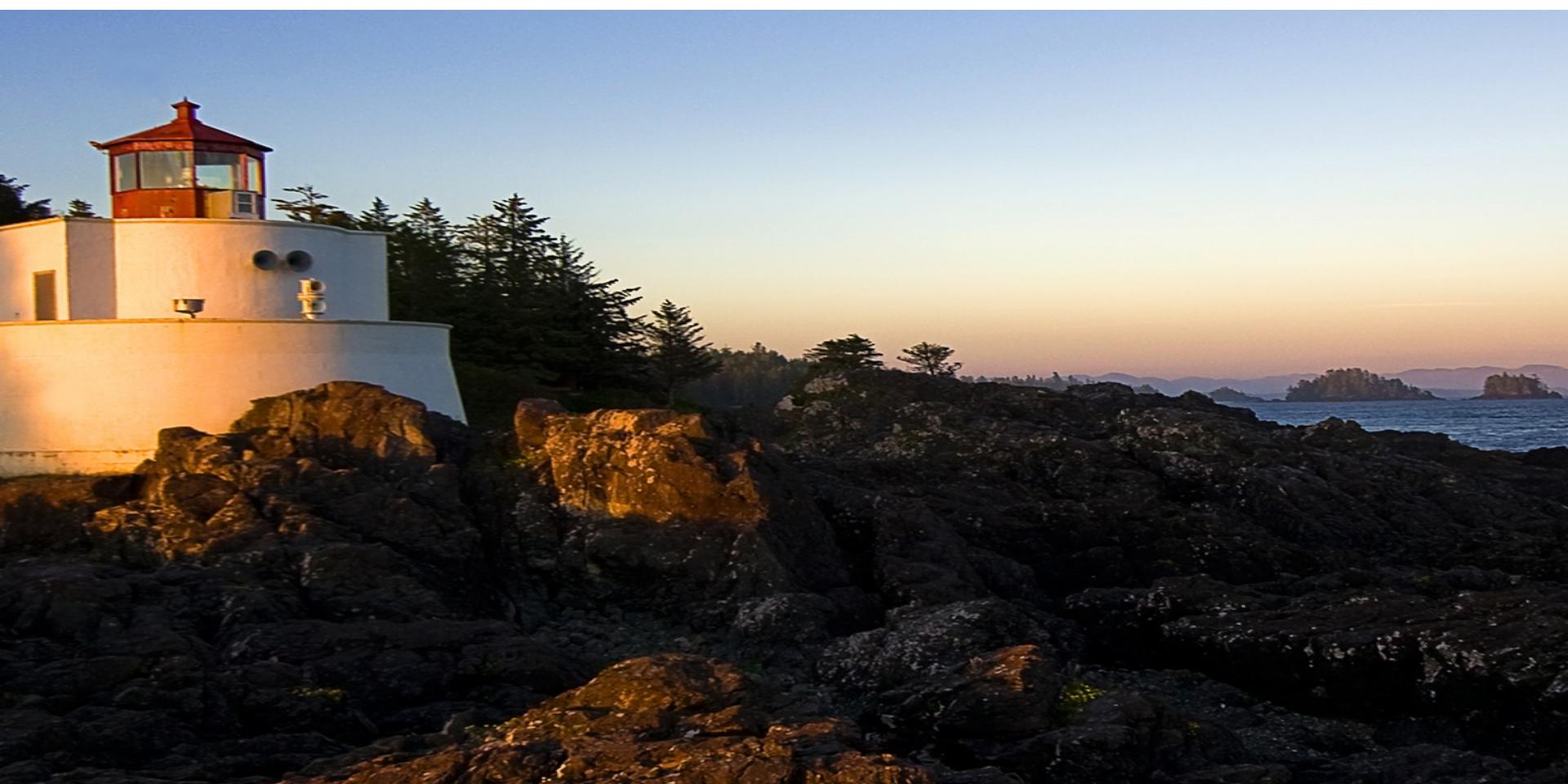


# Welcome

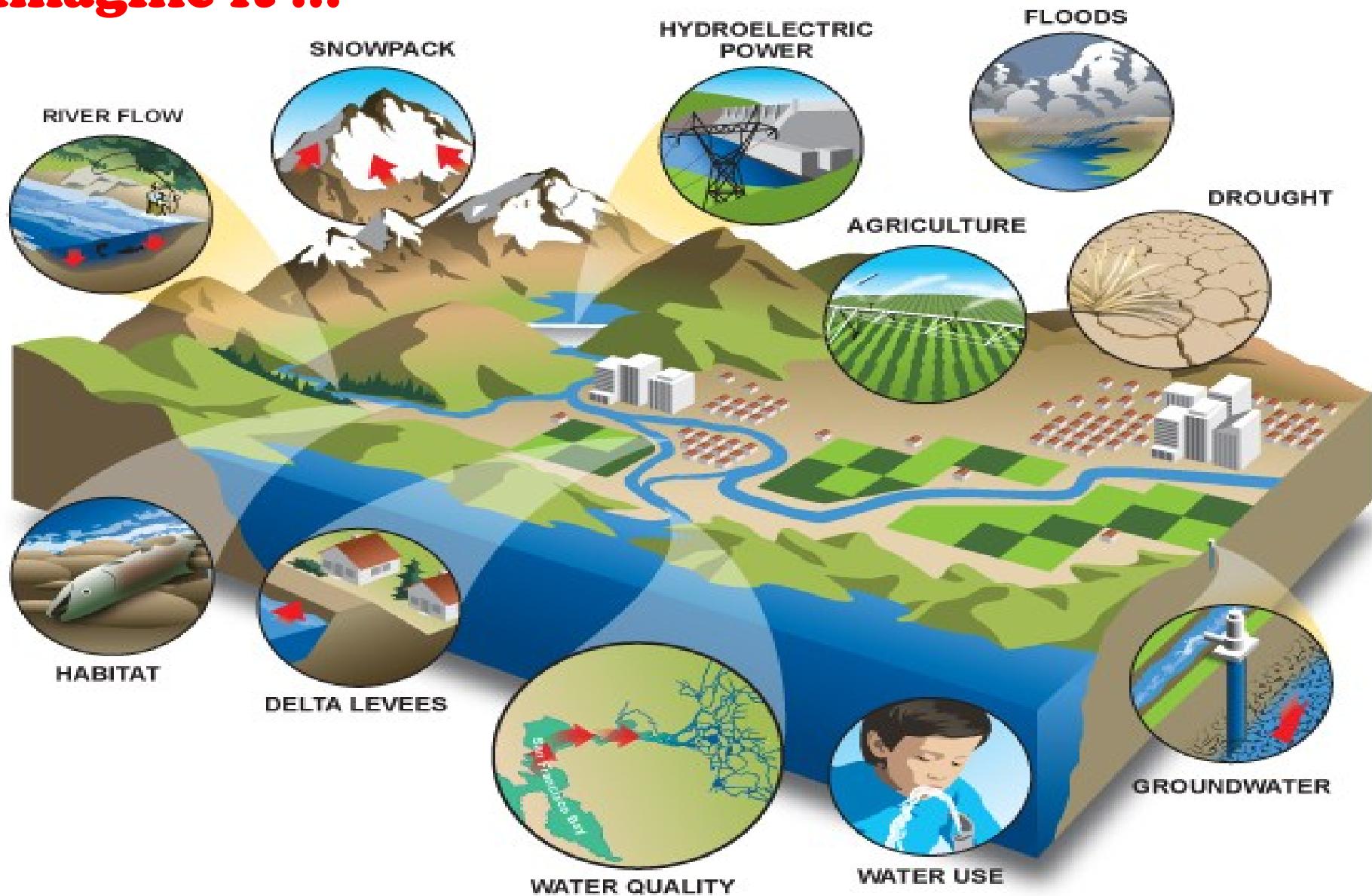
*nagendra raj sitoula, 9751088879 [nrsitoula@gmail.com](mailto:nrsitoula@gmail.com)*



