

The background of the slide features a light beige, textured paper-like surface. In the center, there is a faint, grey-toned illustration of a mountain range. On the right side, a dark grey branch of a willow tree hangs down, adorned with numerous small, dark, circular buds or leaves.

**National Seminar on**

**Global Climate Change**

**Issues & Challenges for India**

**June 5, 2007**

**EZCC, Kolkata**



**Joyashree Roy**

**Professor of Economics  
and**

**Coordinator**

**Global Change Programme.**

**Jadavpur University, Kolkata**



How to

Commemorate

World Environment Day



**Can we take a Pledge**



**A Promise** of action  
To face  
Issues & Challenges  
of  
**Global Climate Change**

The background of the slide features a light beige, textured paper-like surface. In the upper portion, there are faint, layered silhouettes of mountains. On the right side, a dark, thin branch of a willow tree hangs down, adorned with small, dark, round buds.

*Before making a pledge or  
a promise*

*we need to understand what the  
issue is*

*and*

*how each one of us can be  
involved in that*



***We need to understand***

***Climate Change  
Is***

***The Cost “Society” Pays for the  
Choice of “A Development Pathway”***

***since industrial revolution***



## *what is this chosen pathway*

- ❖ **A pathway which has given us :**
- ❖ Global per capita GDP of \$5708
- ❖ 750 million cars on the road
- ❖ Employment of 1.3 billion people in agriculture with 24% contribution in global GDP
- ❖ Total global power consumption of 1667 thousand Gwh.
- ❖ 9% growth rate for Indian economy and so on.....



## *Who has chosen this pathway*

- ❖ **It is us- each one of us- have made conscious choice**
- ❖ **As consumers**
- ❖ **As producers**
- ❖ **So Global aggregates are reflections of each micro or individual choice.**



**What is the cost  
society is paying and why  
for individual  
private choices made**



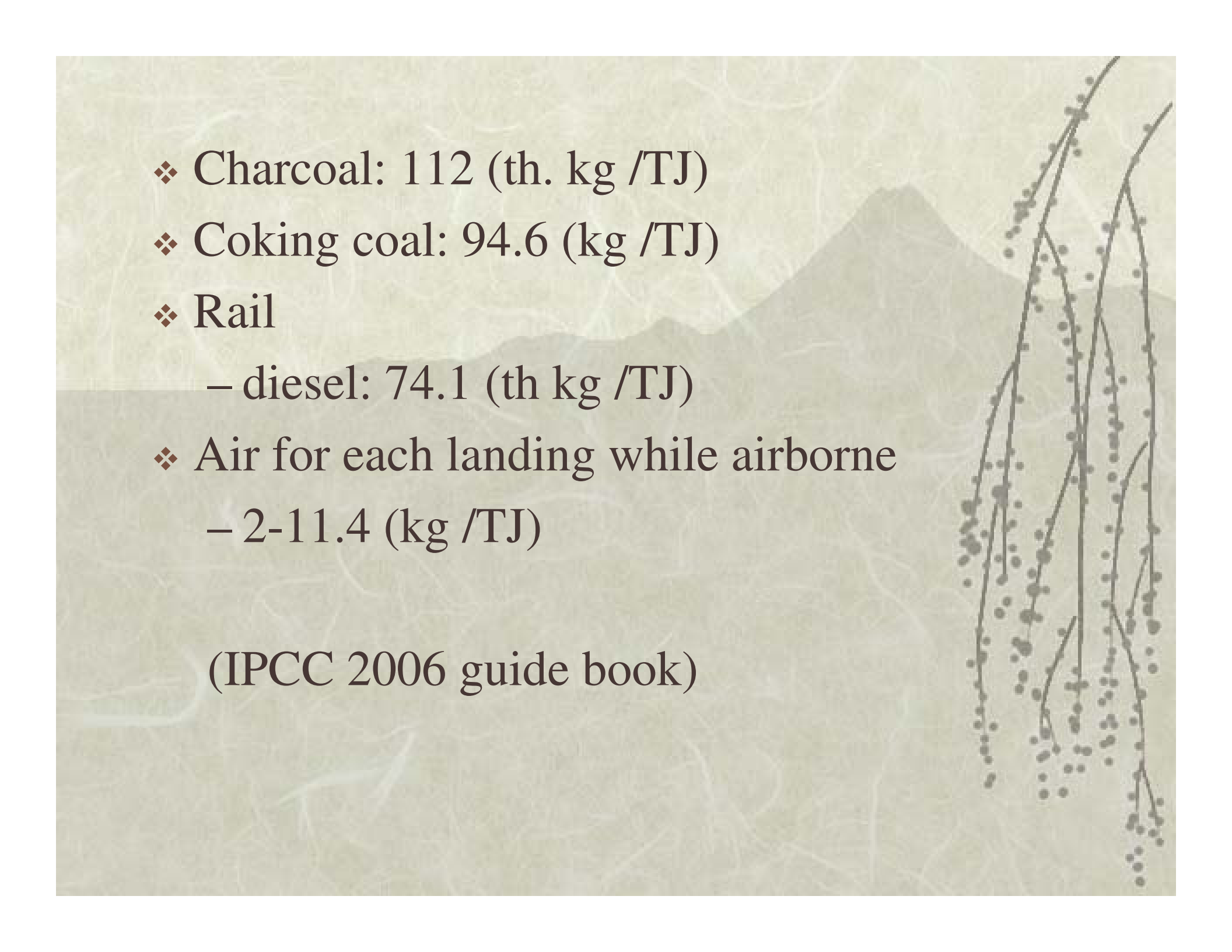
## *New Knowledge from experts world wide*

