Why and how?
Preparation of Health Component of NAP (HNAP) in Pacific Island Countries

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WHY?


2050
sea level
2030
sea level


THE HIGHEST POINT ON SOUTH
TARAWA 3 metres
EITA
Rising seas, drowning islands
TCCC/UNFCCC
SAVE THESE ISLANDS: YES WE CAN


Welcome
to the
HOSPITAL
SCHOOL

Health is sensitive to climate

- Climate & weather have been known to affect human health since ancient time of Hippocrates
- Tropical diseases distribution & transmission are affected by climate and weather, particularly the risk of many vector-borne diseases
- Weather also affects the risk of food-borne & water-borne diseases & emerging infectious diseases
- A well-established association between weather & mortality from cardiovascular, respiratory disease & other non-communicable disease

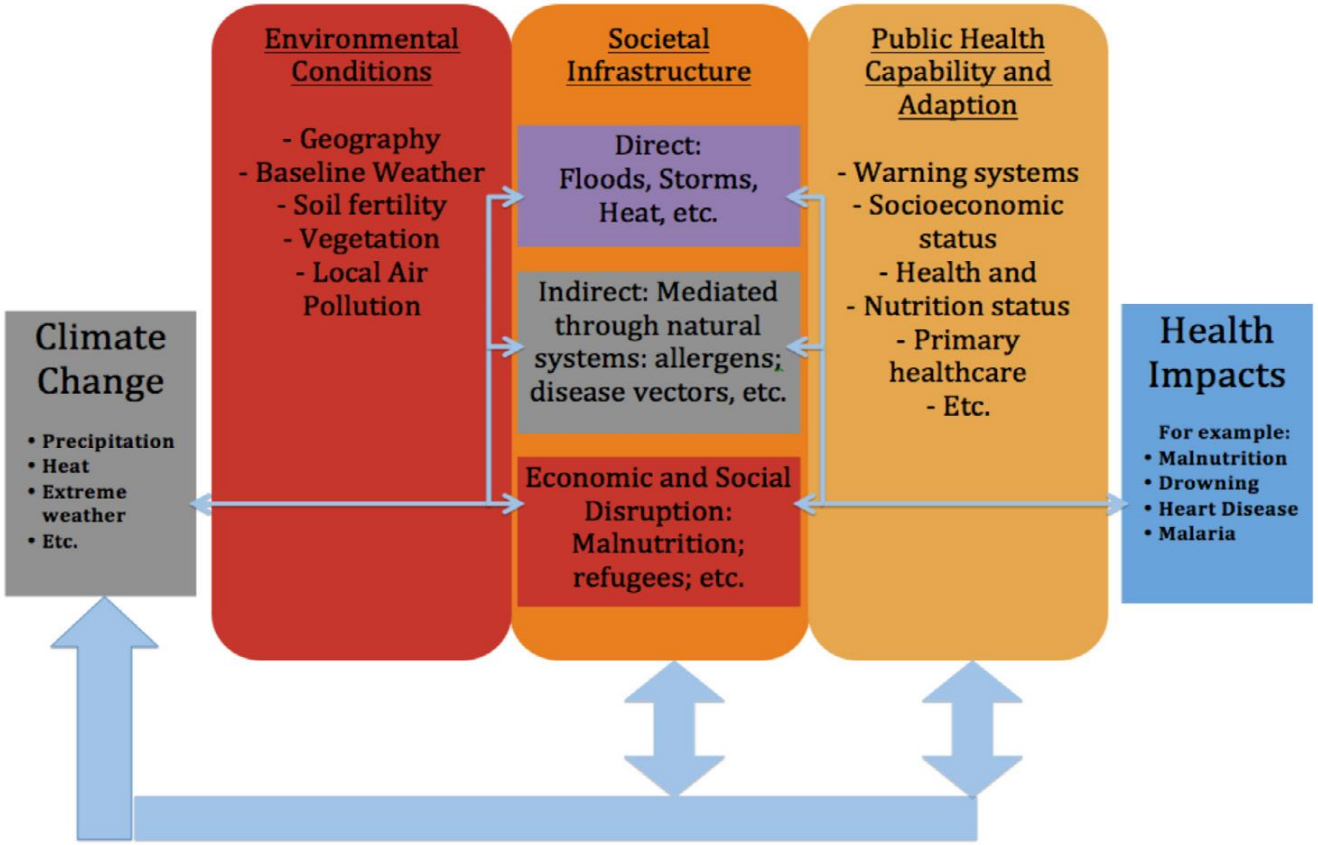
Burden of climate-sensitive diseases

- **Each year:**
  - Under nutrition kills 3.5 million.
  - Diarrhoea kills 2.2 million.
  - Malaria kills 900,000.
  - Extreme weather events kill 60,000.

- Dengue fever over 50 million infections & around 15,000 deaths/year .
  - Weather change may reduce the incubation period of Dengue virus from 12 days to 7 days.
  - PICs are seeing more frequent and severe outbreaks of dengue fever, chickungunya, zika, and other venctor-borne diseases in recent years.

- WHO estimates that the climate change that has occurred since the 1970s already kills over 140,00o per year.

Health - a central agenda



Impacts of climate change on human health & social wellbeing

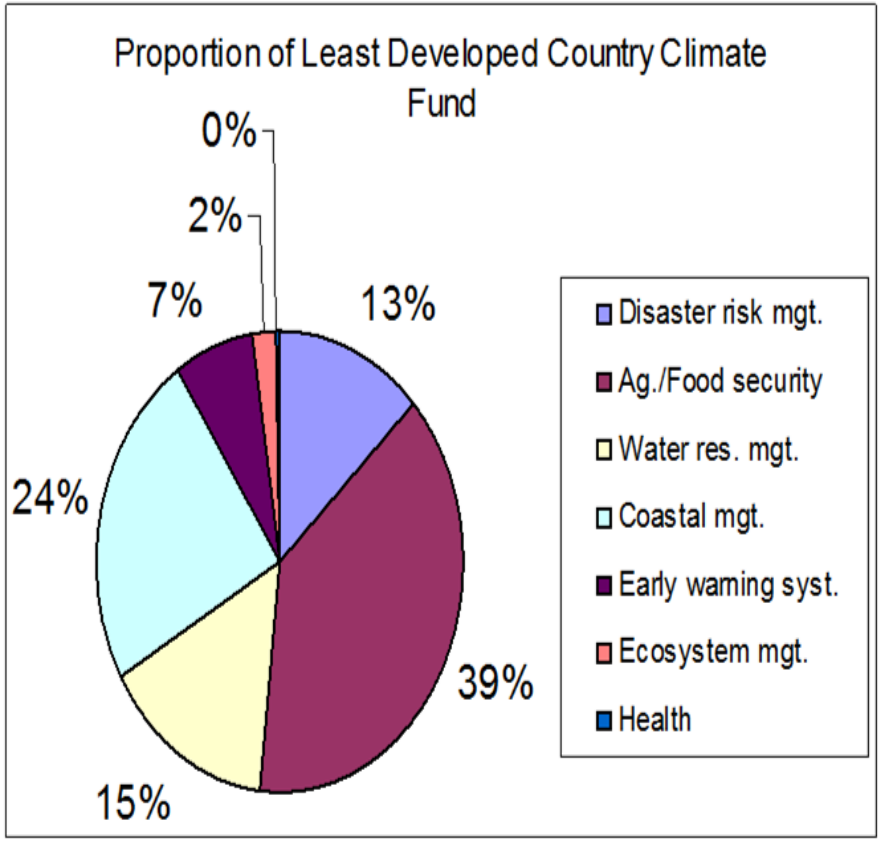
Source : (IPCCWG2),Climate Change 2014

Health component of NAP often overlooked

We are not adequately managing these risks from the health or environment side

- 95% (39/41) of LDC NAPA included health as priority sector.
- Only 25% had adequate health assessments & intervention planning.
- WHO, UNFCCC & WB estimate climate change to increase health costs by $ 4-12 billion in 2030.

