

Solving Adaptation (and Mitigation) and Sustainable Development Problems Together: Some Strategic Issues and Options

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**Sustainable Development and
Climate Change are closely linked**
**Overview of Findings: IPCC Fourth
Assessment Report 2007**



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IPCC AR4 – Summary of Main Findings

- **Global warming is unequivocal. Total radiative forcing of the climate now is unprecedented** in several thousand years, due to rising concentrations of GHG (CO₂, CH₄ & NO₂).
- **Humans activities since the 18th century are very likely to have caused net warming of Earth's climate, dominating over the last 50 years.** More temp. and sea level rise is inevitable, even with existing GHG concentrations.
- **Long term unmitigated climate change would likely exceed the capacity to adapt,** of natural managed and human systems.
- **Poor countries and poorest groups will be most vulnerable** to warming, sea level rise, precipitation changes and extreme events. Most socio-economic sectors, ecological systems and human health will suffer.
- **Adaptation measures are available,** but must be systematically developed
- **Mitigation technologies are also available,** but better policies and measures (PAM) are needed to realize their potential.
- **Making development more sustainable (MDMS)** by integrating climate change policy into sustainable development strategy is most effective solution.

**Climate Change Threat
Highlights Key Motivations
for Seeking More Sustainable
Development Paths**



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Sustainable Development will be harmed by Climate Change, especially in Developing Countries

The **sustainable development challenge** is to:

- **alleviate poverty** for the 1.3 billion people who live on less than \$1 per day and the 3 billion people who live on less than \$2 per day
- provide adequate **food**, especially for the 800 million people who are malnourished today—this will require food production to double in the next 35 years without further environmental degradation, e.g., deforestation
- provide **clean water** for the 1.3 billion people who live without clean water and provide sanitation for the 2 billion people who live without sanitation
- provide **energy** for the 2 billion people who live without electricity
- provide a **healthy environment** for the 1.4 billion people who are exposed to dangerous levels of *outdoor pollution* and the even larger number exposed to dangerous levels of *indoor air pollution and vector-borne diseases*
- provide **safe shelter** for those that live in areas susceptible to civil strife due to environmental degradation and those vulnerable to natural disasters

Major Current Global Issues

Poverty, inequity and human well-being

billions living on <1 per day without basic needs, unequal income distribution

Scarce resources, conflict and competition

energy, water, land, food, etc.

Environmental damage

degradation of air, land and water, climate change, etc.

Globalisation

high risks (e.g., financial crises), but benefits if well-managed

Governance

mis-management, corruption, govt. business and civil society partnership crucial

Private-public balance

Too much government control and unrestrained markets are both risky extremes



Financial Markets

Bubbles

e.g., 2008 sub-
prime crisis

Productive Economic Assets

**Risks due to Divergences between
Illusions and Realities**

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Financial Markets

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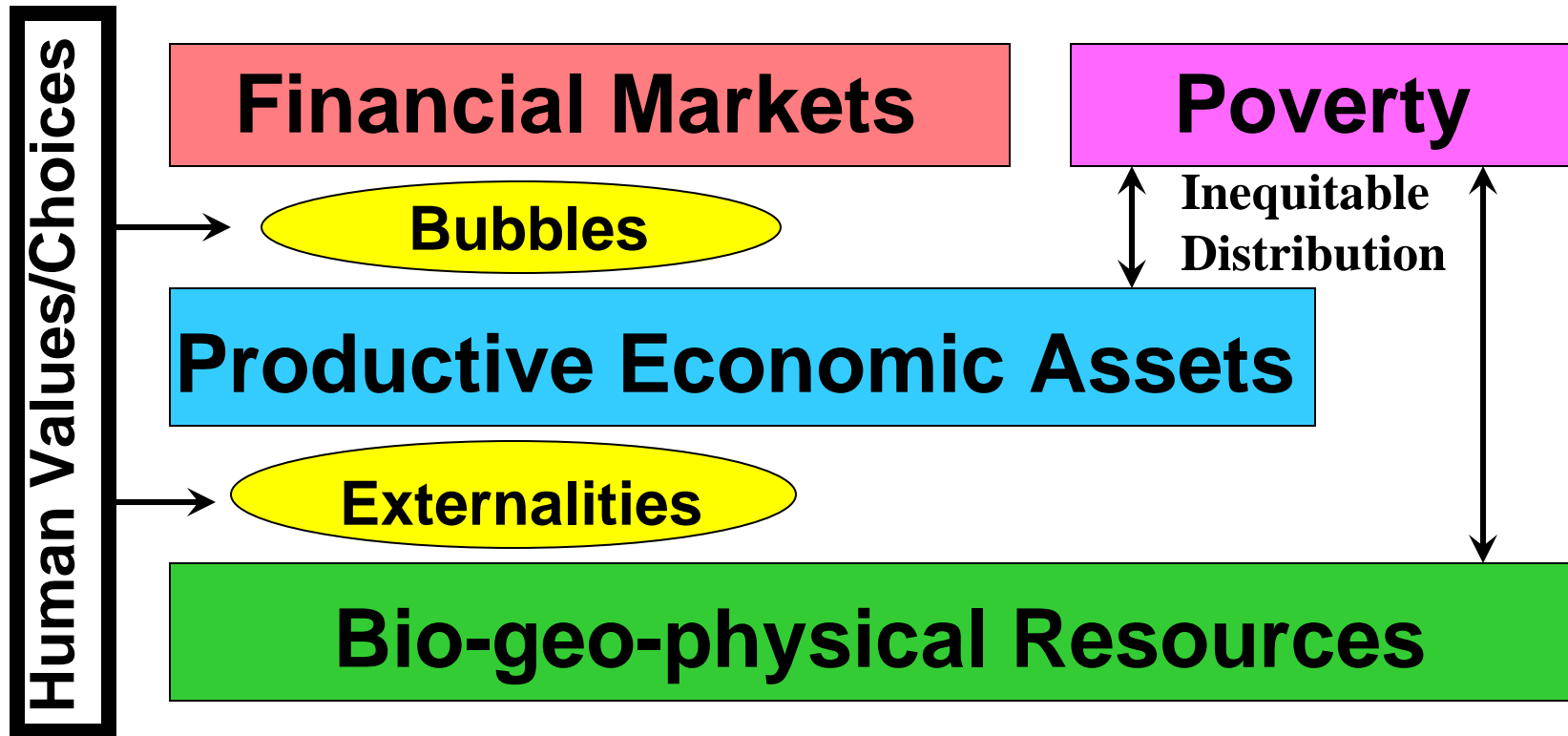
Externalities

e.g., Climate
Change

Bio-geo-physical Resources

**Risks due to Divergences between
Illusions and Realities**

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Risks due to Divergences between Illusions and Realities

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TWO-WAY LINKAGES BETWEEN CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT

CC → SD

SD → CC



MOST DESIRABLE:

**CC Policies that Harmonise Both
Adaptation and Mitigation (Win-Win) and
also Make Development More Sustainable
(MDMS)**

Example: growing forests

**Many trade-offs also arise and need to be
reconciled**



Addressing CC & Sustainable Development issues within the **SUSTAINOMICS Framework**



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Core concepts and elements

- 1. Making development more sustainable (MDMS)**
- 2. Sustainable development triangle**
- 3. Transcending boundaries**
- 4. Full cycle application of integrative tools – from data gathering to practical policy implementation**



Rationale for approach based on Making Development More Sustainable (MDMS)

The precise definition of sustainable development remains an elusive (perhaps unreachable) goal.

