Meso-Level Index Based Flood Insurance

Transferring catastrophe flood risk through insurance

Risk transfer solutions can narrow, stretched disaster management resource gap & better target post disaster relief.

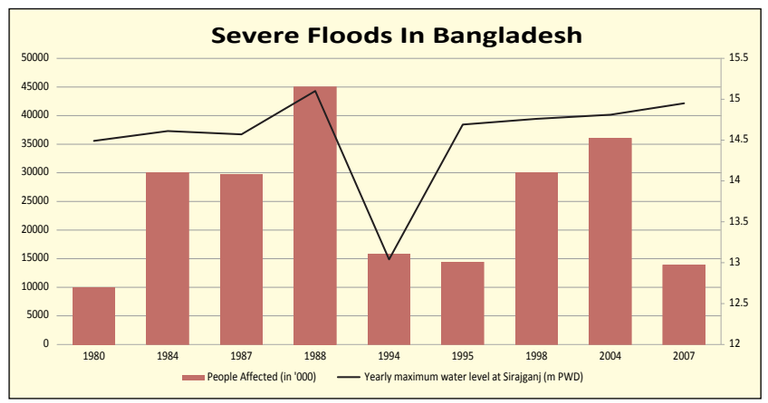
The transfer of risk retention to a formal risk carrier (the insurer) facilitates efficiencies in disaster management and risk preparedness.

Availability of predictable amounts and timely post-disaster liquidity, through insurance payout, can better facilitate household relief and reconstruction requirements.

Ganges, Brahmaputra and Meghna -annually drain a vast basin12 times Bangladesh's area into the country making it one of the most flood prone geographies in the world.

This project is a unique attempt, where a meso-level flood index insurance has been designed to protect the low income, vulnerable char communities by improving their ability to cope with flood risks, which would contribute to their socio-economic development.

The product uses model generated flood data for payout calculation, instead of setting up new settlement water level gauges, which makes the product scalable and free from human error and tampering.



C/RM ADVISORY SERVICES

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Agency for Development and Cooperation SDC

Swiss Re

INSTITUTE OF WATER MODELLING IWM

Pragati Insurance Limited
SYMBOL OF SECURITY

MMS

OXFAM

Project Lead: Oxfam

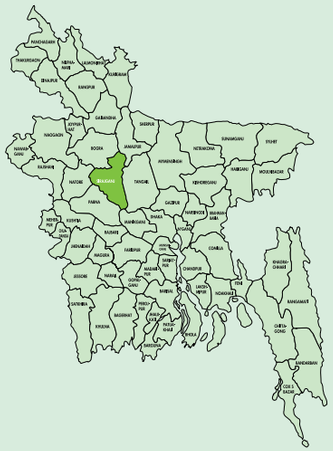
Oxfam is an international confederation of 17 organizations networked together in more than 90 countries, as part of a global movement for change, to build a future free from the injustice of poverty.

http://www.oxfam.org/

Reinsurance Partner: Swiss Re

The Swiss Re Group is a leading wholesale provider of reinsurance, insurance and other insurance-based forms of risk transfer. Dealing direct and working through brokers, its global client base consists of insurance companies, mid-to-large-sized corporations and public sector clients. Swiss Re firmly believes that risk protection can shift the prospects of low income and risk exposed societies around the world. A pioneer of several successful micro insurance pilots launched in partnership with different public and private sector partners, Swiss Re has developed innovative index insurance in agriculture and disaster management to respond to the needs of the vulnerable populations in many emerging markets.

http://www.swissre.com



Country: Bangladesh
District: Sirajganj

Project areas:
Aknadighi - Boro Chouhali - Chakbayra - Choto Chouhali - Fulbari - Fulhara East - Fulhara West - Khasborosimul - Mollikpara - Hatpara - Muradpur East - Muradpur West - Dhitpur - Panchosona

Funding Agency: Swiss Agency for Development and Cooperation (SDC)

The Swiss Agency for Development and Cooperation (SDC) is Switzerland's international cooperation agency within the Federal Department of Foreign Affairs (FDFA). In operating with other federal offices concerned, SDC is responsible for the overall coordination of development activities as well as for the humanitarian aid delivered by the Swiss Confederation.

http://www.sdc.admin.ch/en/Home

Design Partner: CIRM Advisory Services Pvt. Ltd.

CIRM is a specialized design and research centre, stimulating greater market outreach of risk management solutions among vulnerable households.

http://www.cirm.in

Insuring partner: Pragati Insurance Limited (PI)

Pragati Insurance is one of the leading nonlife insurance companies in Bangladesh, started in 1998.

http://www.pragatiinsurance.com/

Technical Partner: Institute of Water Modeling (IWM)

Institute of Water Modeling (IWM) provides world-class services in the field of Water Modeling, Computational Hydraulics & Allied Sciences for improved integrated Water Resources Management. The applications of IWM modeling tools cover a wide range of water related areas such as: flood control, flood forecasting, irrigation and drainage, river morphology, salinity and sediment transport, coastal hydraulics, port, coast and estuary management, environmental impact assessment, bridge hydraulics and related infrastructure.
http://www.iwmbd.org/