- ❖ **IPCC (UNFCCC) Report on climate change, vulnerability-adaptation and mitigation, 2007**
- ❖ **Stern Review on Economics of Climate Change, 2006**
- ❖ **Millennium Ecosystem Assessment Report, 2006**



*says...*

**Our individual consumption and production activities are having “dangerous interference” with earth’s life support system**

- 
- The background of the slide features a soft, sepia-toned image of a mountain range in the distance and a willow tree with its characteristic drooping branches in the foreground on the right side. The overall aesthetic is that of a textured, aged paper.
- ❖ Charcoal: 112 (th. kg /TJ)
  - ❖ Coking coal: 94.6 (kg /TJ)
  - ❖ Rail
    - diesel: 74.1 (th kg /TJ)
  - ❖ Air for each landing while airborne
    - 2-11.4 (kg /TJ)

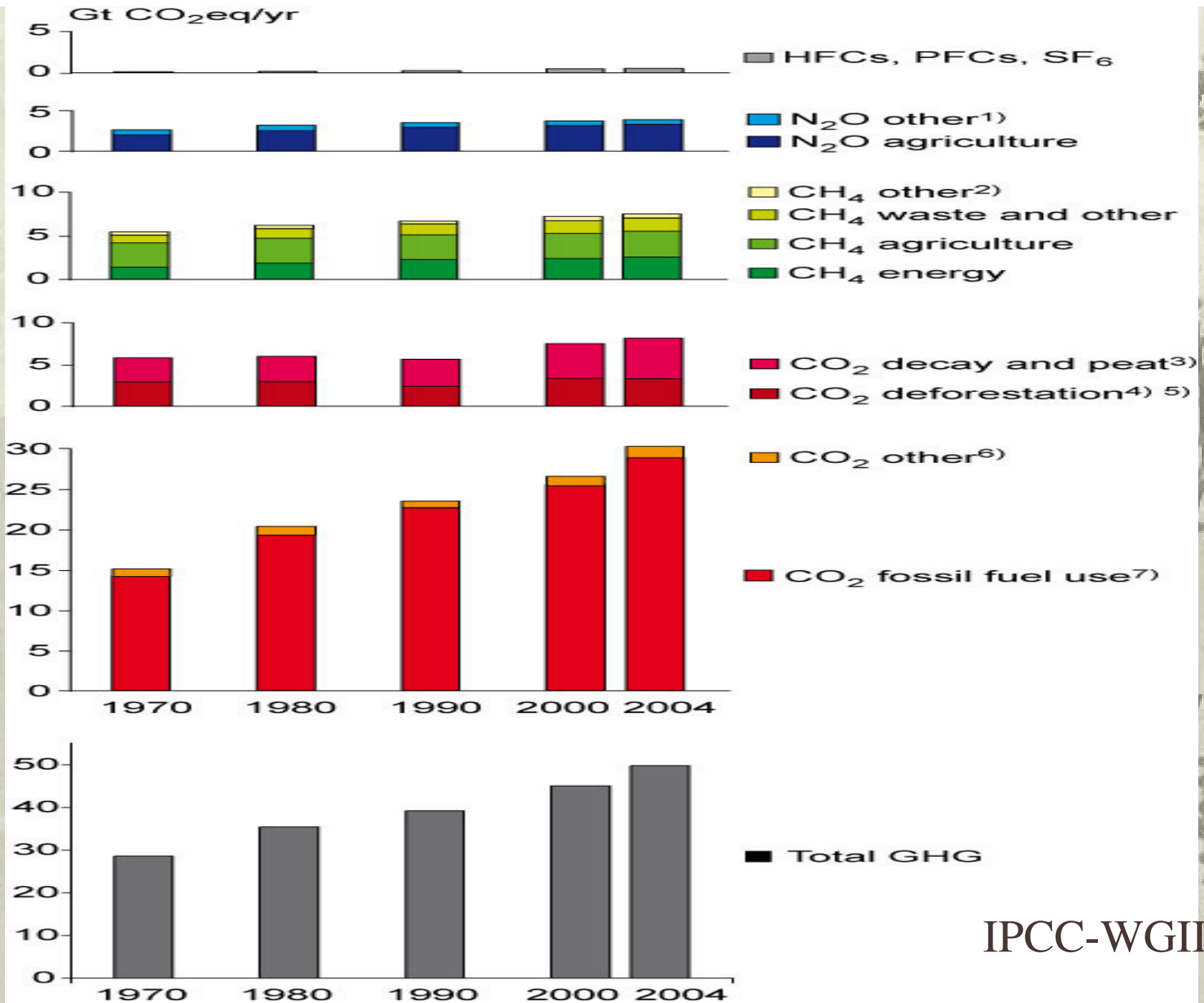
(IPCC 2006 guide book)

❖ Road :