MDMS is a less ambitious strategy based on **Sustainomics**, which offers greater promise. It is an incremental (or gradient-based) method that is more practical, **because many unsustainable activities are easy to recognize and eliminate.**

Parallel track efforts continue to identify long term SD goals

Relevance for Climate Change

Climate response strategies cannot be expected to address ALL the problems of sustainable development.

Thus, climate change impacts and response strategies could be examined more meaningfully by asking the question: **“Do they make development more (or less) sustainable”?**



**Sustainable Development
Peak – including climate
change (covered by clouds)**

**Making Development More
Sustainable (MDMS)**

Lets move forward NOW!! If
we start climbing uphill, we
will reach the peak eventually

**Debating Sustainable
Development and CC**

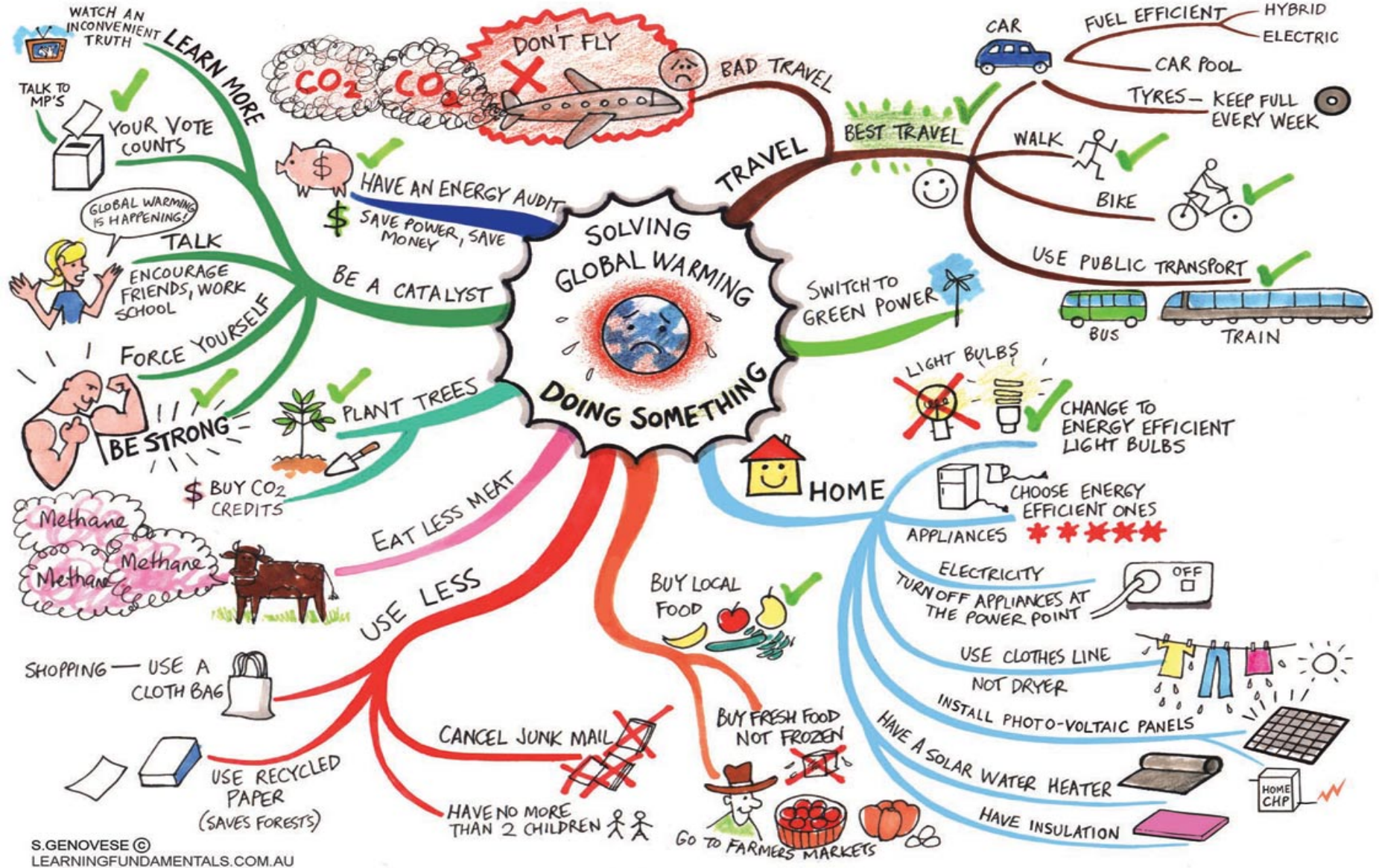
We cannot see the peak!!
Let's first stop, discuss &
debate how to reach it.

**Many obviously unsustainable practices exist today.
MDMS encourages us to eliminate them NOW! Examples
include energy wastage and deforestation.**

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Making Development More Sustainable: Personal Lifestyle Changes



