

# SCIENTIFIC ASPECTS OF GLOBAL WARMING

BY

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INDIA

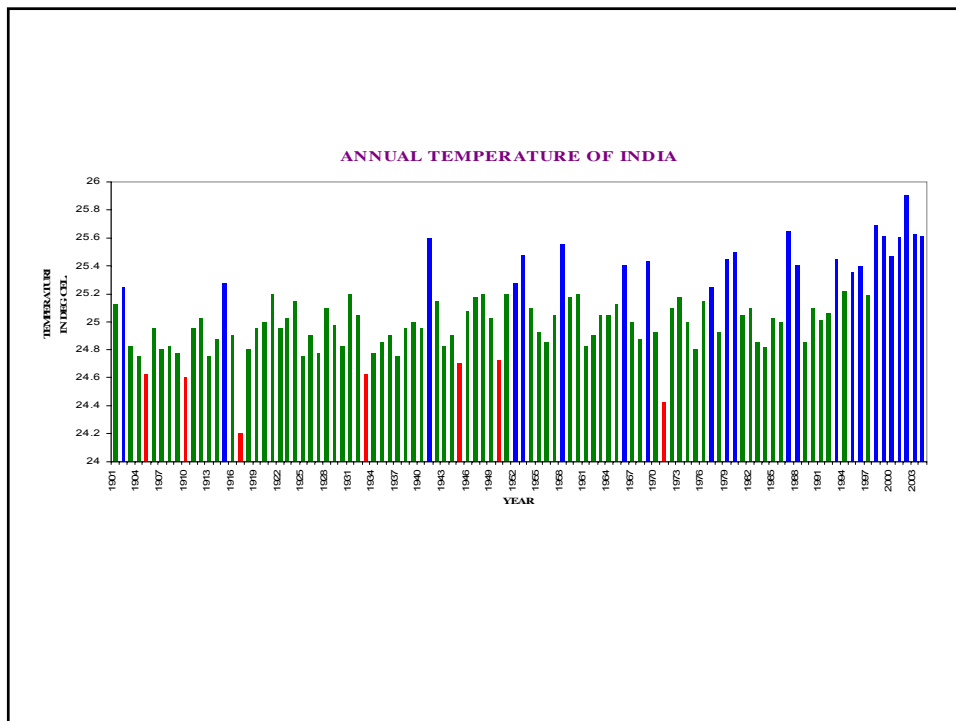
## PRESENTATION LAYOUT

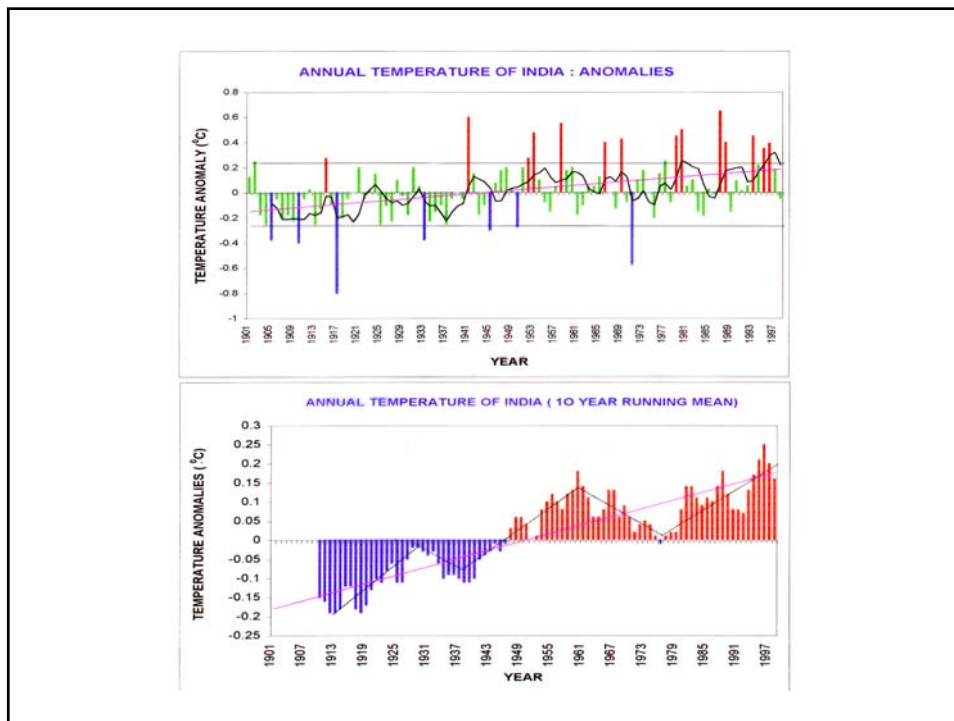
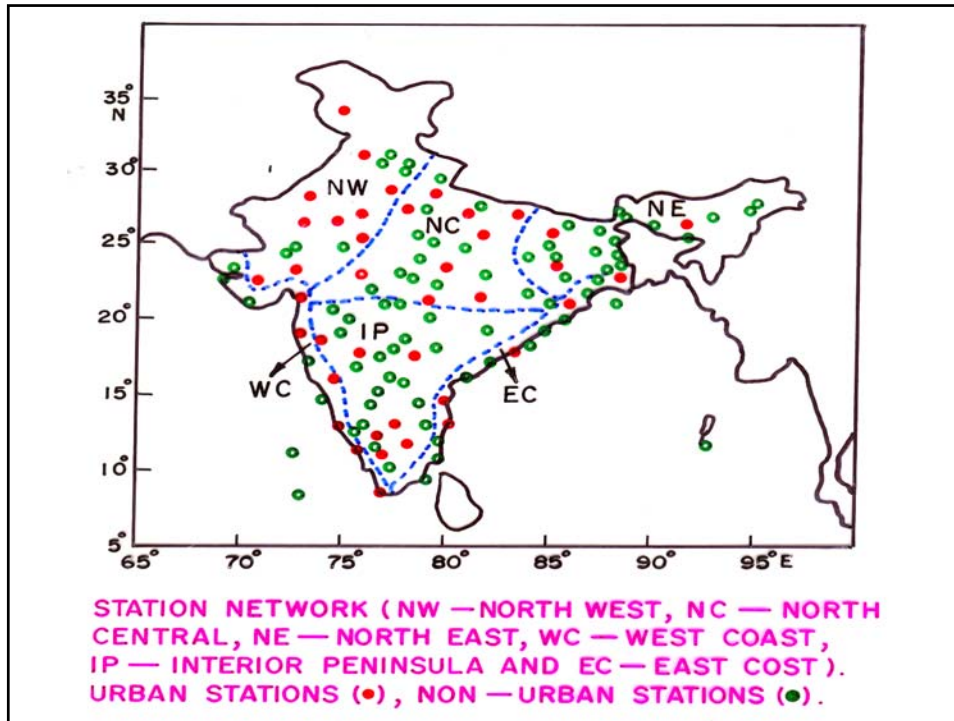
- \*GLOBAL SURFACE TEMP : CLIMATE SYSTEM
- \*CENTURY SCALE TEMP SERIES  
-COUNTRY - GLOBE
- \*TRENDS IN TEMP : -LINEAR -EPOCHAL
- \* RECENT WARMING : EXTREME EVENTS
- \* FUTURE WARMING : MODEL PROJECTIONS
- \* MITIGATION : SOME TRENDS IN INDIA

