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How seasonal flooding affects diets in Bangladesh during a nutrition-sensitive agriculture intervention.

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Background and aims: Climate change is expected to increase the frequency and severity of monsoon floods in south-east Asia and will severely impact food and nutrition security. The Food and Agricultural Approaches to Reducing Malnutrition (FAARM) cluster-randomized controlled trial in rural Bangladesh, aimed to improve nutrition outcomes through a Nutrition-Sensitive Agriculture (NSA) intervention. We evaluated the role of the intervention in moderating the impact of seasonal flood exposures on women's dietary diversity (WDD) and food group consumption.

Description and recommendations: Using Bayesian interaction models, we paired a time series measure of seasonal flooding with high-frequency dietary data collected bi-monthly from 2,701 women throughout the trial (2015-2019). We found that for a 1% increase in flooding in Mar/Apr, subsequent WDD decreased by 18% of a food group in the control-arm, with no detrimental effect observed in the treatment-arm. Of the food groups, vitamin-A-rich foods (VA) was most influenced by seasonal flooding. The odds of consuming VA are normally 41% higher in the May/June months. However, for every 1% increase in flooding in Mar/Apr, the odds of consuming VA in May/June only increases by 13% for the control-arm, and by 27% for the treatment group.

Significance: Flooding has a variable impact on WDD and food consumption, and the NSA intervention appeared to offset the detrimental effects of flooding on WDD in the most volatile season. This study highlights the sensitivity of diets to changing monsoon patterns and provides an approach to evaluating the impacts of interventions on these intricate pathways.