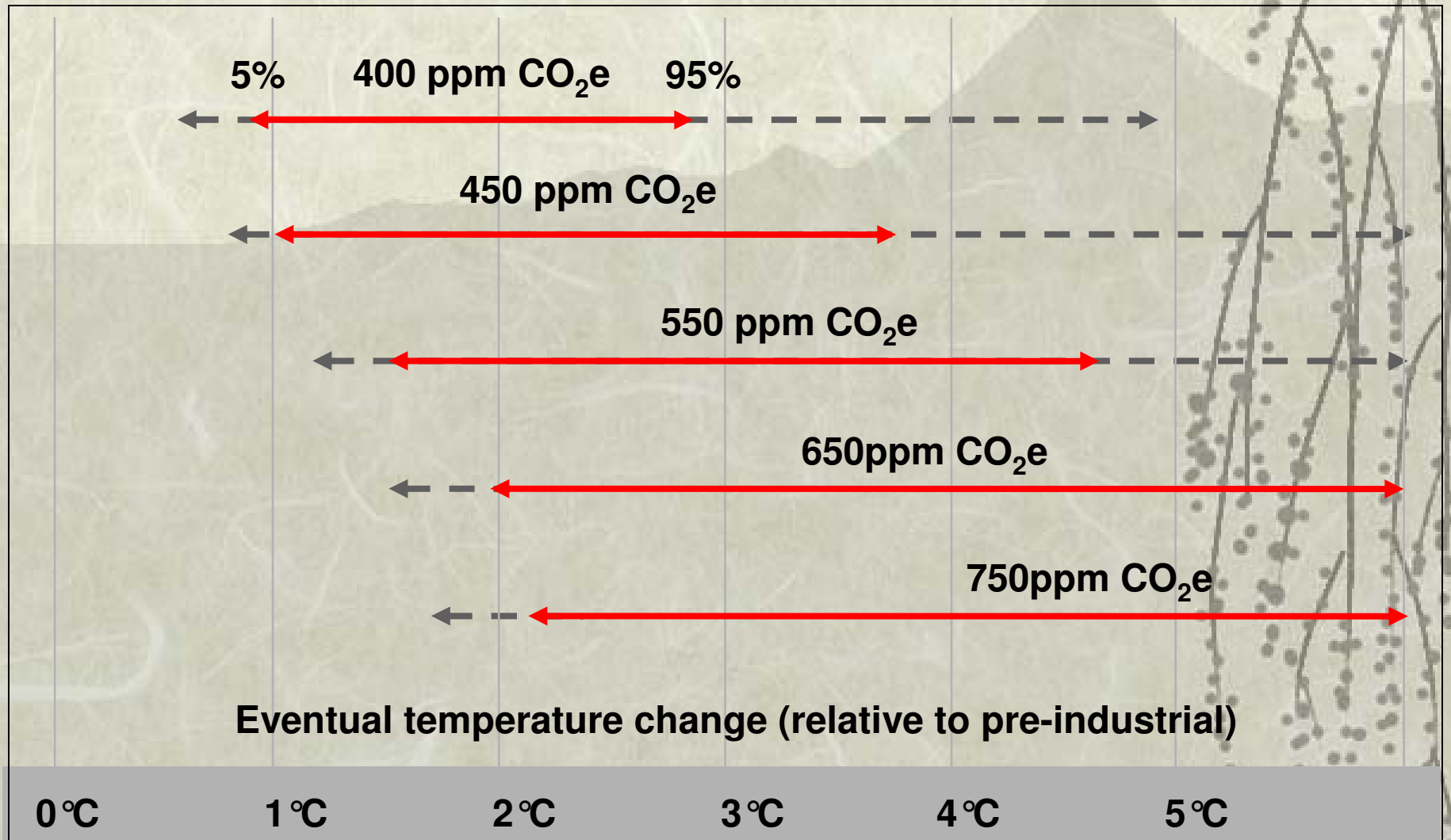
- Ms :69300 (kg /TJ)
- Gas/diesel oil :74100 (kg /TJ)
- LPG 63100 (kg /TJ)
- Kerosene 71900 (kg /TJ)
- Other lubes 73300 (kg /TJ)
- CNG 56100 (kg /TJ)
- LNG 56100 (kg /TJ)

