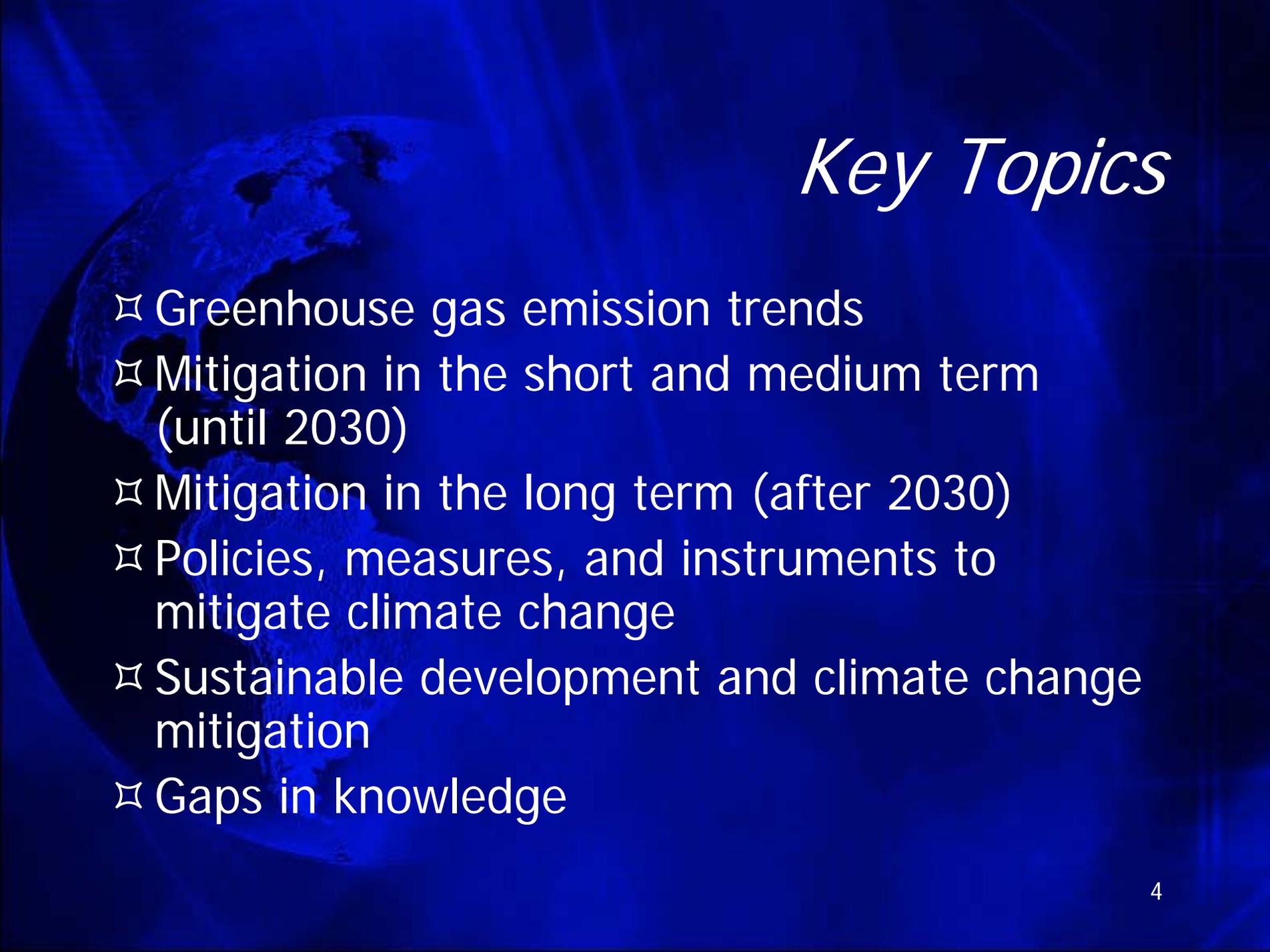
Synthesis Report

As we move from problem recognition to  
mitigation, WGIII will assume greater  
importance.