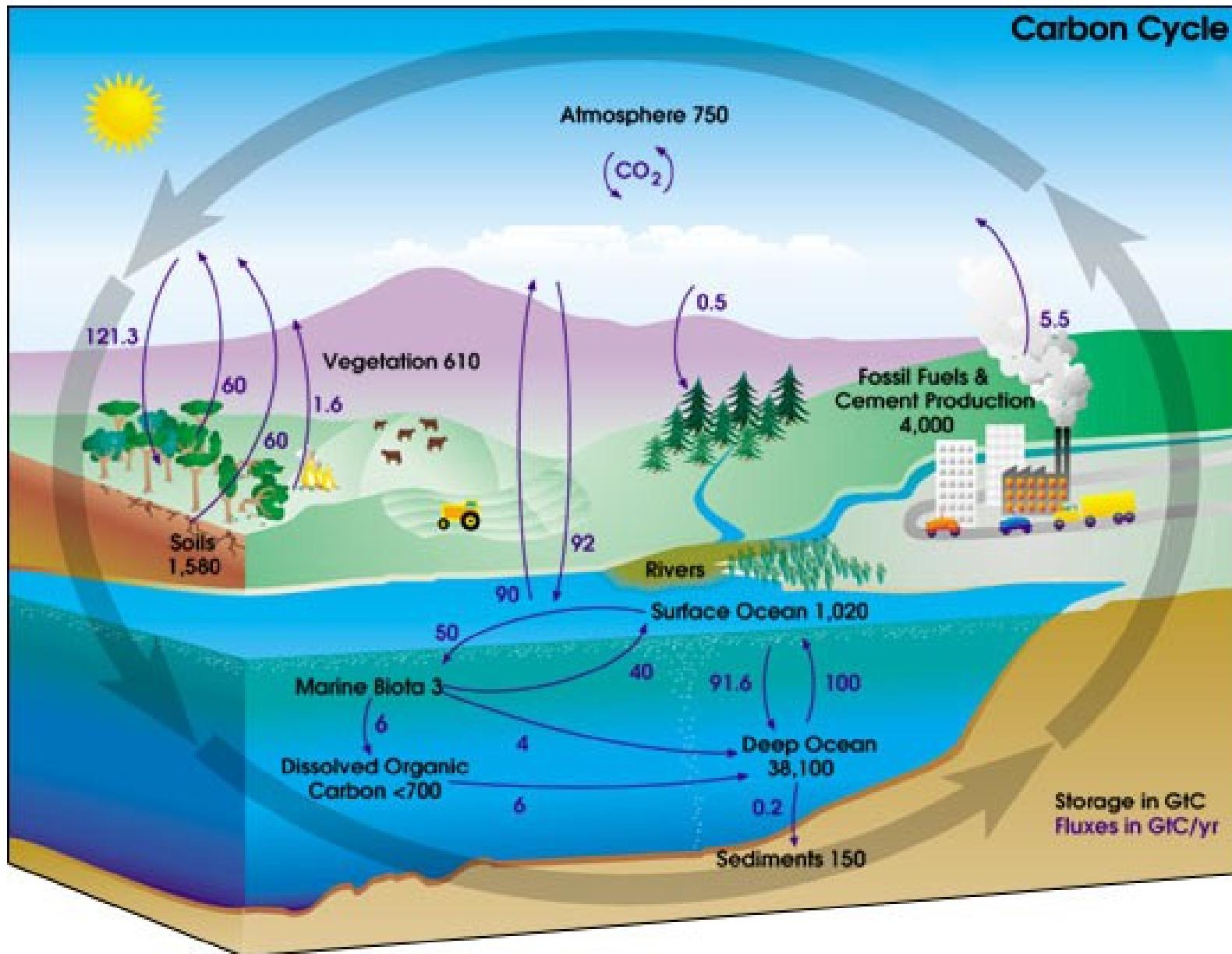
# Give title

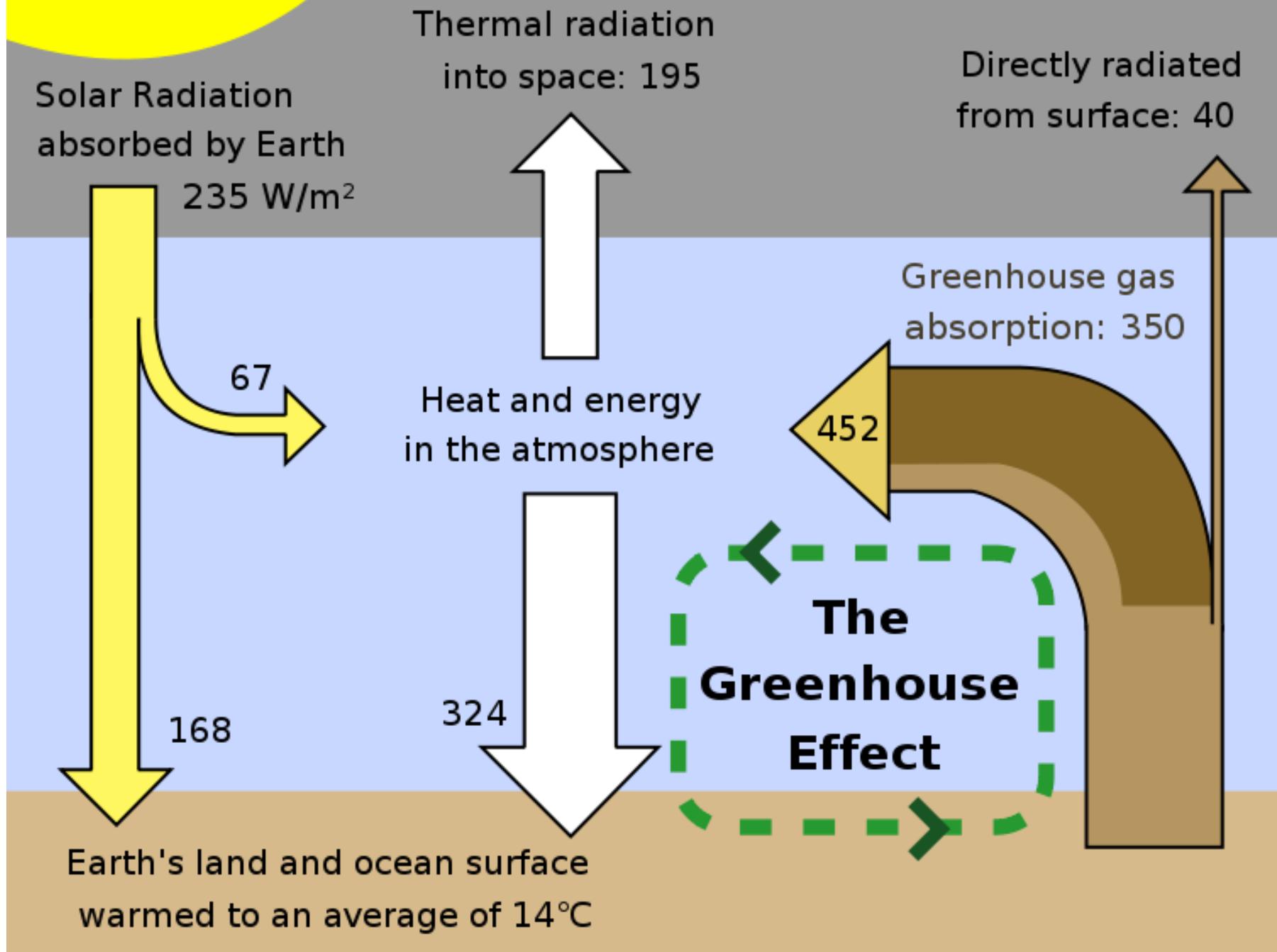


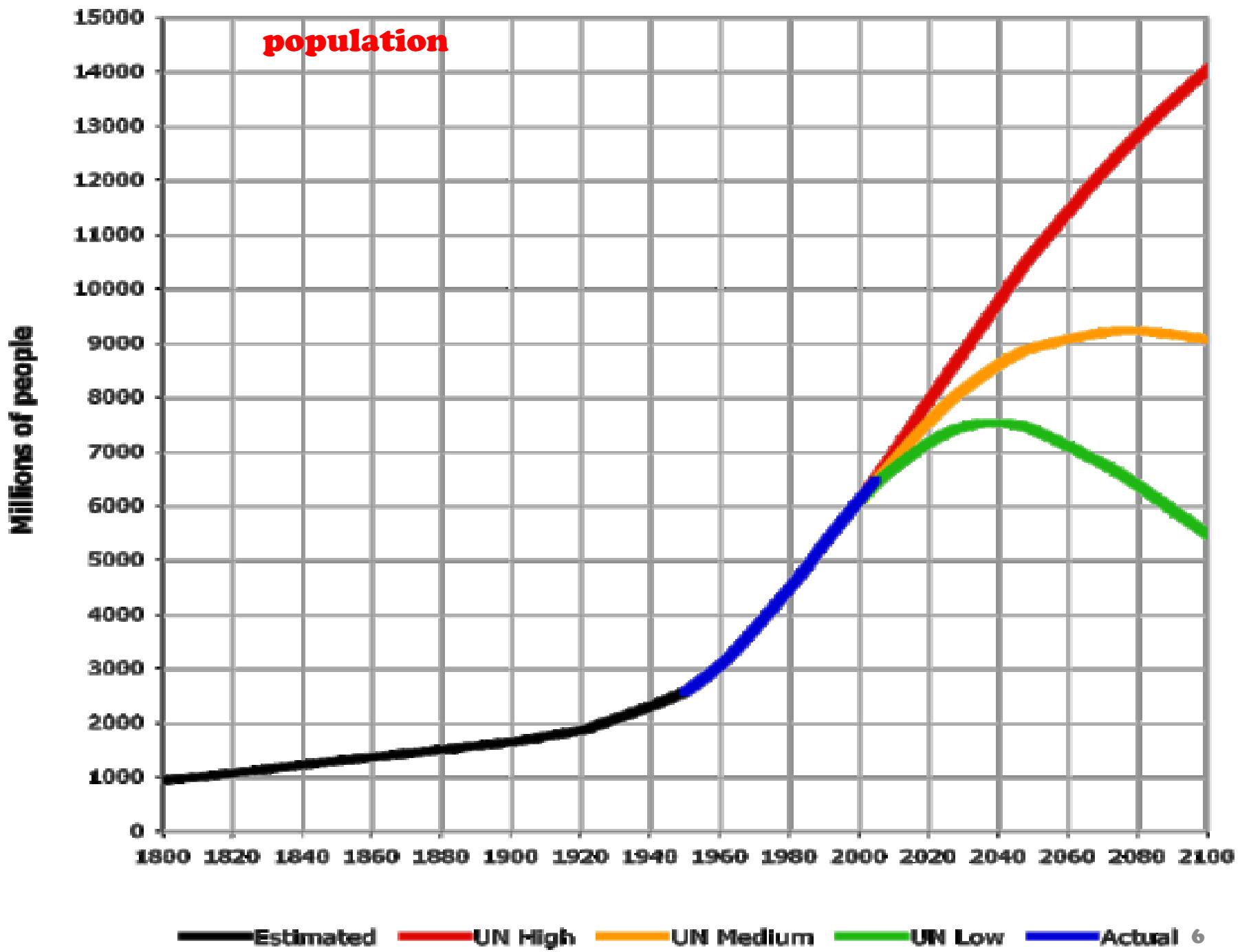
# Imagine it !!!