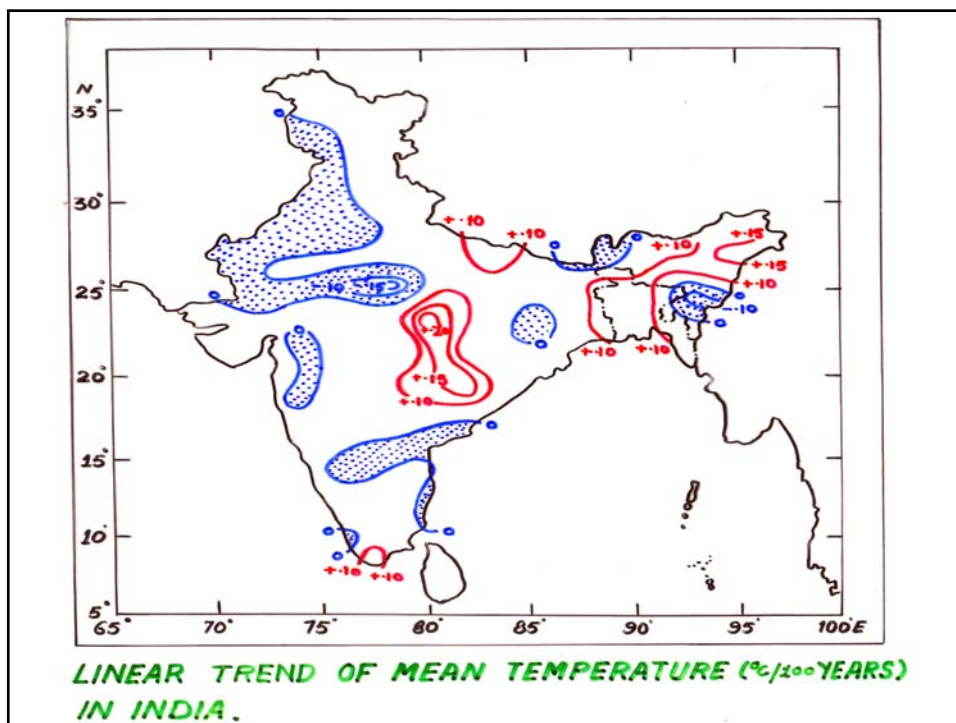
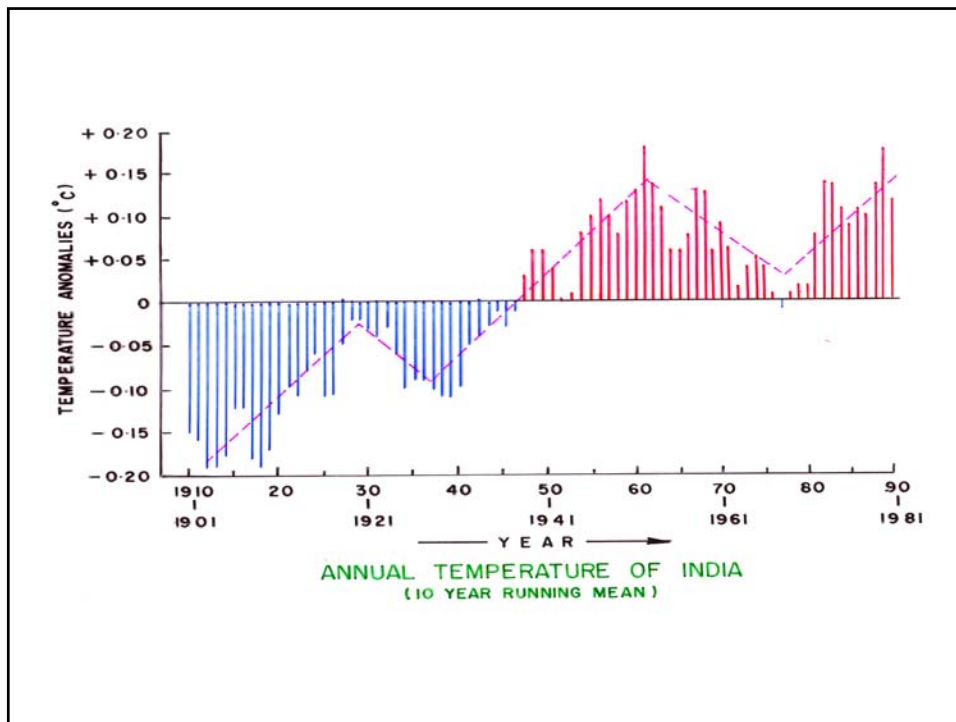
# INDIA

