











Integrated and Participatory Action Research for Enhanced Resilience to Climate Change: Capturing community perceptions and narratives of climate adaptation for informing policy

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### Collaborative Research Project

### "Climate Change Adaptation in Post-Disaster Recovery Processes: Flood-Affected Communities in Cambodia and Fiji"

### Project Partners

University of Auckland, New Zealand; University of the South Pacific, Fiji; Royal University of Phnom Penh; Ministry of Rural Development, Cambodia; Ministry of Environment, Cambodia; University of Western Australia; University of Sydney, Australia



Funded by the Asia-Pacific Network for Global Change Research





**Overall project goal:** Determine the various factors that can enhance or constrain resilience and adaptive capacities of flood-affected communities in a changing environment.



## **Study Area**





### Ba River Catchment, Fiji



## **Conceptual Framework**







### Storage





### **Adaptation Strategies in Post-Disaster Contexts**

Mobility	Storage	Communal Pooling	Diversification	Market Exchange
Moving homes	Water, food, firewood	Resource & labour pooling	Agricultural diversification	Selling alternative produce
Moving fields and livestock	Household items	Infrastructure pooling	Asset and skill diversification	New product exchange
Labour mobility, multi-local livelihoods	Savings (money, livestock)	Information & knowledge pooling	Consumption choices	Buying insurance

Source: Adapted from Agrawal and Perrin (2008); expanded with ideas from Lucy Benge and Carl Middleton

# Methodology





### Ba, Fiji

- Unstructured discussions (talanoa) with community members in Votua, Nawaqarua, Etatoko and Navala
- Semi-structured interviews at household level (3 ½ years after 2012 floods)
- Individual journals with disaster narratives (5-9 months after Cyclone Winston 2016)







# Methodology





### **Participatory hazard mapping**

#### Spatial:

- livelihood activities and locations
- water, energy, food types/sources
- areas effected by hazards

#### **Environmental:**

changes and pressures

#### Hazards:

- types, location and extent, duration, impacts

#### Vulnerability/Resilience:

- aspects of individual and community vulnerability
- impacts on livelihoods
- changes in access to water/energy/food

### Adaptation/Coping/Mitigation:

- hazard management
- coping mechanisms
- alternative livelihood approaches/changing practice
- \* sessions conducted in the local language, translated in real time, notes verified by translator



















#### Participatory hazard map of Nawaqarua village

- Worst affected by Cyclone Winston (2016)
- Worst affected by flooding (2012)
- Active riverbank erosion





Mobility	Storage	Communal pooling	
Resettled community of Etatoko, elevated above the flood plain of the Ba River	Storage of fermented root crops that can serve as post-disaster food	Cyclone-resilient traditional <i>bure</i> in Navala are built with communal labour	
Diversification	Market exchange		
Many families have built two-story houses as a strategy of flood adaptation	Catching mud crabs in mangroves is a lucrative activity for women; after the 2012 floods, the exchange and sale of <i>kuka</i> (small crabs) acted as a short-term coping mechanism		





### Votua (Coastal Community) – After the Floods of 2012





**Recovery and Adaptation** 









### Votua – During the Flood 2012 and After Cyclone Winston 2016



March 2012

240 out of 901 primary and secondary schools (27%) were damaged and 60 completely destroyed (6%) by Cyclone Winston Source: UN Office for the Coordination of Humanitarian Affairs (2016)

May 2016









### Adaptation to Flood Situations (from individual interviews, Nov 2015)

- Build two-storey houses
- □ Store food, water and fuel
- Plant more tree crops around the houses (breadfruit, papaya, banana, coconut as post-flood food)



Tree crops in Cautata

### Preparations for the Next Cyclone (from individual journals, July 2016)

- □ Store food, water and fuel
- □ Tie the house and roof with ropes
- □ Cut back all surrounding trees



Tree destroyed by Cyclone Winston

### **Lessons Learned**





- Participatory mapping and locally adapted research methods allowed discussions around livelihoods, impacts of climate hazards and community responses.
- Communities have very detailed local knowledge about climate risks and have demonstrated a high level of resilience, but they are increasingly challenged by multiple risks.
- Community narratives matter for informing policy; they can also be a communication technique through transformative storytelling.



### **Science-Policy Interface**



THE REPORT STONEY SUSP CONTAINED CLIMATE CHANGE ADAPTATION IN POST-DISASTER RECOVERY - POLICY BRIEF 7 Is Planned Relocation a Viable Solution to is Manneu Relocation a viable Solution to Climate Change Adaptation Policy in Fiji? nos noti sovere impacts on hiji over tre part ten years. In 9 sea levela and large scale climate events, hiji plana io levels and large-scale climate events, Fiji plans ID transle vilages in the next five lot en rears. To what alton reducing the secondability of the worlds main since? Where do vintual level reasoners or statistical d relocation reducing the accountability of the world's main on emissions? Where of videola best practices', as defined in dente on Pranned Relocation (GPR), fail short when Lontext, cuture, and the individual needs of each affected

### Use of **Policy Briefs**

- 85% of Fill's natural dis and salination of arable lar Key Message
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- 1 United Hallons High Commission for Refugees (UNIHCR)



CLIMATE CHANGE ADAPTATION IN **DISASTER RECOVERY - POLICY BRI** 

#### Weathering the Storm: How iTaukei Fi experience vulnerability and resilience

Diverse knowledges, women's experiences, and relational u climate change and natural hazards in Fiji

Cyclone Winston was the most intense tropical cyclone to hit the records began. Following the devastation of their homes and liveliho on one another for support and recovery. This policy brief explor Cyclone Winston on women, their roles in the community and the nolicy

#### KEY MESSAGES

- Women in Votus and Navala did not perceive themsely. natural disasters than men.
- · Social networks can reduce women's perceived vulne protection in times of hardship
- . The Church plays a significant role in community re disasters.
- · Women's domestic and informal work is underval formal sector.
- · Women's traditional roles within the commudisastera

STONEY CUSS CONTRACTOR NA SOTAVI NI DRAKI VEISAU NI OTI NA LEQA TUBUKOSO: IVAKAMACALA LELEKA VAPOLISI 9 Na cava nai tavi ni Lotu – e I Tatao sei Yaragi ni

### produced by Postgraduate **Students**





# **Feedback Workshops**











## **Feedback Workshops**





## Vinaka vaka levu/ Fa'afetai tele lava