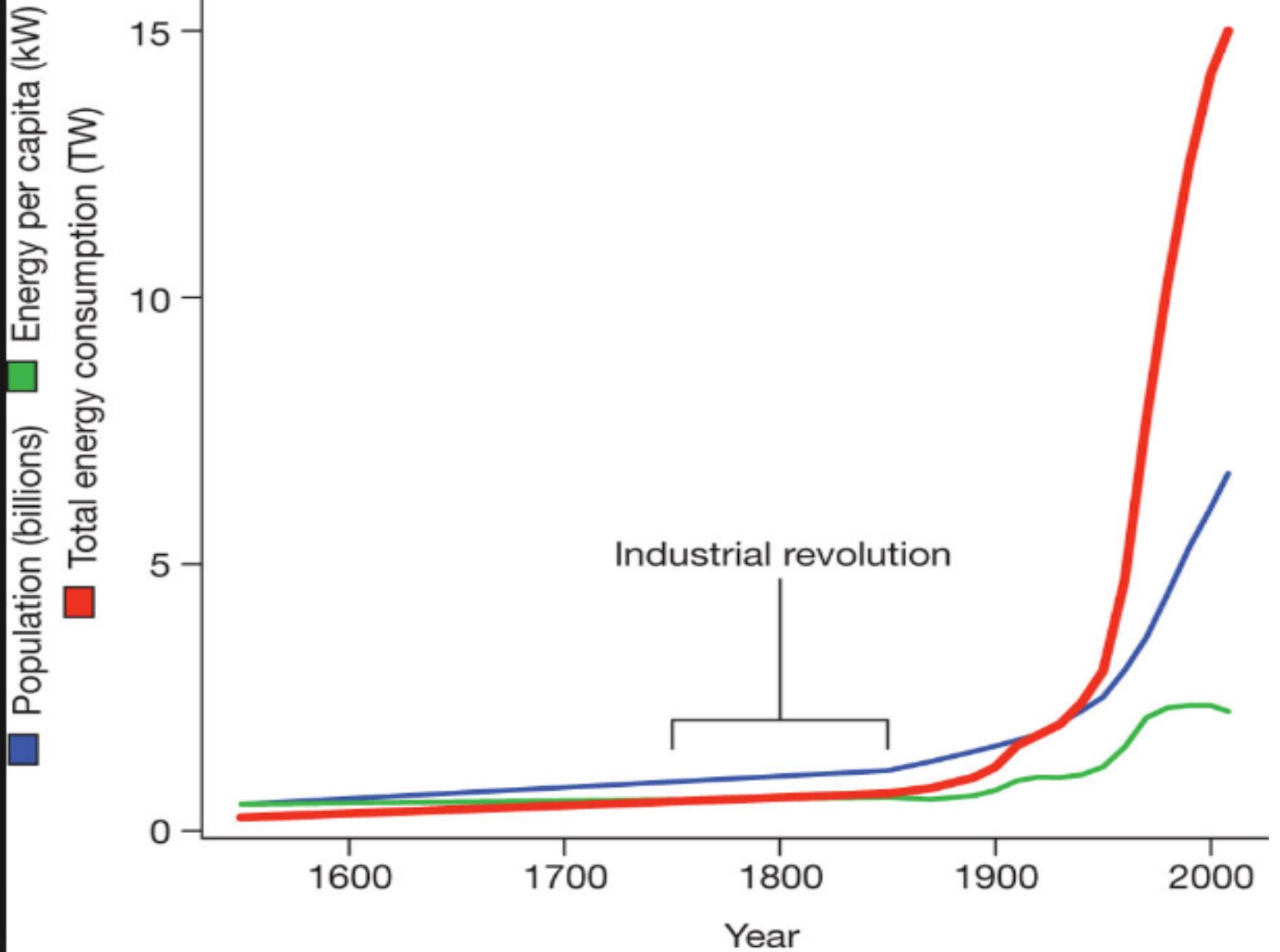


# What is it ?









**3 Billion: 30 January 1960**

**4 Billion: 8 September 1974**

**5 Billion: 31 March 1987**

**6 Billion: 20 January 1999**

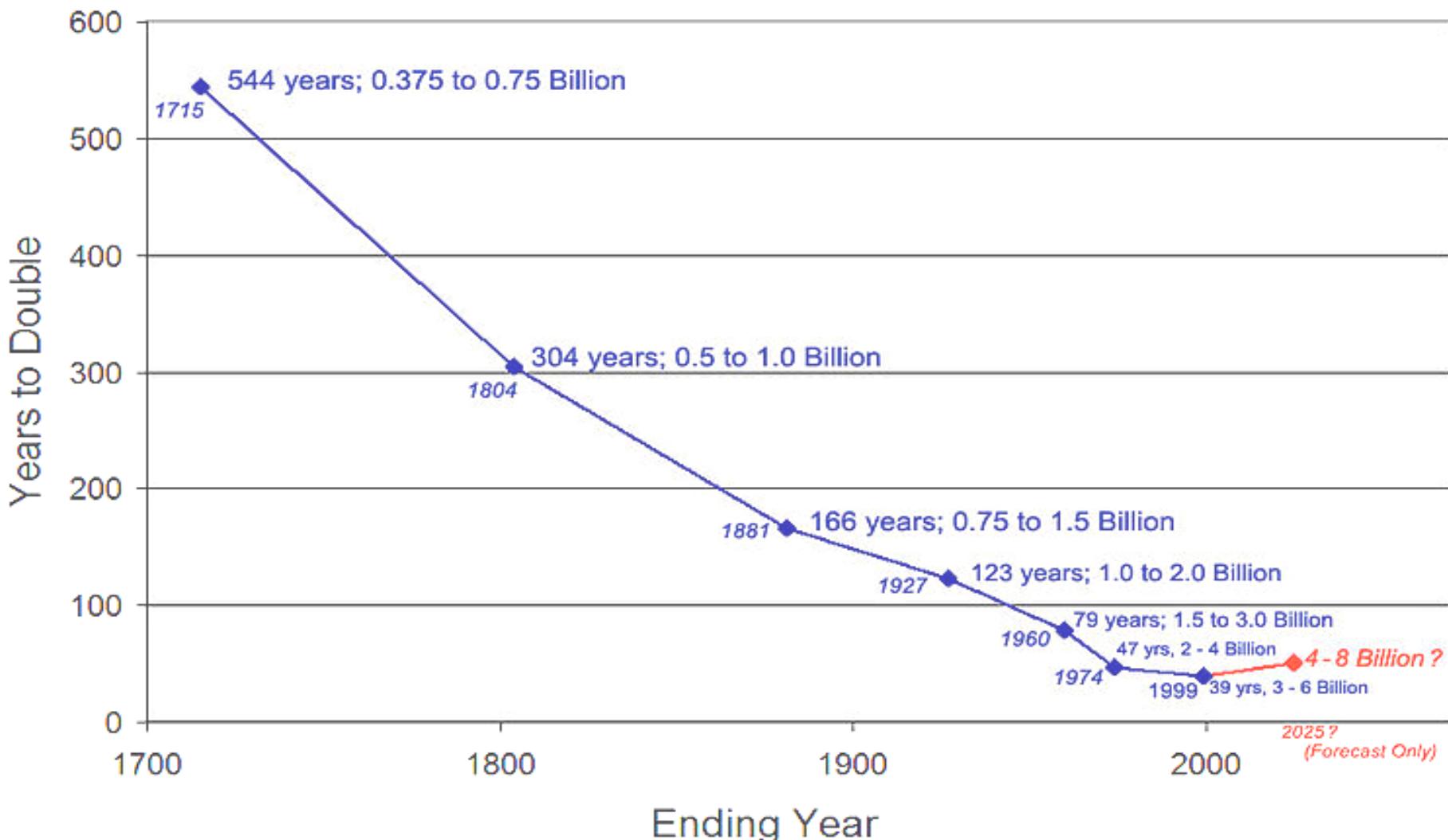
**7 Billion: 26 August 2011**

**8 Billion: 27 April 2025**

**9 Billion: 10 August 2045**

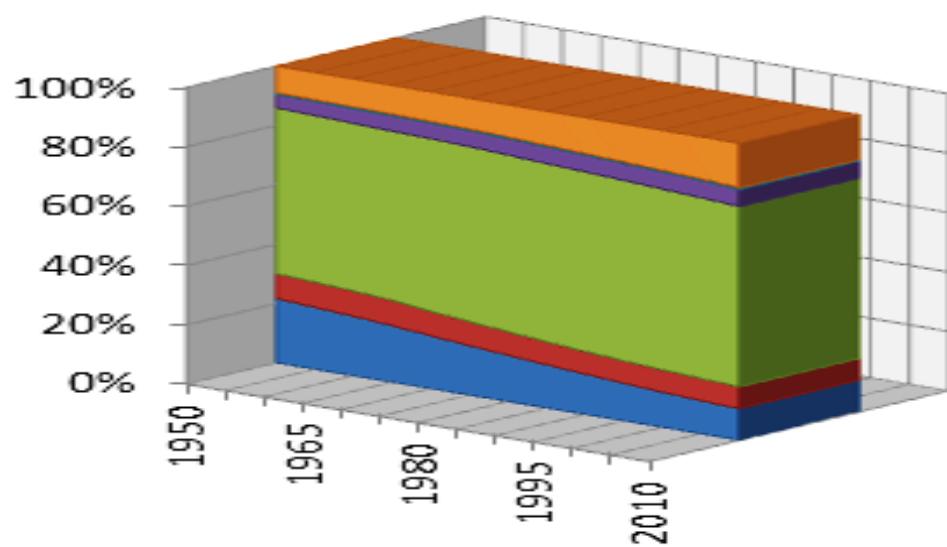
**At what time has the world population reached / will reach ... billion?**

# Years to Double Population



source data: [http://en.wikipedia.org/wiki/World\\_population#Years\\_for\\_world\\_population\\_to\\_double](http://en.wikipedia.org/wiki/World_population#Years_for_world_population_to_double)

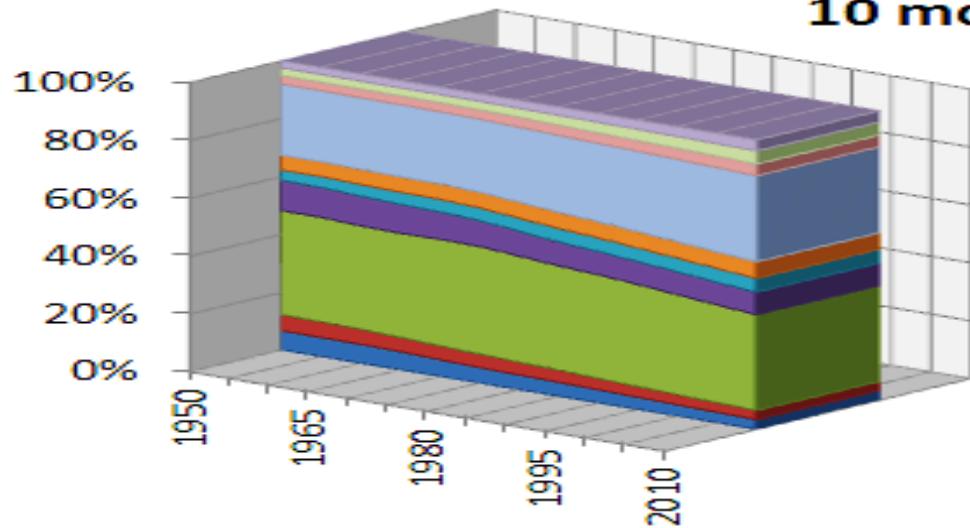
# Share of Population from 1950 to 2010 & Population Growth in the 2000-2010 Decade



## Continents

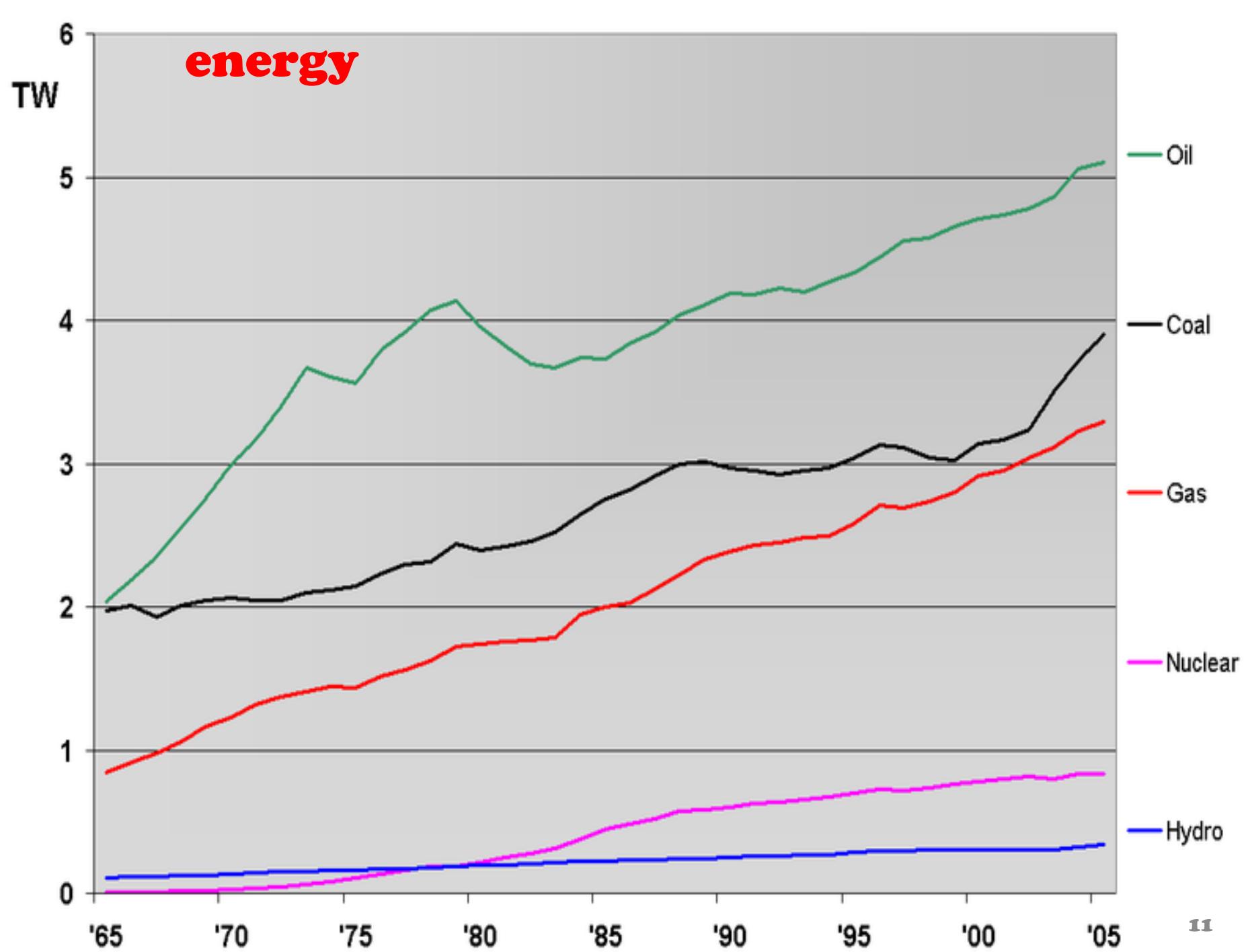
- (26.1%) #2 Africa
- (15.0%) #6 Oceania
- (13.2%) #5 South America
- (12.7%) #1 Asia
- (10.4%) #4 North America
- (00.8%) #3 Europe

## 10 most populated countries



- (26.8%) #8 Nigeria
- (24.7%) #6 Pakistan
- (16.8%) #7 Bangladesh
- (16.5%) #2 India
- (13.3%) #4 Indonesia
- (12.2%) #5 Brazil
- (10.4%) #3 United States
- (06.9%) #1 China
- (00.2%) #10 Japan
- (-4.3%) #9 Russia

Source: Department of Economic and Social Affairs, United Nations Population Division (UNPD). 2010. Available on-line at: <http://esa.un.org/unpp/>