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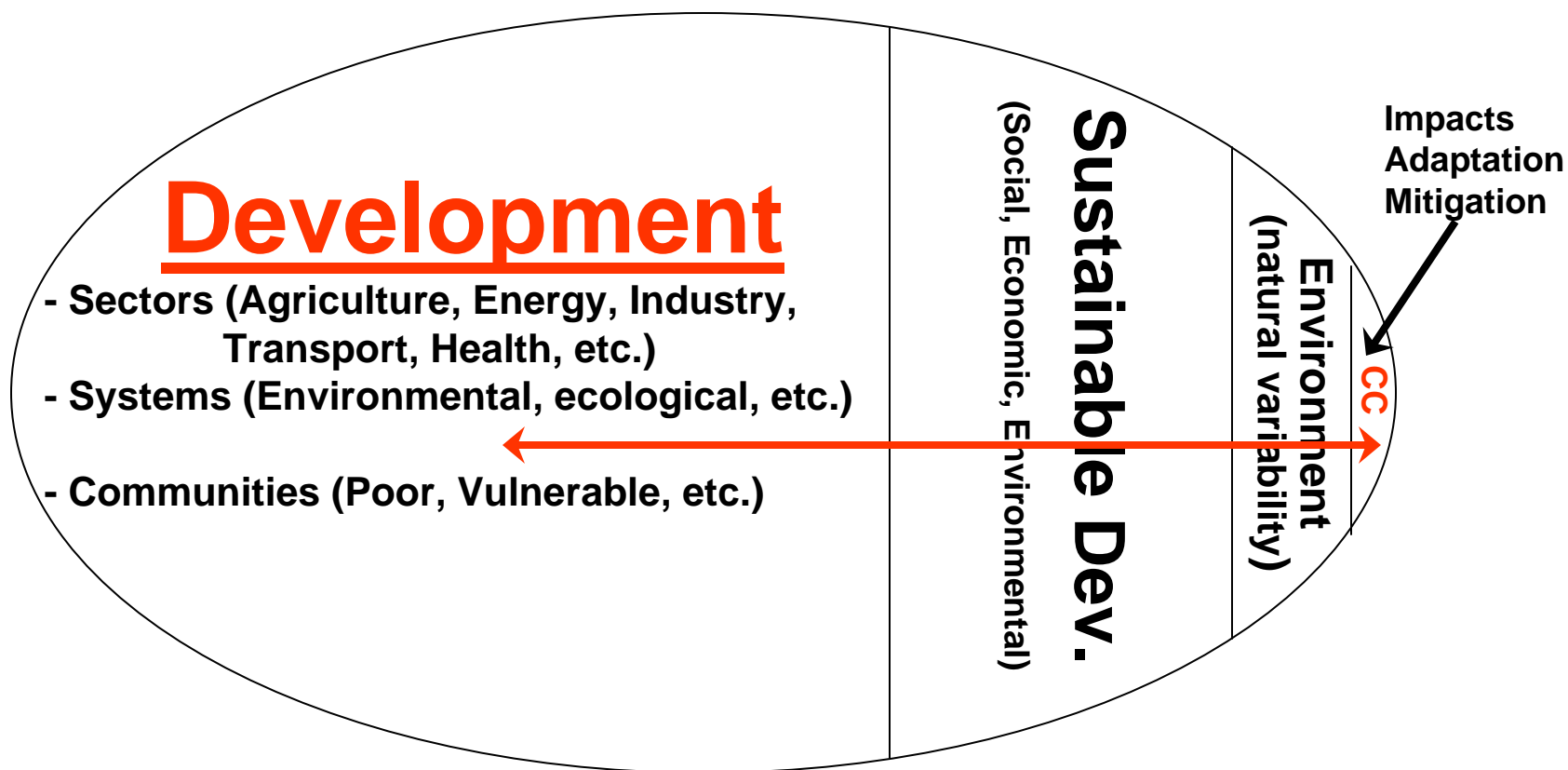
MDMS: Corporate Social Responsibility

- Corporate Social Responsibility (CSR) is a concept whereby organizations **consider the interests of society** by taking responsibility for the impact of their activities on customers, suppliers, employees, shareholders, communities and the environment in all aspects of their operations.
- This obligation is seen to **extend beyond the statutory and conventional obligation** to comply with legislation and seek profits. It sees organizations voluntarily taking further steps to improve the quality of life for employees and their families as well as for the local community and society at large.



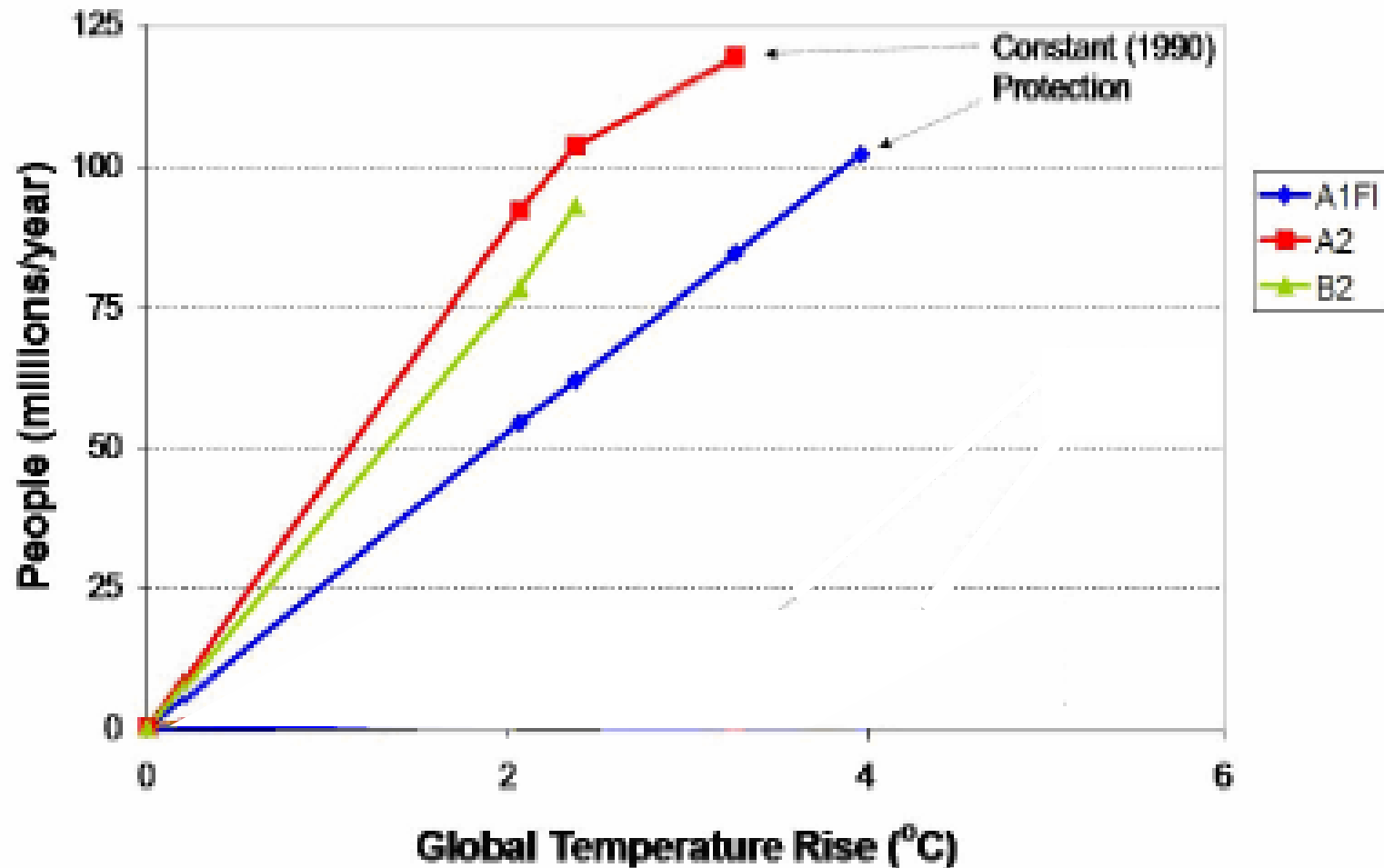
MDMS: National Level CC-SD Integration

Make decision makers see climate change as a key element of the national sustainable development strategy



