Evaluating the forecast skill of GloFAS ensemble river discharge to detect flood signal using impact data

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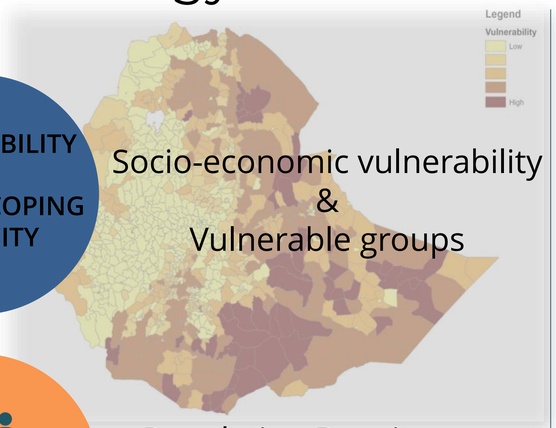
Methodology

VULNERABILITY & LACK OF COPING CAPACITY



Socio-economic vulnerability
&
Vulnerable groups

EXPOSURE

Population Density
&
Open Street Map

HAZARD FORECAST

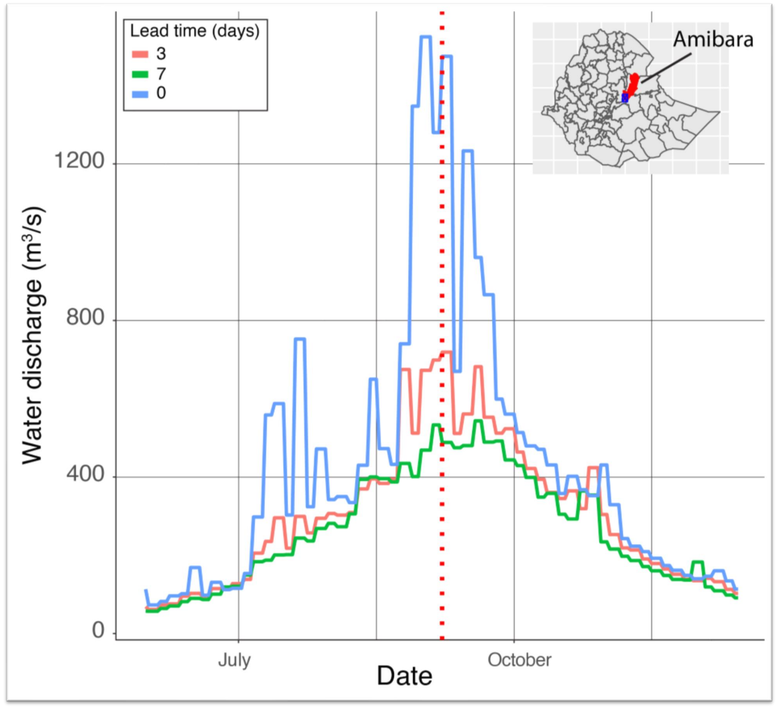
GloFAS discharge
+
Flood reports
=
Impact Hazard Catalog

IMPACT FORECAST TRIGGER LEVEL

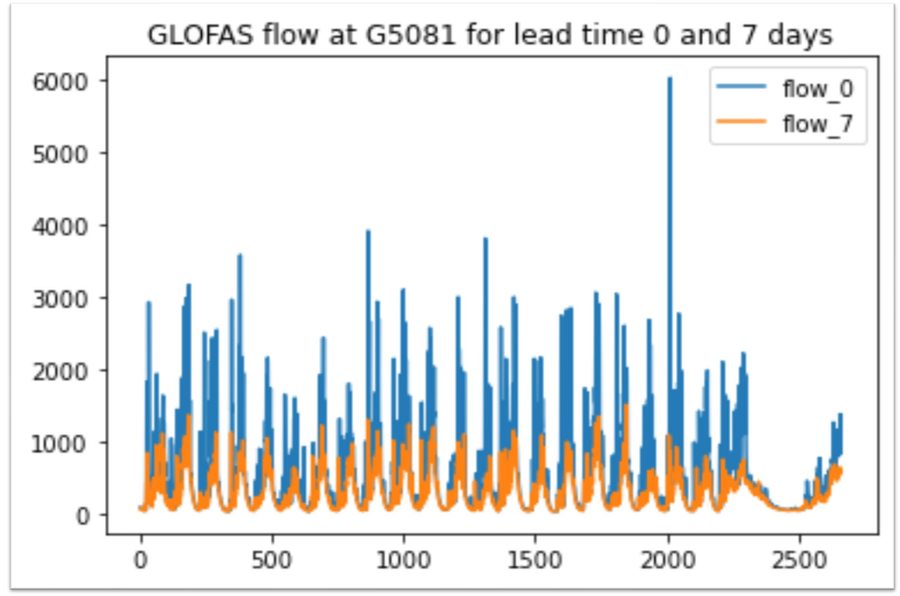
Requirements:
-EAP activation max 1 time in 5 years
-Define trigger levels & probability of trigger for river basins
-Events passing threshold need to be cross-checked with impact from previous reports

Results

1 GloFAS peak flows coincide with reported flood events.



2 Return Period for GloFAS hindcast discharge varies for the different lead times



3 Delay is observed between GloFAS trigger date and date of reported events.

Evidence Table for Nzoia

Date_trigger	Probability	County	Flood_report_date	comment	data_source
2007-07-31	63.6	kakamega	2007-08-10	Upto 39 people were reported injured and rushed to Malava District Hospital, Kakamega Provincial General Hospital and Webuye Sub-District Hospital with bruises on their limbs, chest and muscles	wra
2010-05-11	100	west pokot	2010-05-14	The report was released on 5/14/2010, but the actual events spread in the month of April	dref
2011-11-27	100	kakamega	2011-12-06	60 Families were affected, 20 of them have been displaced	disinvente r

Conclusion

For our case study GloFAS can be used as EWS to trigger the EAP