## *2. Working Group III Report: Mitigation of Climate Change (2007)*

1. Introduction
2. Framing Issues
3. Issues related to mitigation in the long term context
4. Energy supply
5. Transport and its infrastructure
6. Residential and commercial buildings
7. Industry
8. Agriculture
9. Forestry
10. Waste management
11. Mitigation from a cross sectoral perspective
12. Sustainable development and mitigation
13. Policies, instruments and co-operative agreements



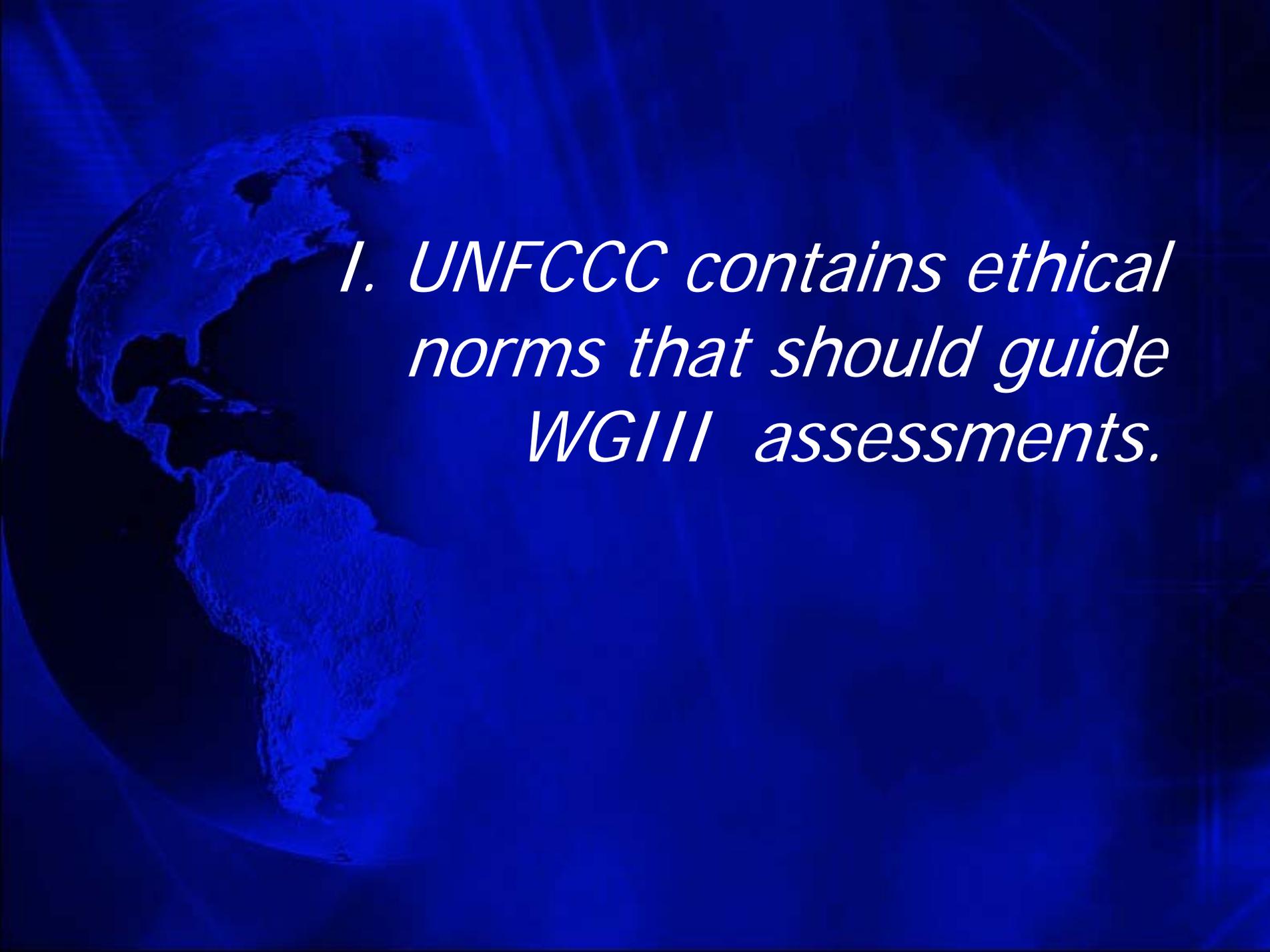
# *Key Topics*

- ✧ Greenhouse gas emission trends
- ✧ Mitigation in the short and medium term (until 2030)
- ✧ Mitigation in the long term (after 2030)
- ✧ Policies, measures, and instruments to mitigate climate change
- ✧ Sustainable development and climate change mitigation
- ✧ Gaps in knowledge