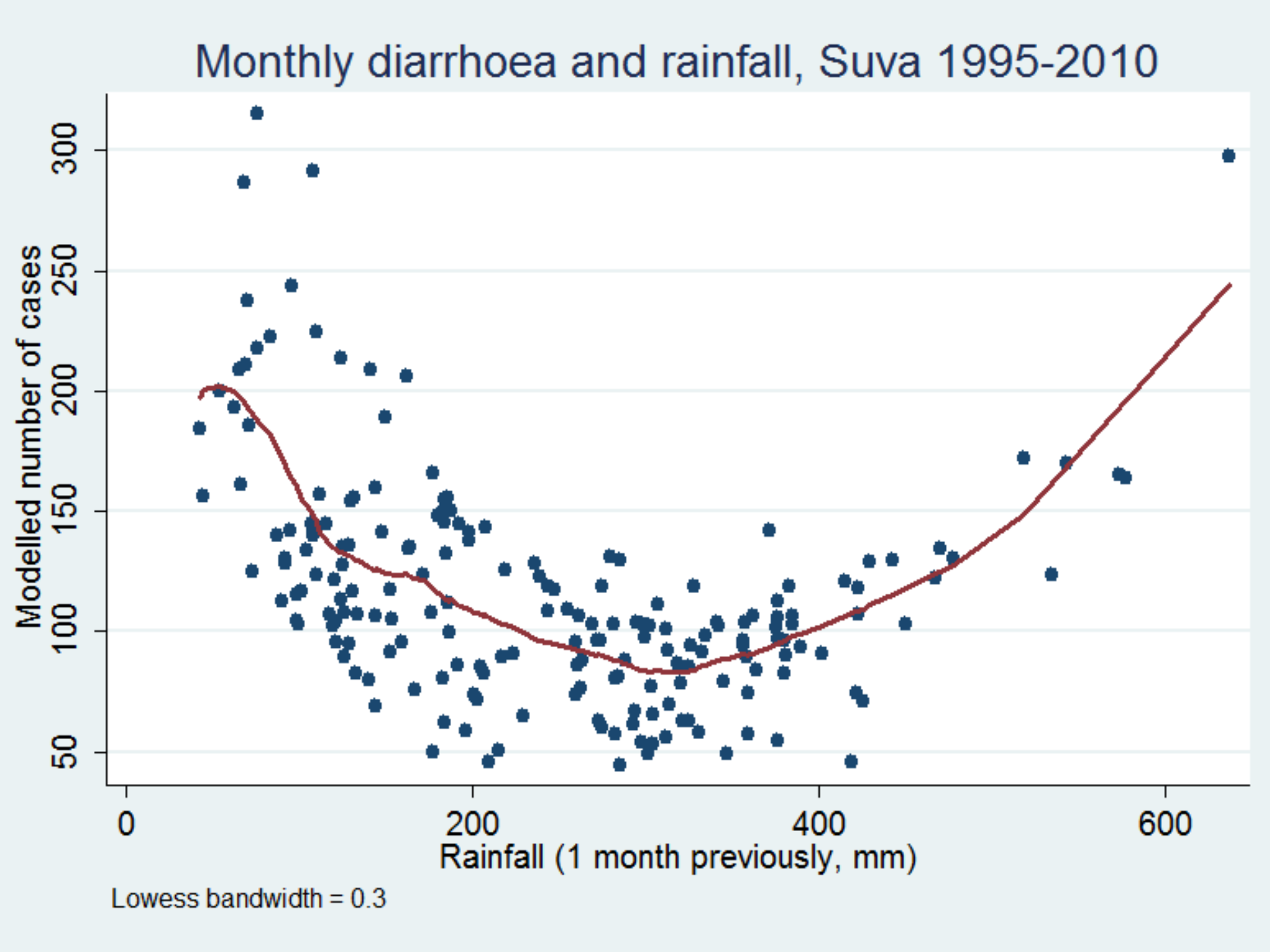
- There is an urgent need to prioritize health in NAP process.



Some evidence produced in the Pacific

Relationship between monthly climate variables (rainfall, maximum temperature, minimum temperature and humidity) at lags of up to three months with monthly cases of CSD's (1995-2009) (McIver et al, 2012)

Disease	Subdivision	Climate variables/model*	Strength of association (pseudo-r2 value)**
Dengue	Ba	Rainfall- lag 1,2,3 Maxtemp- lag 0,1,2,3 Mintemp- lag 2 Humidity- lag 1	0.3, 0.27, 0.32 0.29, 0.38, 0.32, 0.29 0.25 0.34
		Model: rainfall, maxtemp, humidity at lag-1	0.39
	Bua	Rainfall - lag 0,1,2, Maxtemp- lag 0,2,3 Mintemp- lag 0,1,2,3 Humidity- lag 0	0.4, 0.3, 0.37 0.37, 0.33, 0.31 0.35, 0.30, 0.32, 0.31 0.33
		Model: rainfall, maxtemp, mintemp at lag-0	0.52
	Lautoka	Rainfall- lag 1 Maxtemp- lag 1 Mintemp- lag 1	0.42 0.53 0.27
		Model: combination of three lagged climate variables above	0.54
	Suva	Rainfall- lag 2 Maxtemp- lag 3 Mintemp- lag 0,2 Humidity- lag 2	0.47 0.50 0.57, 0.52 0.47
		Model: all four climvar's at lag-2	0.6


Monthly diarrhoea and rainfall, Suva 1995-2010
Modelled number of cases
50
100
150
200
250
300
0
200
400
600
Rainfall (1 month previously, mm)
Lowess bandwidth = 0.3

Odds ratios of CSD outbreaks in the month following extreme weather events in Ba subdivision (all $p<0.05$)

Extreme weather event	Odds ratio (OR)* of CSD outbreak in the month following the event
Drought	Dengue fever: OR = 5.17 Diarrhoeal disease: OR = 9.0
Floods caused by tropical depressions	Dengue fever: OR = 10.57
All Floods	Diarrhoeal disease: OR = 3.5

Climate-sensitive health risks in PICs

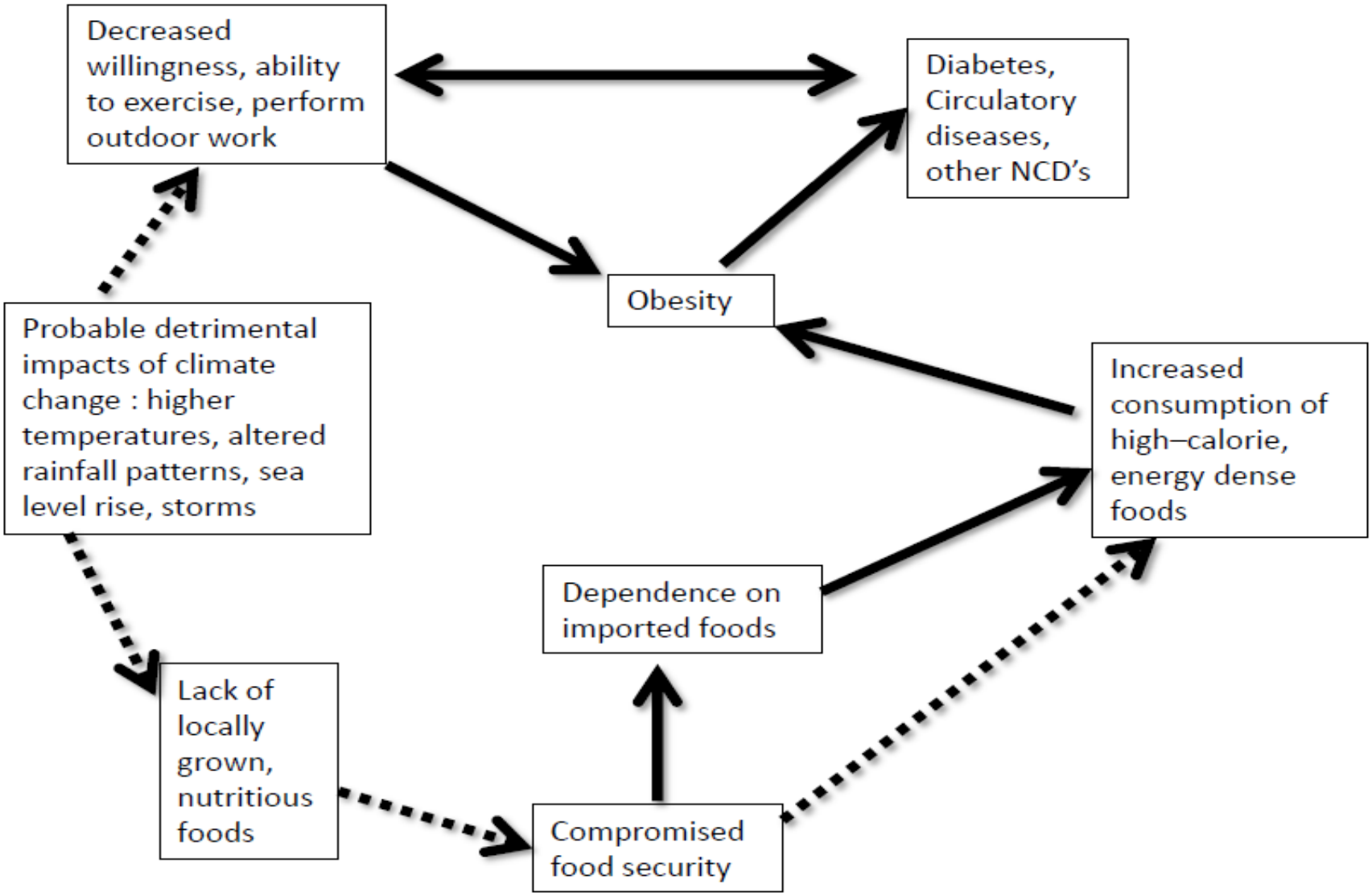
Country*	Main climate-sensitive health issues**
Cook Islands	Dengue fever, diarrhoeal disease
Federated States of Micronesia	Water- and mosquito-borne diseases, malnutrition
Fiji	Dengue fever, typhoid fever, leptospirosis, diarrhoeal disease
Kiribati	Food (safety, security, food-borne diseases), water (safety, security, water-borne diseases) and vector-borne diseases
Nauru	Air quality, food security, non-communicable diseases (NCDs)
Niue	Vector-borne diseases, ciguatera, diarrhoeal disease, respiratory disease, heat-related illness, NCDs, trauma from extreme weather events