**Oil 37%**

**Coal 25%**

**Gas 23%**

**Nuclear 6%**

**Biomass 4%**

**Hydro 3%**

**Solar heat 0.5%**

**Wind 0.3%**

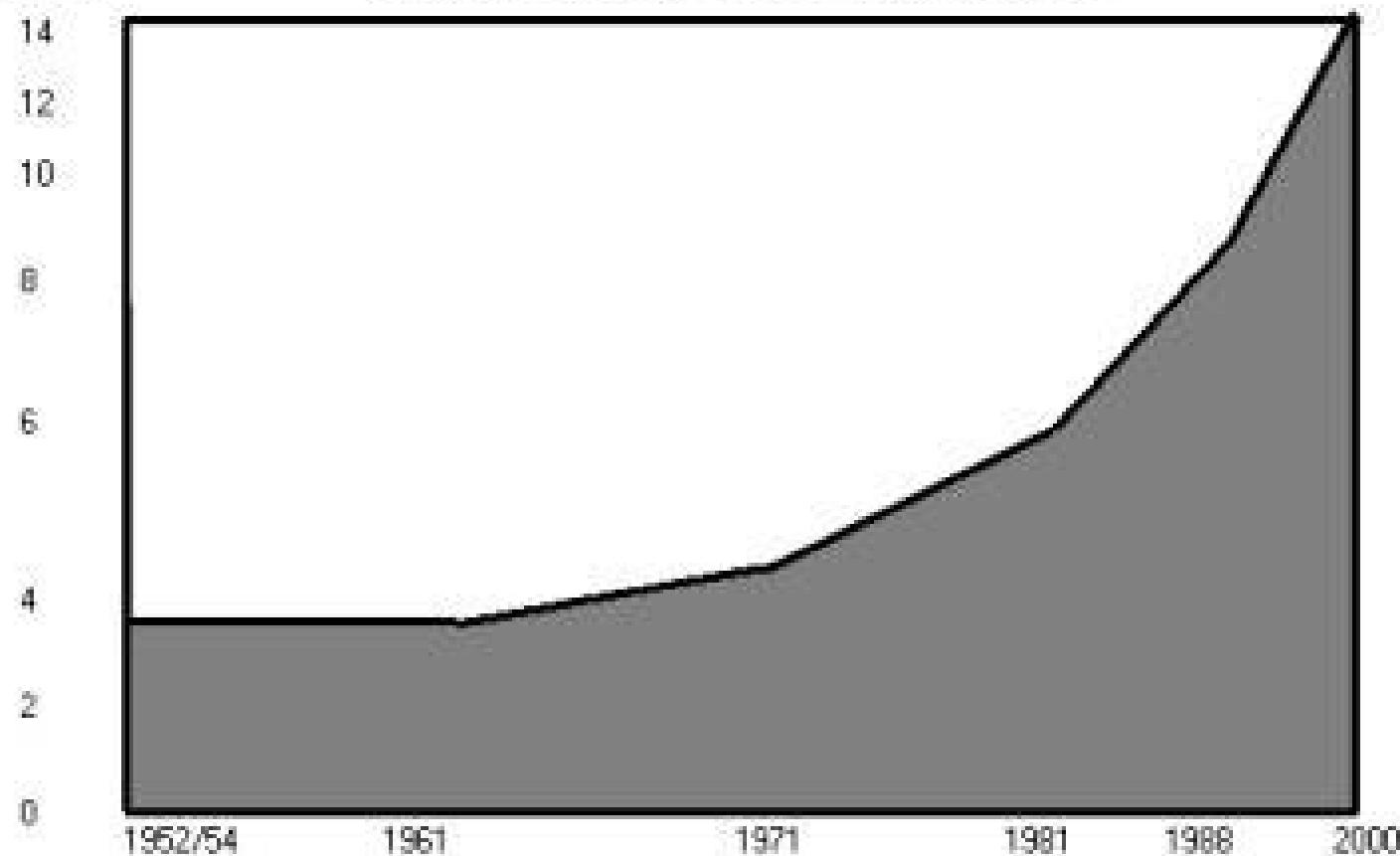
**Geothermal 0.2%**

**Biofuels 0.2%**

**Solar photovoltaic 0.04%**<sup>12</sup>

Percent

### LEVEL AND GROWTH OF URBANISATION IN NEPAL



Sources: Shama, 1989; UNDP 1990

# **Climate change**

- **Climate change is becoming the most serious and urgent problem the world faces. Unless we take radical action now, we face the shadow of a century of rising sea level, droughts, hurricanes, heat waves, glacial melting, floods, crop failure and forced migration. All of this will affects the poorest and most vulnerable people, the very people least responsible for the problem.**
  - **Hillary Benn, UK secretary of state of international**

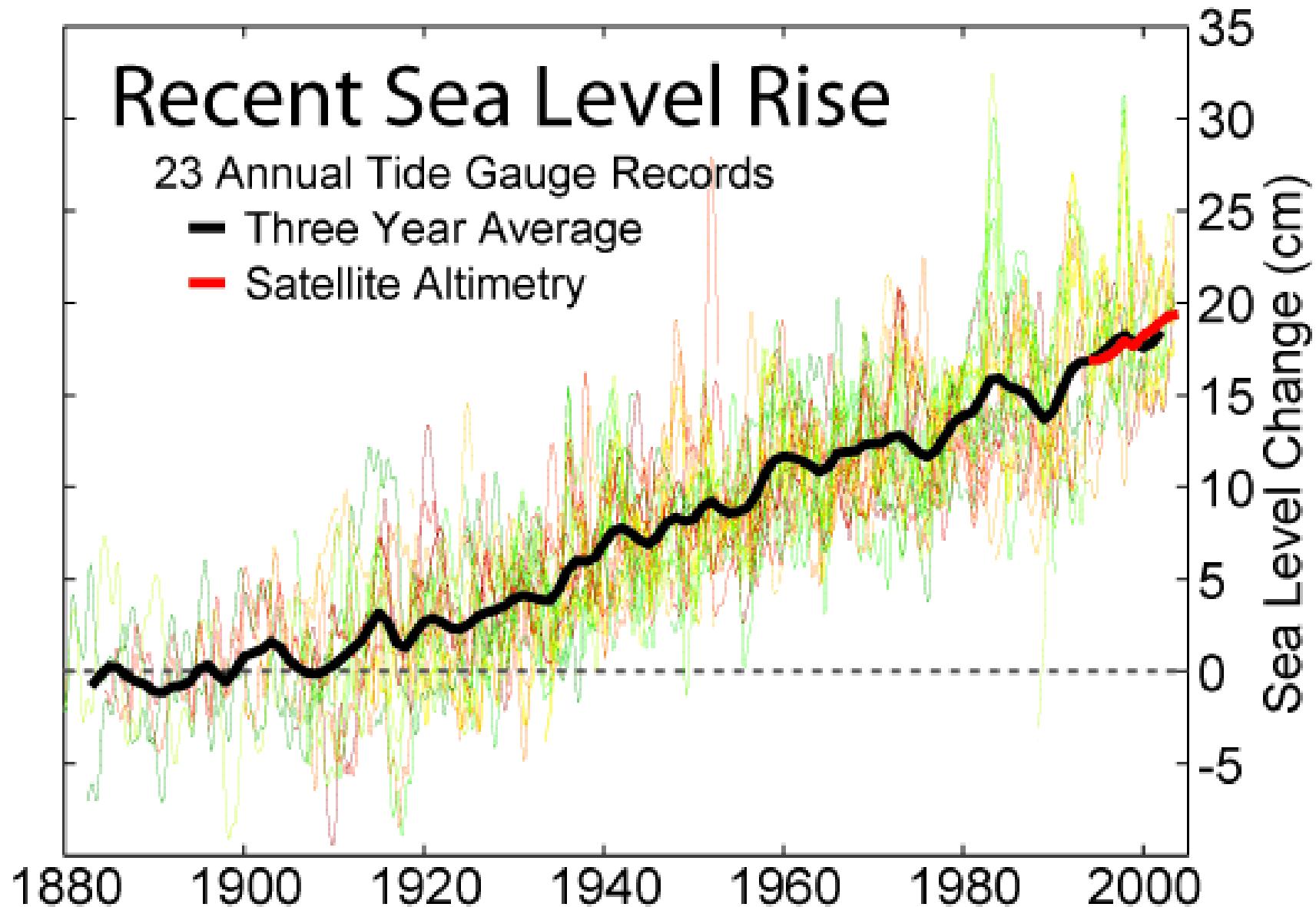
# **Global climate change**

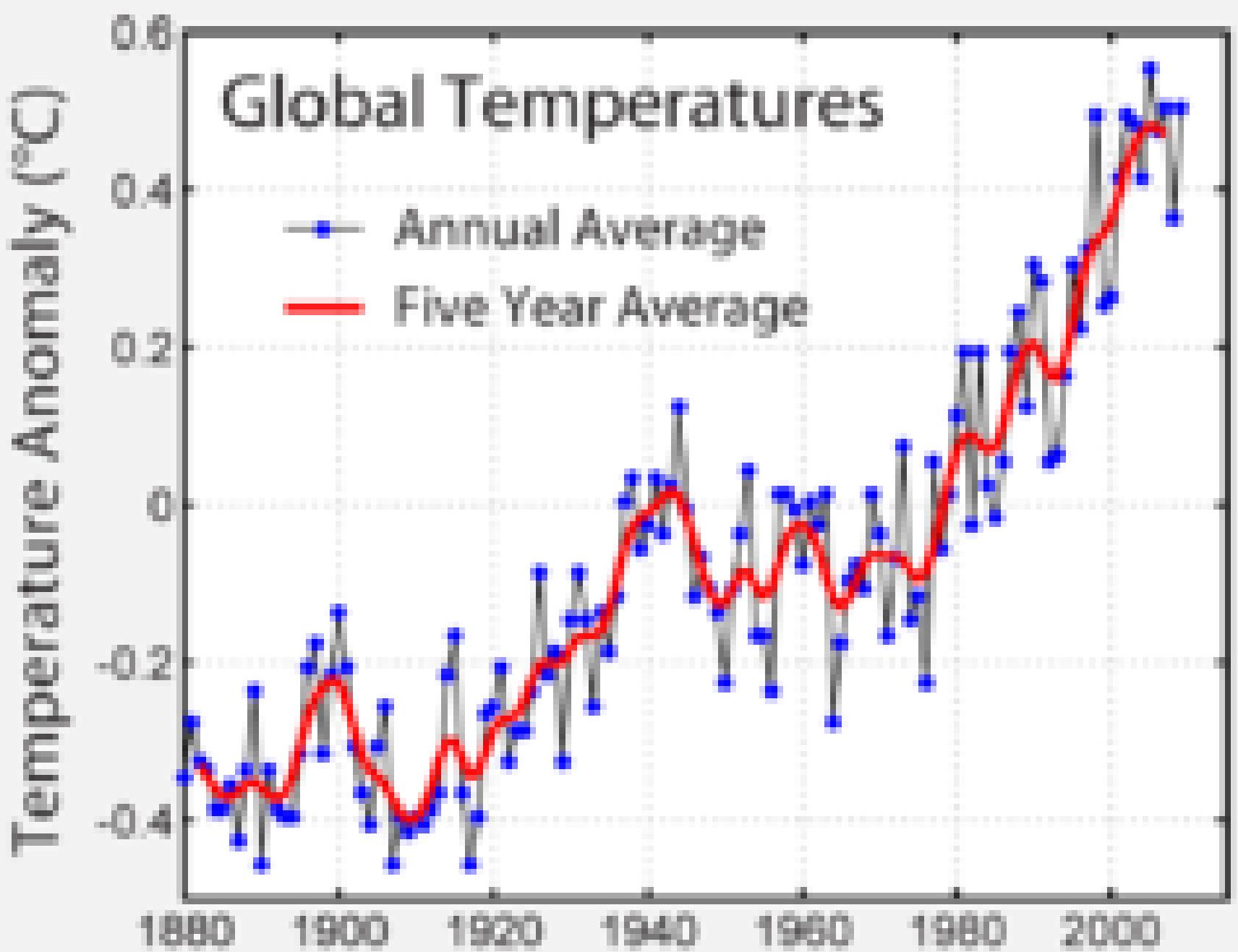
- **Increased number of extreme weather events**
  - **Tsunamis, hurricanes, typhoons, floods, droughts, etc**
  - **13 number in 1950 -60**
  - **16 number in 1960-70**
  - **29 number in 1970-80**
  - **44 number in 1980-80**
  - **72 number in 1990-98**