Adaptation Example: People flooded in coastal areas 2080

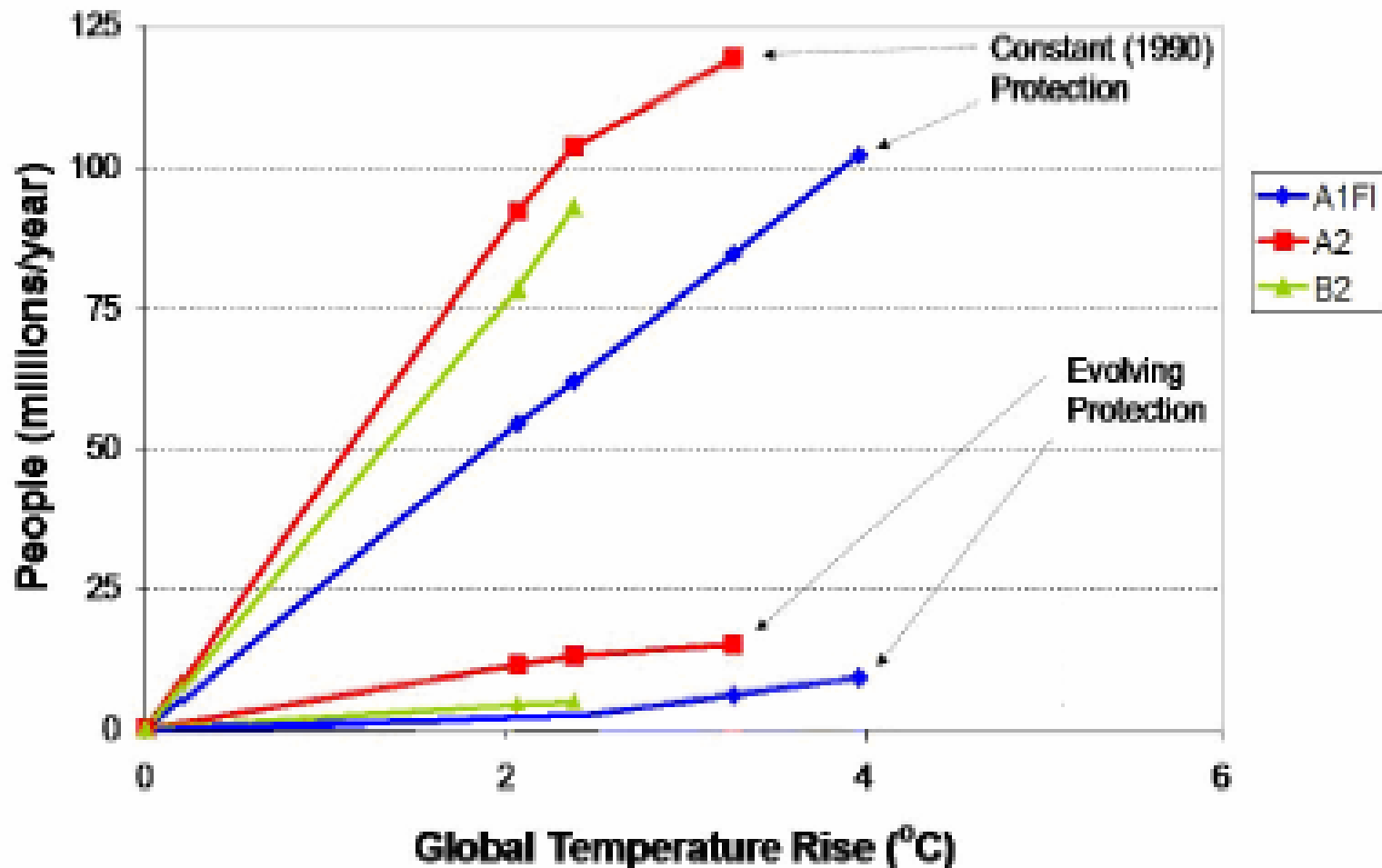
Constant protection = spending maintained at 1990 levels.



Adaptation Example: People flooded in coastal areas 2080

Constant protection = spending maintained at 1990 levels.

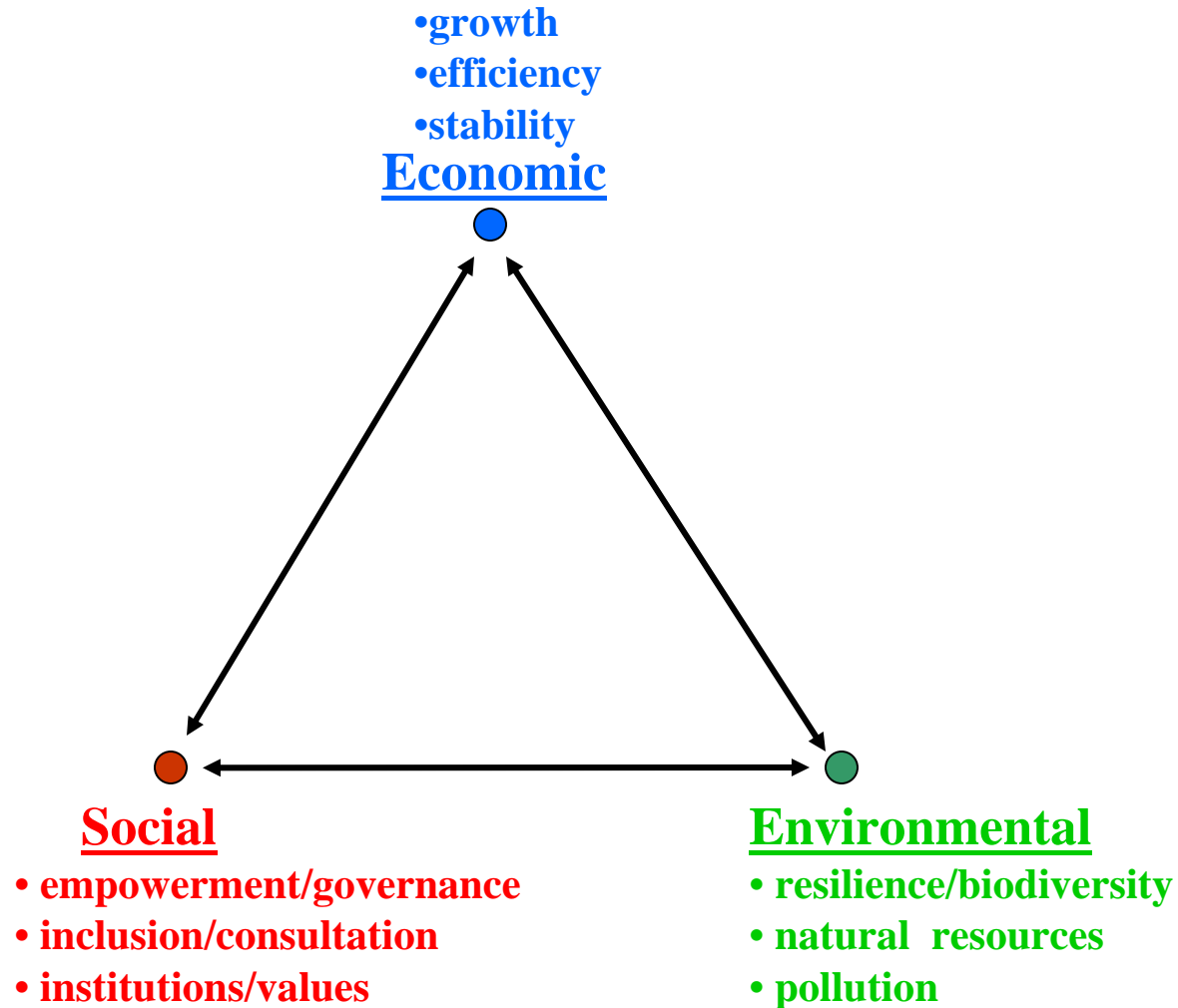
Evolving protection = spending increases at same rate as GDP.