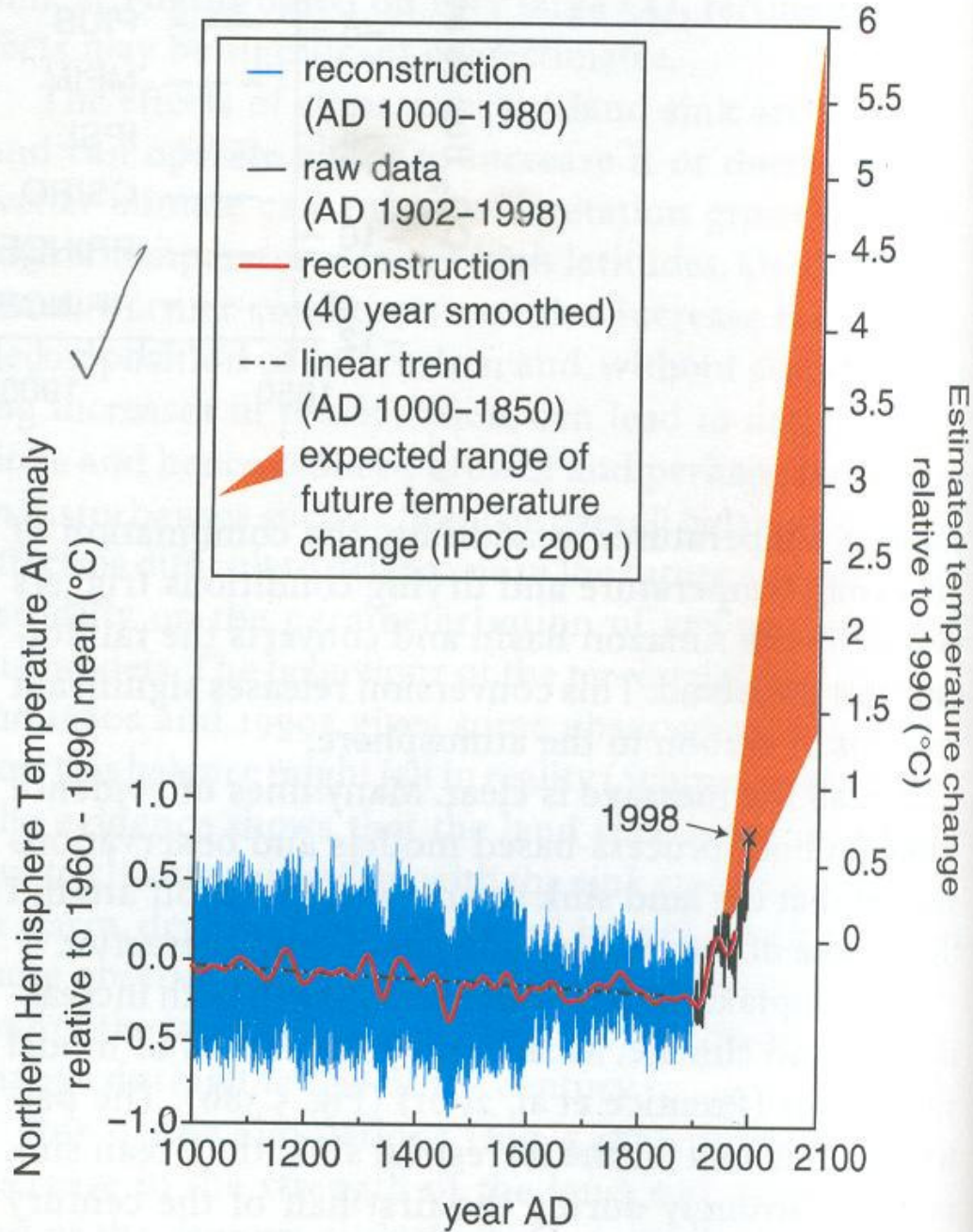
# *GHG Emissions from*

- ❖ **Energy consumption & production sector is 65%**
- ❖ **Power**
- ❖ **Transport**
- ❖ **Buildings**
- ❖ **Industry**
- ❖ **Others**
- ❖ **Non energy sector is 35%**
- ❖ **Waste**
- ❖ **Agriculture**
- ❖ **Land use**