# Recent Sea Level Rise

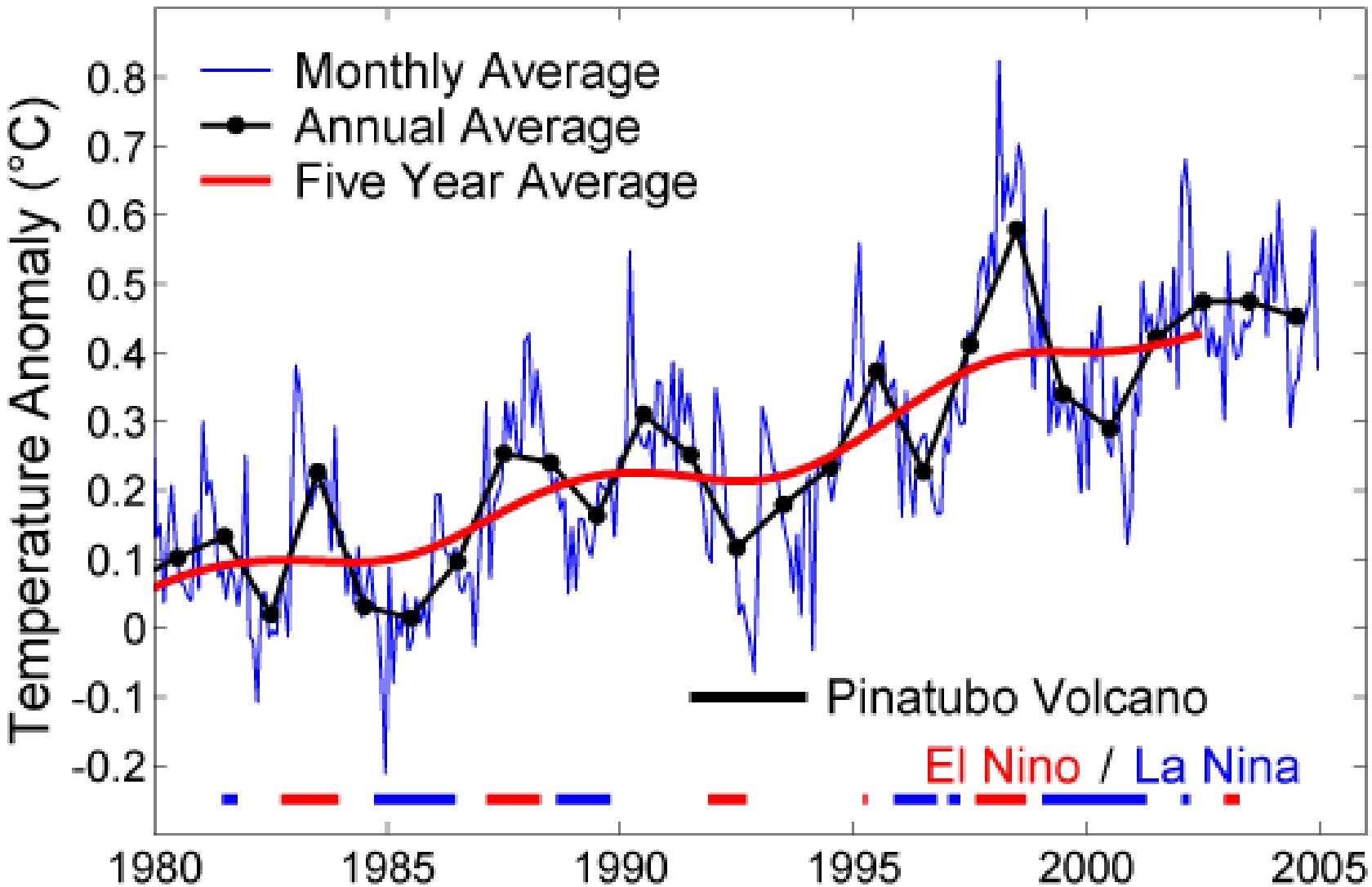
23 Annual Tide Gauge Records

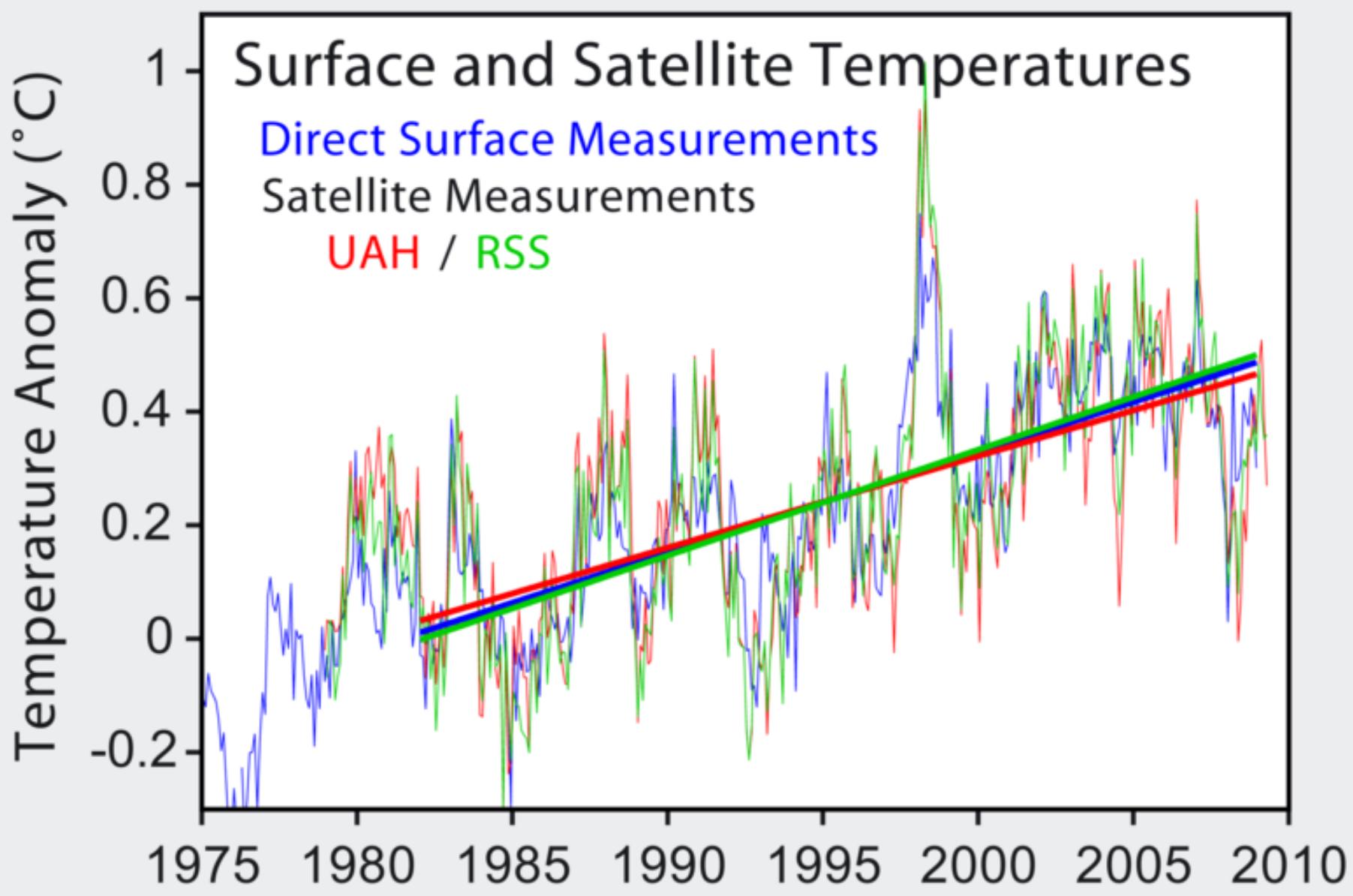
- Three Year Average
- Satellite Altimetry



