Impacts of Natural Disasters

- Tsunami 29 Sept 2009 (143 killed)

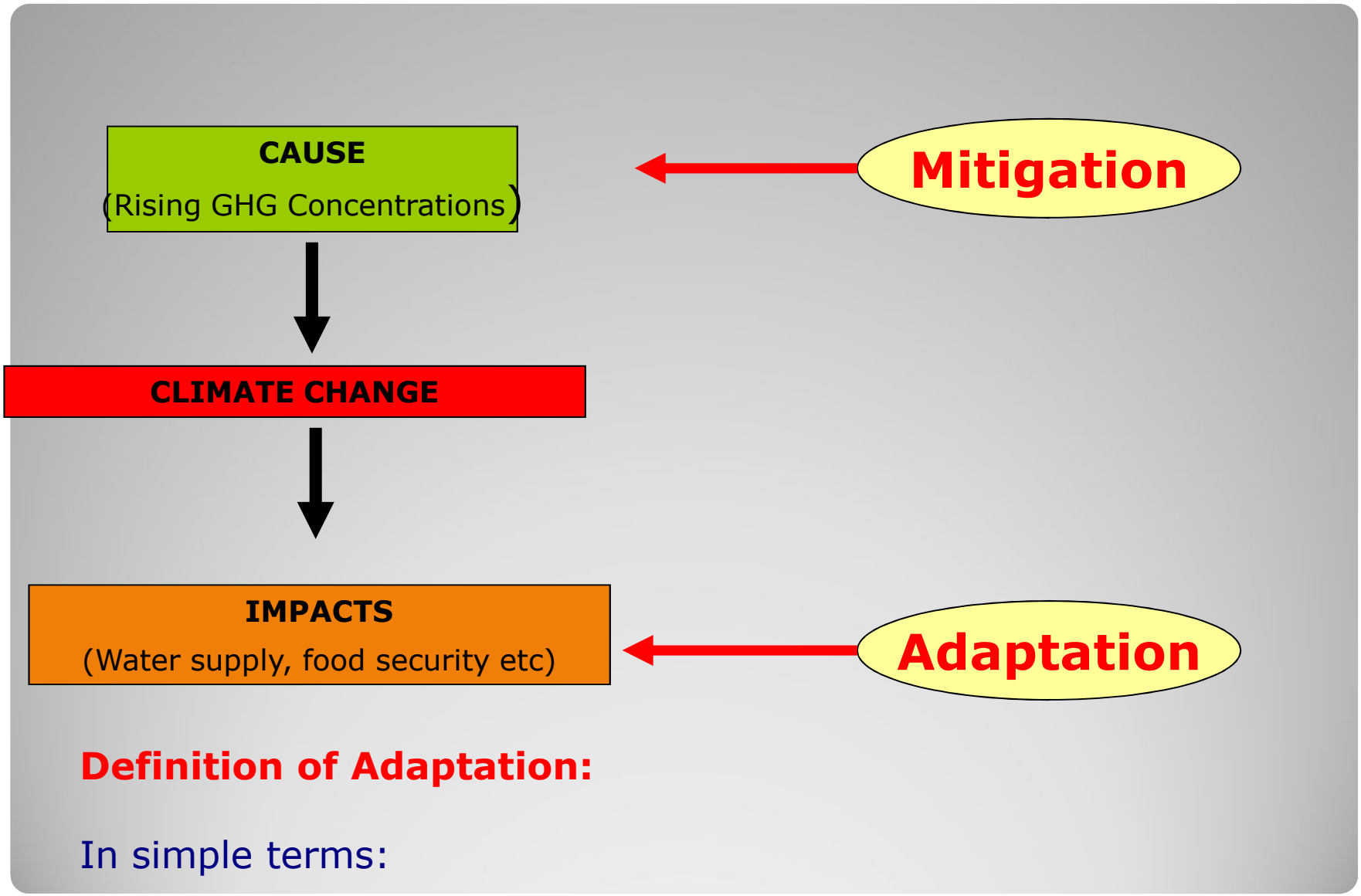





Samoa's Policy response to CC

There are two approaches in which Samoa has responded to CC and its impacts:

1. Adaptation
2. Mitigation



Definition of Adaptation:

In simple terms:

"Learning to live with the new climatic conditions

Data Collection

- Climate Observation Network
  - 42 manual rainfall obs stations
  - 8 full climate stations
  - 16 automated weather obs stations
  - 4 agricultural met stations
  - 1 tide gauge

- Hydrology Observation Network
  - 40 tipping bucket rain gauges (automated)

