

# Climate change in Sri Lanka



P.A.Madushanka  
Department of agrarian  
development  
Sri Lanka

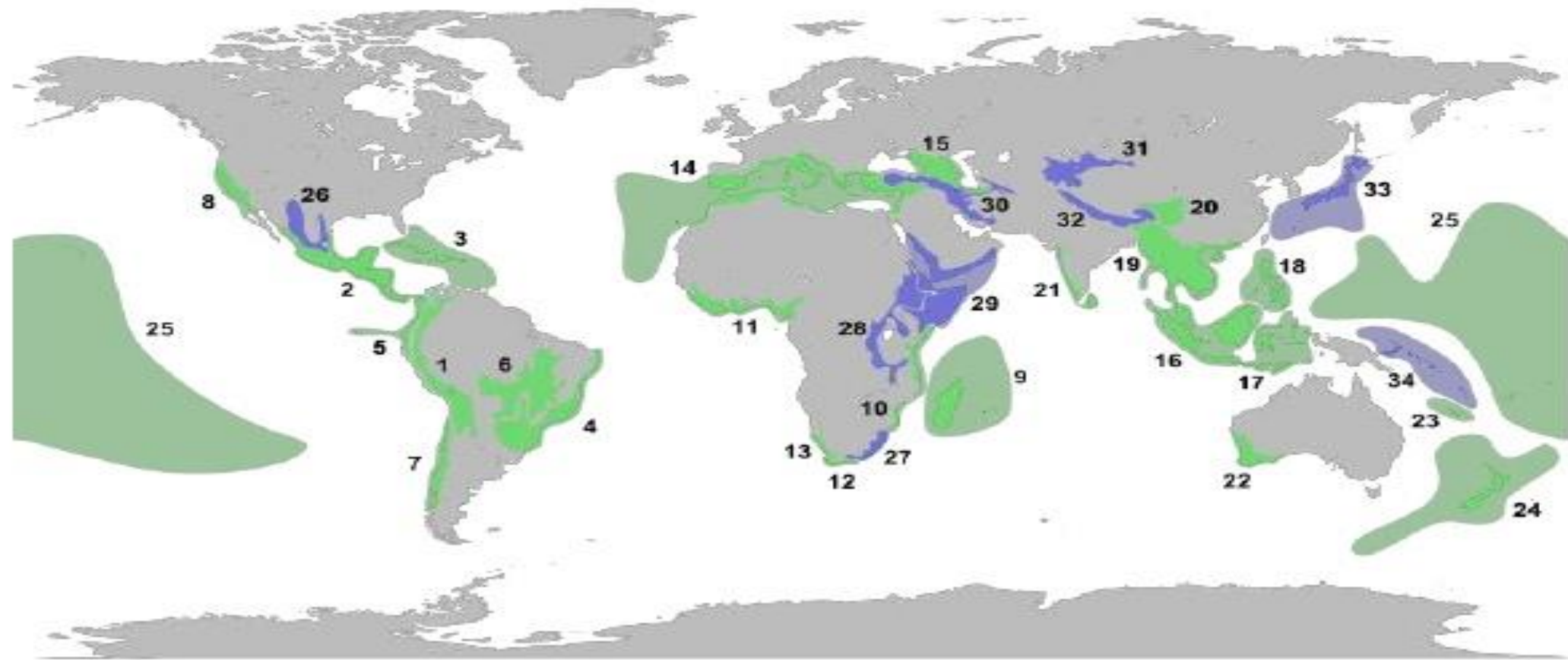
# Sri Lanka

- Sri Lanka is a tropical island nation south of India in the Indian Ocean. It is located between 5.55° and 9.55° North latitude and 79° and 82° East longitude. Sri Lanka is a small island with a total land area of 65,525 sq km, a maximum length of 432 km and a width of 224 km. The total annual average rainfall is 900 mm to 5,000 mm. The wet zone area has 1,500 mm up to annual average rainfall, and the dry zone has 900-1,500 mm. The average temperature is 27°C in coastal areas and 15°C in the upper hills. The total coastline is 1,585 km.
- Sri Lanka has been identified by the environment activist group Conservation International (CI) as one of 25 biodiversity hotspots in the world. (fauna and flora, mammals, reptiles, amphibians, fish, birds, coral reefs)



# SRI LANKA

## AN ISLAND IN THE TROPICS



- **Having the optimum conditions year-round, tropical countries can hold a rich biodiversity**



