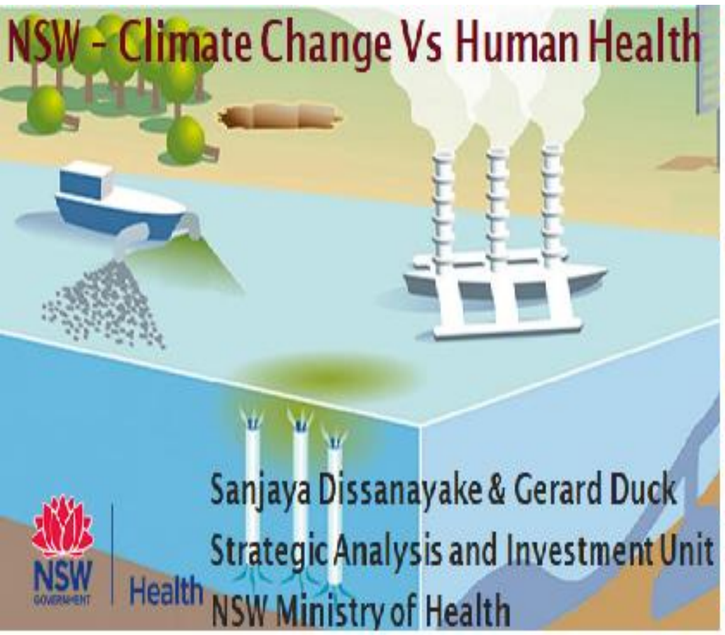

Objective

- Need #1: Assess probable health impacts of climate change
- Need #2: Assess subsequent impact on increasing demand for health and emergency services

Climate change factors

- Change in air quality
- Change in water quality
- Change in food safety
- UV radiation due to sun exposure
- Extreme events

Data

Secondary data

From

ABS, ABM, Healthstats

DPIE

Melanoma Incidence Forecast - Exponential Smoothing

Lung Cancer Forecast - ARIMA (2,1,0)

Lung Dust Disease Forecast - Exponential Smoothing

Asthma Forecast - ARIMA (0,1,0)

Methodology

Hybrid:

Quantitative + Qualitative

Assessing Predictive Causality

Granger's Test performed for NSW annual data -

Air Quality (PM_{10} data) Vs Lung Cancer, Lung Dust disease and Asthma incidence rates

Solar Exposure (MJ/Sq. m) Vs Melanoma incidence rates

All tests were significant: $p<0.05$

Assessing Predictive Causality under constraints

Air Quality (Dust data) Vs Lung Dust Disease and Asthma incidence rates

Lung Dust disease incidence rates Vs Lung Cancer incidence rates

Solar exposure time with more than 50% usage of SPF>=8 Sun screen Vs Melanoma incidence rates

All tests were significant: $p<0.05$, SPF - Sun Protection Factor

PM_{10}- Particulate matter diameter < 10µm: Dust, Pollen, Mold, Combustion particles, organic compounds, metals etc