Parameters for modeling

- Rainfall
- Air Temperature
- Solar radiation
- Relative humidity
- Sunshine hours
- Soil temperature
- Leaf Wetness
- Sea level
- Wind / Direction
- Evaporation
- Soil Temperature and Soil Humidity

Apia station

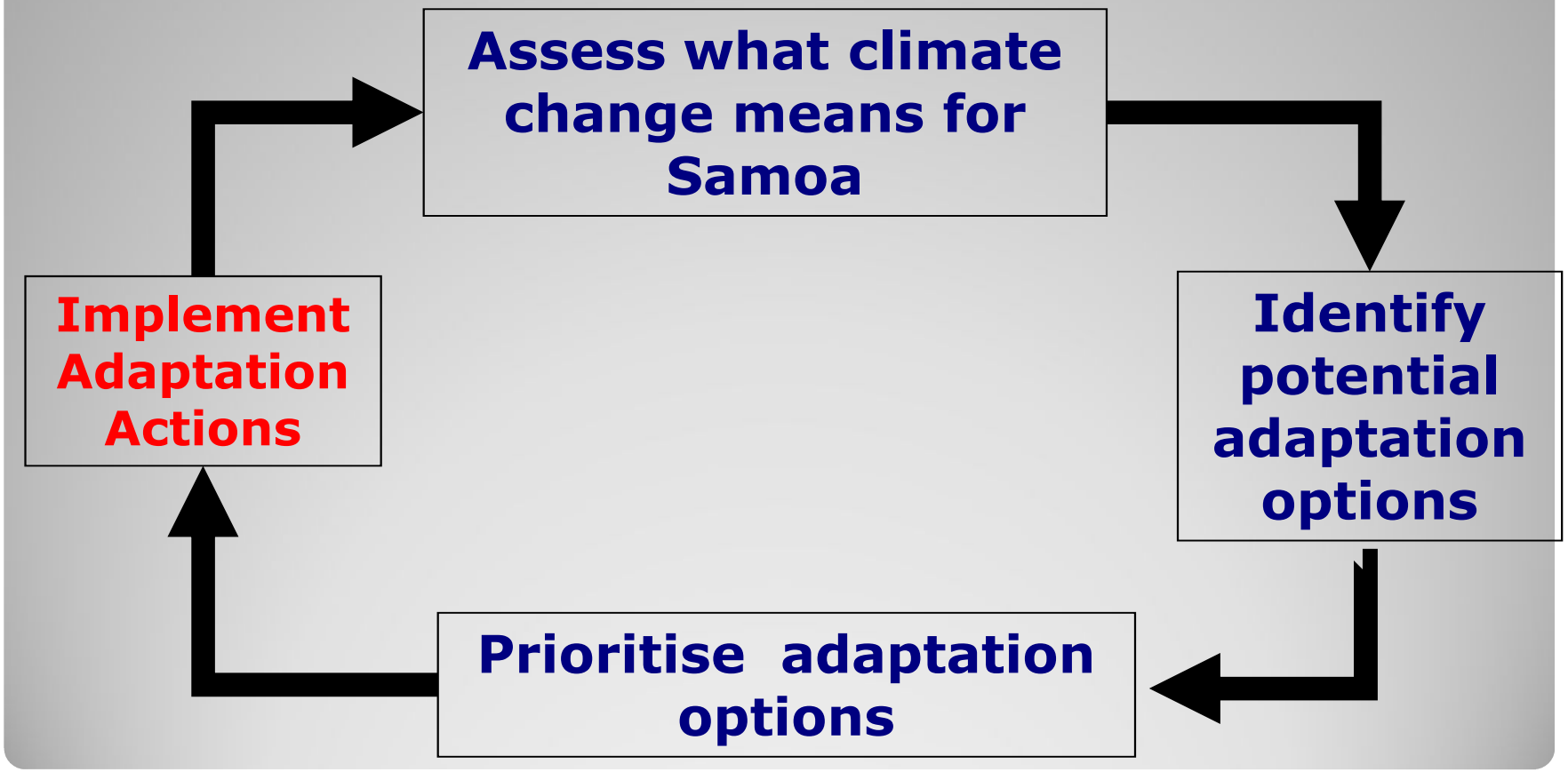
- Main station
- More than 120 years of meteorological data
- Ideal for climate change research and analysis
- The other 7 climate stations have more than 40 years of data
- Cost of operating the Climate network is WST$17,400.00 per annum without hydro power and petrol.

Climate Change Modeling

- 2 Types of modeling
  (a) Statistical (SCOPIC)
  (b) Dynamic

- Samoa Meteorological Services uses the statistical model SCOPIC to issue seasonal climate and ENSO forecasts.
- Climate reports are guided by Dynamic models from regional organizations such as Japan Met Agency (JMA), UK Met Office (UKMO), National Centre for Environment Prediction (NCEP), NASA, European Centre for Medium-Range Weather Forecasts (ECMWF).