# *Thesis*

- ✧ 1. Energy efficiency and conservation are not simply two more options; they are the most equitable and sustainable options (except for people not now served by modern energy.)
- ✧ 2. WGIII should:
  - ✧ Issue a special report in the near future assessing the potential of energy efficiency and conservation to contribute to stabilization of greenhouse gas emissions in the next ten years.
  - ✧ Directly address developed country leadership in future reports, especially on per capita energy consumption and greenhouse gas emissions.

A blue-tinted image of the Earth from space, showing the Americas. The text is overlaid on the right side of the image.

*I. UNFCCC contains ethical norms that should guide WGIII assessments.*

## *A. Developed Country Leadership*

- ✧ Article 3.1. "The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof."
- ✧ Preamble: "the largest share of historical and current global emissions of greenhouse gases has originated in developed countries"



## *A legal duty of developed countries*

Article 4.2(a). Each developed country party  
" *shall* adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs. These policies and measures will demonstrate that developed countries are taking the lead in modifying longer-term trends in anthropogenic emissions...."



## *2. Equity for developing and vulnerable countries*

- ✧ Article 3.2. "The specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration."
- ✧ Preamble: "per capita emissions in developing countries are still relatively low and...the share of global emissions originating in developing countries will grow to meet their social and development needs"



### *3. Right of parties to sustainable development*

- ✧ Article 3.4: “The Parties have a right to, and should, promote sustainable development.”
  - ✧ Social, economic, and environmental dimensions
  - ✧ Intergenerational equity

A blue-tinted image of the Earth, showing the continents of North and South America. The text is overlaid on the right side of the image.

*II. These principles create a strong preference for energy efficiency and conservation.*