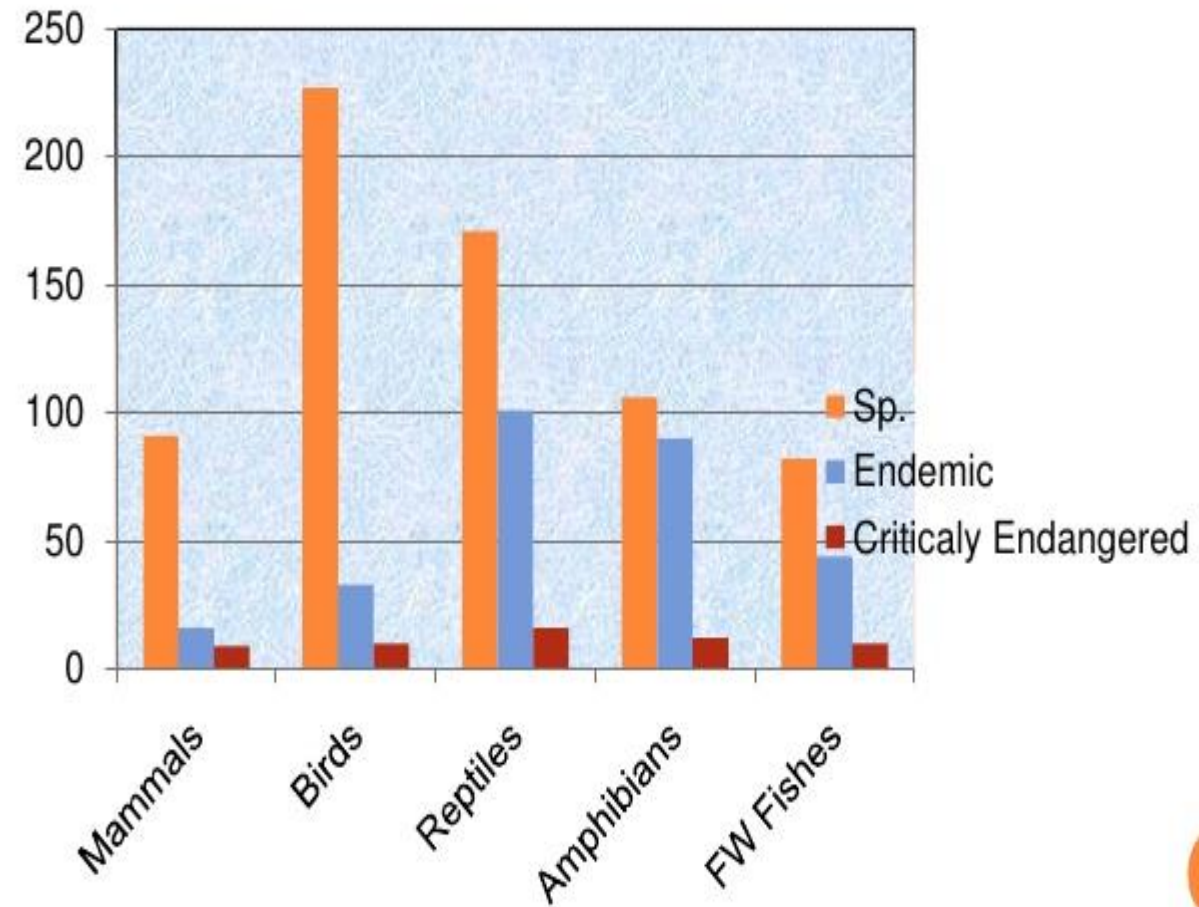


## SRI LANKA AS A BIODIVERSITY HOTSPOT

- Geographically Sri Lanka is an island separated from the Indian sub continent
- Together with the Western Ghats of India, Sri Lanka is recognized as one of the Biological Hotspots in the world
- Biodiversity Hot spots are only 8% of the total geographical area of the world, but holds 35% of the vertebrates and 46% of the plants