IPCC-WGIII

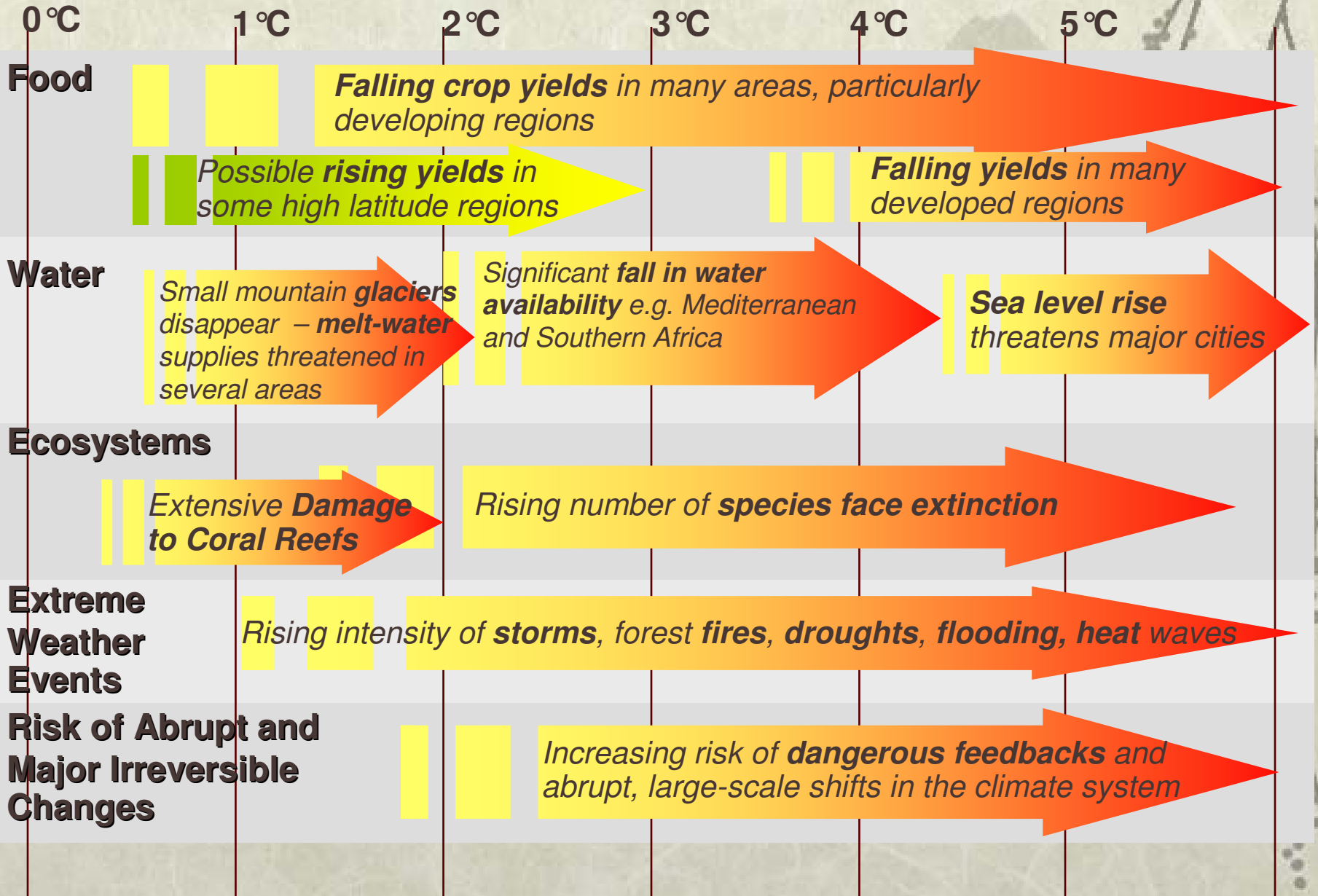




The range of future projections of temperature change lie far outside the range of historic global average temperature for at-least the last millennium

## Projected impacts of climate change

### Global temperature change (relative to pre-industrial)





## *BAU: Development pathway*

- ❖ **Between 1970 and 2004 global greenhouse gas emissions have increased by 70 % (IPCC)**
- ❖ 2050 :550ppm
- ❖ temperature >2 C
- ❖ GHG's treble
  
- ❖ non uniform effect on people's lives
- ❖ **Damage (global social cost) is 5% GDP**
- ❖ Cost of inaction



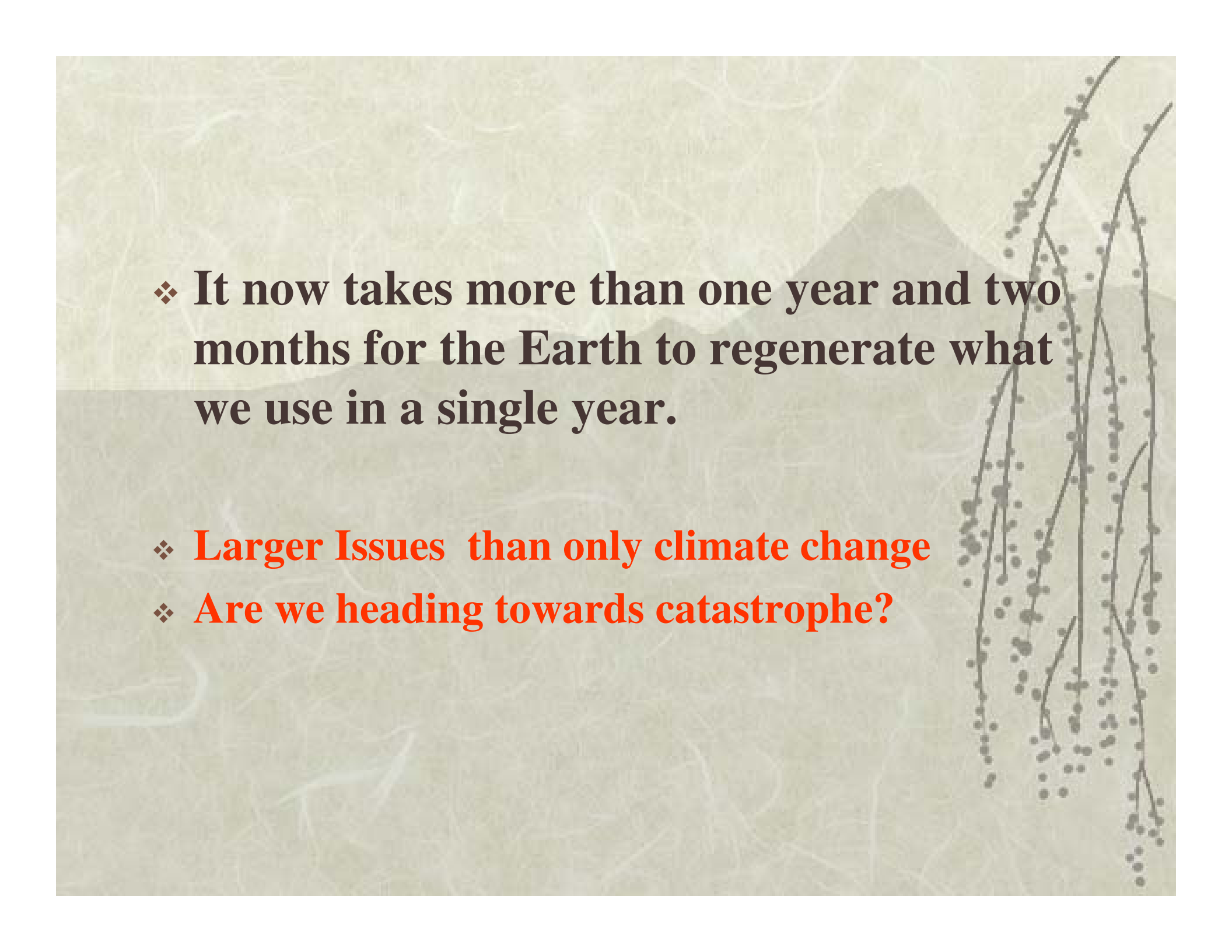
*Let's widen our vision and  
go to the concept of*

*Global Climate Change*



## *Question*

- ❖ Can we sustain our lifestyle choice followed since Industrial revolution?
- ❖ **Answer is clearly NO**
- ❖ Ecosystem loss will make future generations poorer if measured in terms of human wellbeing
- ❖ Ecological footprint is over 23% larger than what the planet can regenerate

The background of the slide features a soft-focus landscape. In the center, a mountain range is visible under a pale sky. On the right side, a willow tree with its characteristic drooping branches and small, dark buds is in focus. The overall color palette is muted, consisting of earthy greens, greys, and browns.

