### International Conference on Inclusive Insurance 2024 – Kathmandu, Nepal

23 October 2024 – Day 3: 14:00 – 15:30

Parallel session 9

Leveraging parametric insurance as an innovative financing mechanism for Anticipatory Action (AA)

Hosted by MCII



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नेपाल बीमा प्राधिकरण NEPAL INSURANCE AUTHORITY





Munich Re Foundation From Knowledge to Action



## **Forecast Index Insurance – FII-**WFP-Guatemala

Alimentos

SALVAR VIDAS CAMBIAR VIDAS

October 2024

# WFP DISASTER RISK FINANCE STRATEGY (nexus)



# Anticipatory actions -aa-



# FORECAST INDEX INSURANCE -FII-

The Forecast Index Insurance (FII) aims to be an innovative tool in the insurance market, shifting its traditional mechanism from post-event payments to pre-event payments. Its activation will be based on climate forecasts, with the goal of enabling the government or local authorities to anticipate climate events. The insurance payout will be used to mitigate the potential impact on food security and livelihoods of communities vulnerable to drought.



### First design of the fii



The proposed product required a change to the narrative, as it was only possible to forecast 10 days of climate information, and it would not be possible to recognize crop loss or agricultural activity in time to implement anticipatory actions.



**Forecast** days

10

First payment – Level Meso

### Where are we now?



In collaboration with IRI and ASISA, a platform • was developed with predictive modeling based on the NextGen model and historical data regarding the water requirements of maize.



days.



Capability to compare with analogous years and years with a history of prolonged drought.



The trigger is designed based on the maize production cycle, complemented by optimal timing for Anticipatory Action (AA).





### FII Design Timeline









Build Disaster Risk Resilience in the Pacific through Finance, Adaptation and Insurance





Pacific Insurance and Climate Adaptation Programme: Ex Ante Parametric Insurance Products in the Pacific



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**UK Government** 

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THE GOVERNMENT OF THE GRAND DUCHY OF LUXEMBOURG Ministry of the Environment, Climate and Sustainable Development



# **Solution Offered: Micro – Meso Approach**

Objective: Improving the financial preparedness and resilience of PSIDS towards climate change and natural hazards

An **insurance response** mechanism that improves local communities' resilience against extreme climate events.

Climate risk insurance to provide immediate liquidity post-disaster.



**Market-based climate risk insurance** and other disaster risk financing instruments targeted at:

- Low-income households & communities
- MSMEs
- Co-ops & Agri-agency associations and unions
- Financial institutions



Agriculture



**Fisheries** 



MSMEs



Tourism

# Results/Outcomes (2021 - 2024)

Guinea

windspeed and rainfall







# Anticipatory Insurance Scheme: Pilot Project in Fiji







Evidence based anticipatory solution – FGDs across three communities in Fiji

- Meso-level Cooperatives in Central, Western and Northern Division
- Understanding EARLY WARNING SYSTEMS IN PLACE, VULNERABILITY FACTORS, **EXISTING CAPACITIES AND IDENTIFYING NEEDS**

### **FGD Feedback:**



Radio, message from the Turaga ni Koro, traditional knowledge



Vulnerability Factors

Weak housing structure, location, no proper drainage, loss of income source and mind-set towards disaster risk management



**Existing Capacities** 

Manpower, traditional knowledge, savings in their bank accounts and strong reliance on gov't assistance



**Community Needs** 

Cat 3 & above - \$5,000-\$15,000 required to purchase/hire items to improve their disaster preparedness. This includes hardware for securing properties and livestock sheds, chainsaws for clearing fallen trees, hire of digger to clear drainage systems, fuel or solar panels, batteries, basic items such as food, hygienic kits, clean water, transportation to evacuation centres, etc.).





#### Product

Antici Actio Payou 24-48 prior actua

**Payout on** data recorded after the event

occurence

#### Anticipatory On Account Payment Trigger Index

	Max Gust Range (km/hr)	Minimum Pressure (hPa)	Distance to the Eye of the Cyclone (km)		
atory			Distance to the Eye of the Cyclone (km)       Option 1 (\$50,000)     Option 2 (\$100,000)       -     -     -       \$5,000     \$10,000     \$10,000       \$7,500     \$15,000     \$15,000       \$10,000     \$20,000     \$20% or \$20,000		
			Option 1 (\$50,000)	Option 2 (\$100,000)	
nours	G < 178	965 <u>&lt;</u> P- Cat 2 or low	-	-	
o event	178 <u>&lt;</u> G < 209	945 <u>&lt;</u> P < 965 Cat 3	\$5,000	\$10,000	
	209 <u>&lt;</u> G < 252	920 <u>&lt;</u> P <945 Cat 4	\$7,500	\$15,000	
	G ≥ 252	P < 920 Cat 5	\$10,000	\$20,000	
8h	Maximun	20% or \$10,000	20% or \$20,000		

triggers for gust & pressure corresponding to Category 3. Category 4 and Category 5 events