Adaptation Planning Cycle



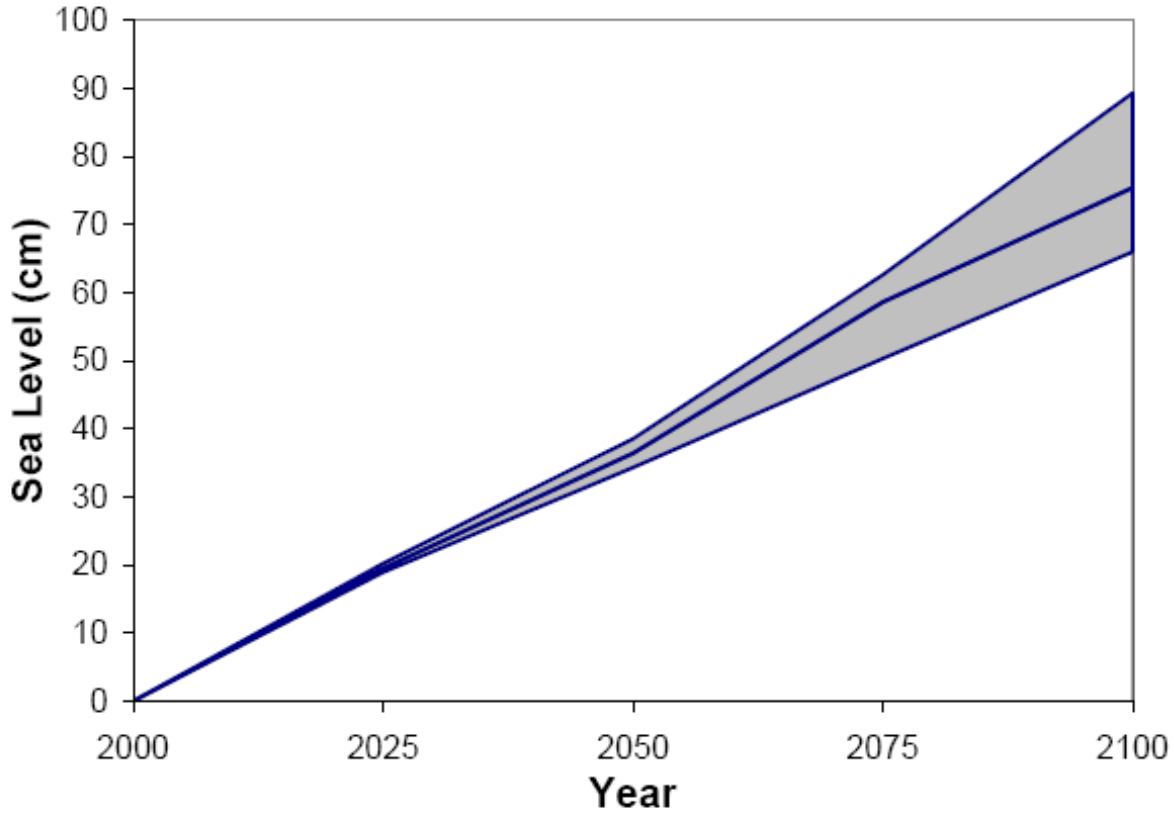


Figure 5 Best estimate of projected increase in mean sea level for Apia, along with the uncertainty envelope as given by the maximum and minimum estimates using all possible combinations of the available global climate models and emission scenarios.