Palau	Vector-borne diseases, zoonotic infections, gastroenteritis, respiratory disease, NCDs, trauma from extreme weather events, mental health issues
Republic of the Marshall Islands	Food-, water- and vector-borne (dengue) diseases, respiratory diseases, malnutrition
Solomon Islands	Vector-borne diseases (malaria), respiratory diseases
Tonga	Diarrhoeal diseases, vector-borne diseases (dengue), food security/nutrition, non-communicable diseases, injuries and deaths from extreme weather events
Tuvalu	Diarrhoeal disease, respiratory disease, compromised food security and impacts on NCD's
Vanuatu	Food- and water-borne diseases

100 Years Ago in Palau- Ibedul Louch

From *The Fiji Sun* (27. 5. 2011):
‘Imported foods raise obesity, health issues for Pacific Islanders’

Link between climate change and NCDs



HOW?

Existing commitment of health ministries to health adaptation

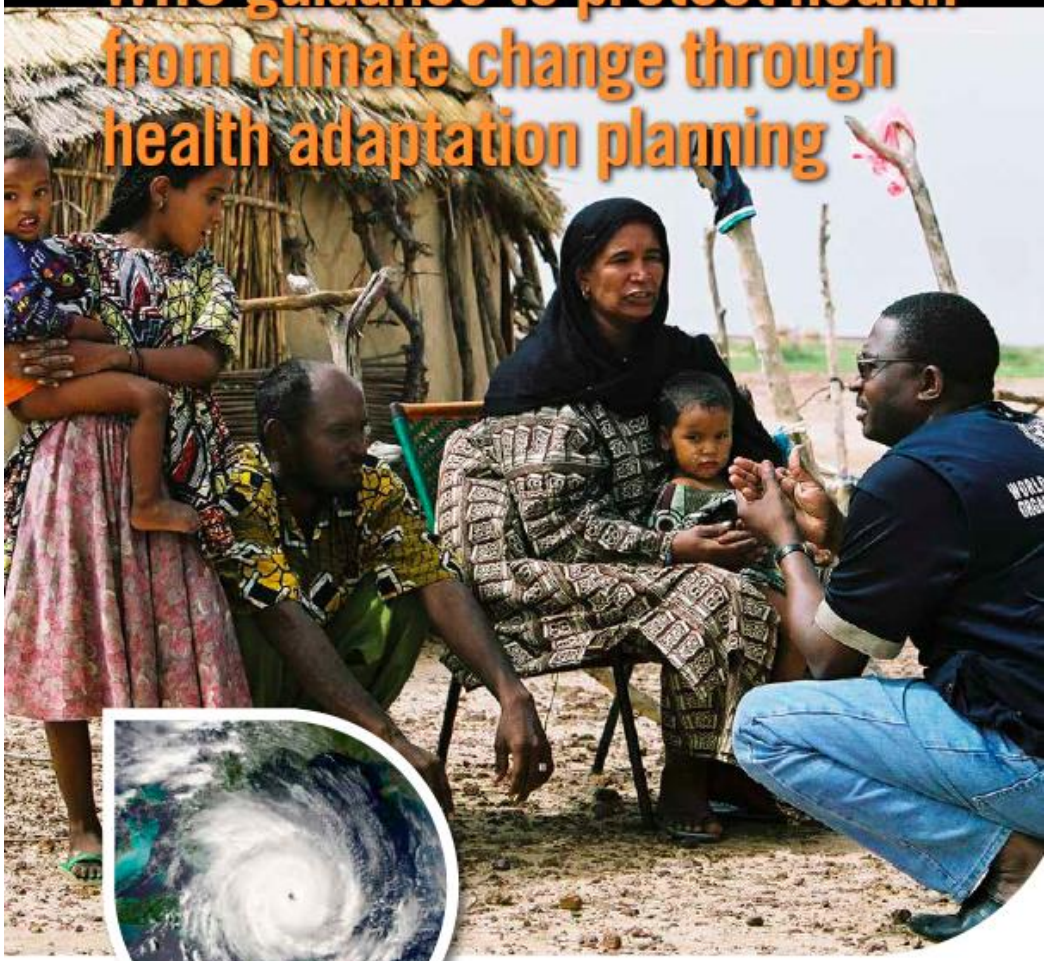
- World Health Assembly passed a resolution WHA61.19 on Climate change &health in May 2008.
- WHO Regional Committee for Western Pacific adopted a resolution on climate change and health in 2008
- Pacific Health Ministers highlighted vulnerability of PICs to health impacts of climate change and commit to action in Madang, 2009

WHO support to build health system's resilience: Guidance for health in national adaptation plans

- WHO adapted LEG NAP Guidance to specific of health sector
- Aims to ensure that health sector works with environment & other sectors, & follows a systematic process to:
  1. Engage in the overall NAP process at the national level;
  2. Identify national strategic goals for building health resilience to CC;
  3. Develop a national plan with prioritized activities to achieve these goals, within a specific time period and given available resources.
- Support for countries to conduct **vulnerability & adaptation assessments** (V&A)
- Support PICs in developing and implementing HNAP (e.g., a programmatic approach project in GEF LDCF)