Core concepts and elements

1. Making development more sustainable (MDMS)
2. Sustainable development triangle
3. Transcending boundaries
4. Full cycle application of integrative tools – from data gathering to practical policy implementation

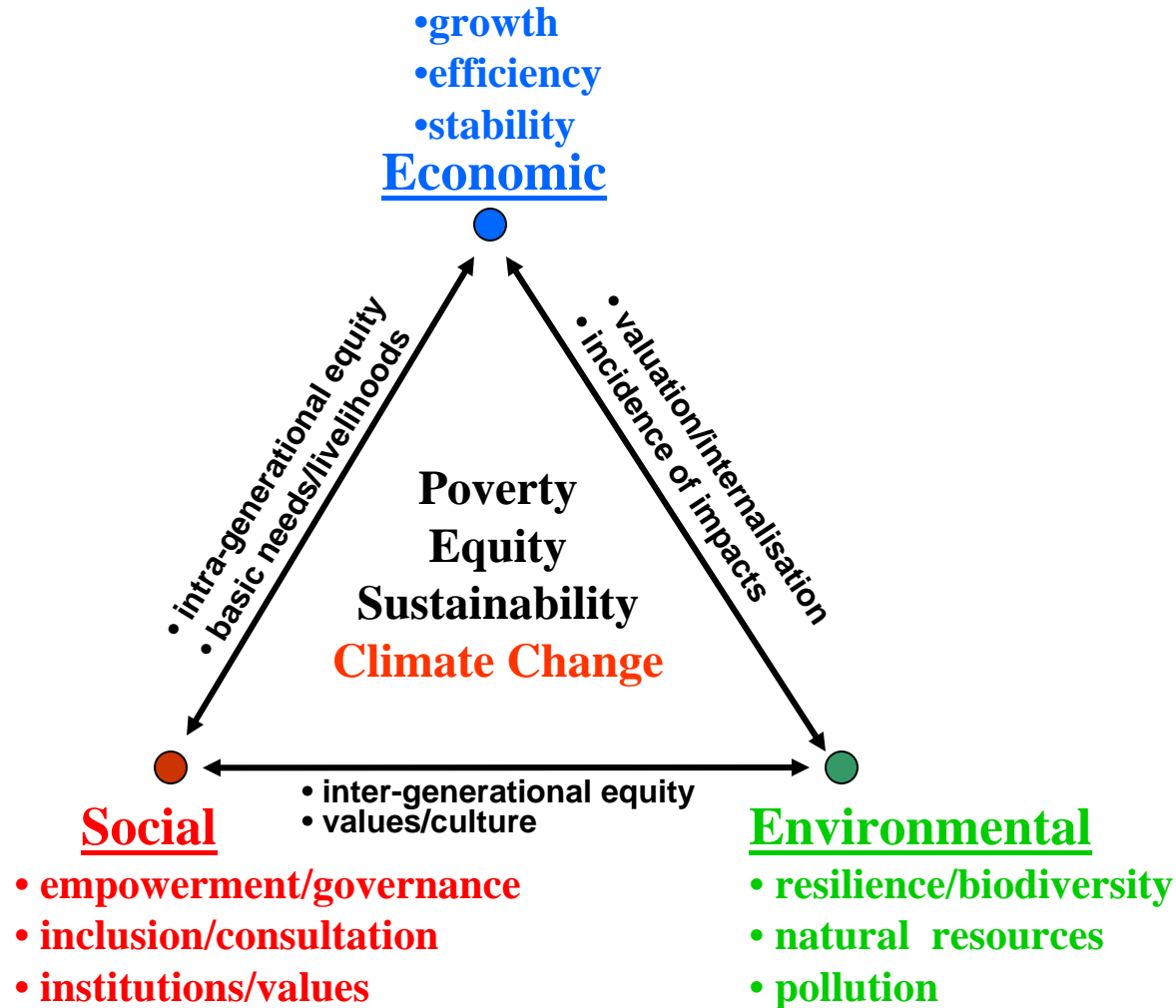




Sustainable Development Triangle – harmonising key elements and interconnections (corners, sides and centre) Source: Munasinghe [1992], Rio Earth Summit