Three-Stepped payout Payment triggers if matrix with 10%, 15% and 20% payout (values in Sum Insured %)

Maximum gust and/or minimum pressure forecasted within 115 kms of the insured location hits the trigger

Data Source: Global Forecast System (GFS) data -National Centers for Environmental Prediction (NCEP) weather forecast model

#### Payout Table\* on Actual Index

Option 1: \$50,000 Cover Option 2: \$100,000 Cove						over			
Max Wind Speed (WS) Range (km/hr);	Distance to the Eye of the Cyclone				Max Wind Speed (WS) Range (km/hr);	Distance to the Eye of the Cyclone			
IC Category*	0-25	25-50	50-75	75-100	TC Category"	0-25	25-50	50-75	75-100
119 <u>&lt;</u> WS <154 - Cat 1	\$3,750	\$0	\$0	\$0	119≤ WS <154 - Cat 1	\$7,500	\$0	O Cover       a     Eve of the s       a     50-75       a     \$0       b     \$0       a     \$0       b     \$0       b     \$0       b     \$0       c     \$1,500       c     \$20,000       c     \$45,000	\$0
154≤ WS <178 - Cat 2	\$10,000	\$3,750	\$0	\$0	154≤ WS <178 - Cat 2	\$20,000	\$7,500	\$0	\$0
178 <u>&lt;</u> WS <209 - Cat 3	\$22,500	\$10,000	\$3,750	\$0	178 <u>&lt;</u> WS <209 - Cat 3	\$45,000	\$20,000	\$7,500	\$0
209 <u>≤</u> WS <252 - Cat 4	\$37,500	\$22,500	\$10,000	\$3,750	209≤ WS <252 - Cat 4	\$75,000	\$45,000	\$20,000	\$7,500
WS ≥ 252 - Cat 5	\$50,000	\$37,500	\$22,500	\$10,000	WS <u>&gt;</u> 252 - Cat 5	\$100,000	\$75,000	\$45,000	\$20,000
Maximum Payout		100% or	\$50,000		Maximum Payout		100% or 9	\$100,000	

triggers for maximum 1- minute sustained windspeed corresponding to Category 1, Category 2, Category 3, Category 4 and Category 5 events



Five-Stepped payout matrix with loss ranging between 7.5%-100% (values in Sum Insured %). Loss % for a triggered event will vary depending on the nearest distance from the eye of the cyclone



Payment triggers if Maximum 1- min sustained wind speed hits the trigger within 100 kms of the insured location

Data Source: Joint Typhoon Warning Centre, 1-Min Maximum sustained WS at 3 Hourly interval