## CENTURY SCALE TEMP SERIES

- \* NETWORK
- \* QUALITY DATA
- \*TRENDS
  - LINEAR
  - EPOCHAL







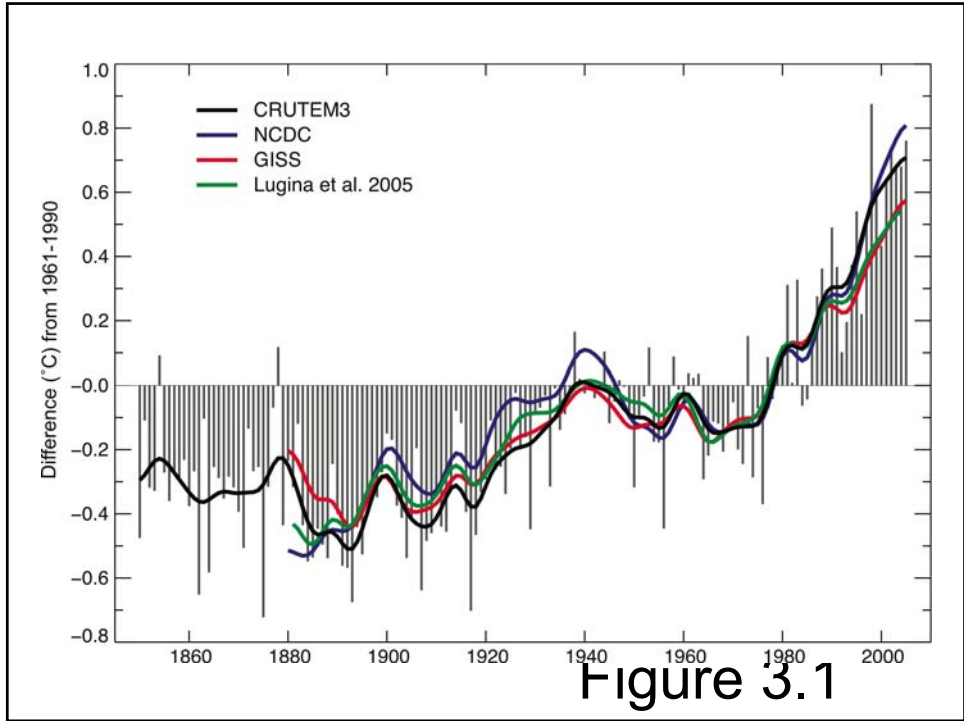
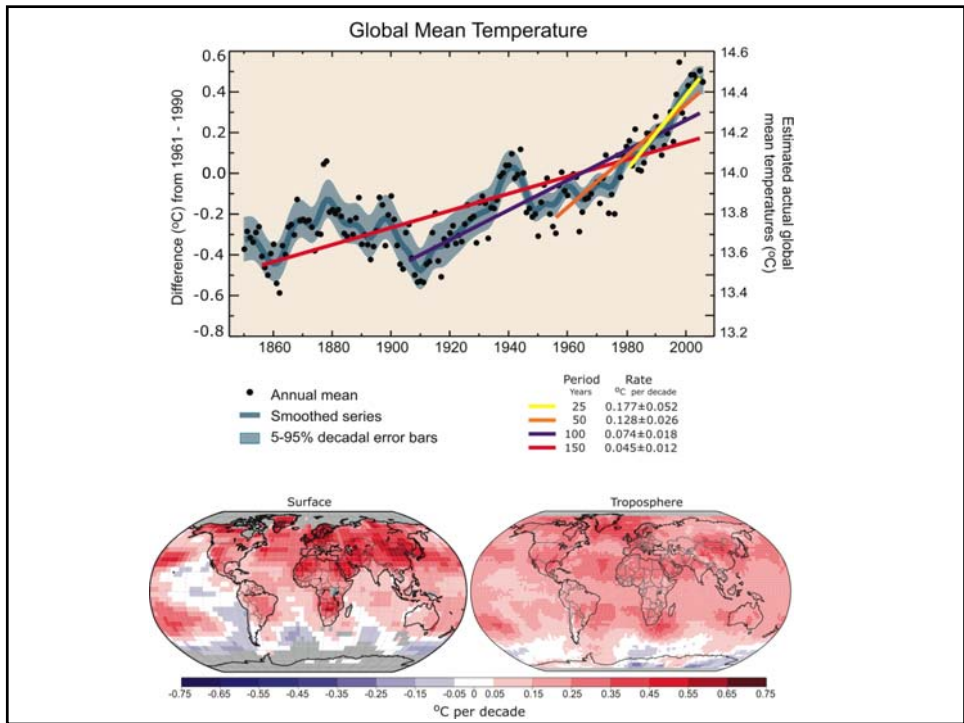
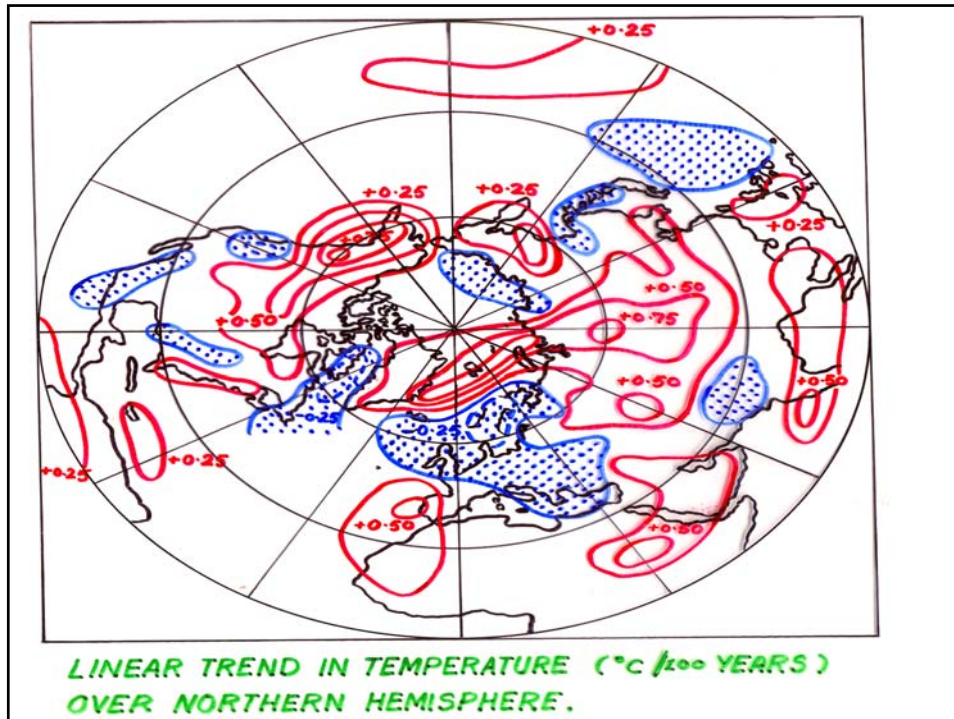