## SPECIES DIVERSITY, ENDEMISM AND THE STATUS OF THE VERTEBRATE FAUNA OF SRI LANKA



IUCN Red data List 2007



# ECOSYSTEM DIVERSITY OF SRI LANKA

## ○ Marine and Coastal Habitats





# Cont.

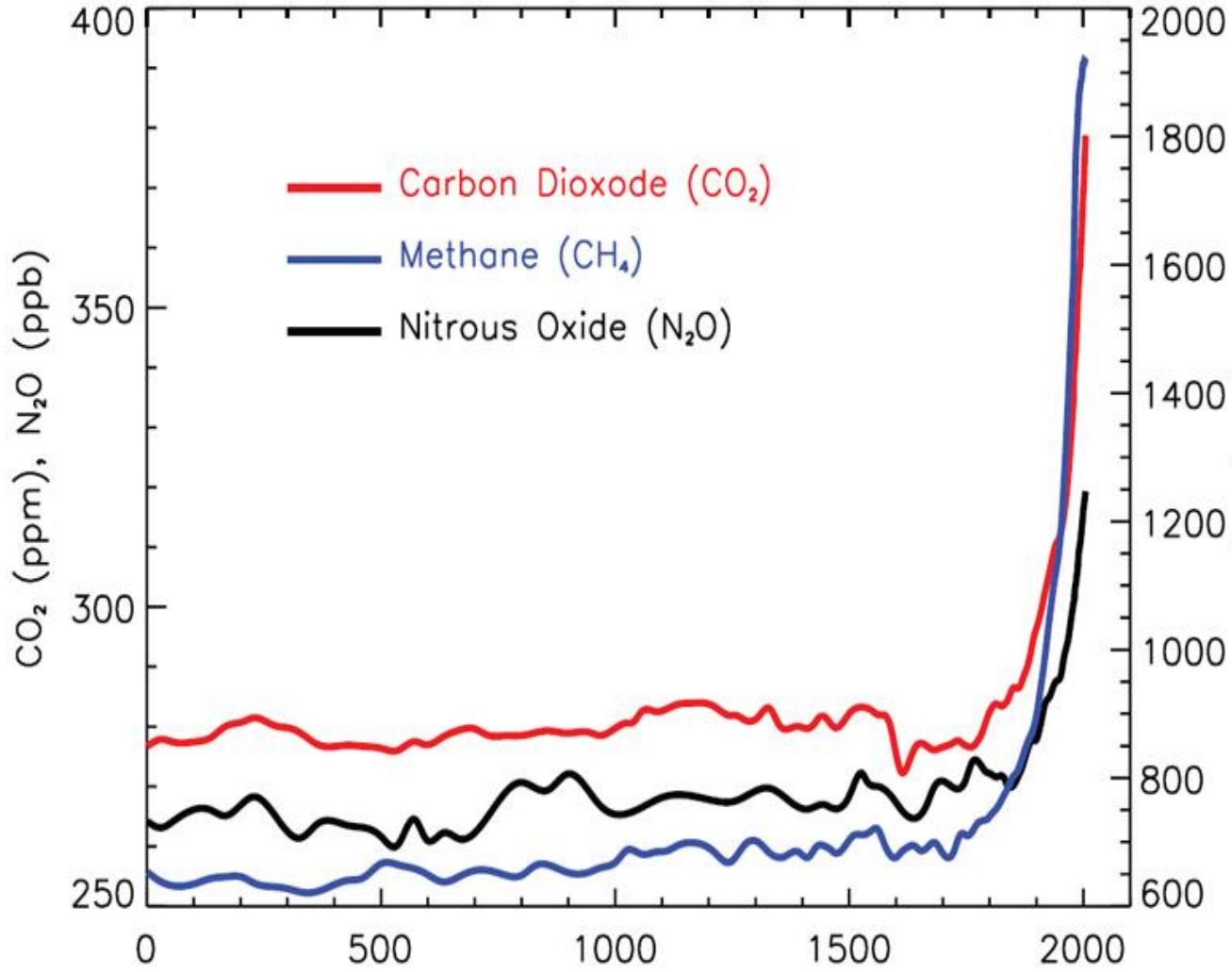
- Total faddy land area 831375 ha and other crop land area 910000
- Irigated land aria 602565
- Land slide prone areas (9 district)