# *Energy Consumption and GHG Intensity*

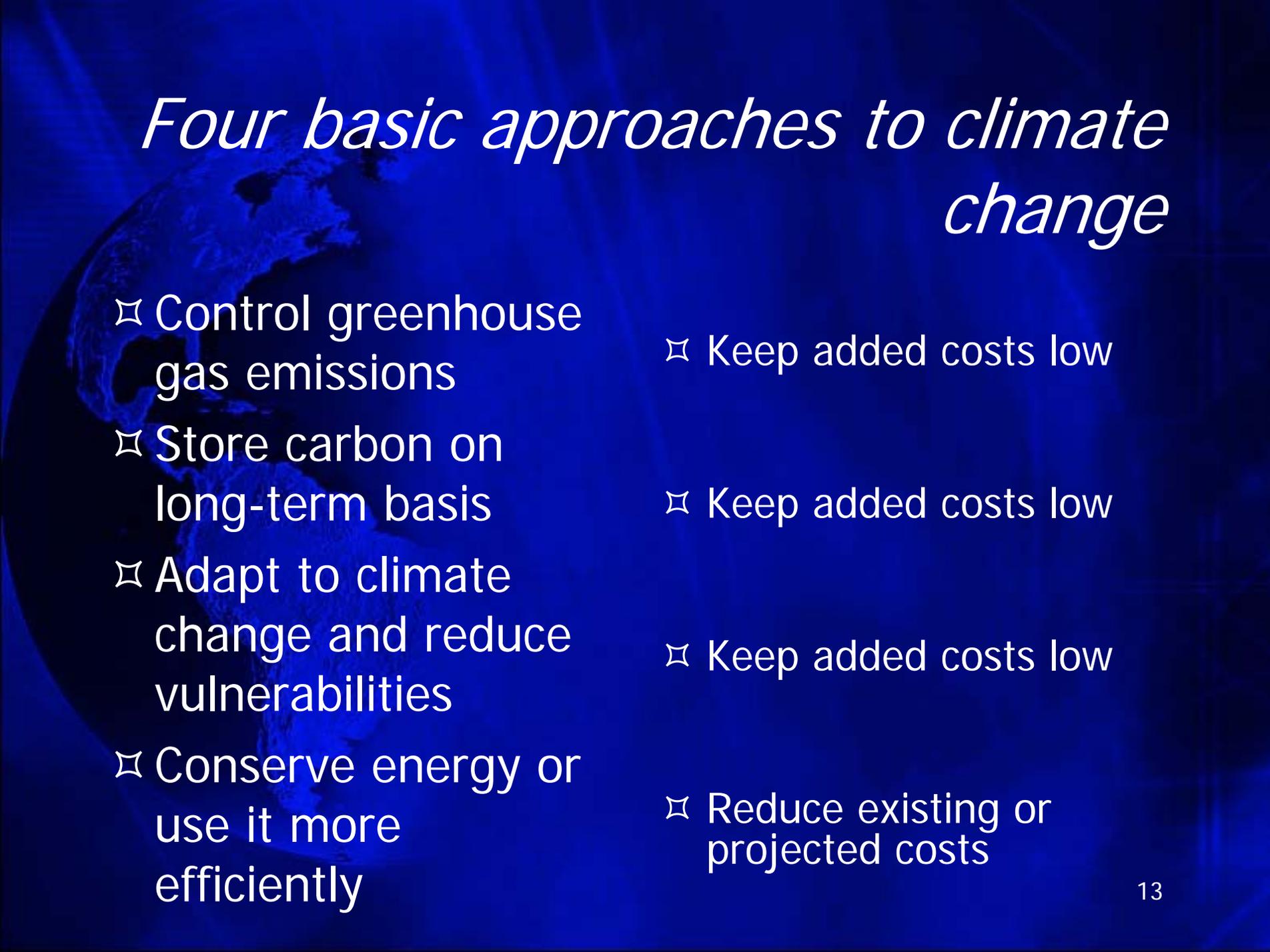
## **Developed countries**

- ✧ 20% of world population
- ✧ 46% of GHG emissions
  
- ✧ 57% of world GDP