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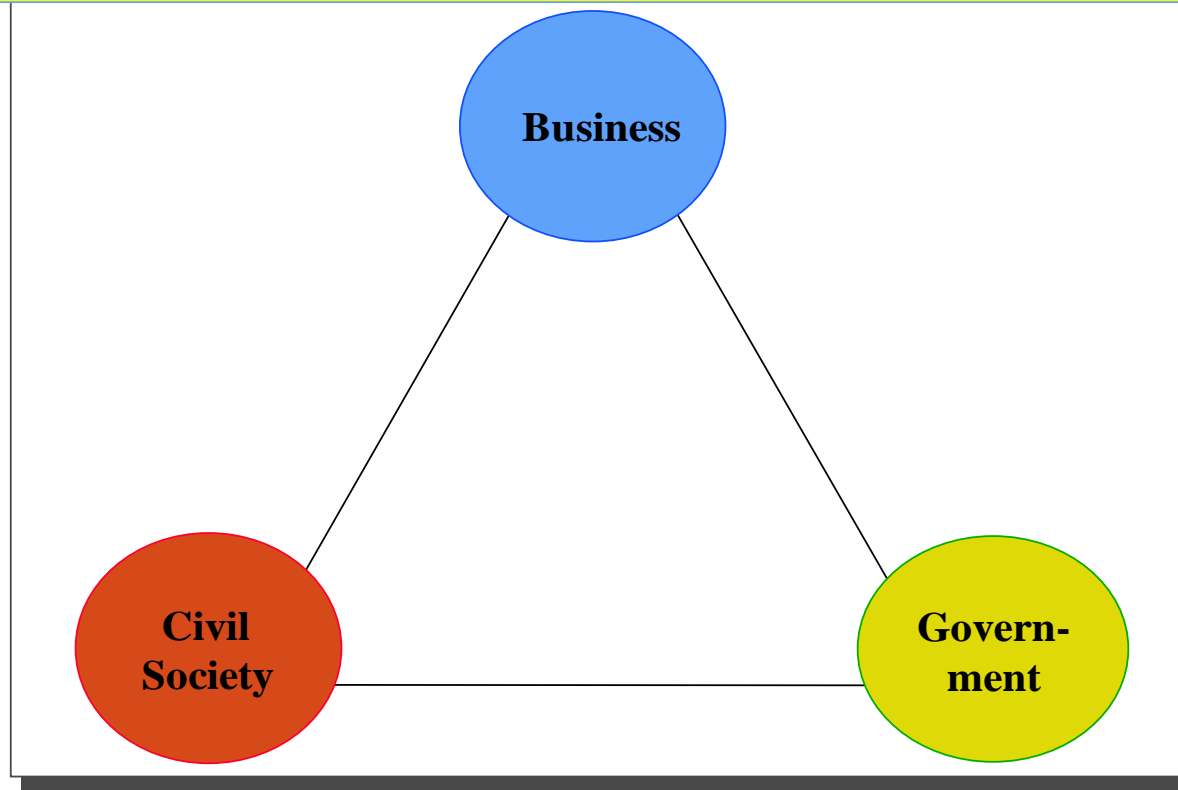


Transcending Boundaries for Sustainable Development

- **Disciplinary**
- **Space**
- **Time**
- **Stakeholder**
- **Operational**



Transcending Stakeholder Boundaries to Ensure Cooperation for Sustainable Development



Not only **government**, but also **civil society** and **business** play a vital and balanced role in strengthening local, national and global citizenship.
Information flow and media are also critical



There are many practical analytical tools and policy options to integrate CC responses into SD strategy (from global to local levels)

There are many available case studies and best practice examples involving sustainomics applications



Global Level Application

Making Development More Sustainable via “Tunneling”:

A Potential Post-Kyoto

Framework for Jointly Managing Climate Risk & Right to Develop



UN Framework Convention on Climate Change 1992

Article 2

Stabilize atmospheric GHG concentrations to prevent ‘dangerous’ anthropogenic interference in the climate system:

- enable **economic development** to proceed in a sustainable manner
- ensure **food production** is not threatened
- allow **ecosystems** to adapt naturally

UNFCCC also speaks of “**common but differentiated responsibilities**”

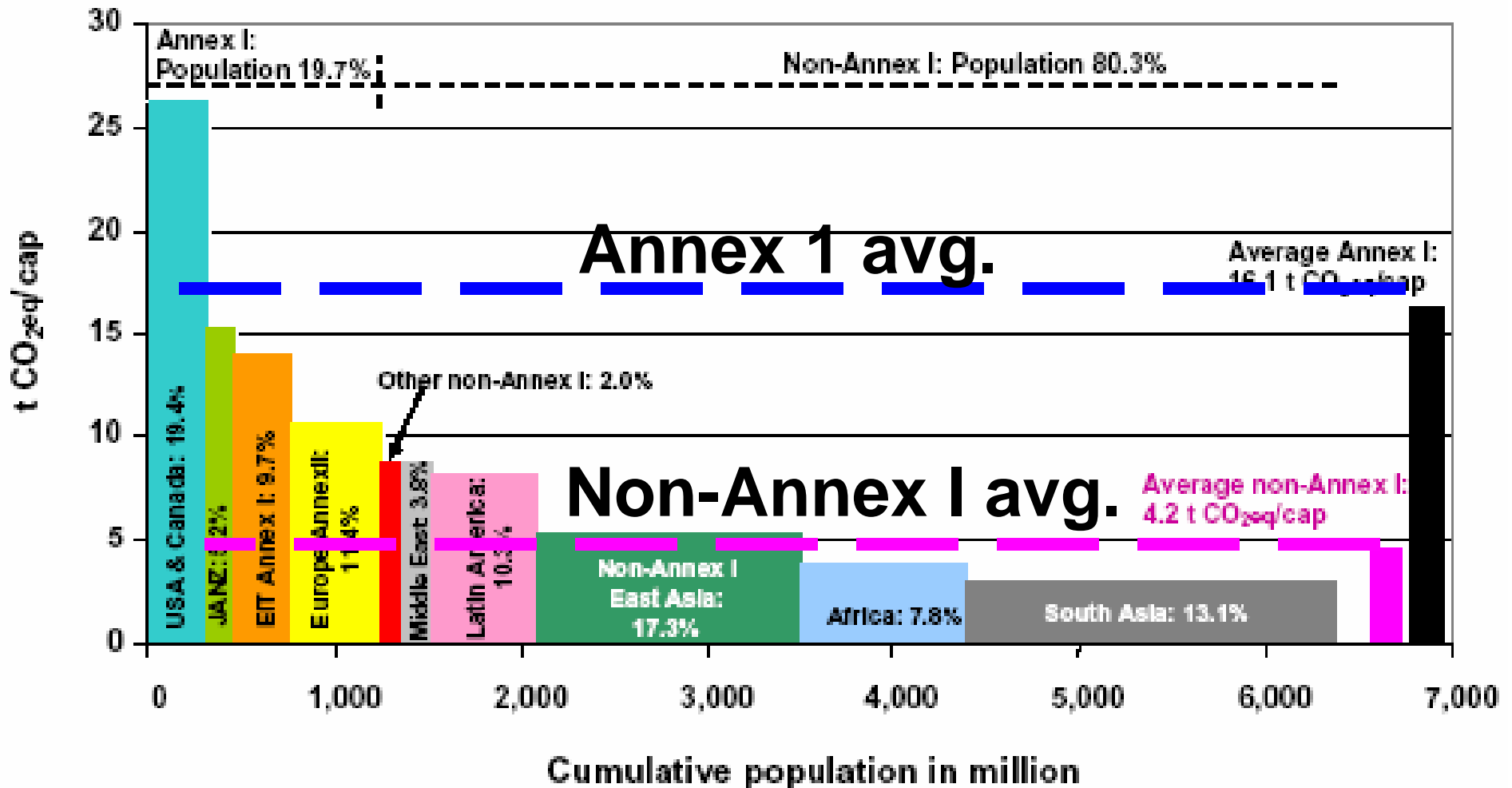
Adaptation Burden & Equity: CC → SD

Adaptation is the first priority of developing countries that are most vulnerable to climate change. Help is also crucial.