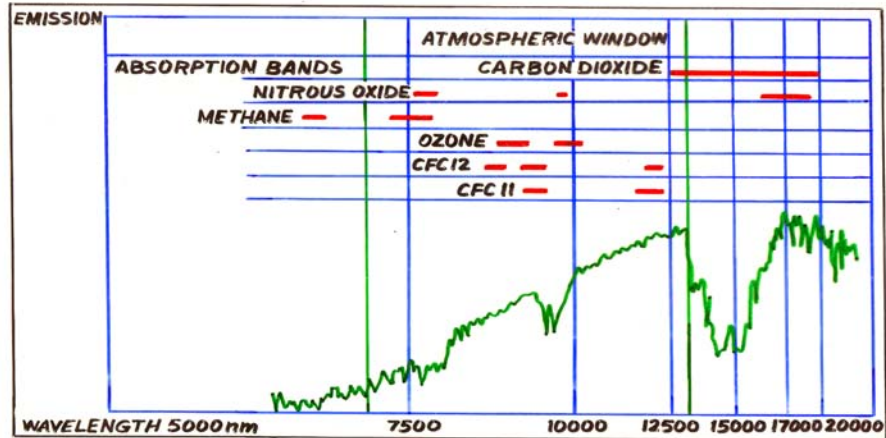
Figure 3.1





## WHY MITIGATION

- \* WARMING AFTER 1970 IS TWICE THAN THAT OBSERVED IN EARLIER HUNDRED YEARS & FOR HIGHER FREQUENCY OF ETREME EVENTS ( WEATHER & CLIMATE )
  - SEA LEVEL RISE (1.8/mm year))
  - SHRINKING OF ICE EXTENT
  - FREQUENT DROUGHT, FLOOD, HEAT WAVE,COLD WAVE,CYCLONES
- \* FUTURE WARMING SCENARIOS
  - EVEN PRESENT TREND OF GHG WOULD CAUSE FURTHER WARMING
  - DYNAMICAL MODEL(COUPLED CLIMATE G C Ms) PROJECTIONS INDICATE HIGHER WARMING IN FUTURE(1.5C to 4.5;most2.5)



*ABSORPTION BAND OF GREENHOUSE GASES*

### MITIGATION-SOME TRENDS IN INDIA

- \* NON-GHG ADDING SOURCES
  - WIND ENERGY( 4<sup>th</sup> IN WORLD,9587MW)
  - SOLAR ENERGY(SMALL,PLANED1000MW)
- \*MODERATE GHG ADDING SOURCES
  - HIGHER UTILISATION OF RAILWAYS
  - PUBLIC TRANSPORT SYSTEM
  - CONVERSION OFGARBAGE
- \*GHG REDUCING SOURCES
  - INCREASE IN VEGETATION COVER(23 to33%)
  - ENCOURAGING PUBLIC TO GROW MORE MEDICINAL PLANTS ( PATANJALI YOG TRUST)
- \*GOVT INCENTIVES FOR FRIENDLY ACTIONS

## SUMMARY

- \*TEMP SERIES SHOWS DISTINCT TRENDS
  - LINEAR (0.04 to 0.06C/ dec)
  - EPOCAL (0.01 to 0.09C/ dec)
- \* NOTED FOUR DISTINCT EPOCHS (2-4 dec)
- \*LAND (HIGHER LAT) WARMER THAN SEA (EQUAT)
- \* GREATER WARMING AFTER 1970(0.12C/dec)
- \* MODEL FORECAST (1.5C to 4.5C ; most 2.5C)
- \* MITIGATION : GREATER ROLE OF CLEANER ENERGY,RAILWAYS,GROWING HIGHER UTILITY PLANTS,CONVERTION OF WEST MATERIAL etc