- ✧ GHG intensity—0.68 kg CO<sub>2</sub> equivalent/U.S. dollar in GDP

## **Developing countries**

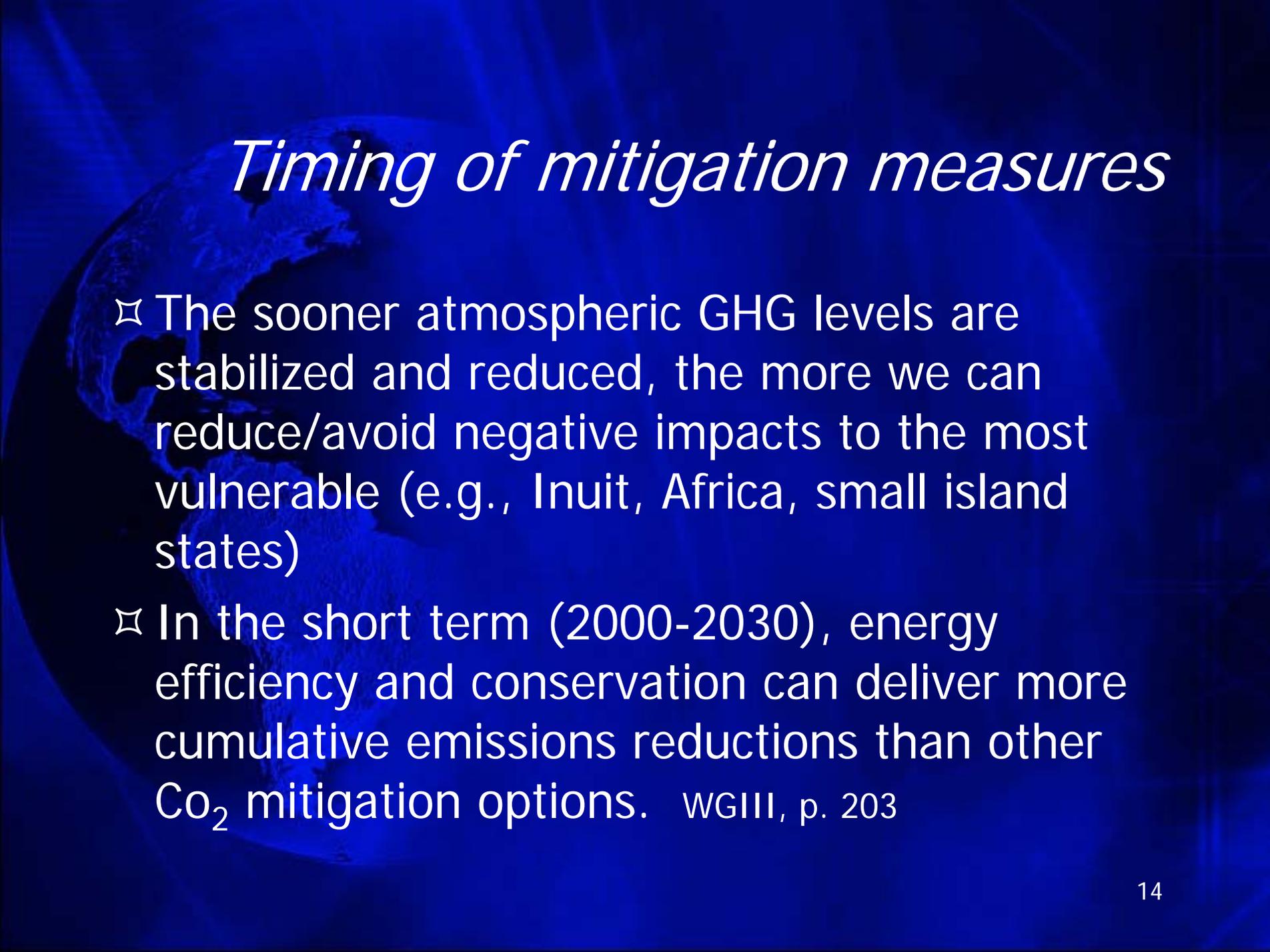
- ✧ 80% of world population
- ✧ 54% of GHG emissions
  