Projected Sea Level

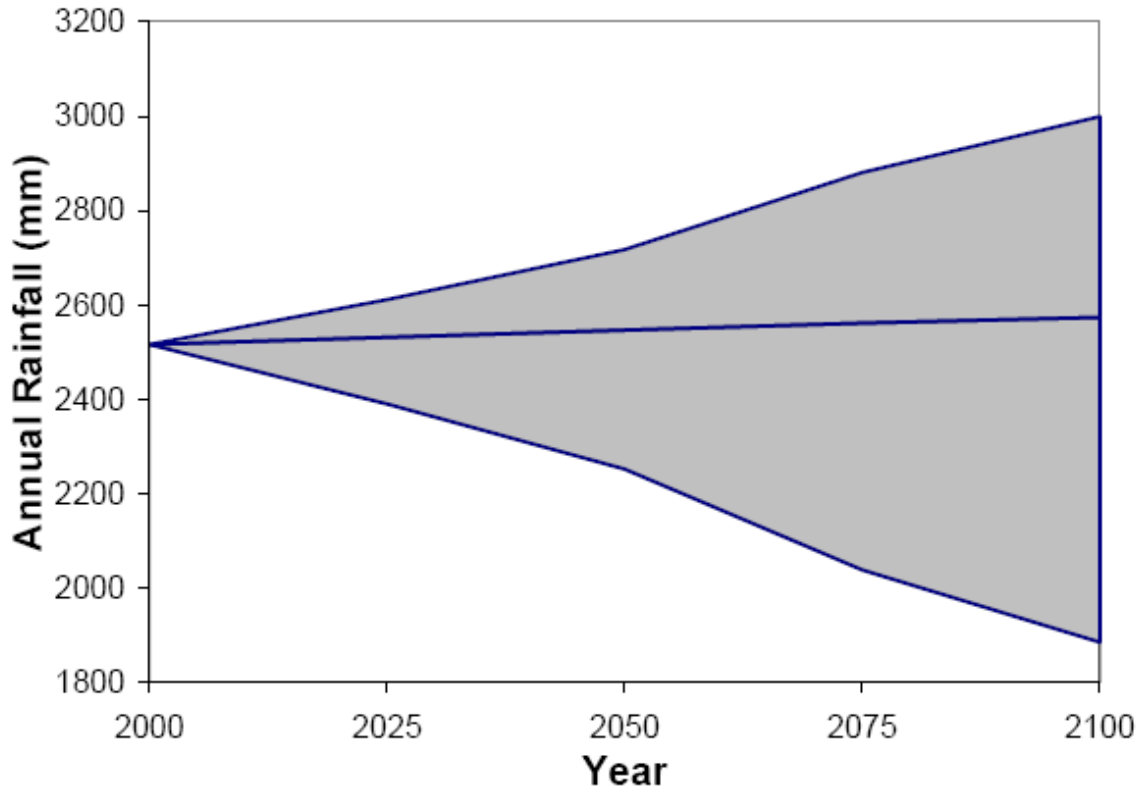


Figure 12 Best estimate of projected change in mean annual rainfall for Apia, along with the uncertainty envelope as given by the maximum and minimum estimates using all possible combinations of the available global climate models and emission scenarios.

