Climate Variability: Health Effects

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Mapping links between Climate Change and Health

**Human exposures**
- Regional weather changes
- Heat waves
- Extreme weather
- Temperature
- Precipitation

**Health effects**
- Temperature-related illness and death
- Extreme weather-related health effects
- Air pollution-related health effects
- Water and food-borne diseases
- Vector-borne and rodent-borne diseases

Based on Patz et al, 2000
Climate Change: Threats to Human Health

- Insect and rodent diseases including dengue, leptospirosis, malaria and yellow fever
- Waterborne diseases including schistosomiasis, cryptosporidium and cholera
- Deaths and direct injuries including bites from animals
- Food-borne diseases including diarrhoeal diseases, food poisoning, salmonellosis and typhoid
Climate Change: Threats to Human Health

- Respiratory diseases - asthma, bronchitis, allergies and infections
- Heat-related illnesses – sunstroke, sunburn, heat stress, heat exhaustion and dehydration
- Malnutrition – from disturbances in food production or distribution
- Anxiety and stress
Experiences


- Government alerted of changes in rainfall and storm patterns. Sever droughts, typhoons and hurricanes were expected.

- Drought-response plans were developed and aggressive public education programme.

- Fewer children were admitted to hospital with diarrhoeal disease than under normal conditions.
Experiences

- **1997-1998 El Niño – Indonesia**
  - Forrest Fires – drought
  - Air quality was affected in regions beyond the immediate burn areas

More cases of Respiratory Illnesses and allergy symptoms than normal reported
Experiences

Caribbean 2001 – Tropical Storm Lily

- St. Vincent: >US$14.8 agricultural loses and 4 deaths

- Barbados: poultry Ind. Lost more than US$100,000 – 400 houses were damage

- St. Lucia – Banana Ind lost more than US$7.52 million
Experiences

  - 24,000 affected/856,000 total pop – 13 persons died
  - $T^\circ$ affects rate of virus development inside mosquito
  - Increases in incidence are associated with warmer, more humid weather
  - Population immunity plays great role
Recommendations

- Early warning systems to enhance opportunities for disease control – site specific
  - We look for conditions that may be conducive for disease

- Enhanced public health monitoring and surveillance programme
Piloting Climate Change Adaptation to Protect Human Health

A joint WHO/UNDP project
funded by the Global Environment Facility (GEF)
Project Pilot Countries

- Pilot with seven countries in different ecosystem zones, thus different health risks from climate change:
  - Small island developing states: Fiji and Barbados,
  - Countries with highland areas: Bhutan and Kenya,
  - Water-stressed Countries: Jordan and Uzbekistan, and
  - Countries with multiple vulnerabilities: China.
Project Design Phase Activities (I)

- Identify main health vulnerabilities to climate change, including variability and for each country, e.g.
  - Diseases associated with water scarcity
  - Storms and floods
  - Changing patterns of vector-borne pathogens,
  - Urban heat stress

- Examine current health policies to address these threats

- Identify strategies, policies, and measures to cope with the additional burden of climate change, including variability
Project Design Phase Activities (II)

- Identify barriers to implementation of the various strategies, policies, and measures
- Estimate the additional cost of climate change adaptation relative to current baseline
- Design a proposal to implement one or more actions for each country
- Share information across countries and develop final project proposal
Expected Natural Benefits

Measurable increase in "adaptive capacity":

- Reduction in the burden of climate sensitive diseases;
- Reduction of the effect of climate change on human health;
- Better Integration of planning and implementation across sectors
Expected Global Benefits

- Improved knowledge of the links between climate, health, and adaptation in the most vulnerable countries.

- Adaptation strategies that other countries can use to protect human health from the impact of climate change.
Project Partners

At the national level:

- National Government,
  - Ministries (e.g. Health, Environment, Agriculture)
  - Agencies (e.g. Meteorology Agency)
- NGOs in health and environment fields,
- Researchers,
- Health Practitioners, and
- Representatives of most vulnerable community groups.
Project Partners

- At the global level
  - Global Environment Facility (GEF)-Project Funder
  - United Nations Development Programme (UNDP)
    - GEF agency, provides broad expertise in adapting to climate change
  - World Health Organization (WHO)
    - Executing agency for the project design phase,
    - Technical support for design, selection and implementation of health protection measures.
Climate change adaptation is a new field. The long term aims of the project are:

- Rolling out lessons from this pilot project to other countries facing similar stresses, but with few resources,
- Supporting broad aim of preventive approaches to protect health and,
- Widening partnerships
Project Webpage:
http://www.who.int/globalchange/climate/gefproject

More information on Climate Change:
http://www.who.int/globalchange
http://www.undp.org/climatechange