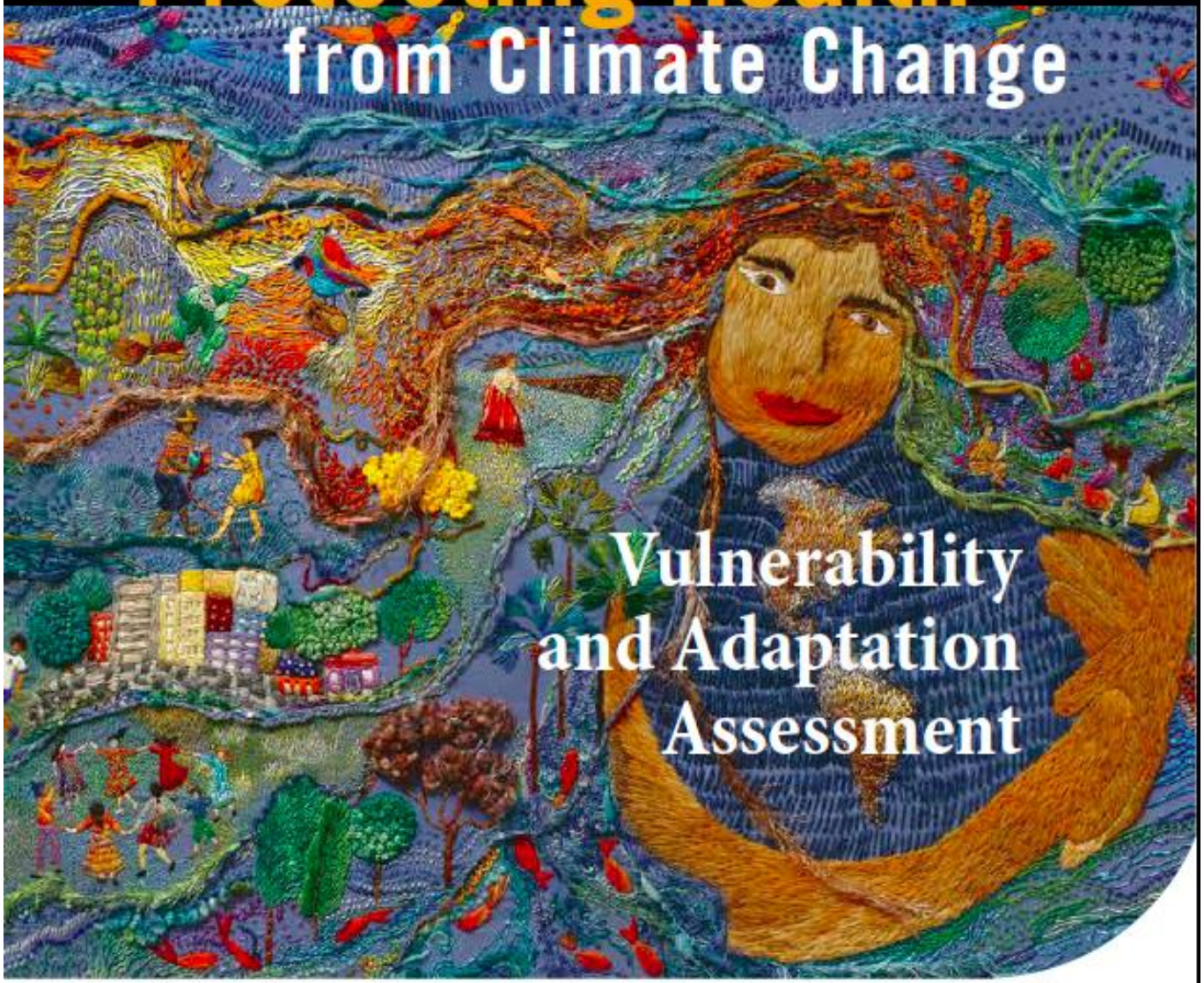
DISCUSSION DRAFT

WHO guidance to protect health from climate change through health adaptation planning



World Health Organization

Protecting Health from Climate Change



Vulnerability and Adaptation Assessment

http://apps.who.int/iris/bitstream/10665/137383/1/9789241508001_eng.pdf?ua=1

http://www.who.int/globalchange/resources/protectinghealthfromclimatechange.pdf

GOOD NEWS!

We don’t need to invent a new wheel.

Your country already have the National Climate Change and Health Action Plan (NCCHAP), which constitutes health component of NAP (HNAP)


Northern Mariana Islands
Guam
Marshall Islands
Palau
Federated States of Micronesia
Nauru
Wallis &Futuna Islands
Papua New Guinea
Christmas Island
Kiribati
Solomon Islands
Tuvalu
Tokelau
Coral Sea Islands
New Caledonia
Vanuatu
Tonga
Cook Islands
Fiji
French Polynesia
Pitcairn Islands
Niue
Western Samoa
American Samoa
Australia
Norfolk Island
New Zealand

Vulnerability and Adaptation Assessment in NCCHAP

- **Identification of the human health risks** for current climate variability and recent climate change, and the public health policies and programmes to address the risks.
- **Projection of future health risks** and impacts under climate change.
- **Identification and prioritization** of policies and programmes to address current and projected health risks.
- Establishment of a process for **monitoring and managing the health risks** of climate change.

Country	NCCHAP	Finalised	Endorsed
American Samoa	?		
CNMI	?		
Cook Islands	Yes	Yes	?
FSM	Yes	Yes	Yes
Fiji	No		
French Polynesia	?		
Kiribati	Yes	Yes	Yes
Marshall Islands	Yes	Yes	?
Nauru	Yes	No	?
New Caledonia	?		
Niue	Yes	Yes	?
Palau	Yes	Yes	?
Samoa	Yes	Yes	Yes
Solomon Islands	Yes	Yes	Yes
Tokelau	?		
Tonga	Yes	Yes	?
Tuvalu	Yes	Yes	?
Vanuatu	Yes	No	?

Climate change and health in PICs

- Most PICs have prepared National CC&H Action Plans (NCCHAPs) or similar national strategies
- Most PICs, particularly atoll countries, are extremely vulnerable to the impacts of climate change, including its detrimental effects on health
  - increasing incidence of food-, water- and vector-borne diseases, injuries/deaths from extreme weather events, mental health disorders and other NCDs
- Most PICs, particularly LDCs, will require substantial support from partners and donors in further developing and implementing HNAPs and protecting the public health from the impacts of CC

Integrated health sector adaptation

- Adaptation as an umbrella framework
  - Water, Food, Disaster, Hospital safety, Health systems development
- Strengthening surveillance program in Public Health Services
- Role of preventive and curative health services in health sector's adaptation
- Target vulnerable population, demonstrate the success, and expand to the whole country

Example of formulating LDCF/SCCF project for health adaptation

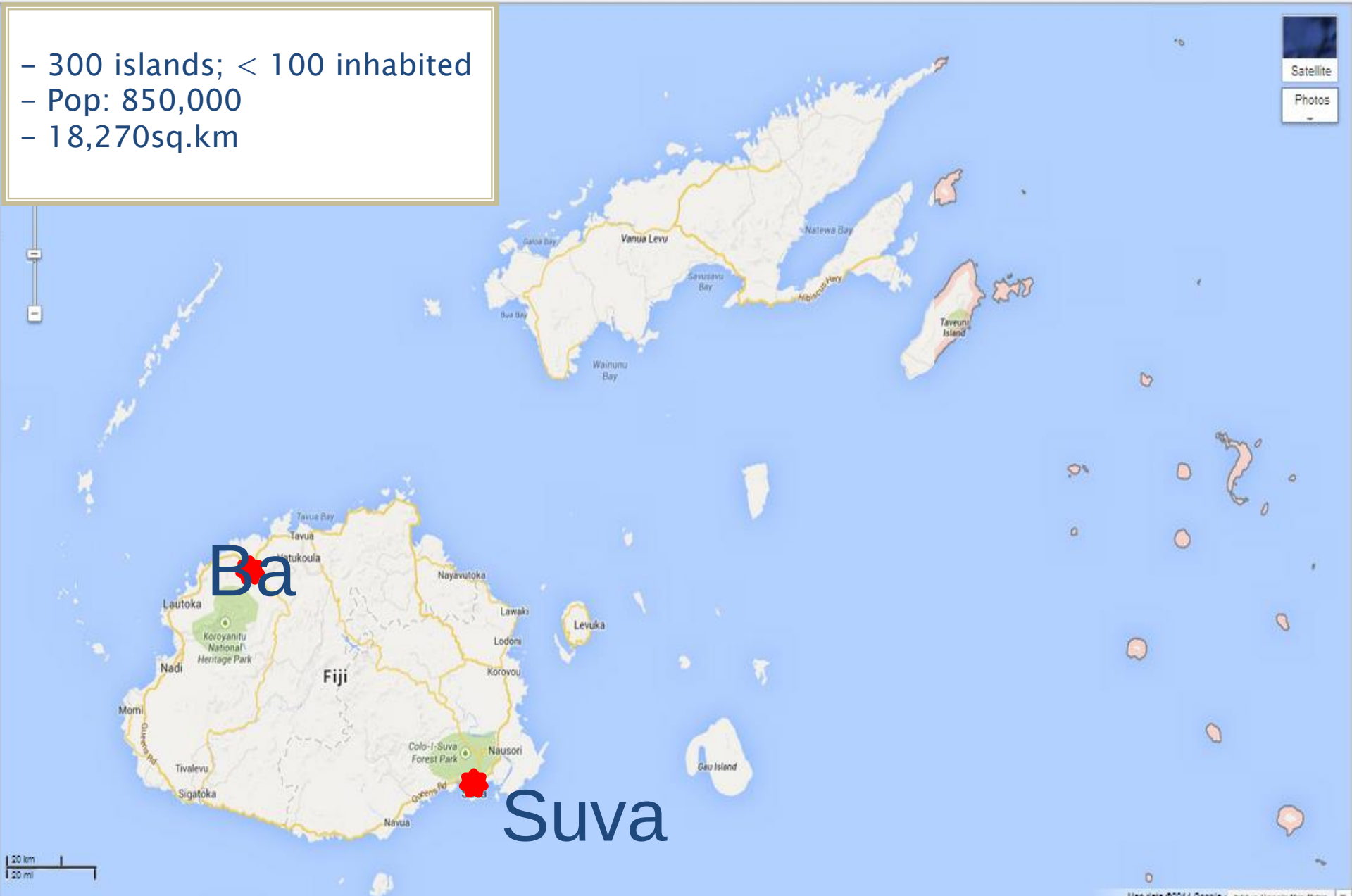
1. Governance and policies	1. Governance of health system and institutional capacities strengthened by mainstreaming climate-related risk and resilience aspects into health policy frameworks
2. Health information and climate early warning systems	2. Capacities of health system institutions and personnel strengthened in managing health information and climate early warning systems
3. Service delivery	3. Improved coverage and quality of health services addressing climate-related diseases, and reduced climate-induced disruptions in the function of health care facilities
4. Knowledge management and technical assistance - regional/international component	4. Enhanced south-south cooperation fostering knowledge exchange, the provision of technical assistance and scientific advisory, and the integration of national health policy frames and related adaptation plans with ongoing NAP-related processes

Thank you very much for your attention.