- ✧ 43% of world GDP
- ✧ GHG intensity—1.06 kg CO<sub>2</sub> equivalent/U.S. dollar in GDP

✧ WGIII, p. 30



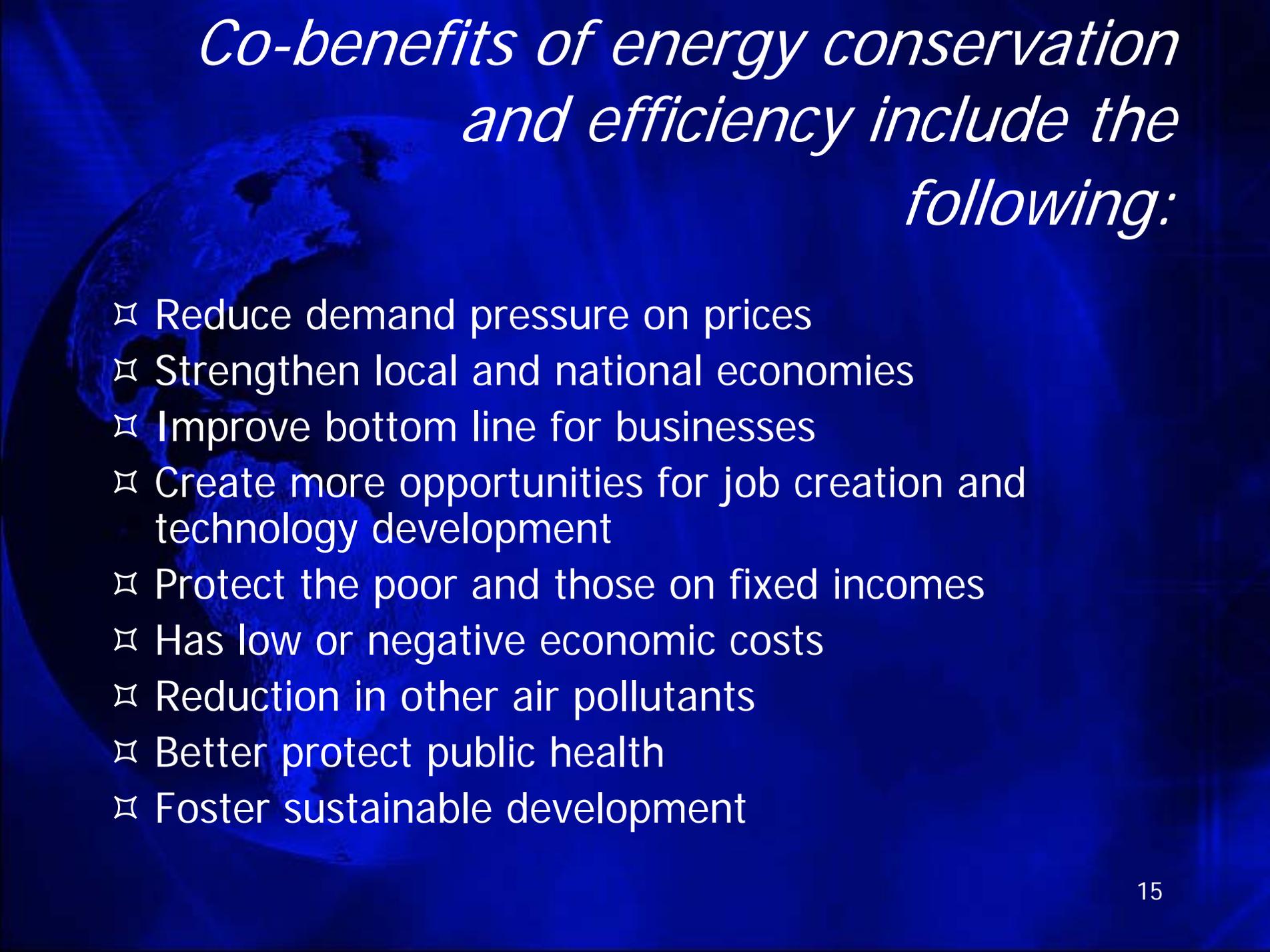
# *Four basic approaches to climate change*

