Flood early warninG systems Using Impact-baseD forEcasts   (Flood GUIDE)

Nigeria

Ghana

Guatemala

Peru

South Africa

Rationale

Floods are impacting many countries worldwide.

Early warning systems can minimize impacts if we are better aware of potential impacts.

Aim

To develop a procedure to incorporate the routine use of impact-based forecasts in addition to the typical forecasts about floods that may trigger a disaster.

How?

Incorporate the routine use of the Global Flood Awareness System (GLOFAS), and hydrologic modelling using digital elevation models and other tools to generate maps indicating the potential geographical extent of floods.

GLOFAS forecast: small flood (period of return of 2 to 5 years) — **Hydrological modelling** — Potential geographical extent of flood in specific segment of a river

GLOFAS forecast: moderate to large flood (period of return of 5 to 20 years) — **Hydrological modelling** — Potential geographical extent of flood in specific segment of a river

GLOFAS forecast: very large flood (period of return more than 20 years) — **Hydrological modelling** — Potential geographical extent of flood in specific segment of a river

How?

Deduct from data on impacts from historic floods potential impacts on communities, in different sector of development and critical infrastructure.

Shape such impacts as part of "impact-based forecasts"

scenarios of potential impacts

Compilation of data on historic impacts of floods aligned with period of return or geographical extent of historic floods

SCENARIO OF POTENTIAL IMPACT IN MUNICIPAL DISTRICTS				
		level of impact		
District	Number of inhabitants	Low	Moderate	High
DISTRICT A	30.158	10.645	3.038	16.475
DISTRICT B	3.897	2.102	1.031	764
DISTRICT C	15.473	8.420	2.781	4.272
DISTRICT D	12.891	6.162	4.934	1.795
DISTRICT E	7.977	5.427	1.068	1.482
DISTRICT F	6.399	2.869	724	2.806
DISTRICT G	10.195	5.509	1.642	3.044
DISTRICT H	1.961	881	123	957
DISTRICT I	14.523	7.912	5.023	1.588

Landcover Exposed to Flood 2010
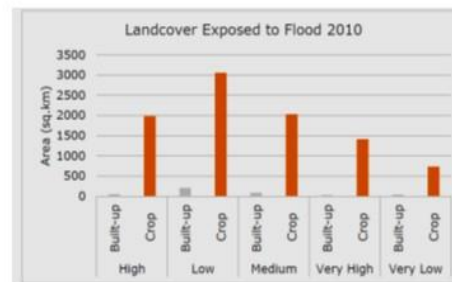
Disaster Management agencies issue warnings more locally and prepare humanitarian assistance on the basis of these scenarios

Countries

Institutions

Ghana

National Disaster Management Organization (NADMO)

Nigeria

National Emergency Management Agency (NEMA)
National Space Research and Development Agency (NASRDA)
National Hydrological Services Agency (NIHSA)

South Africa

National Disaster Management Centre (NDMC)
South African National Space Agency (SANSA)

Guatemala

National Coordinating Agency for Disaster Reduction (CONRED)
Climate Change Institute (ICC)

Peru

National Civil Defense Institute (INDECI)
National Commission for Aerospace Research and Development (CONIDA)

Next steps

Proposed plan of work for implementation of the pilot project					
Activity	Sept. to Dec. 2021	Jan. to June 2022	July to Dec. 2022	Jan. to June. 2023	Dec. 2023
Small technical document outlining current flood early warning practices in the selected rivers.	▓				
Classification of historic floods in the selected rivers in three levels: small, moderate to large, and very large.		▓			
Hydrological modeling for the three levels of floods in the selected region of the rivers.		▓	▓		
Procedure to incorporate impact-based forecasts using inputs provided by NDMC and SANSA.			▓	▓	
Table-top exercises to test the SOP.				▓	
Awareness raising events.	▓	▓	▓	▓	▓
Elaboration of a joint technical publication and				▓	▓

THANK YOU

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