Rainfall Projection

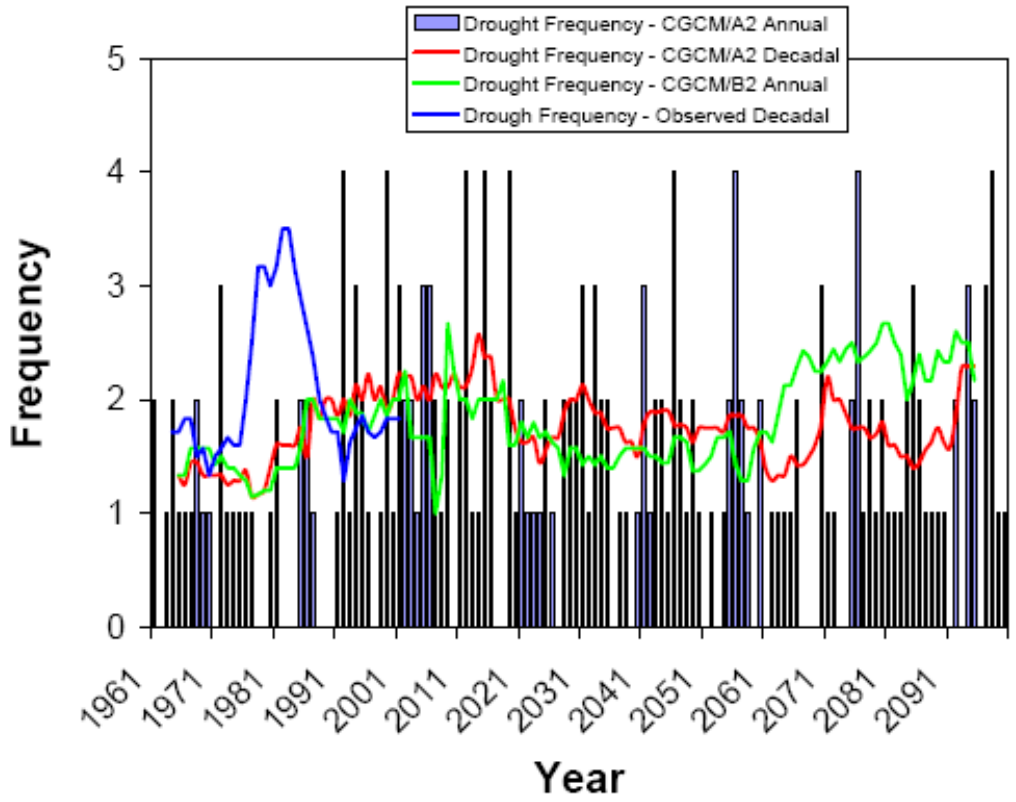
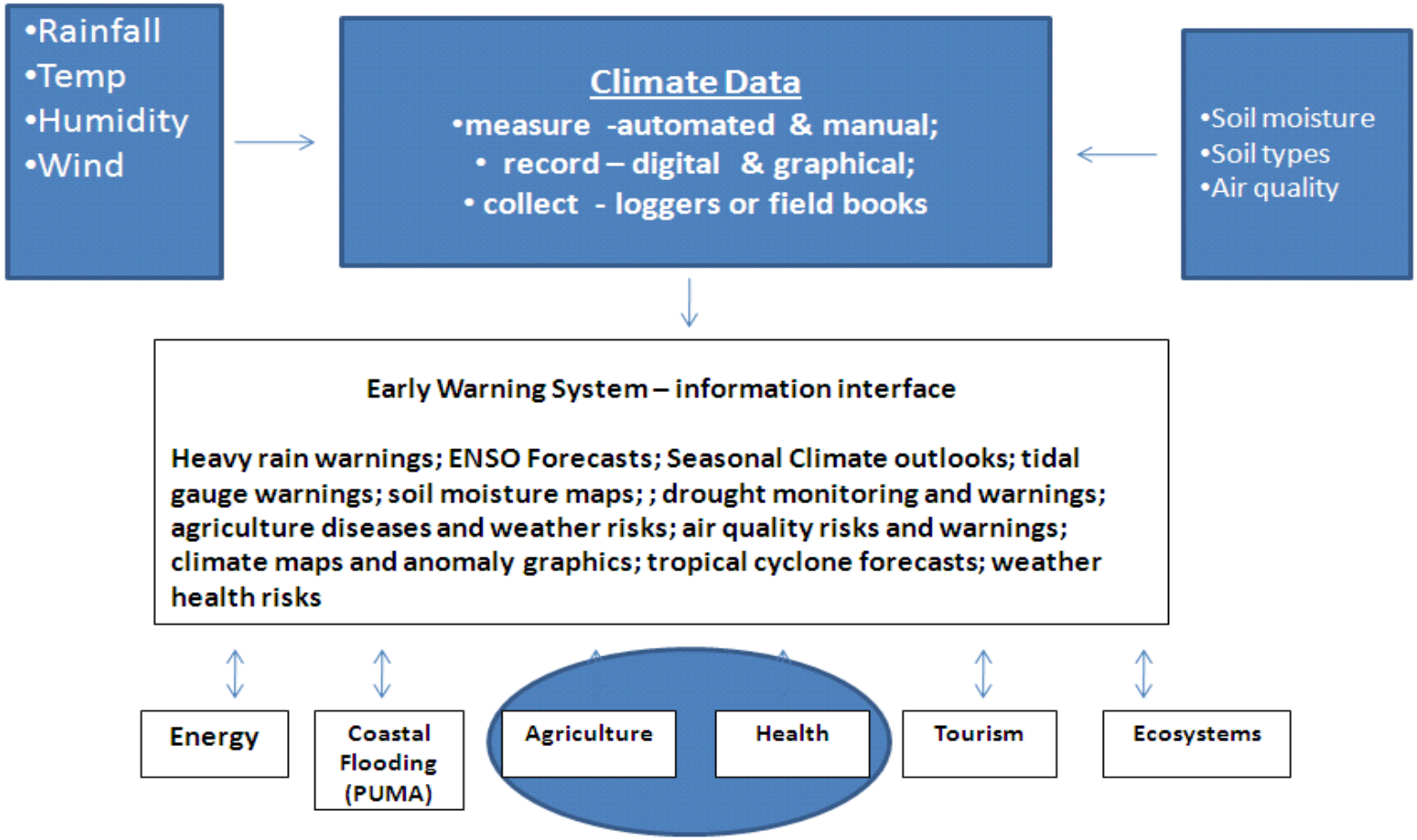


Figure 18 The number of months per year for which the precipitation for Apia is projected to be below the 1961-1999 ten percentile for the relevant month. Also shown are the averages over ten years, based on the observed (1957 to 2005) and modelled (1961 to 2100) data. Modelled data are from the Canadian GCM, with an A2 and B2 emission scenarios and best estimates for GCM sensitivity.

Drought Projections

Meteorology Component – Integrating Climate Early Warning System (CLEWS)



Faafetai lava (Thank you)