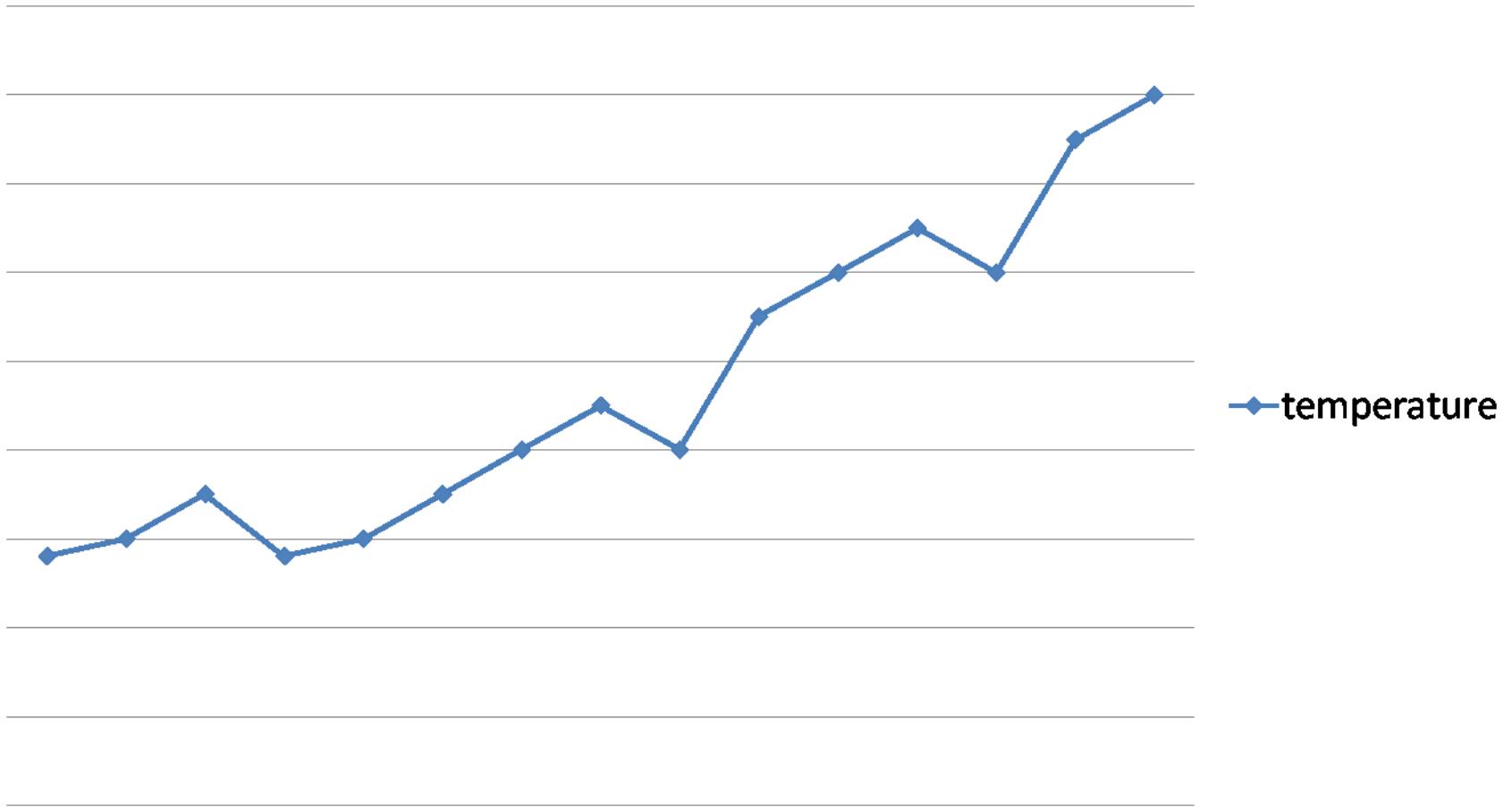


# Surface Temperature Record

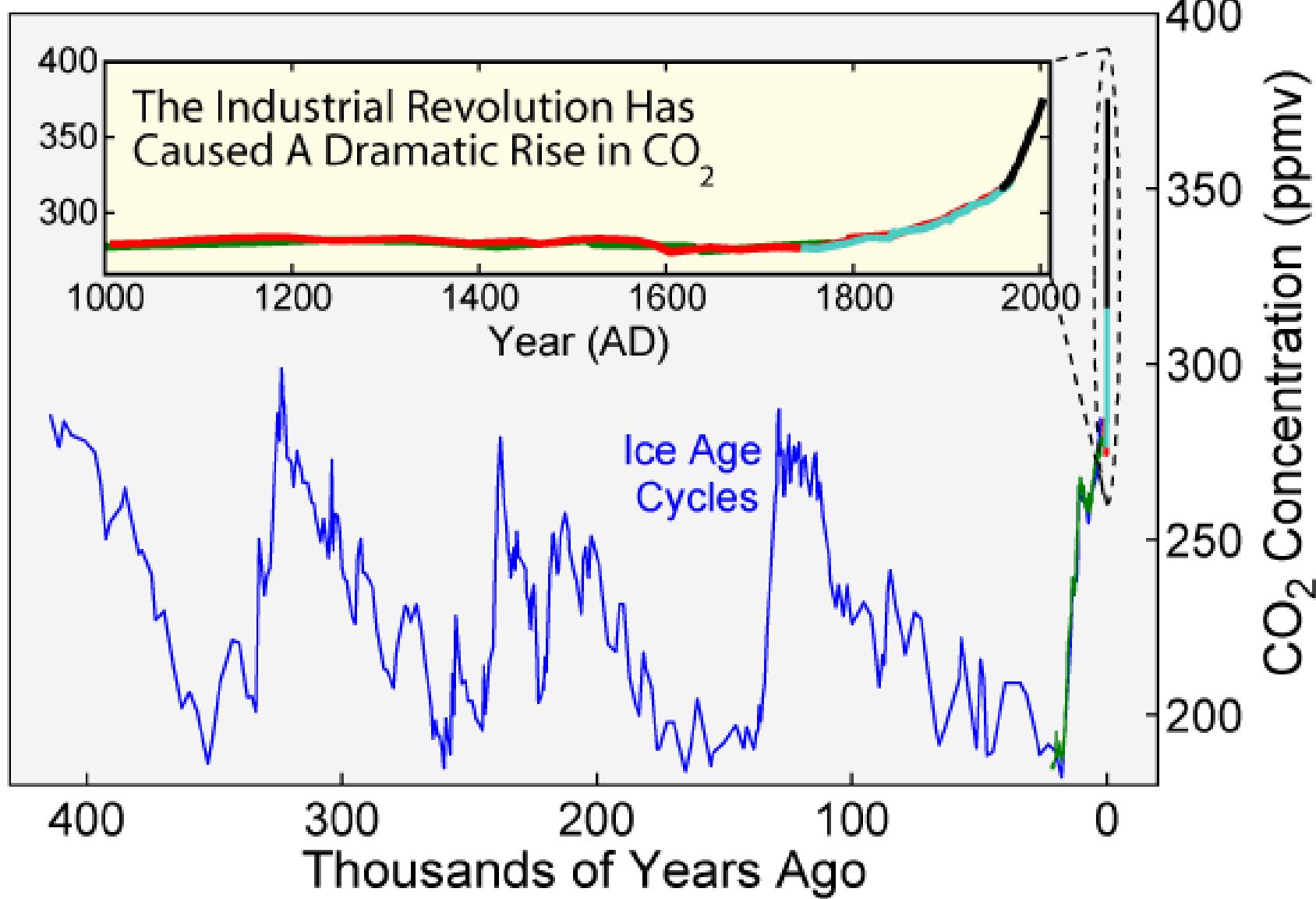




# Temperature changes

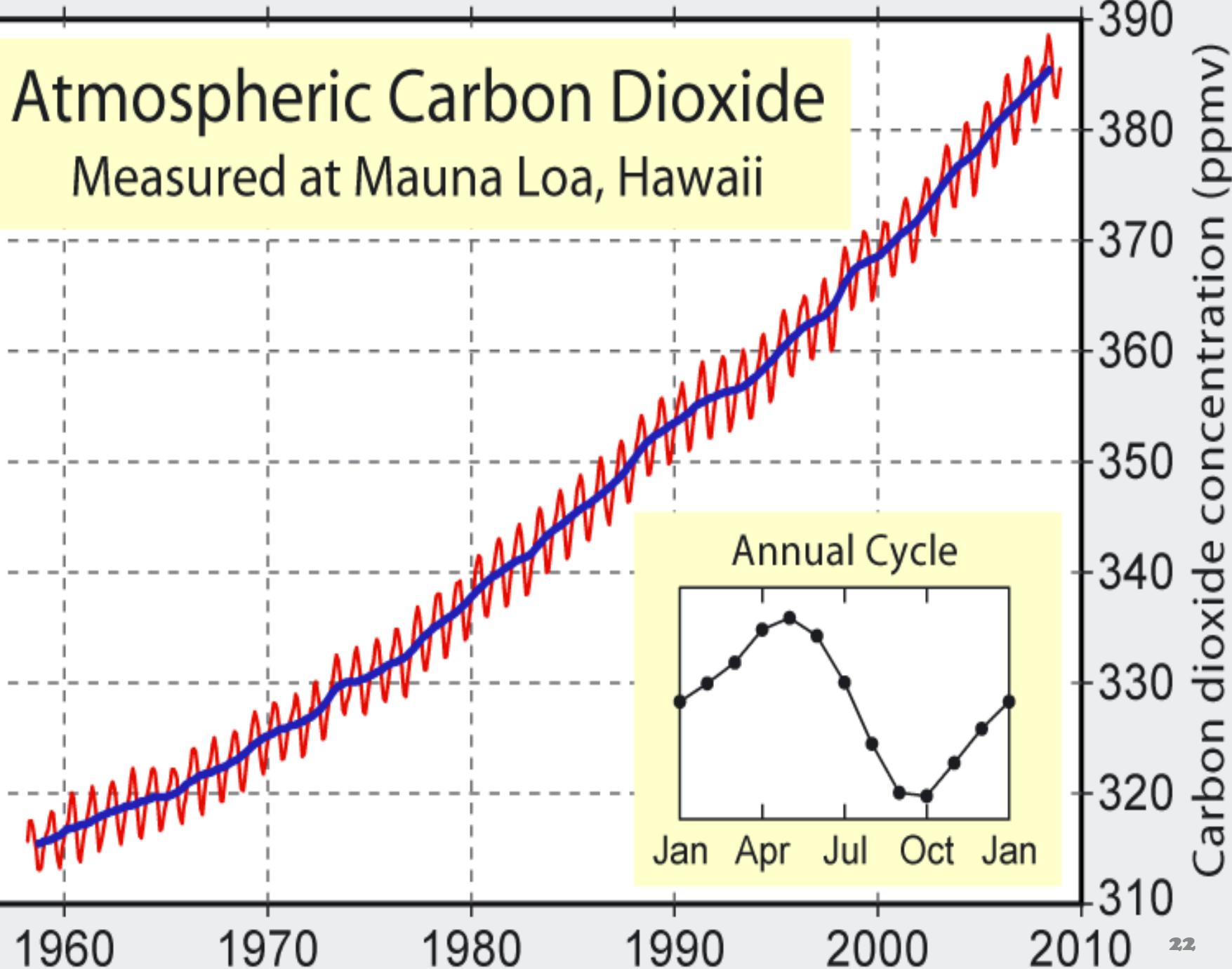


# Carbon Dioxide Variations

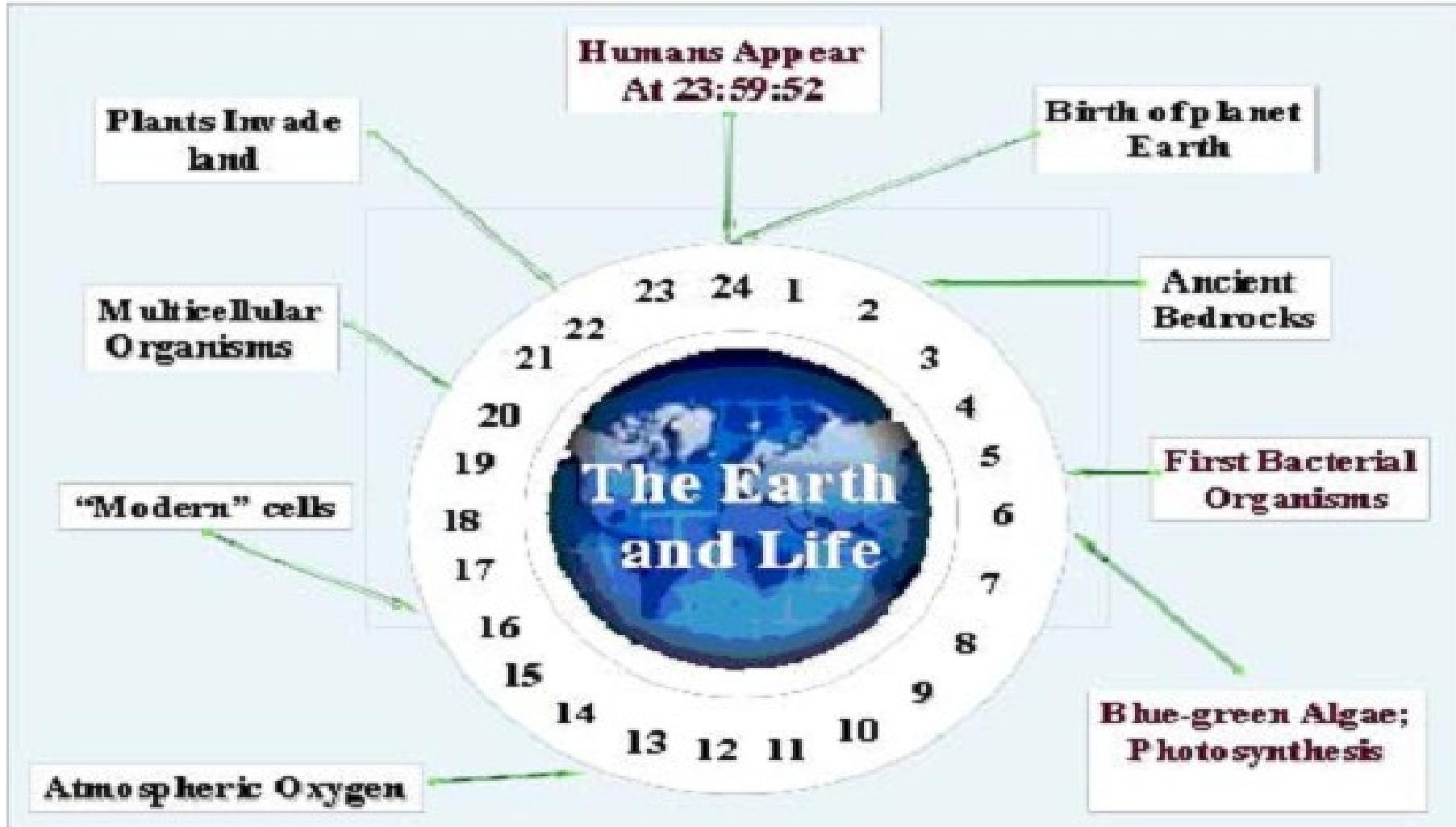


# Atmospheric Carbon Dioxide

Measured at Mauna Loa, Hawaii



# History of Our Planet



*"Planet Earth – is a Giant Self Regulating System"*

- Gaia Hypothesis  
23

# **Who is responsible?**

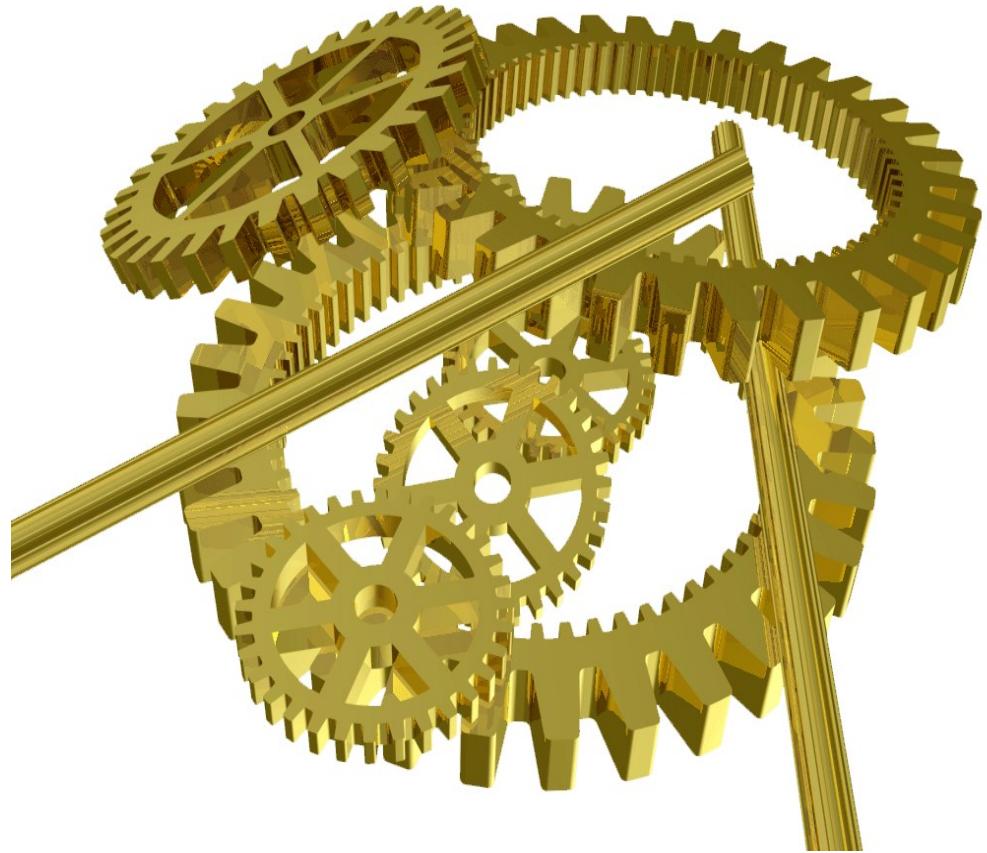
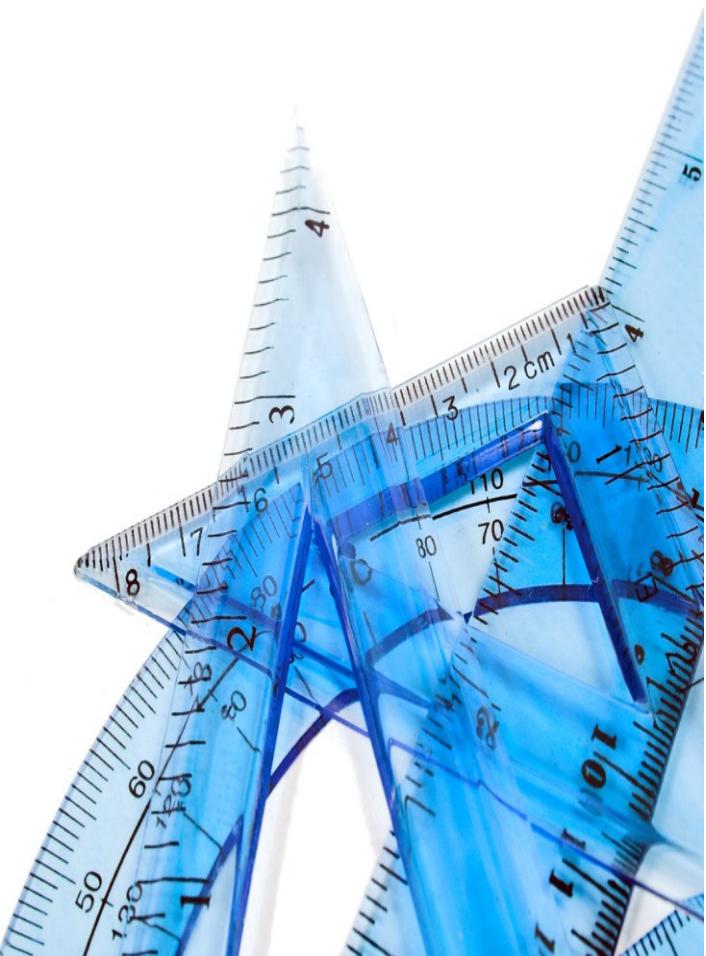
- **Nature**
- **Animal**
- **Man**
- **human**
- **Politics**
- **Science**
- **Technology**
- **Society**
- **What should do? .....**

# Course rationale:

- The main aim of this course to introduce the ethical and legal environment in engineering practice.
- Course Contents:



# Engineering



# society



# Ethics



# Professionalism



# **Gorkha Earthquake 2015 unanswered questions**

- 1. Who is responsible for this disaster ?**
- 2. Eq is a hazard , man make it disaster**

# **Engineering Professional Practice**

## **Evaluation:**

Theory	Theory	Total
Assessment	10	10
Final	40 -	40
Total	50	50

# **Epp syllabus**

- **Lecture :**      **2**      **Year :**      **IV**
- **Tutorial :**      **0**      **Part :**      **II**
- **Practical**           **:**      **0**
- 
- **Course Objective:**
- **To familiarize the students with their roles in the society, ethical and legal environment in which engineering is practiced, contract administration, regulatory environment and contemporary issues in Engineering.**

# **Epp syllabus**

- **CH1**
- **History of Engineering Practices [3 hours]**
  - **Man and Society**