- ✧ Control greenhouse gas emissions
- ✧ Store carbon on long-term basis
- ✧ Adapt to climate change and reduce vulnerabilities
- ✧ Conserve energy or use it more efficiently
- ✧ Keep added costs low
- ✧ Keep added costs low
- ✧ Keep added costs low
- ✧ Reduce existing or projected costs



## *Timing of mitigation measures*

- ✧ The sooner atmospheric GHG levels are stabilized and reduced, the more we can reduce/avoid negative impacts to the most vulnerable (e.g., Inuit, Africa, small island states)
- ✧ In the short term (2000-2030), energy efficiency and conservation can deliver more cumulative emissions reductions than other Co<sub>2</sub> mitigation options. WGIII, p. 203

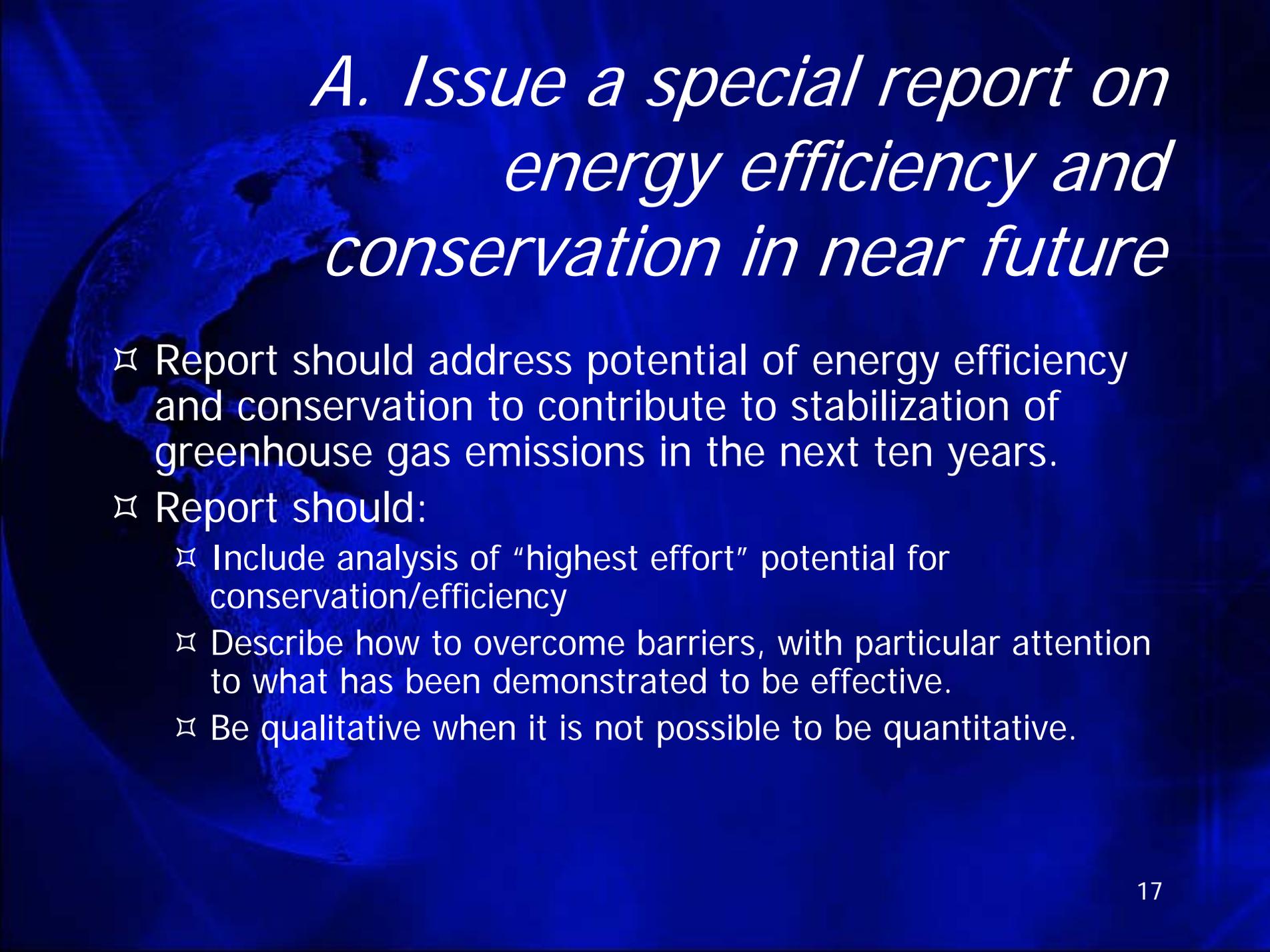


*Co-benefits of energy conservation  
and efficiency include the  
following:*

- ✧ Reduce demand pressure on prices
- ✧ Strengthen local and national economies
- ✧ Improve bottom line for businesses
- ✧ Create more opportunities for job creation and technology development
- ✧ Protect the poor and those on fixed incomes
- ✧ Has low or negative economic costs
- ✧ Reduction in other air pollutants
- ✧ Better protect public health
- ✧ Foster sustainable development