WHO-UNDP-GEF Project on Piloting Climate Change Adaptation to Protect Human Health (PCCAPHH) in Fiji Islands

Fiji Islands

- 300 islands; < 100 inhabited
- Pop: 850,000
- 18,270sq.km



Fiji PCCAPHH Work plan

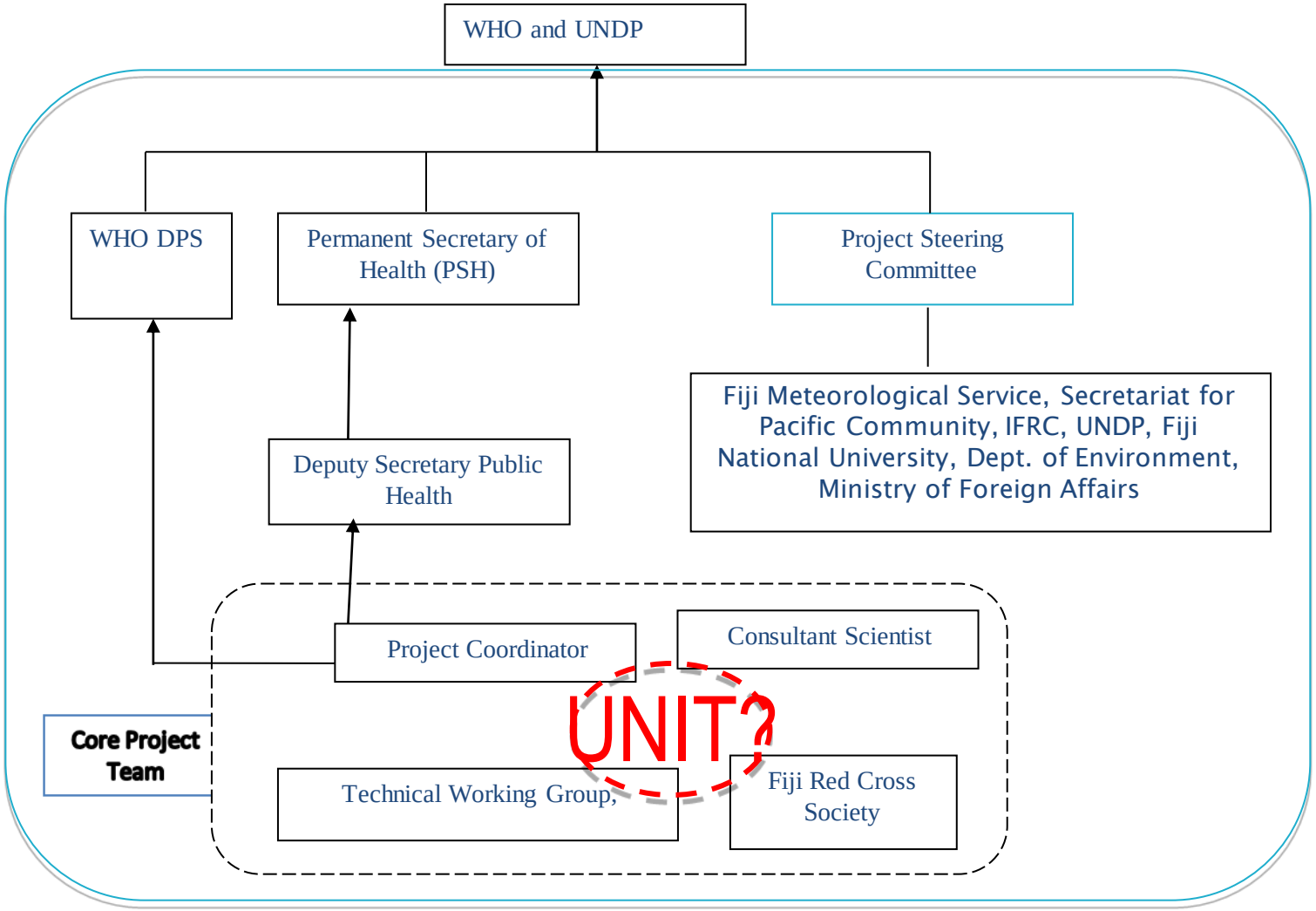
Aim: To enhance the capacity of health practitioners in Fiji to respond to Climate-Sensitive Diseases (CSDs) effectively and efficiently. 目标: 加强卫生部门应对能力

Outcome 1: *A climate-based early warning system is providing timely and reliable information on likely outbreaks of CSDs at pilot sites* [4 outputs]. 预警

Outcome 2: *Strengthen capacity of health sector to respond effectively to CSDs, based on early warnings provided* [2 outputs]. 加强卫生部门应对能力

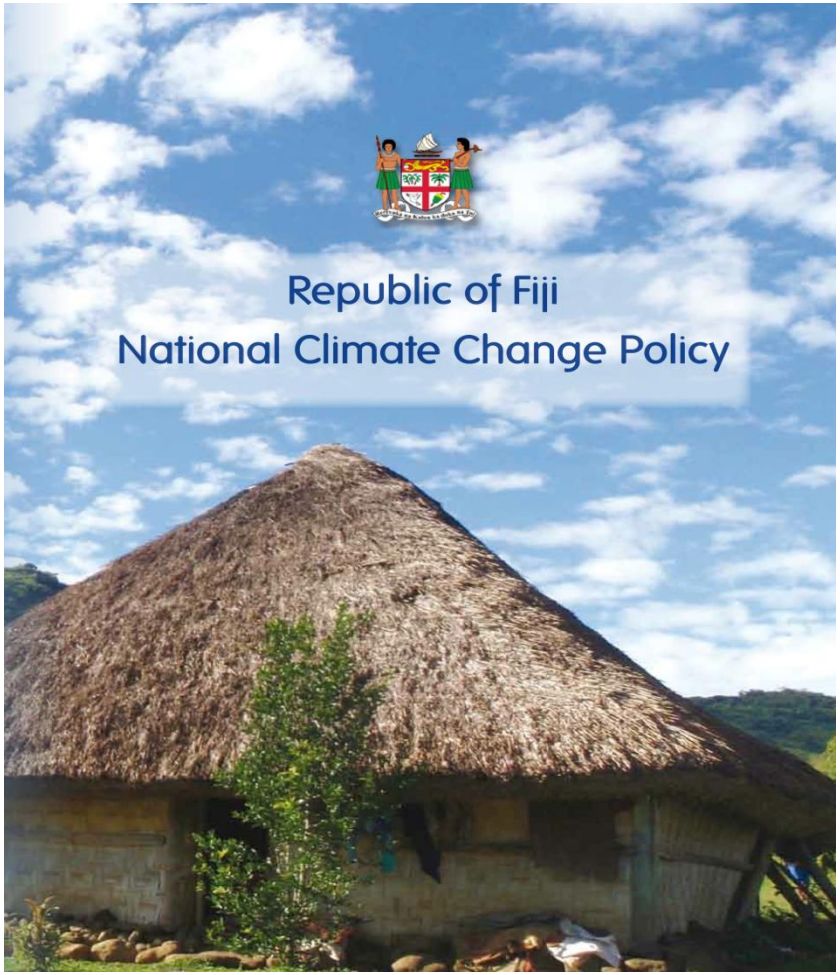
Outcome 3: *Health adaptation activities are piloted in selected vulnerable sites in Ba and Suva (led by Fiji Red Cross Society)* [3 outputs] 脆弱地区适应措施

