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A collaborative modelling approach to develop an operational impact-based forecasting system to guide implementation of humanitarian early actions to minimize the impact of flood on vulnerable communities in Ethiopia

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Abstract: Many parts of Ethiopia are frequently affected by flooding, which affects livelihoods of communities. Ethiopian Red cross National Society(ERCS), in collaboration with other stakeholders developed a forecast based action (FBA) plan which aims to reduce the impact of flooding. For ERCS and partners this FBA plan is a guiding tool for timely and effective implementation of early actions during flood emergency response. National disaster risk management commission(NDRPPC), National Meteorological Agency(NMA), Basin Development Authority(BDA), Ministry of Agriculture (MoA), WFP and FAO in Ethiopia are the main stakeholders in the design phase of the FBA, 510 provided technical support for FBA system design. The outcome of FBA system design is an Early Action Protocol (EAP) for floods, which is a guiding document for activation and implementation of early actions when FBA is activated. The EAP is not a replacement of existing DRR plans, it complement existing DRRM plans of NDRPPC and ERCS. Flood anticipatory actions are important to mitigate the impact of flooding but needs to be guided by a credible and reliable early warning system. To fill this requirement an Impact Based Forecasting (IBF) model was developed. In IBF model development, we first identified potential stakeholders and data sources during feasibility study. Based on the outcome of the feasibility study ERCS developed a roadmap for FBA, which includes forming a multi stakeholder TWG committee, among others. The TWG committee is responsible for evaluating IBF model, defining early actions and associated trigger levels. An interactive user interface is created to visualize the implication of danger level selection for each specific areas by evaluating performance of selected danger level based on historical flood events. This helps TWG to define a trigger level for activating early actions. The EAP, after approval international federation of red cross, will be put in action in the coming flood season.

Keywords: EAP; FBF; FBA; Flood; ERCS