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## Livestock exposure to future cumulated climate-related stressors in West Africa

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As global warming is projected to intensify according to model simulations, a large range of resulting impacts and stressors is expected during the 21st century. Severe impacts are particularly projected in vulnerable regions such as West Africa, where local populations largely rely on livestock systems as their main food production and income source. As climate change threatens livestock systems in various ways, here we assess how regional livestock could be exposed to cumulated and cross-sectoral climate stressors during the upcoming decades. A set of eight major risk indicators that may affect livestock is assessed and illustrate changes in food availability, heat stress, flood and drought risks. Corresponding simulations are analysed from the largest multi-model climate-related impact simulations database ISIMIP.

Under the RCP8.5 scenario, we find that a large part of West Africa will experience at least 5 to 6 cumulated cross-sectoral climate stressors before the 2030s, including amplified severe heat stress conditions and flood risks. Consequently, about 30% of total west african livestock will be affected by these cumulated stressors, with highest exposures shown for sheeps and cattles (respectively 39% and 38% of their total regional density). Multi-model means show that these species will be first exposed to significant intensification of severe heat stress conditions from early 2020s, then to more flood risks from 2030s. This study brings new quantifications that could help policy makers to prioritize decisions to prepare local populations to face multiple climate-related impacts.