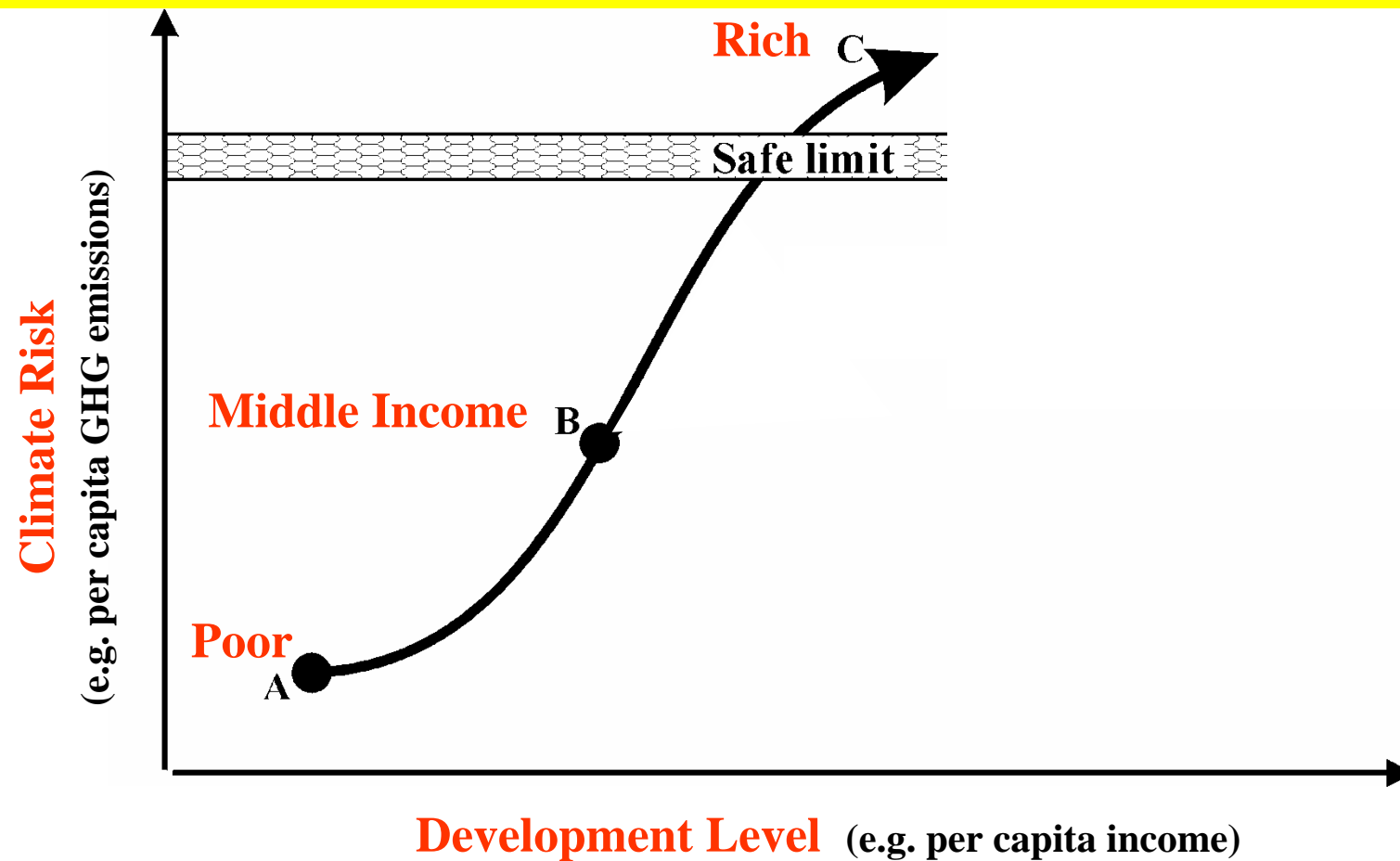
- **Climate change is likely to impact disproportionately upon the poorest countries and the poorest persons within all countries**, exacerbating inequities in health status and access to adequate food, clean water and other resources.
- **Net economic effects will be negative in most developing countries**
- **Impacts will be worse** - many areas are already flood and drought prone, and economic sectors are climate sensitive
- **Lower capacity to adapt** because of a lack of financial, institutional and technological capacity, and access to knowledge

Mitigation Responsibility & Equity: SD → CC

Mitigation leadership is the main responsibility of industrial countries with high per capita GHG emissions



MDMS via “Tunneling”: global cooperation to manage Climate Risk & Right to Develop - Step 1