FIJI- MESO LEVEL: ANTICIPATORY INSURANCE COVER



UN CDF Impact Capital for Developmen

Insured Twelve aggregator locations in Fiji are covered:								
Aggregator		Region	Province	The maximum payout under Anticipatory component.	,			
Fiji Rice Limited	Fiji Rice	Northern Division	Macuata	Coverage is valid from 1st October 2024 to 30th September 2025 (12 months) or cover a set of the se	n The Anticipatory payout would Addit happen 24-48 hours before the actual event if triggered as per forecast data	ional payout, if any, would be ted once the final cyclone track data is published Multiple events payable		
Cane-Farmers Co-operative Savings & Loans Association Ltd	COSLA COP	Western Division	Ва		Coverage Amount Option 1: \$50,000 per Aggregator	Premium Amount Option 1: \$5,000 per Aggregator		
Cane-Farmers Co-operative Savings & Loans Association Ltd	COP	Eastern Division	Kadavu	offered by: INSURANCE	Option 2: \$100,000 per Aggregator	Option 2: \$10,000 per Aggregator		
Cane-Farmers Co-operative Savings & Loans Association Ltd	COP	Eastern Division	Lomaiviti		Data Sources	Sources Actual Data Payment		
Nature's Way Cooperative	Nature's Way Cooperative Fiji Ltd	Western Division	Ва	Anticipatory on Account Payment				
Sugarcane Growers Council - North Office	NEARCAST GROWEN CONVEL Storing Trie State Benerou of St	Northern Divison	Macuata	24-48 Global Forecast System (GFS) forecast data which includes 3 hourty Peak Gust and Minimum pressure	a Joint Typ agency 3 track pos	phoon Warning Centre (JTWC) – USA 8 hourly cyclone track data which includes sition and 1-minute sustained wind speed		
Sugarcane Growers Council - West Office	EXAMPLE AND	Western Division	Ba					
Tailevu Dairy Farmers Co-op Association Ltd	TAILEVU DAIRY FARMERS CO-OPERATIVE ASSOCIATION LIMITED	Central Division	Tailevu	GFS is run times a day, i.e., loss calculations will be Forecast is generated at	2x 🖻			
Cassava Farmers Association (registered with Fiji Crop and Livestock Council)	Fiji Crop & Livestock Counc Fiji 's voice for agriculture	Central Division	Tailevu	intervals degrees (28 kms)	JTWC data is updated twice a week	Payout is payable if wind speed trigger is hit within 100 kms of the insured location		
Ginger Farmers Association (registered with Fiji Crop and Livestock Council)	Fiji Crop & Livestock Counc Fiji's volce for #pyriculture	Central Division	Naitasiri					
Dalo Farmers Association (registered with Fiji Crop and Livestock Council)	Fiji Crop & Livestock Counc Fiji 's voice for appriculture	Northern Division	Cakaudrove	To determine the severity of	) To determin			
Cassava Farmers Association (registered with Fiji Crop and Livestock Council)	Fiji Crop & Livestock Counci Fiji's voice for Apriculture	Northern Division	Bua	a cyclonic event, Maximum gust and/or minimum Gust and minimum pressure 1115 kms of the insured forecast data are considered location hits the trigger	distance f maximum 1-i	rom the eye of the cyclone and min sustained wind speed data are considered		







Build Disaster Risk Resilience in the Pacific through Finance, Adaptation and Insurance





# Thank You!

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EARLY WARNING EARLY ACTION AND INDEX BASED FLOOD INSURANCE

Leveraging Parametric Insurance as an innovative financing mechanism for Anticipatory Action.

Practical ACTION



### Early Warning Early Action - Lower Karnali (Anticipatory Action)

Basin Name	Station Index	Station Name	District	Water Level (m)	Warning Level (m)	Danger Level (m)	Trend	Status
Karnali	280	Karnali at Chisapani Sun, Oct 20, 2024 7:10 PM	Kailali	4.48	10	10.8	STEADY	BELOW WARNING LEVEL







Early Action- Actions in Lead Time before flood enters community

Alert 9m: Siren -blue flag- Miking-Be alert. Reach out to pregnant women, children, elderly people, disabled people.

Warning 10m: Siren - Yellow flag inform people

- Keep assets in safer places. Evacuate children, elderly people, disabled people.

Danger level 10.8m: Siren – Red flag . Community people evacuate to safer places.

Building and mobilizing response capability of communities enables them to act to early warning messages.

### Index based flood Insurance FEWS Risk Polygon-Lower Karnali



### Approved rolled out product

Water Level in Mtr.	Loss% & Payout %
10.80-11.80	10%
11.81-12.80	25%
12.81-13.80	50%
13.81-14.80	75%
14.81 above	100%

Fluvial Flood ,Standing Paddy Rice: Per hectare Sum insured=NPR 106250 7%premium of the sum insured

			No. of	No. of Insured	Sum Insured		
Year	Location	District	<b>Group Policy</b>	Farmer	(NPR)	Premium	Remark
2022	Karnali River	Bardia and Kailali	27	935	14,216,940	995,186	Claim 25% - Paid
2023	Karnali River	Bardia and Kailali	47	4,278	91,255,716	6,387,900	No claim occurred
2024	Karnali River	Bardia and Kailali	53	1,233	30,962,700	2,167,389	Claim 10% - Paid

### FEWS & Index based flood Insurance in Climate & disaster risk management

Sources of Resilience	Livelihood Capitals	System of Resilience	DRM Cycle
Flood Early Warning System (FEWS)	Physical	Robustness	Preparedness
Index Based Flood Insurance (IBFI)	Financial	Rapidity	



**Compensatory disaster risk management** :activities strengthen the social and economic resilience in the face of residual risk that cannot be effectively reduced. Include preparedness, response and recovery activities, plus a mix of different financing instruments, such as national contingency funds, contingent credit, CLIMATE AND DISASTER RISK INSURANCE, ......

# Index based Flood Insurance Project Funding and Implementation



InsuResilience Solutions Fund











# Practical ACTION



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# Thank YOU