# Climate change

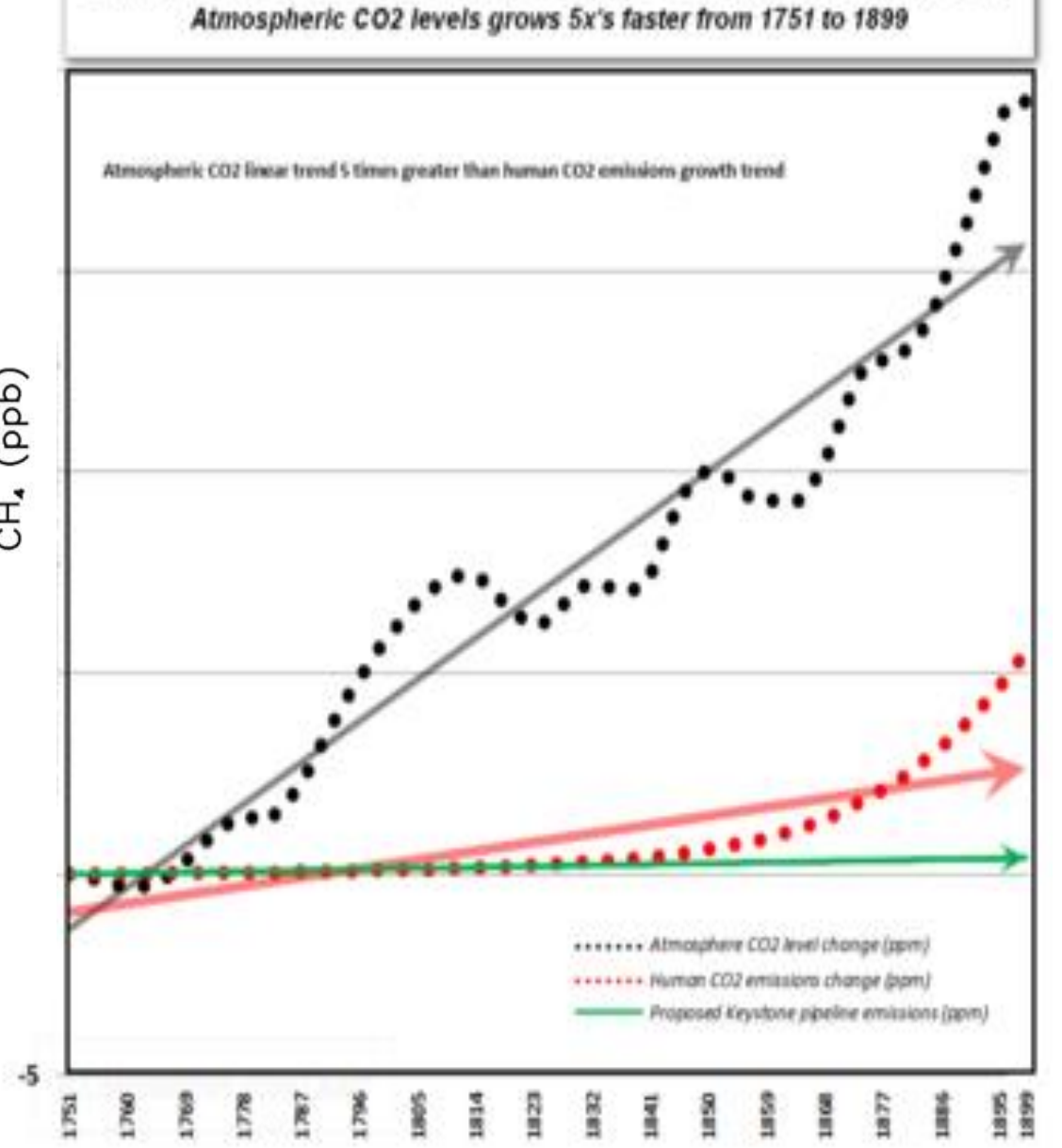
- Climate change is a change in the statistical distribution of weather patterns when that change lasts for an extended period time.
- Climate change also called global warming, refer to the rise in average surface temperatures on earth. the primary cause of climate change is the burning of fossil fuels, such as oil and coal, which emits greenhouse gases into the atmosphere primarily carbon dioxide. other human activities such as agriculture and deforestation



Concentrations of Greenhouse Gases from 0 to 2005



Natural Growth of CO<sub>2</sub> Levels Outpace Growth of Human CO<sub>2</sub>  
Atmospheric CO<sub>2</sub> levels grows 5x's faster from 1751 to 1899