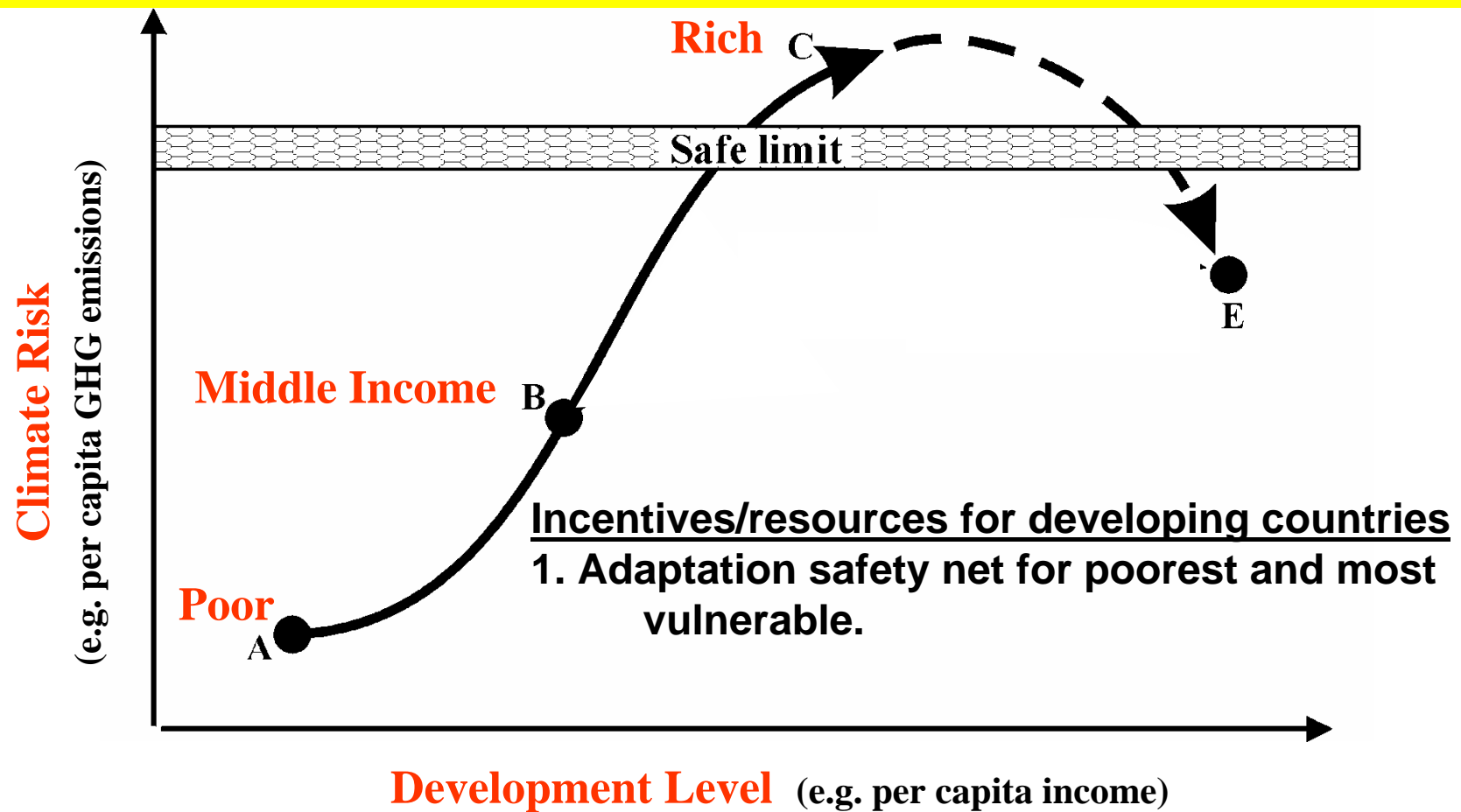


Source: M. Munasinghe (1995) "Making Growth More Sustainable," *Ecological Economics*, 15:121-4.

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MDMS via “Tunneling”: global cooperation to manage Climate Risk & Right to Develop - Step 2

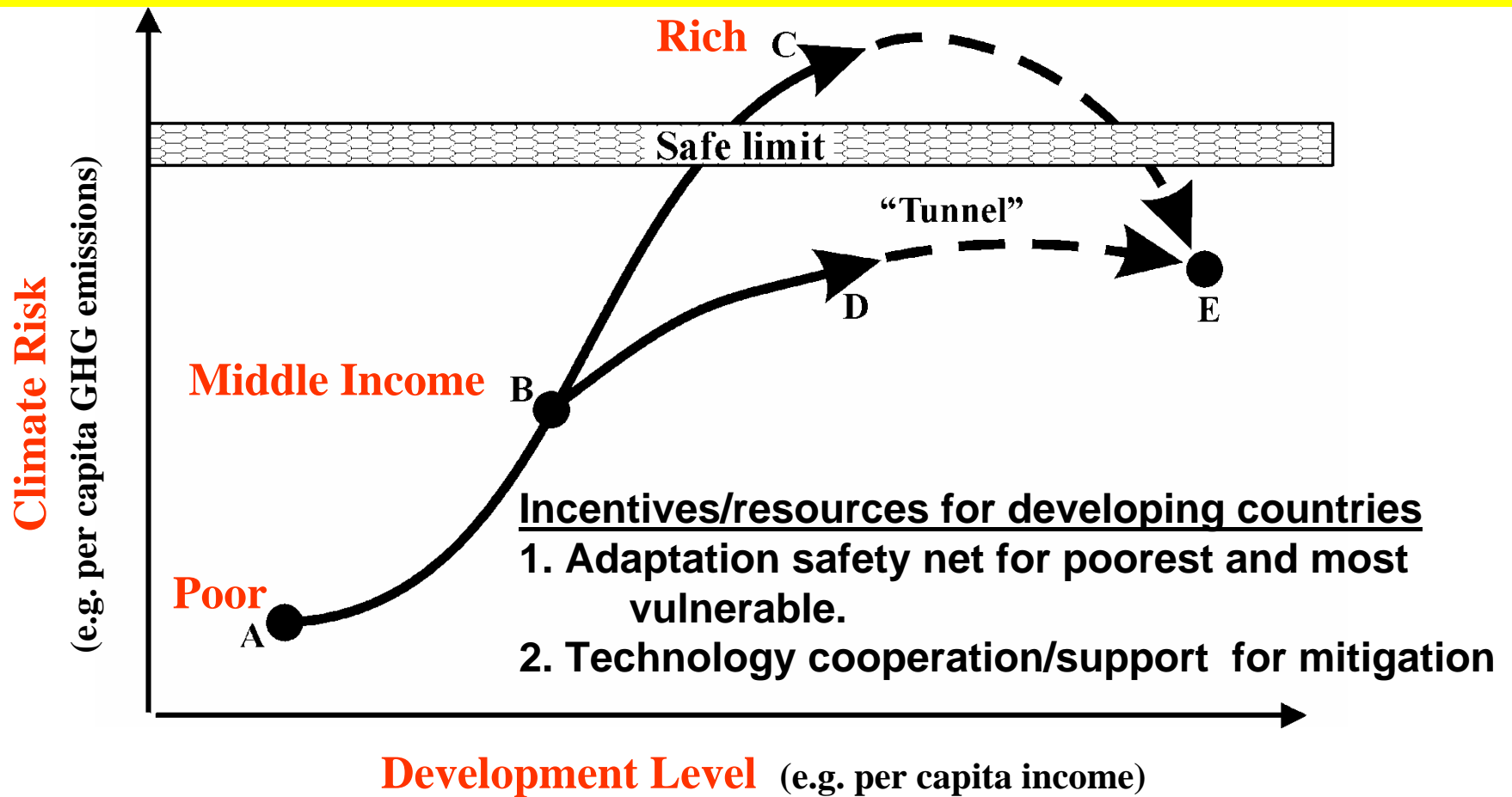


Source: M. Munasinghe (1995) "Making Growth More Sustainable," *Ecological Economics*, 15:121-4.

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MDMS via “Tunneling”: global cooperation to manage Climate Risk & Right to Develop - Step 3



CHINA is well placed to succeed in finding the tunnel path

Source: M. Munasinghe (1995) "Making Growth More Sustainable," *Ecological Economics*, 15:121-4.

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Optimistic Take Home Message

Climate change and sustainable development are interlinked problems posing a serious challenge to us all.

Although the issues are complex and serious, both problems could be solved together, provided we begin now.

We know enough already to take the first steps towards making development more sustainable, that will transform the risky “business-as-usual” scenario into a safer and more secure future.

Business and civil society must work with government, to mobilise resources, frame issues, and implement solutions.

CHINA has a key leadership role to play in developing the new model of sustainable development for the 21st century

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Short Paper: 5 pages



**Rising
Temperatures,
Rising Risks**

Mohan Munasinghe

Finance and Development, March 2008, pp.37-41



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**Book:
650
pages**

**Making
Development More
Sustainable:
Sustainomics Framework
and Practical Applications**
Mohan Munasinghe

WEALTH



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Thank You Very Much



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