Institutional PCCAPHH framework



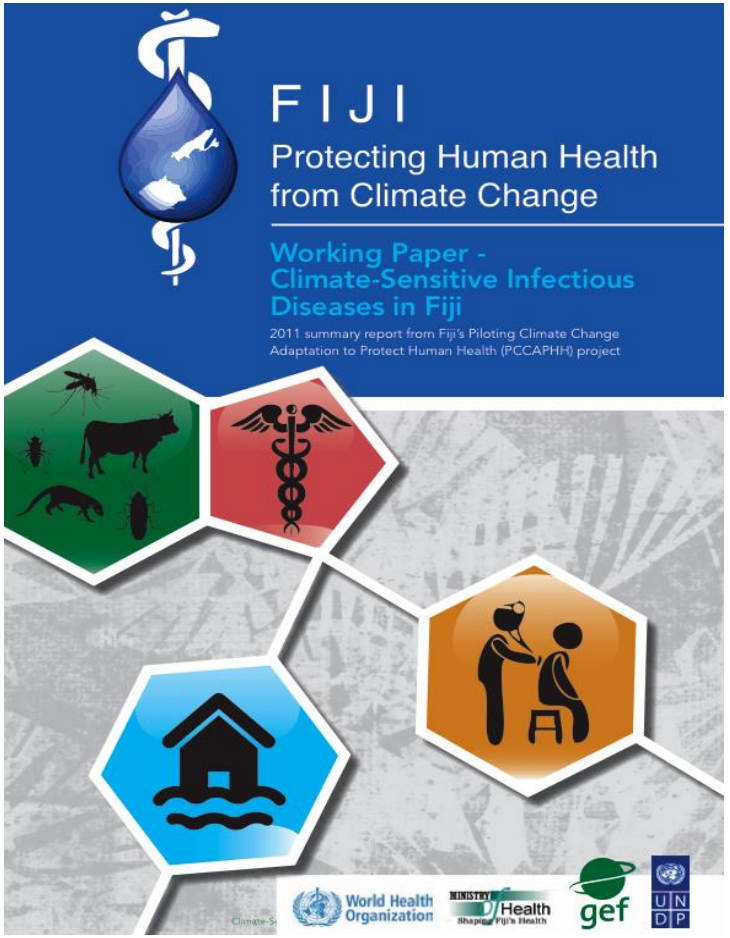
Strengthening collaboration of project steering committee

- National Policy for Climate change (includes PCCAPHH Scope)
- Formal agreements through Memorandum of Understanding (MOU) between Ministry of Health and each project steering committee organization elaborating specific relationships.
- EXAMPLE: MOU by MoH and Letter of Agreement (WHO) with the Fiji Red Cross Society for implementation of Outcome 3

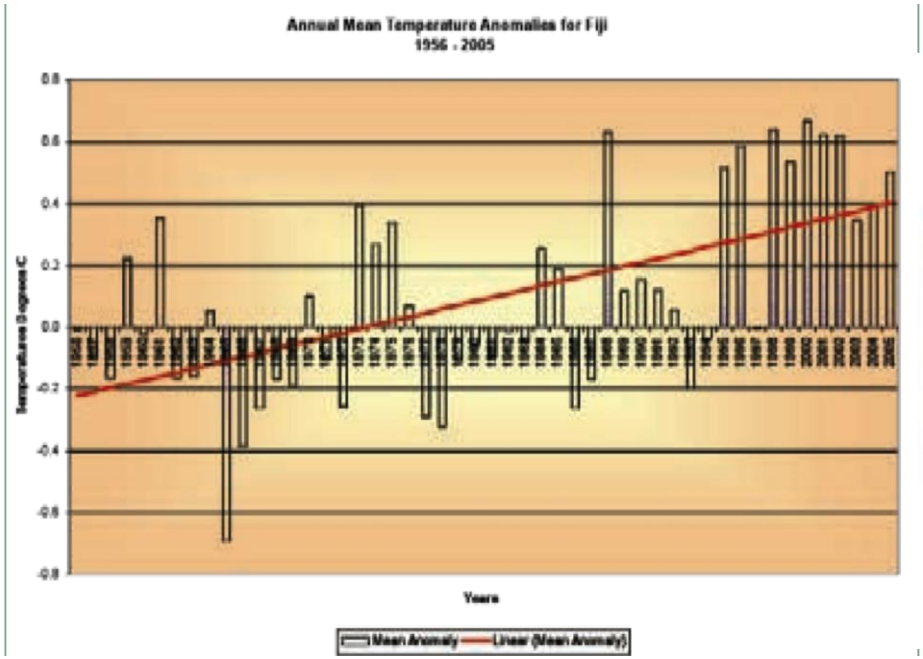


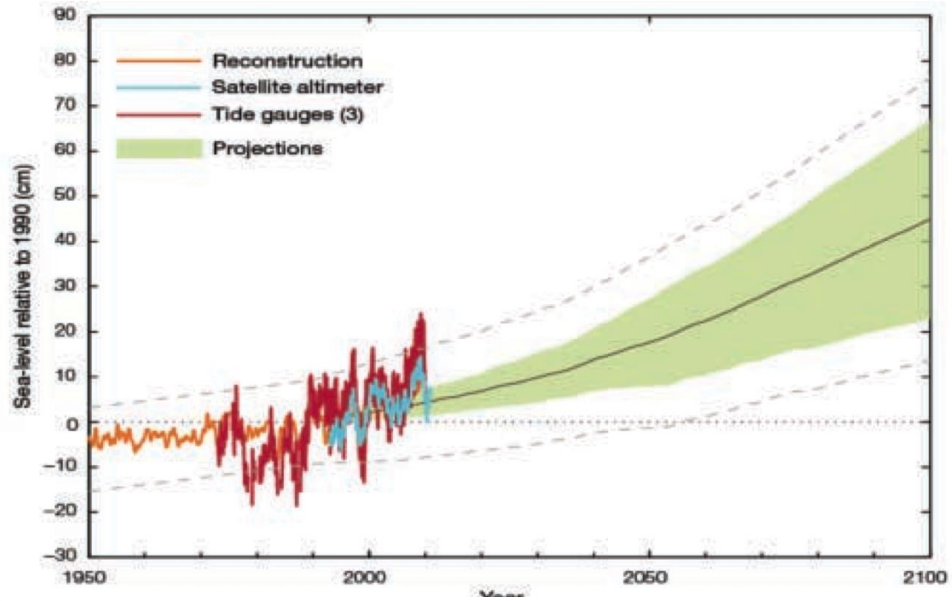
Outcome 1: Early Warning systems for CSDs

- (1) Initial analysis in 2010 by consultant on Working paper – CSDs in Fiji (2010) 气候敏感性疾病
- (2) Engaged consultants 2013-2014 for EWS model (work in progress)



(A) Working paper CSD in Fiji





CSDs = Leptospirosis, Typhoid fever, Dengue fever (LTD) & Diarrhoeal diseases

Results of modeling CSD and climate data (rainfall, temp., humidity) indicate:
weak correlations for diarrhoeal illness at all pilot sites -
Moderate-strong correlations for LTD at some pilot sites-

(B) EWS for CSDs in Fiji e.g. diarrhoea

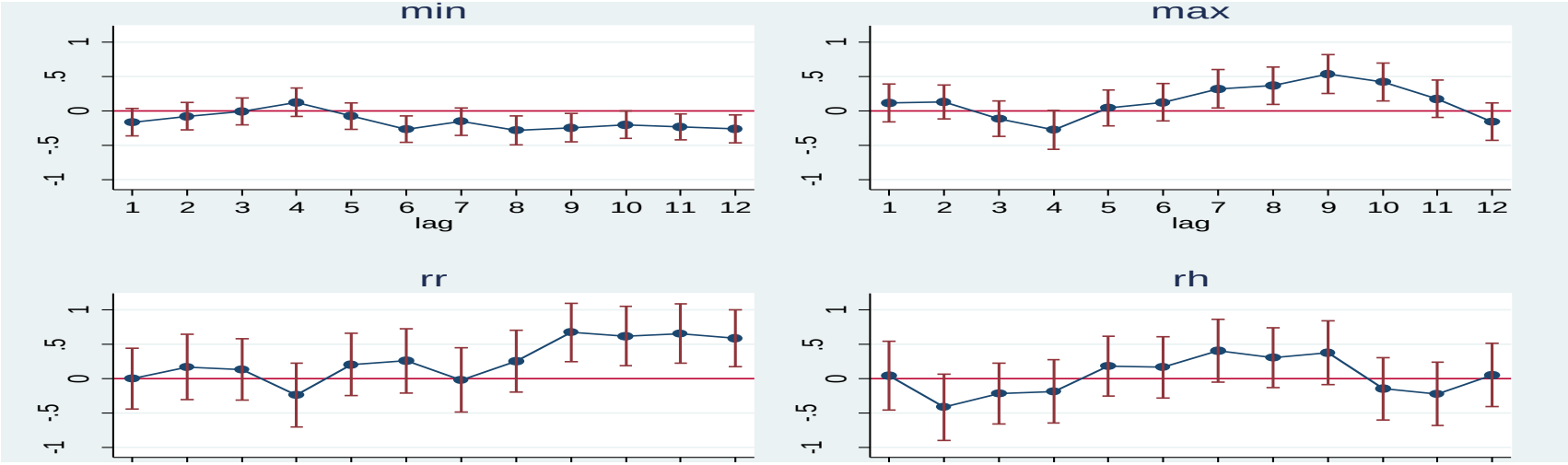


Figure 6: coefficients for lagged weather variables (with 95% CI). The graph for rh shows rate ratio per 10 percentage points of relative humidity

Diarrhoeal risk index for Ba is calculated as:

$DRI_{ba} = K(m) + (-0.447) \times Imin + (0.782) \times Imax + (1.18) \times Irr$

Imin = average of monthly minimum temperature over lags 6 to 12 (seven months): coefficient -0.447
Imax= average of monthly maximum temperature over lags 7 to 10 (four months): coefficient 0.782
Irr = average of log10-transformed monthly rainfall over lags 9 to 12 (four months): coefficient 1.18
RH: not used.