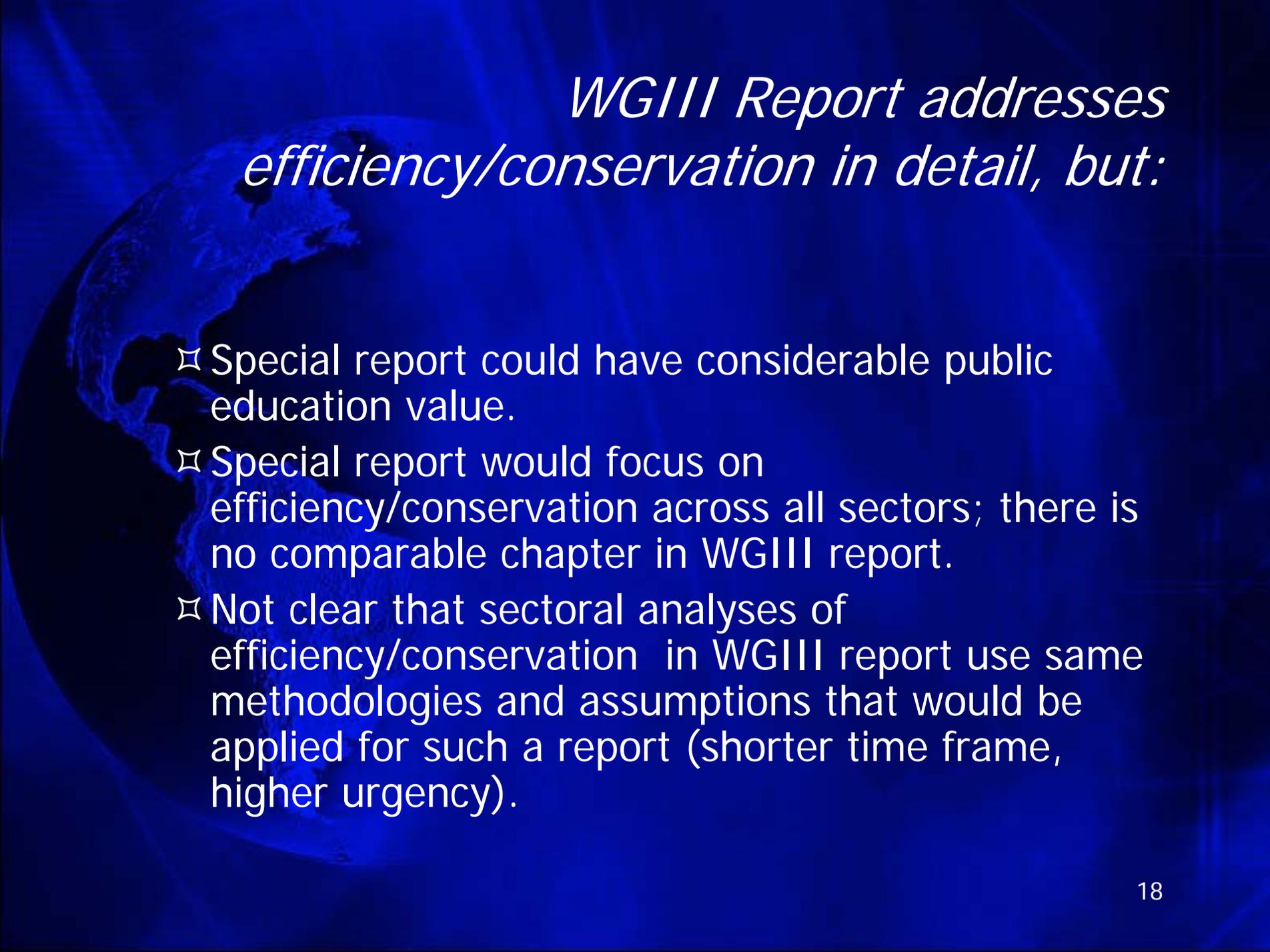


*III. Possible next steps for  
WGIII on efficiency and  
conservation*



## *A. Issue a special report on energy efficiency and conservation in near future*

- ✧ Report should address potential of energy efficiency and conservation to contribute to stabilization of greenhouse gas emissions in the next ten years.
- ✧ Report should:
  - ✧ Include analysis of “highest effort” potential for conservation/efficiency
  - ✧ Describe how to overcome barriers, with particular attention to what has been demonstrated to be effective.
  - ✧ Be qualitative when it is not possible to be quantitative.



*WGIII Report addresses efficiency/conservation in detail, but:*

- ✧ Special report could have considerable public education value.
- ✧ Special report would focus on efficiency/conservation across all sectors; there is no comparable chapter in WGIII report.
- ✧ Not clear that sectoral analyses of efficiency/conservation in WGIII report use same methodologies and assumptions that would be applied for such a report (shorter time frame, higher urgency).



*B. Directly address developed country leadership, especially on per capita energy consumption and GHG emissions.*

- ✧ Because of high energy use, developed countries could likely significantly reduce per capita emissions with greater efficiency and conservation (WGIII).
- ✧ Describe legal and policy measures for developed countries that would lead to reduced per capita energy consumption and GHG emissions and that are consistent with sustainable development.
- ✧ Assess contribution of lifestyle/behavior changes in developed countries to reducing per capita energy consumption (note: substantial literature already exists).
- ✧ WGIII report does not fully address this issue.



# *Summary*

- ✧ 1. Energy efficiency and conservation are not simply two more options; they are the most equitable and sustainable options (except for people not now served by modern energy.)
- ✧ 2. WGIII should:
  - ✧ Issue a special report in the near future assessing the potential of energy efficiency and conservation to contribute to stabilization of greenhouse gas emissions in the next ten years.
  - ✧ Directly address developed country leadership in future reports, especially on per capita energy consumption and greenhouse gas emissions.



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