❖ **It now takes more than one year and two months for the Earth to regenerate what we use in a single year.**

- ❖ **Larger Issues than only climate change**
- ❖ **Are we heading towards catastrophe?**



*Good news is*

*it is our choice*

*on which we have control*

The background features a light beige, textured paper-like surface. In the center, there is a faint, layered image of a mountain range. On the right side, a dark, thin branch of a willow tree hangs down, adorned with small, dark, round buds.

*Strategies for Emission  
Reduction*

**Alternative pathway  
of development**

# *IPCC*

*Substantial economic potential for  
the mitigation of  
global GHG emissions over the  
coming decades*

*UNFCCC*

*with differentiated responsibilities*



## *Action not costless*

- ❖ Goal : Stabilisation + growth possible
- ❖ Stern review at 550 in 2050 Cost of action 1% of GDP by 2050
- ❖ IPCC says at 535-590 in 2030 cost of action will be 0.2-2.5% of GDP



# *How*

- ❖ No automatic transition
- ❖ Policy intervention:  
Mitigation, Adaptation,  
Cooperation



## *Source of complexity*

- ❖ Individual Pledge is not going to produce any result
- ❖ It has to be collective pledge
- ❖ Collectiveness goes beyond boundaries and in fact is global in nature



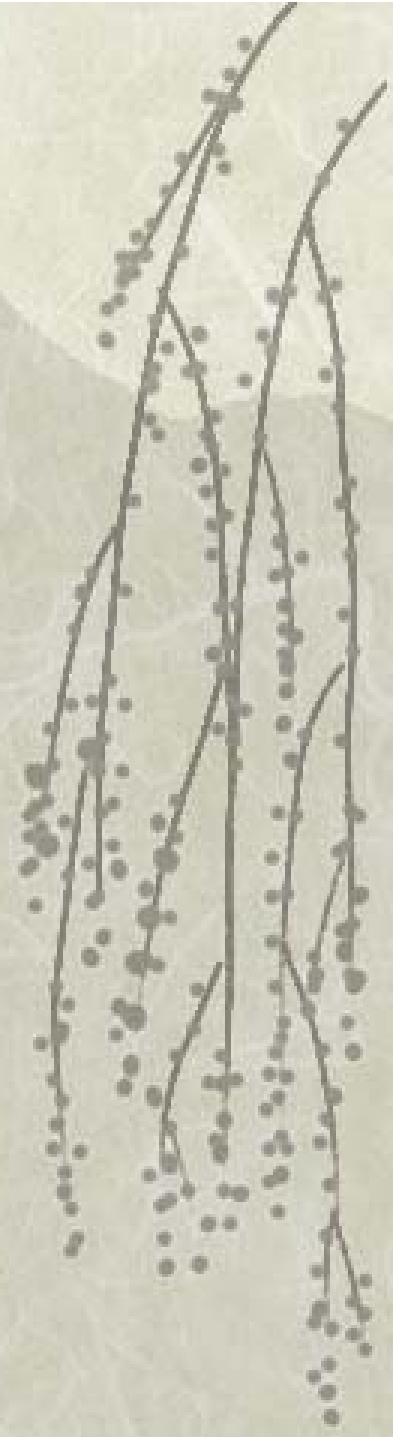
## *Key challenge for India*

❖ How to integrate development policy options with climate policy options.



*Paradigm Shift*

*sustainable  
development pathway*





# *New Indicators of Development*

Ex of Env factors

Dimensions of Poverty

Elements of Well being





*Planning tool*

*To mainstream climate change*





*Can we take just one pledge  
to commemorate  
the world development day*

❖ **And meet next year to see what we  
have achieved out of this pledge?**



## *Can we take just one pledge*

- ❖ To maintain a note book and note down how many travels I have avoided
- ❖ How many litres of piped water I have saved
- ❖ Right technology choice, curtailing demand through response to corrected price signals



## *Can we take just one pledge*

- ❖ We can estimate what we have saved by managing our demand
- ❖ These voluntary actions can take us to global negotiation table to argue what we can do domestically and this will strengthen our position to push big global emitters to cooperate first .
- ❖ Charity begins at home : so let's begin domestically before we make any international commitment