Outcome 2: Capacity Building

First Pacific Regional Climate Change and Health Symposium

- Hosted by Fiji that attracted more then 130 Researchers from Asia and the Pacific
- Supported by the Secretariat of the Pacific Community (SPC), WHO and PCCAPHH.
- Abstracts presented include:
  - (4) PCCAPHH & IPCC presentations
  - (15) Pacific Island country presentations on CC and health vulnerabilities & adaptation
  - (5) countries on activities, projects and research activities (academic & international)
  - (3) addressing food safety and security.
  - (1) alternative sources of energy that protect human health

http://www.spc.int/phs/ENGLISH/Publications/InformACTION/IA-SS01-contents.htm

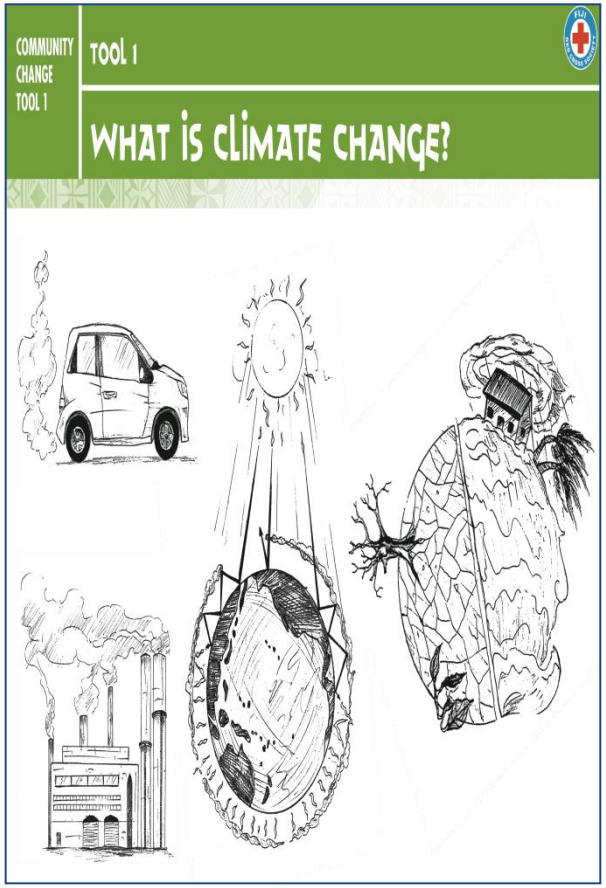
Vulnerability and Capacity Assessment Findings (2013)
脆弱性及能力评估结果

- Aim: To establish a baseline in relation to community vulnerabilities to CSDs by the Fiji Ministry. 社区脆弱性与CSD关系
- Community risk assessment of households undertaken for CSDs. 家庭脆弱性评估
- Method: The International Federation of the Red Cross and Red Crescent Societies Vulnerability and Capacity Assessment Guidelines (IFRC, 2006) 78-question survey tool, 问卷调查

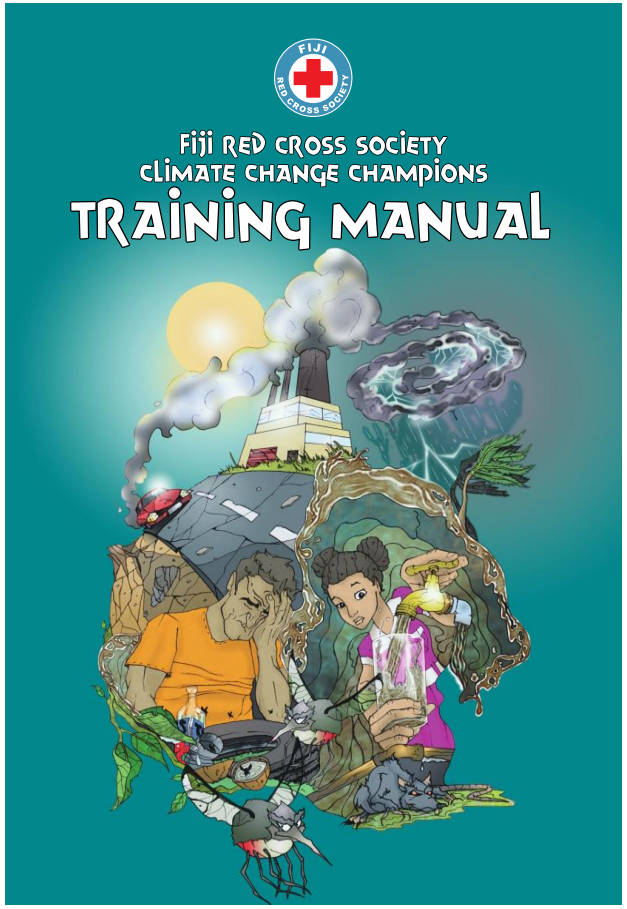
- Results: Study identified specific risks related to the 4 CSDs – food hygiene, water supply and safety, sanitation, shelter vulnerability and mosquito control.确定疾病健康风险

- Conclusion; Identifying the different areas of vulnerability in communities is the first step in designing fitting adaptation measures to minimise health risks associated with climate-sensitive diseases 识别脆弱地区,相应适应措施,降低健康风险