## Future Climate Shift

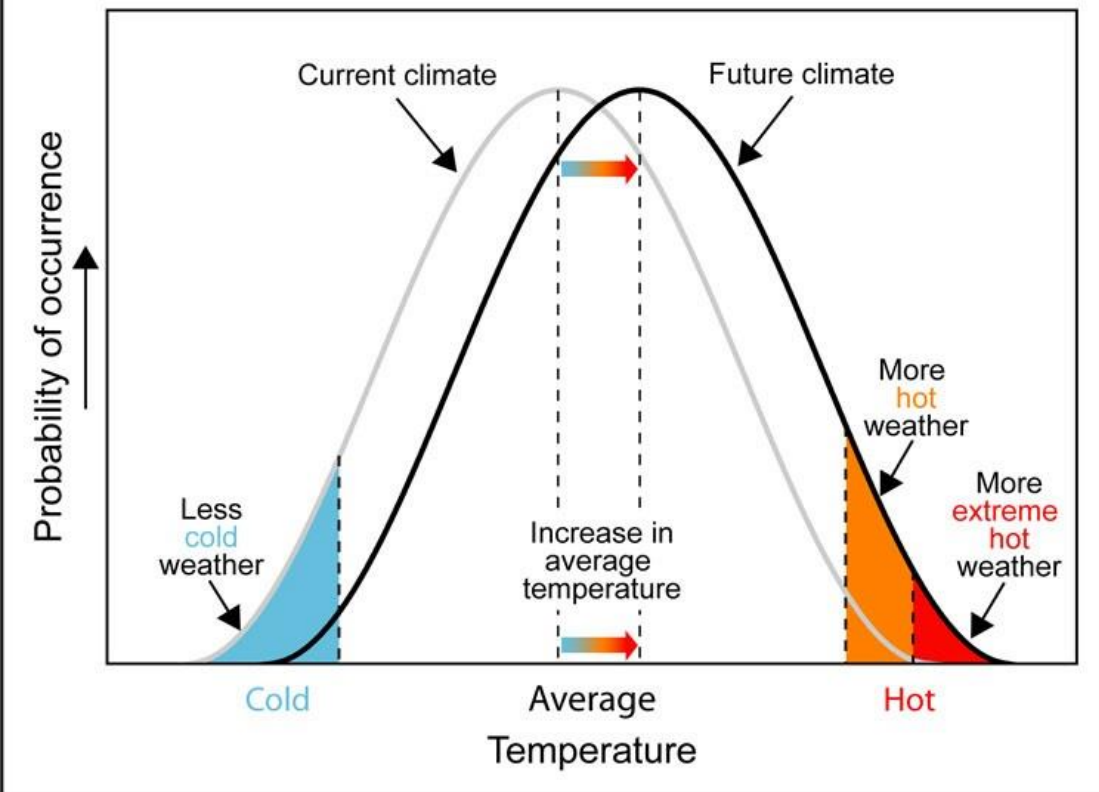
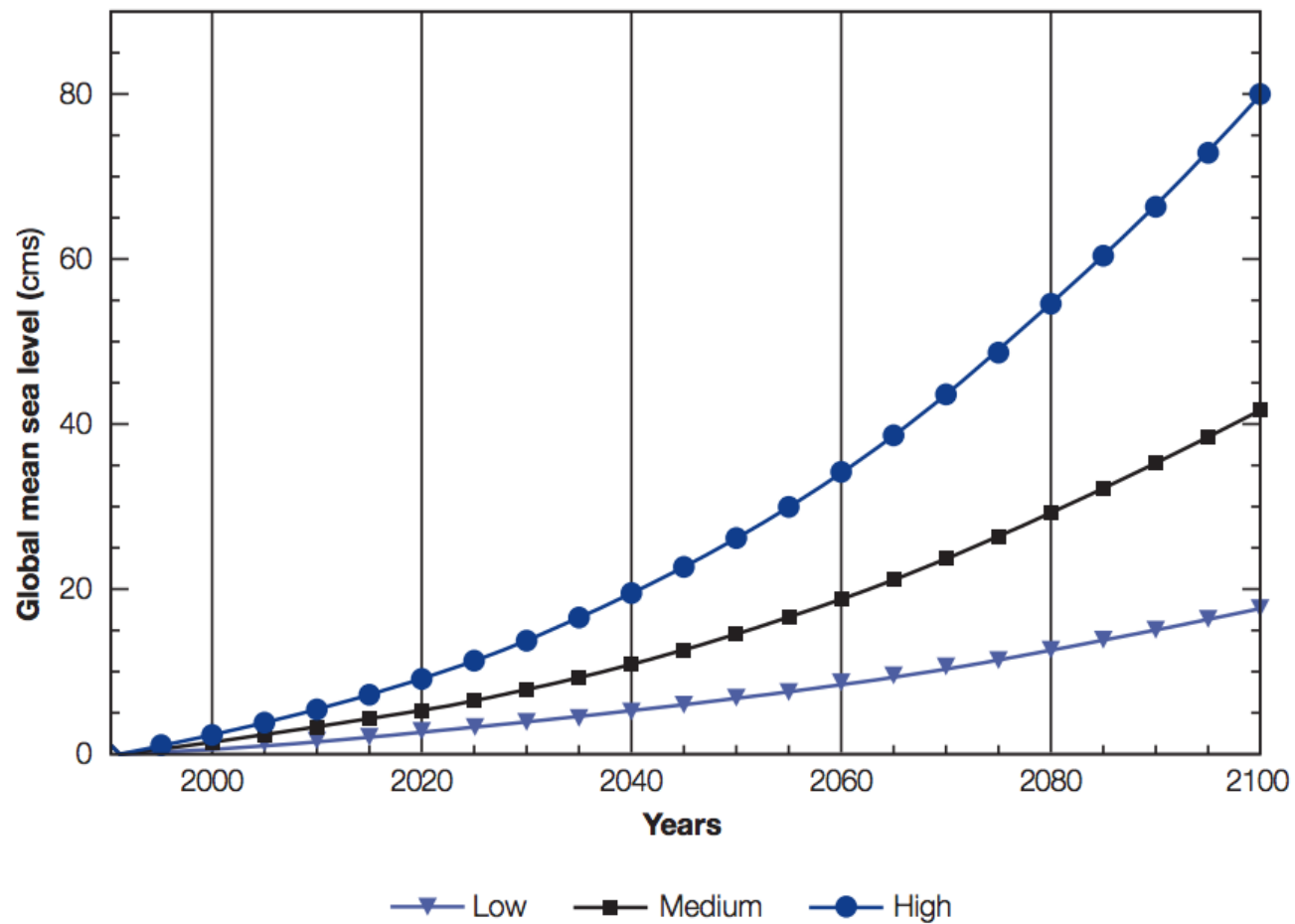