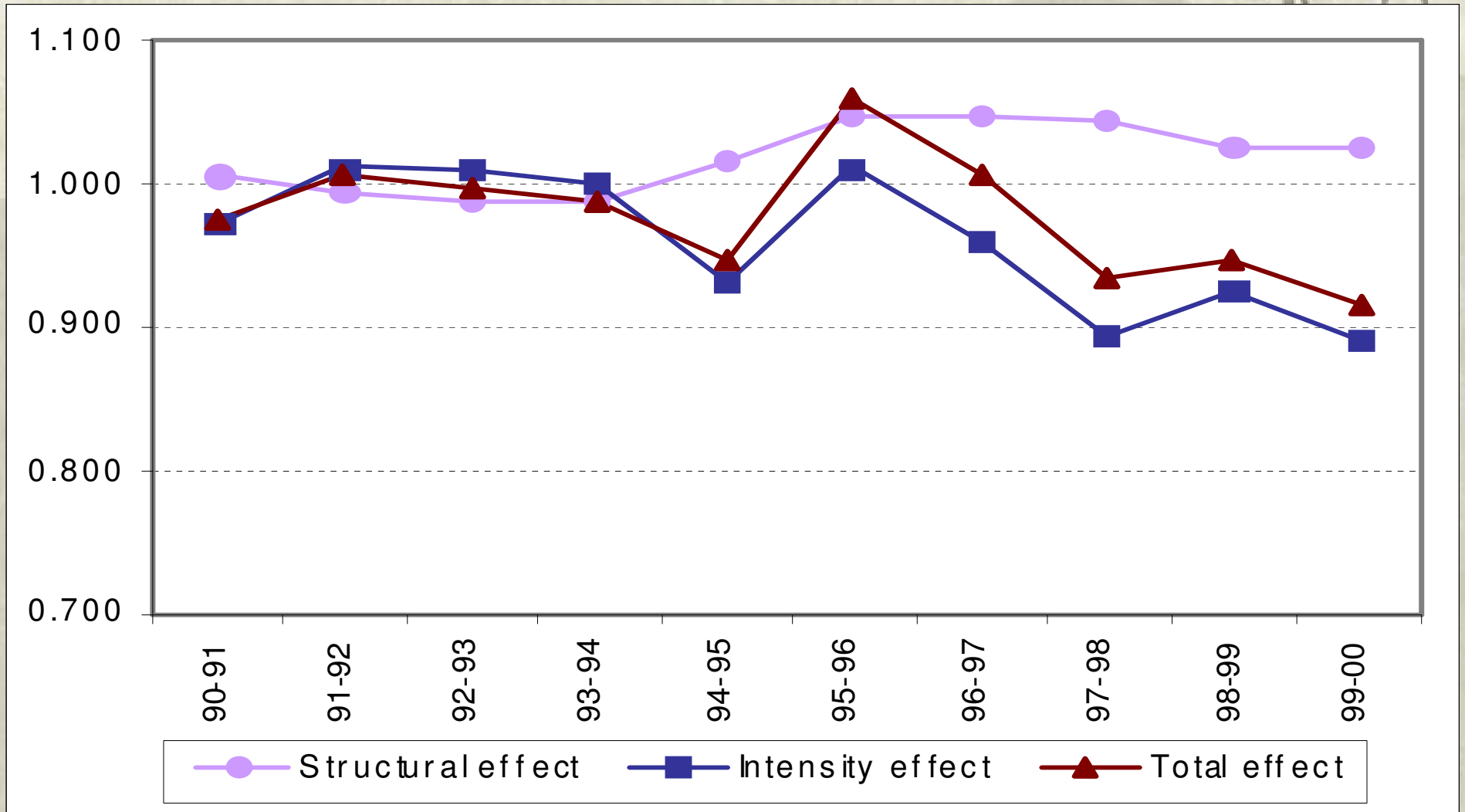


## *Challenge*

- ❖ to imagine innovative ways to save the earth from over use of resources without compromising welfare.
- ❖ To correct our incentive structure to reduce waste
- ❖ To explore no regret options