  - **Technology and Society**
  - **History of Engineering Practice in Eastern Society**
  - **History of Engineering Practice in Western society**
  - **Engineering Practices in Nepal**

# Epp syllabus

- **Chapter II**
- **Profession and Ethics [6 hours]**
  - **Profession: Definition and Characteristics**
  - **Professional Institutions**
  - **Relation of an Engineer with Client, Contractor and Fellow Engineers**
  - **Ethics, Code of Ethics and Engineering Ethics**
  - **Moral Dilemma and Ethical Decision Making**
  - **Detailed Duties of an Engineer and Architect**
  - **Liability and Negligence**

# Epp syllabus

- **Chapter III**
- **Professional Practices in Nepal [3 hours]**
  - **Public Sector practices**
  - **Private Sector Practices**
  - **General Job Descriptions of Fresh Graduates in both Public and Private Sector**

# Epp syllabus

- **CH IV**
- **Contract Management [6 hours]**
  - Methods of work execution/contracting
  - Types of Contracts
  - Tendering Procedure
  - Contract agreement

# Epp syllabus

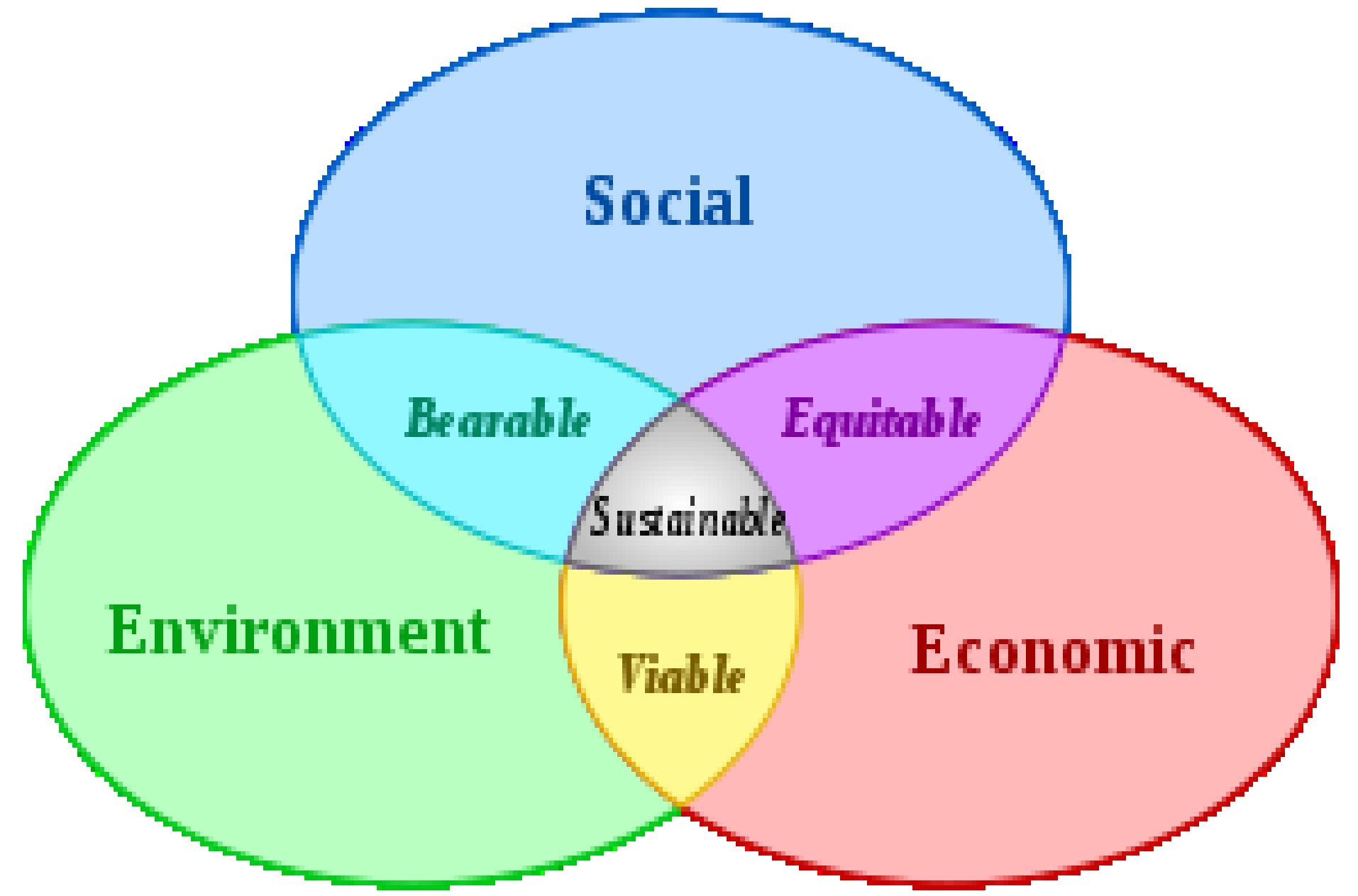
- **CH V**
- **Regulatory Environment [5 hours]**
  - **Nepal Engineering Council Act**
  - **Labor Law**
  - **Intellectual Property Right**
  - **Building Codes and Bylaws**
  - **Company Registration**

# Epp syllabus

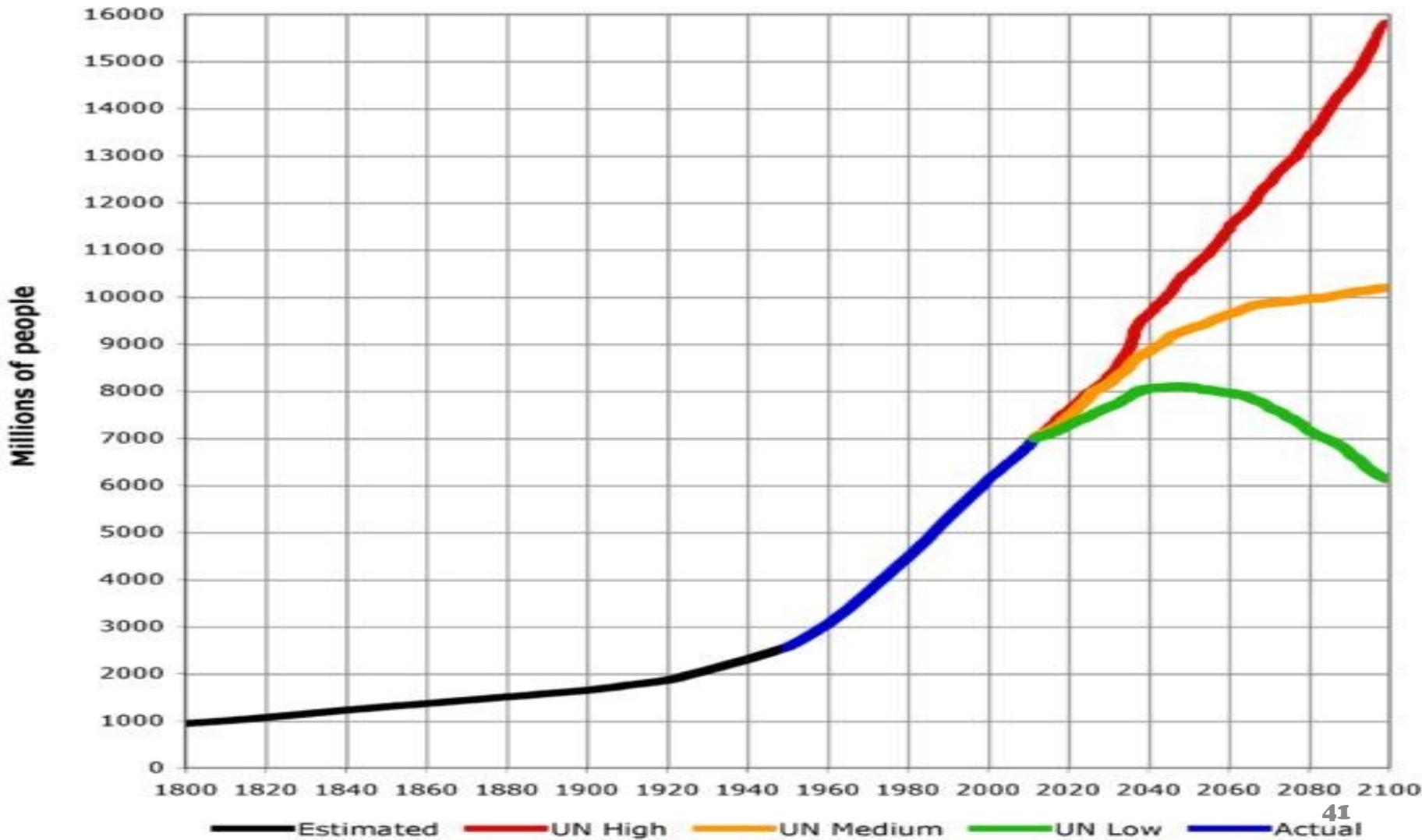
- **CH VI Contemporary Issues in Engineering [3 hours]**
  - Globalization and Cross Cultural Issues
  - Public Private Partnership
  - Safety, Risk and Benefit Analysis
  - Development and Environment
  - Conflict and Dispute Management
- **CH VII Case Studies based on Engineering Practices [4 hours]**
  - 
  - 
  -