Figure 11: Projected Changes in Global Mean Sea Level to the End of the 21st Century for Three Emission Scenarios based on Geophysical Fluid Dynamics Laboratory Model Results

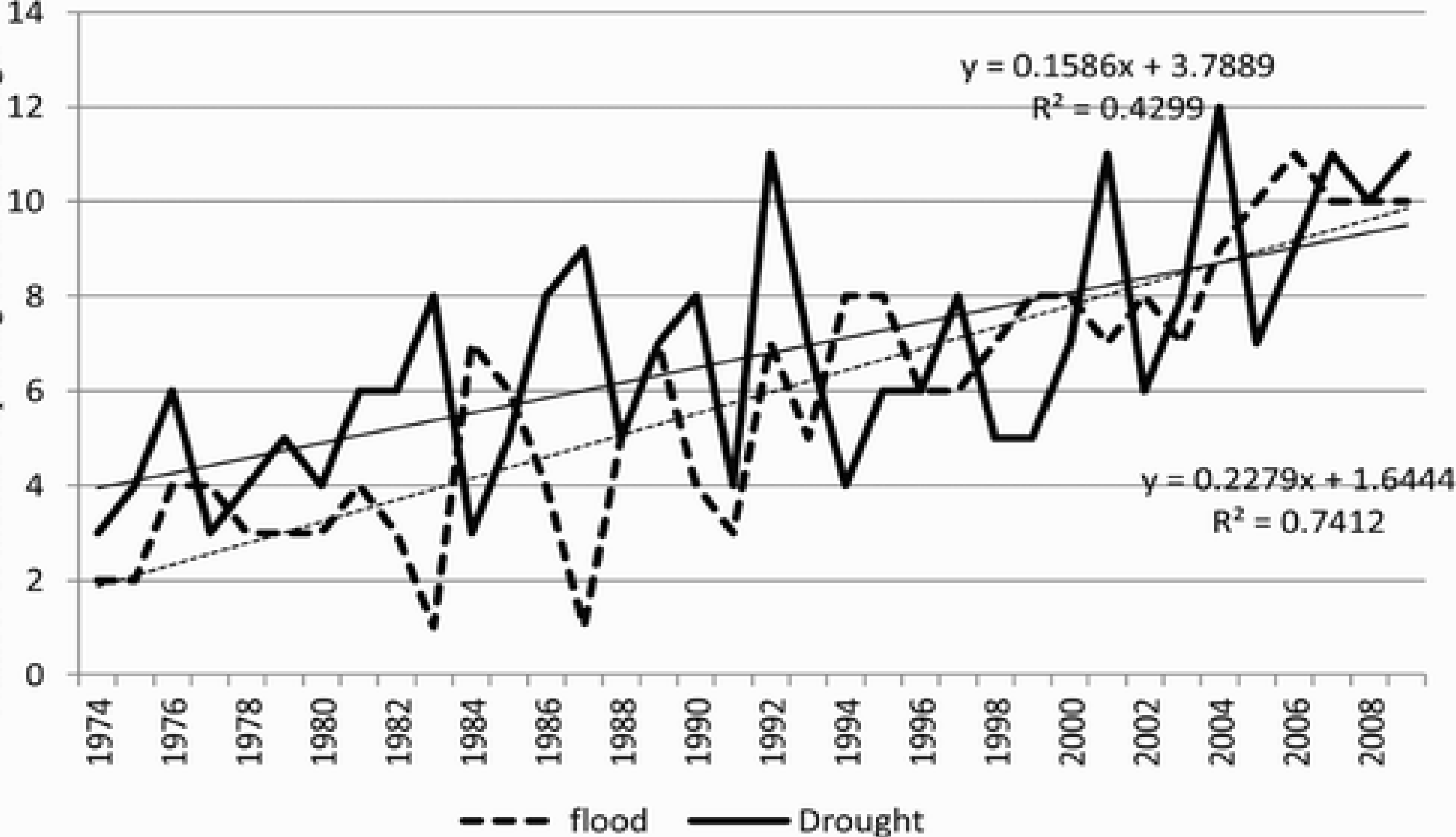




# Climate change effect on sri lanka

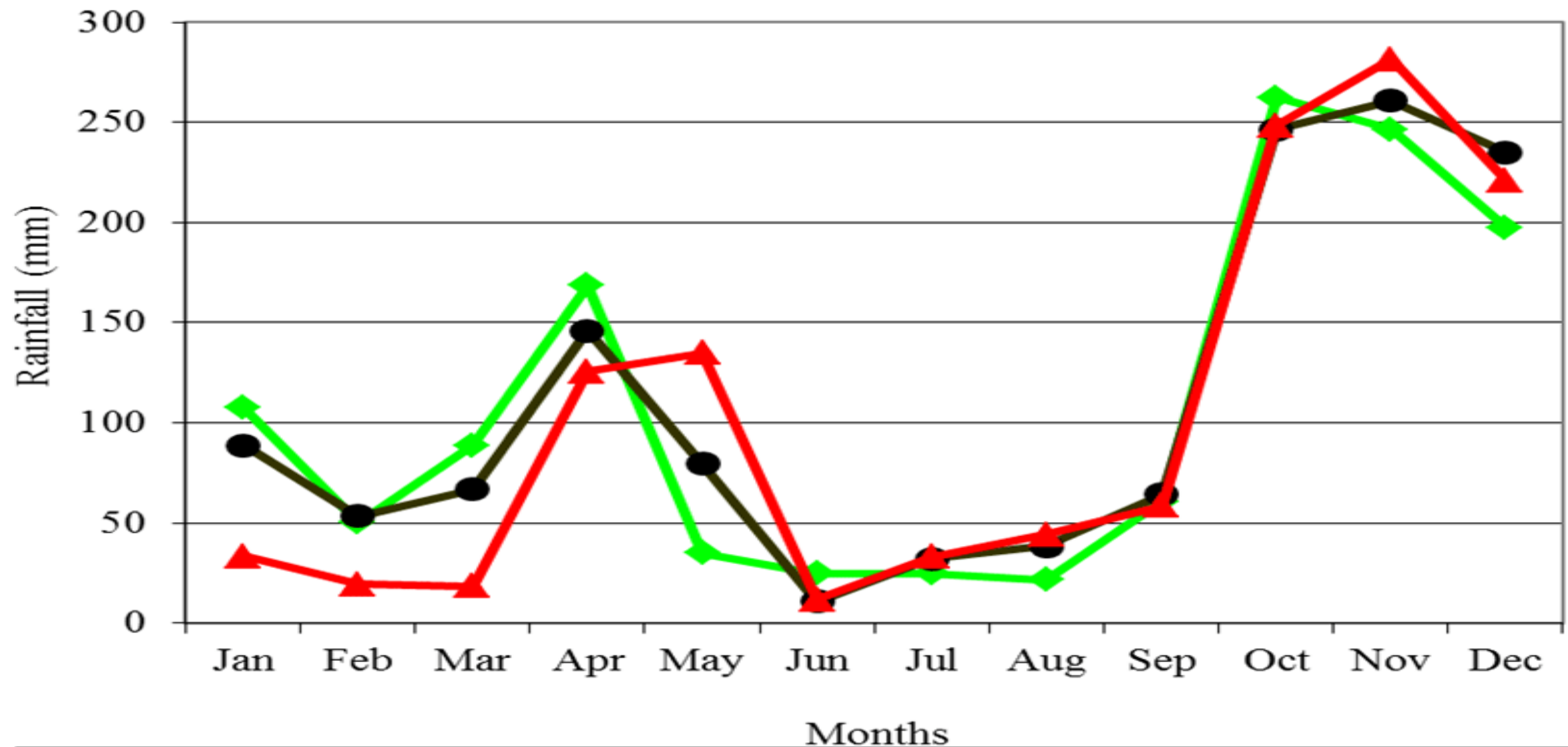
- Sea level rising
- Increasing temperature
- Increased frequency of extrem wether events
  1. High variability of rain fall
    - more floods
    - More droughts
  2. High rain intensity >25mm/hr (with intense rain acclerate soil errosion and finaly land slides)
  3. Tornado type winds,lightening,cyclones