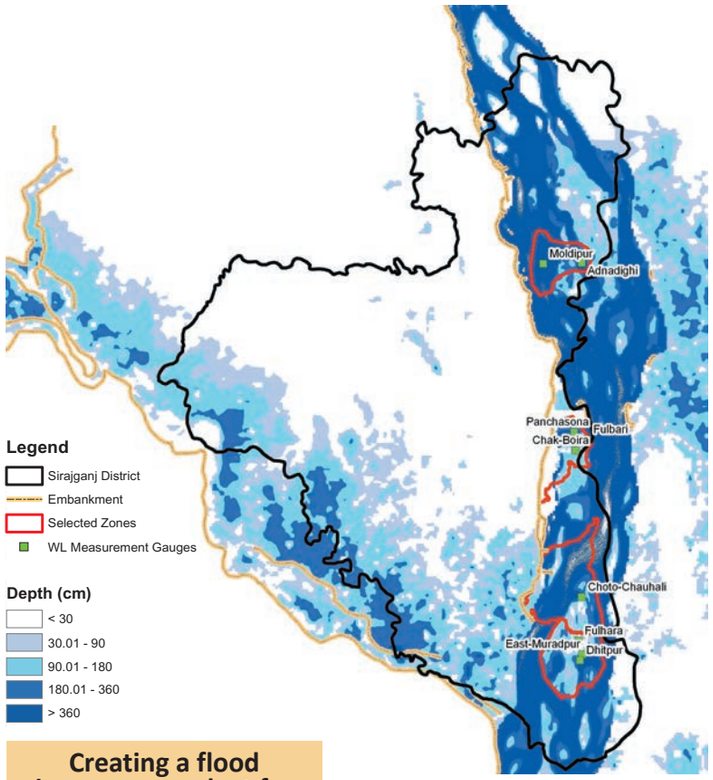
Implementing partner at local level: Manab Mukti Sangstha (MMS)

Manab Mukti Sangstha (MMS) is a local level NGO established on January 15, 1984 at Rahaimandalbhog in Sthal Char under Chowhali Upazila in Sirajgonj District with a view to "see a society free from poverty, discrimination and risk of natural disasters'. The organization obtained registration from the Department of Social Services in 1985 and the NGO Affairs Bureau in 1990.
http://www.mmsbangladesh.org/

Project Advisor: Palli Karma Sahayak Foundation (PKSF)

Palli Karma-Sahayak Foundation (PKSF) was established in 1990 by the Government of Bangladesh as a 'not-for-profit' company, registered under the Companies Act 1913/1994. The principal objective of PKSF is to provide funds to various organizations for their microcredit programme with a view to help the poor for creating their employment.
http://www.pksf-bd.org/

Flood Mapping
15 Aug 2011



Creating a flood insurance product for Bangladesh river islands

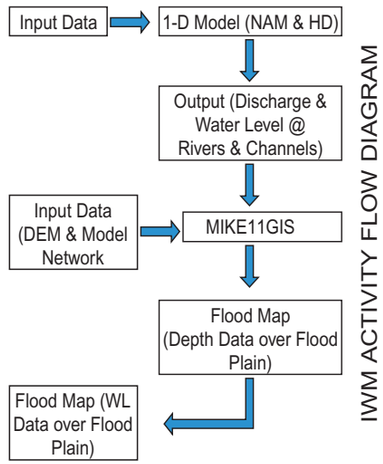
A commercially pragmatic index-based catastrophic flood risk transfer method designed for populations most impacted by natural catastrophes and climate impacts.

Data prerequisites ensure governance co-benefits through the creation of localized information sets on flood hazards and losses, including agricultural damage.

Leveraging the ex-ante resilience building of REECALL to advance post-facto coping capacity.

Sirajganj Flood Hazard Model - Details

A dedicated 1-Dimentional hydrodynamic model has been developed by IWM to generate historical water level data in the river channel and flood plains. The same model will be used to generate data for 2013 flood season which will used for payout calculation. Thus, the insurer doesn't need to install river gauges and monitor the water level readings every day.



IWM ACTIVITY FLOW DIAGRAM

Recommendations for the improvement of the Flood Hazard Model

Detailed Survey covering Spot level/Land level, Cross-section, Bench-Mark, Alignment Survey and dense network of primary data collection (Water Level, Discharge)

Updating of existing Digital Elevation Model (DEM) with surveyed data

Use of MIKE Flood Model (1D-2D Couple Model)

Use of well constructed Flood Loss Model

Sirajganj Meso-Level Flood Index Insurance Product

Compensation Payment Schedule (per household in reference area)	
Continuous 10 or lesser days of flood	Tk 0 /-
Continuous 11 days of flood	Tk 2800 /-
Continuous 21 days of flood	Tk 4400 /-
Continuous 26 days of flood	Tk 8000 /-
# A flood day is when average water level of the reference area is higher than the corresponding water level trigger	

Water Level Triggers for Compensation

Reference Area	# of Households	Water Level Trigger (mPWD)
Aknadighi	148	14.35
Boro Chouhali	56	11.35
Chakbayra	54	12.70
Choto Chouhali	105	11.10
Fulbari	119	12.85
Fulhara	168	11.00
Khasborosimul	98	12.80
Mollikpara	200	14.35
Muradpur	379	10.90
Panchosona	334	12.75

Parametric Insurance Advantages

Lower Moral Hazard

Lesser Adverse Selection

Standard & Transparent

Availability & Negotiability

Reinsurance acceptability

Versatility

Administrative Cost is lower

Timely Payout

Policy Holder:
Manab Mukti Sangstha

Data Provider:
Institute of Water Modeling

Insurer:
Pragiti General Insurance

Reinsurer:
Swiss Re

Total Sum Insured
Tk 1328800

Total Number of Households covered
1661

Maximum Payout per Household
Tk 8000

Premium per household
Tk 824 + VAT

Cover Period
Aug 16th - Sept 30th, 2013