# Epp syllabus

- **References:**
- **Carson Morrison and Philip Hughes “Professional engineering Practice – Ethical Aspects”, McGraw-Hill Ryerson Ltd.’ Toronto 1982**
- **Dr Rajendra Adhikari, “Engineering Professional Practice – Nepalese and international Perspectives” Pashupati Publishing House, Kathmandu Nepal 2010**
- **Er. SK shrestha and RK shrestha , “Engineering Professional Practice, Heritage Publishers & Distributors Pvt. Ltd. Bhotahity, Kathmandu , Nepal, 2013**
- **M. Govindarajan; S Natarajan and V.S. Senthikumar., “ Engineering Ethics” – PHI Learning Pvt. Ltd. New Delhi 2009**
- **Nepal Engineering Council Act**
- **Contract Act**
- **Labor Act**
- **Company Act**
- **Copyright Act**
- **Public Procurement Act**
- **Building By-Laws**
- **National Building Code**



# WORLD POPULATION

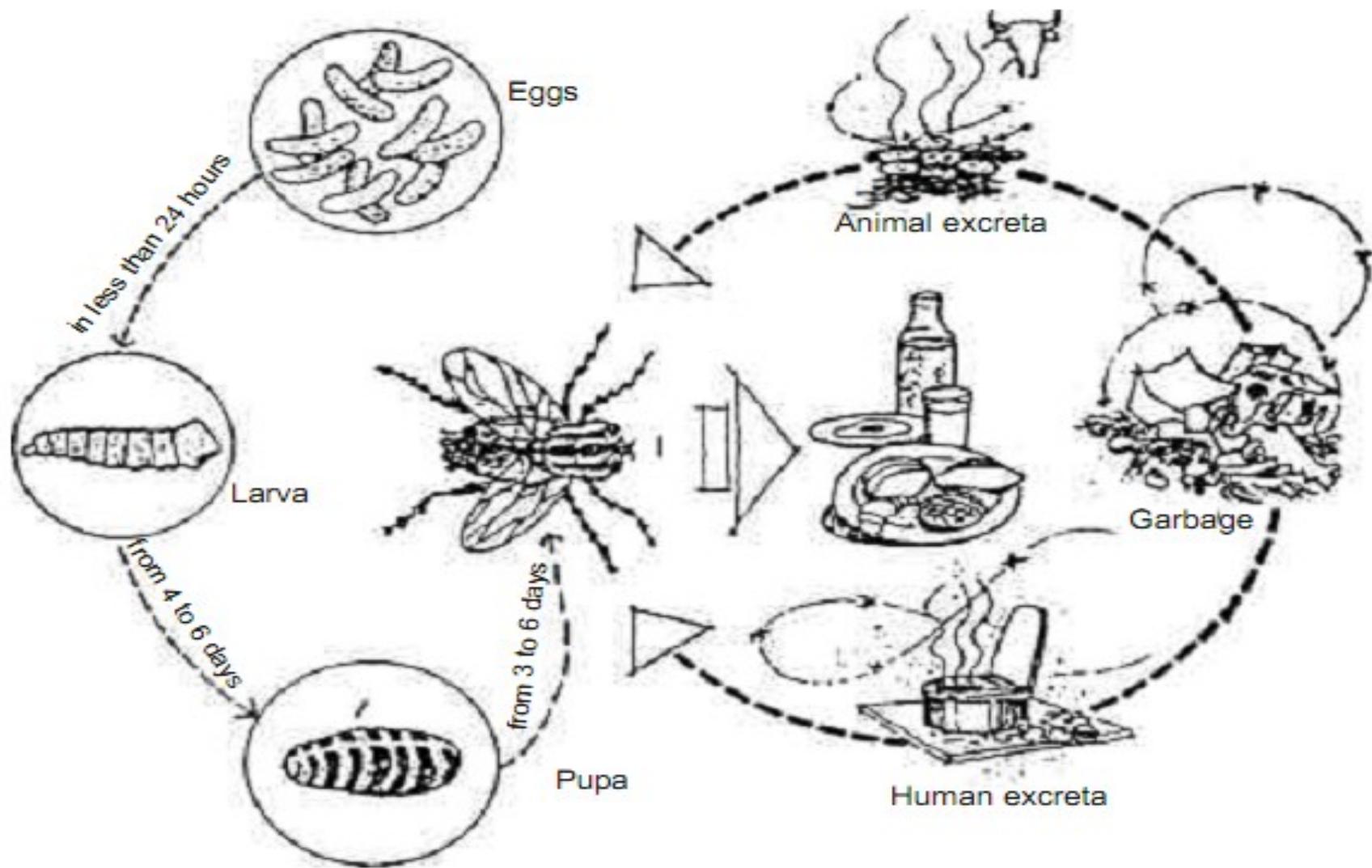


# Health impacts and environmental sanitation





## The life cycle of the fly and its importance in the transmission of diseases



Source: Secretaría de Salubridad y Asistencia. Instructivo Sanitario. Ed. Limusa, México, 1980.

## Activities Generating Municipal Solid Waste

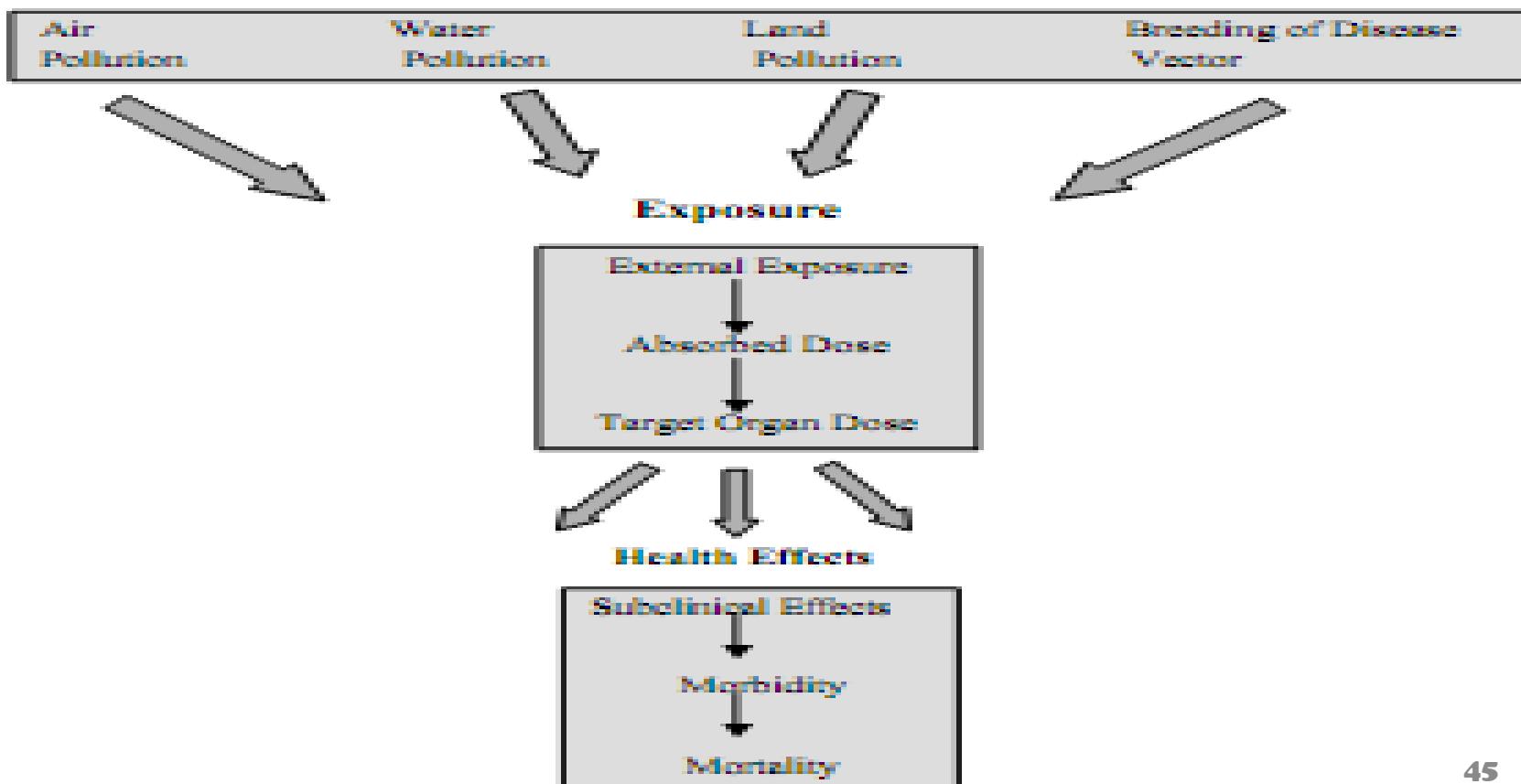
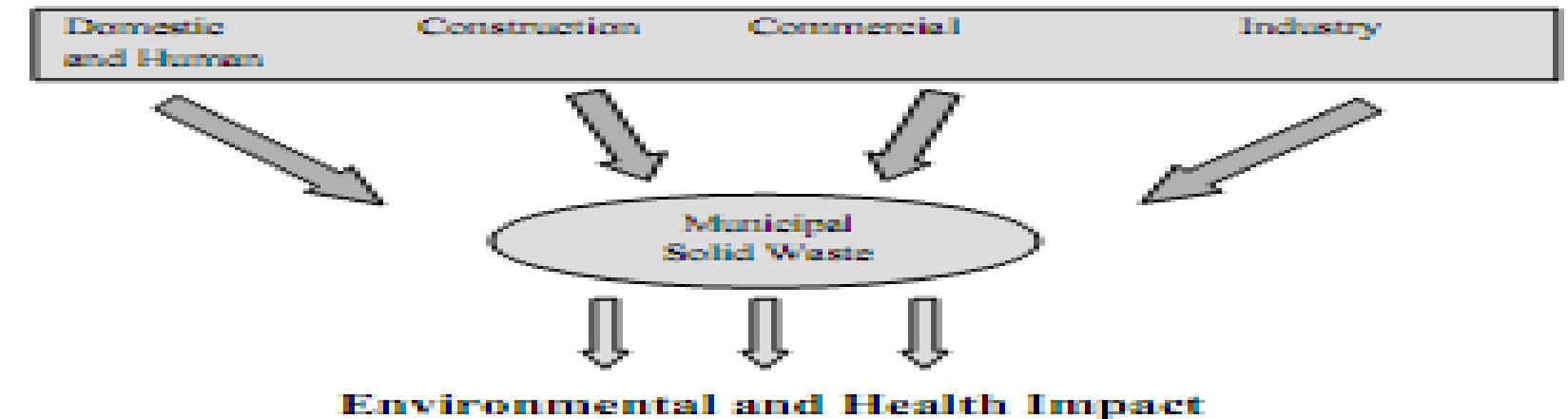


Fig. 22.1 Impact of Municipal Solid Waste on Environment & Health

# Transfer station at Teku, KTM





# Vermi composting



Photo by V. Jedlicka