Number of months reporting floods and droughts





### Monthly Average Rainfall in mm



—◆— Average(1999-2008)MET —●— Average(1961-1990)IWMI —▲— HadCM3-2050-A2



Baseline Scenario (1961-1990)



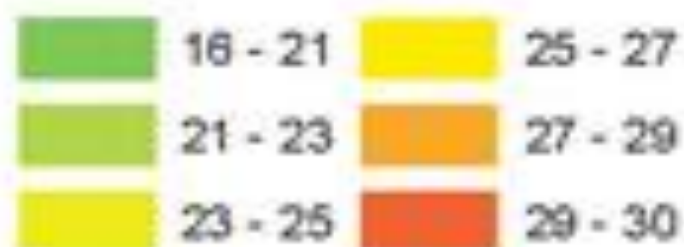
SRES A2 Scenario 2050s



SRES B2 scenario 2050s



Average air temperature













# Vulnerable areas

- Water resources
- agriculture
- Human health
- Coastal zone
- Tourism
- Forestry, wild life, biodiversity
- Fisheries sector
- Animal production



# Water resources

- Lack of rain fall-droughts
- Salt water intrusion in coastal belt-sea rising
- Water tank damages-floods
- Siltation of reservoirs(cannot operate at design capacity)-soil erosion

## Result

- Lack of drinking water (human/animal)
- Lack of irrigated water
- disaster
- Lack of hydro power







# Agriculture

- Yield reduction
- Reduced productivity of high value crops(vegetable and potato)
- Increased pest and disease out break and their range
- More land degration(soil erosion and salinization)

## Result

- No food security
- Incresing Poverty level
- Malnutrition



# Health sector

- More vector and water borne diseases(dangue/diarrhea)
- Incrriased rate of respiratory disorders(dust and cold waves)
- More commanicable diseases(skin deseases/typhoid feve)
- More accidents under extreme weather condition(lightning,tornado type winds,floods,land slides,cyclones)

# Animal/forest/fish/biodiversity

- Lack of animal feed and water
- Die animal and plant
- Forest firing
- Die coral reef





# National Approaches

- Strengthening forest and environment law
- Construct new water tank (dam) and rehabilitate previous irrigation system
- Introduce modern irrigation system
- Introduce high tolerant crops
- Reforestation & agro forestation (23% → 30%)
- Introduction of more fuel efficiency vehicles and improve road network
- Solar power system (new programme)
- Strengthening public transport system

# Cont.

- Improve forest protection
- Introduce and improved agricultural home garden and home forest
- Introduce high resistant and high productive breeds
- Improved inland aquaculture and introduce small scal aquaculture farm(sojan agriculture)
- Coral reef protection programme(empower low and awareness programme)
- Soil conservation
- Governmant awareness programe
- School programe



Colombo









**Thank You**