Vulnerability and Capacity Building
脆弱性与能力建设

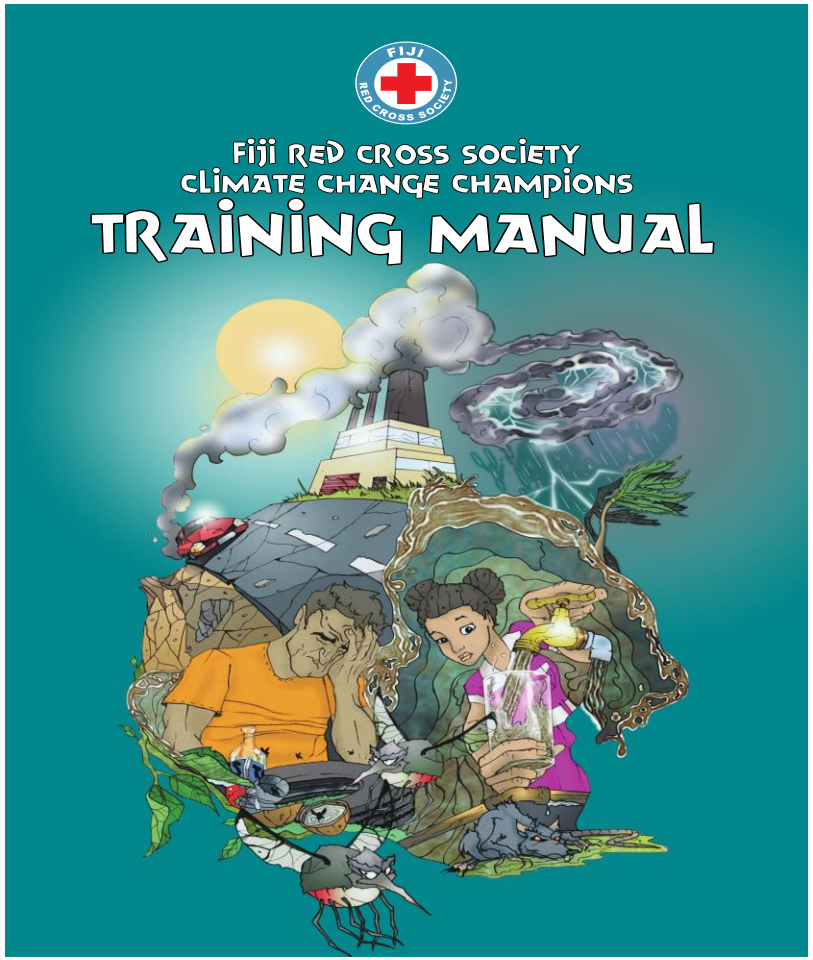


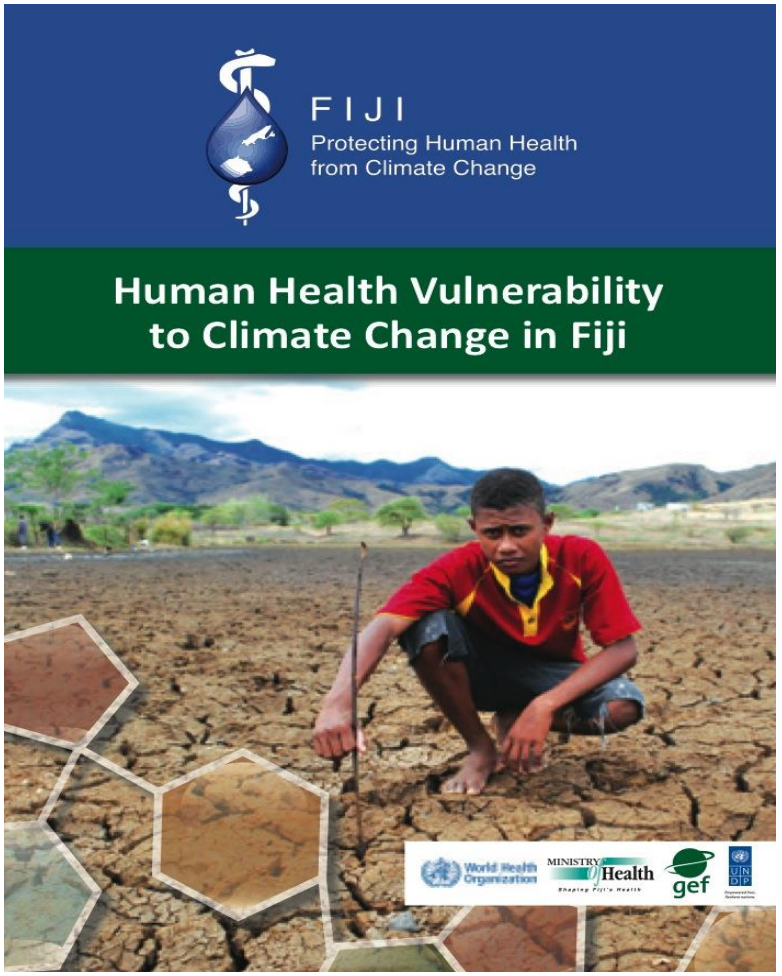
School education tool



Community education tool

Global project on piloting climate change adaptation to protect health





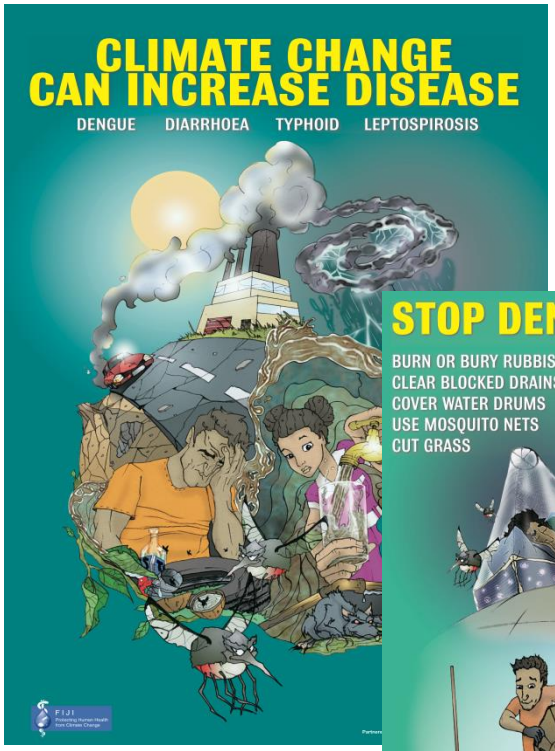
Global project on piloting climate change adaptation to protect health

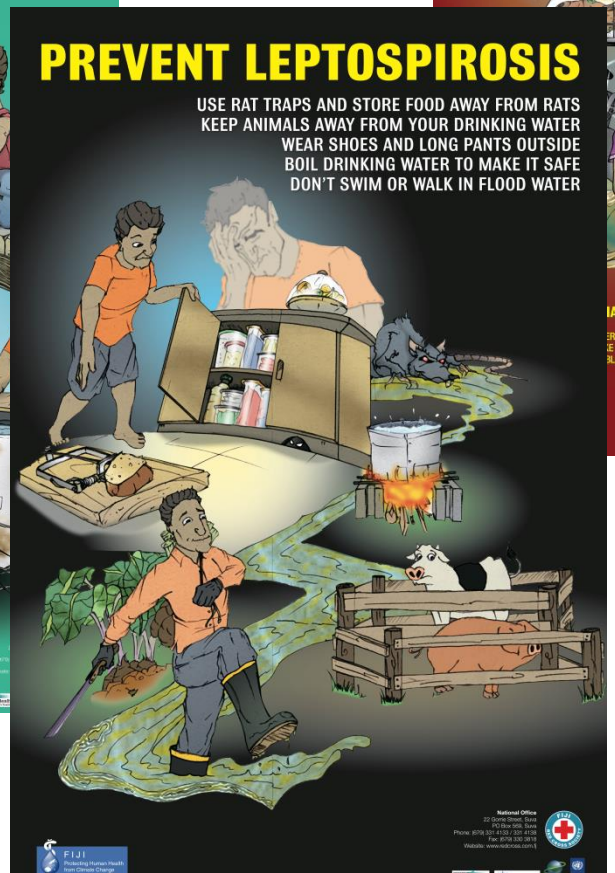
Outcome 3: Disease Prevention Measures Piloted

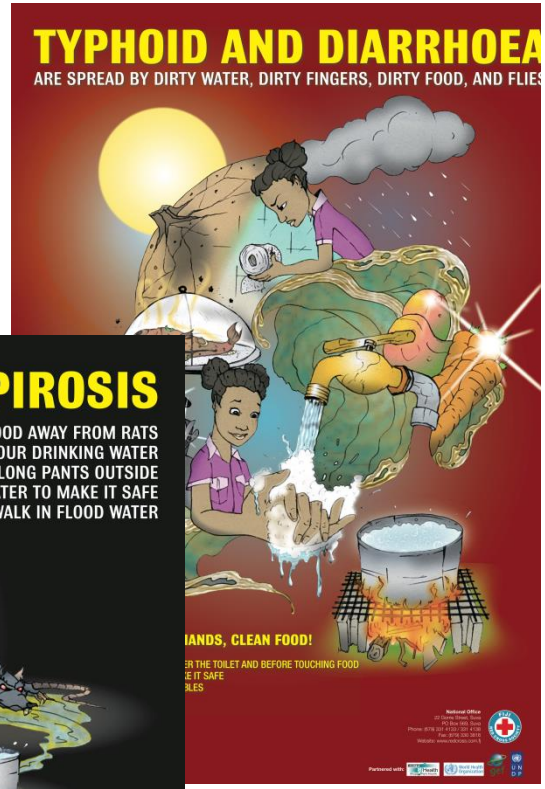
Achievements: 成果

- Revising of National Notifiable Disease form to enhance on CSD epidemiological surveillance 修订国家法定疾病报告系统,加强CSD监测
- Development of IEC materials on CSD preventative & control measures 开发健康教育材料

IEC Materials







Lessons Learned

- Inadequate local capacity to conduct analysis & modeling of EWS; 地方数据分析和建模能力不足
- MoH personnel have very large workloads so cannot engage effectively with project; 卫生部门工作任务繁重,投入项目精力有限
- Staff turnover is very high人员流动大

Way Forward

- Plans in place to establish a Health & Climate Change Unit within the MoH 卫生部内部设立健康与气候变化专门机构
- Selected individuals to undergo capacity building short-courses选派人员接受短期培训
- Adopt best practices from the GEF/WHO CC & Health participating countries from this Shenzhen seminar吸取深圳会议的成果经验