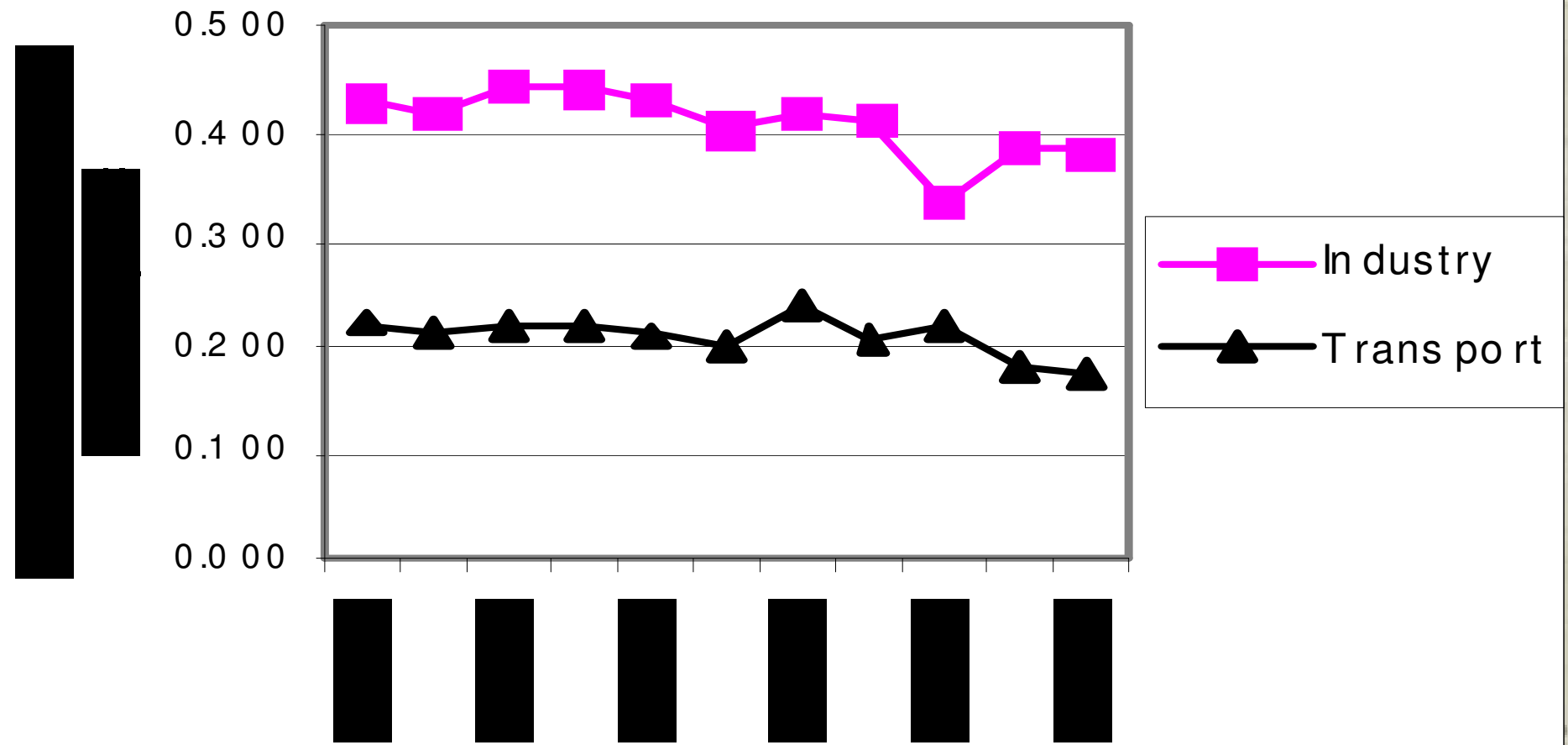
# *Intensity effect?*





# Sectoral intensity

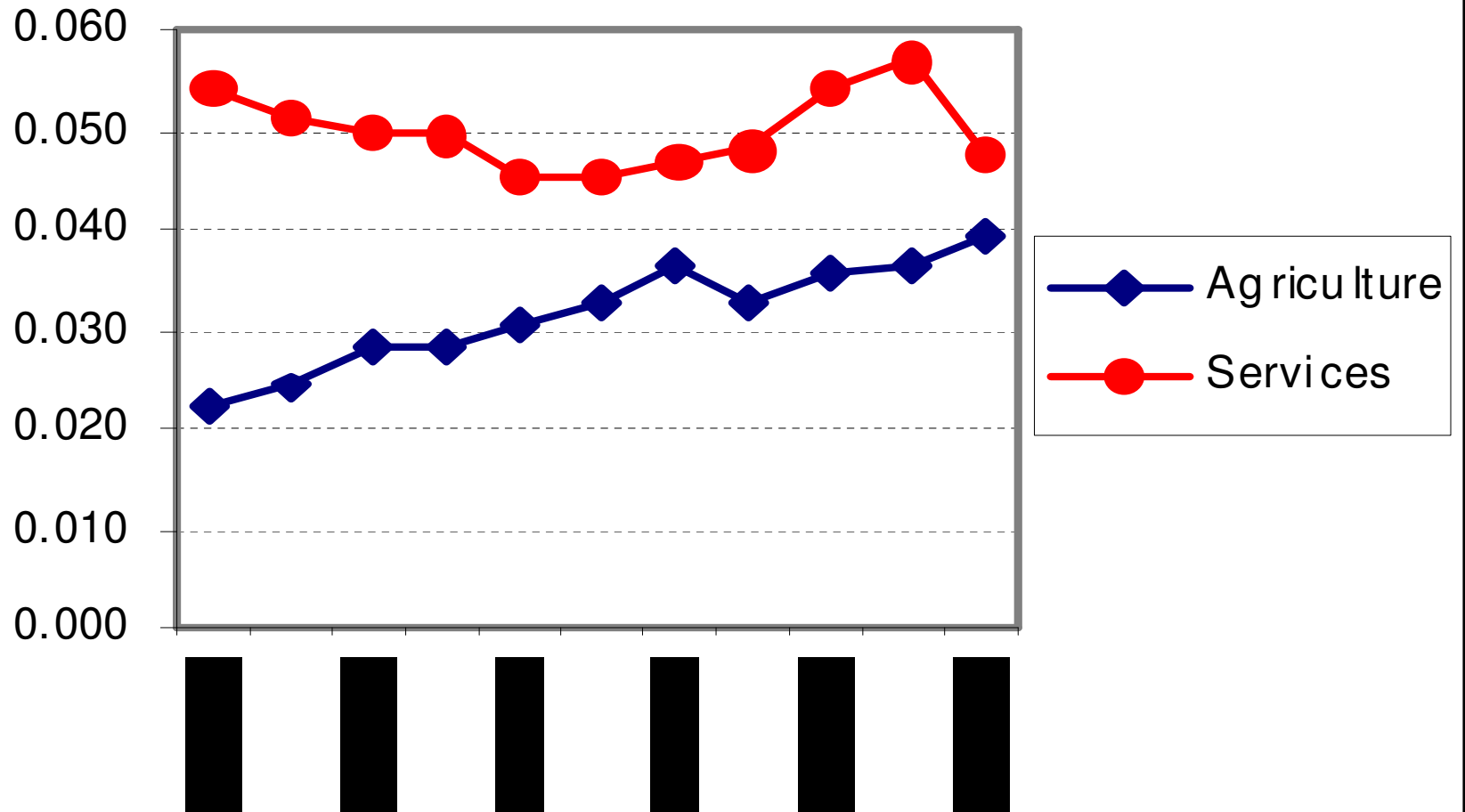
Energy intensity of industrial and transport sector





# Sectoral intensity

Energy intensity of agriculture and service sector





*Human action  
Human Choice  
is Reversible*

# *Jadavpur University*

## **Global Change Programme**

<http://juglobalchangeprogram.org/>



# Thank you