



GENDER, CLIMATE CHANGE, AND NUTRITION INTEGRATION INITIATIVE (GCAN) NEWSLETTER | October 2019

The October issue of GCAN is dedicated to a summary of GCAN findings from 2017-2019

New GCAN Webinars	
<p>Aflatoxin Webinar</p> <p>In a recent webinar, panelists from USAID's Bureau for Food Security, Purdue University, the GCAN team and an independent consultant discussed how aflatoxins relate to climate change, gender and nutrition, addressing the following questions:</p> <ul style="list-style-type: none">• How might aflatoxin levels change for maize and groundnuts as a result of climate change?• What are the key nutritional and gendered entry points to address aflatoxins?• What are ongoing, key USAID interventions to address this challenge? <p>Watch the video></p>	<p>GCAN Findings Webinar</p> <p>In this webinar, panelists from USAID's Bureau for Food Security and the GCAN team shared the approaches that the GCAN project has used to integrate across climate, gender and nutrition presented findings and discussed how to strengthen and scale up integration at USAID and with partners.</p> <p>Watch the video></p>
Highlights from Research Findings 2017-2019	
<p>Key Summary Findings</p> <ol style="list-style-type: none">1. Without action, climate change will impact nutrition through decreased food quantity and access, decreased dietary diversity, and decreased food nutritional content. We therefore need a climate-smart and nutrition-sensitive food system in order to ensure that mitigation and adaptation strategies take nutrition into account. Key entry points can be found in Learn more...2. Development programming is moving toward more integrated, systems-based approaches that address multiple, interlinked development challenges simultaneously. A conceptual framework can help identify key elements and connections and common ground to identify tradeoffs and synergies. The GCAN framework also highlights possible unintended consequences of interventions, hidden factors that influence specific development outcomes, and relationships and trade-offs between processes and outcomes. Learn more...	

3. Aflatoxin hotspot modeling shows that water stress greatly increases aflatoxin contamination in both groundnuts and maize. Changes in temperatures are important predictors for aflatoxin contamination in maize and to some extent for ground nuts. The methodology can be used for near-term forecasting of aflatoxin hotspots. [Learn more...](#)
4. There are chiefly two strategies to address aflatoxins: 1) minimizing contamination in the growing cycle through the use of good agricultural practices and by mitigating accelerated toxin development in the postharvest supply chain; and 2) reduce the consumption of contaminated food by diversifying the diet to include more fruits, vegetables, legumes, and animal-source foods. Women have key roles to play in both strategies. [Learn more...](#)
5. A study on gender and mechanization in Bangladesh identified four entry points to tackle this complex topic: 1) Question the meaning of “ownership” over technology; 2) Consider joint ownership and trainings; 3) Tap into women’s networks to boost technology adoption; and 4) Consider the role of women in the service supply area. [Learn more...](#)
6. As risk perceptions to climatic and other shocks vary between women and men farmers, so do desired coping and adaptation options, including risk-reducing measures, such as insurance. As such, emergency and precautionary savings instruments might be as or even more important to women than index-based insurance instruments. Index-based insurance instruments could be combined with group savings scheme to support women’s needs; and financial literacy and numeracy needs should be addressed to increase equity in benefits from insurance. [Learn more...](#)
7. We find that the women’s empowerment score is positively linked with crop diversification. Crop diversification increases when women’s participation in production decisions and women’s participation in groups grow, while increased women’s control over assets reduces diversification, possibly because women in Bangladesh tend to disengage from agricultural production and decisions on family farms as they get wealthier. [Learn more...](#)
8. Exposure to flood risk is associated with decreased consumption overall, including consumption of animal source foods (ASFs). Women’s empowerment appears to be an important pathway toward increased consumption of ASFs, particularly non-livestock owning households. [Learn more...](#)
9. We find evidence that women’s empowerment in agriculture may affect child nutritional status and diet quality differentially in polygynous households and monogamous households with different dimensions of empowerment having different impacts on child nutrition outcomes looking at Feed-the-Future data from Ghana. [Learn more...](#)
10. Using Feed-the-Future data from Bangladesh and Ghana we find that the compounding effects of multiple years of precipitation extremes make households vulnerable to hunger (rather than short-duration shocks). In northern Ghana, food security and nutrition are more sensitive to rainfall deviations from long-term norms than in Bangladesh, possibly due to the limited irrigation infrastructure. In Bangladesh excess rainfall was linked with more hunger while in northern Ghana, hunger was lower but undernutrition increased, possibly due to water-borne diseases. [Learn more...](#)
11. A study on the way households in Zambia allocate their farmland to various crops shows that the risk attitudes of farmers should not be ignored when performing analyses

related to climate change. Risk-reducing decisions can reinforce crop shifts driven by climate change in ways that are detrimental to livelihoods and nutrient availability. Results show that interventions on reducing yield variability can lead to a sizable increase in total crop production and a significant increase in available per-capita daily calories. The most important conclusion is that increased efforts in risk management and in developing policies aiming at reducing risk can lead to significant positive outcomes for the nutritional status of low-income food-insecure populations. [Learn more...](#)

GCAN Datasets 2017-2019

To enhance access to the [Feed the Future Population-Based Surveys](#) and their interoperability with other databases, FTF datasets were recompiled, applying standard processing methods from original (raw) datafiles to final output ready to be displayed and reproduced, and linked with spatially-explicit, biophysical data layers to facilitate climate-gender-nutrition analyses. For reproducibility and diffusion, the outputs of this process were documented and made available during the FtF Datathon events. Available datasets include:

- 1. Ghana Feed-the-Future Harmonized Dataset (2012):** <https://doi:10.7910/DVN/DXMARV>
- 2. Bangladesh Integrated Household Survey (BIHS) Harmonized Dataset (2011 and 2015):** <https://doi.org/10.7910/DVN/PUK1P7>
- 3. Zambia Rural Agricultural Livelihood Survey (RALS) (2012 and 2015):** Data sharing pending agreement from data provider.

GCAN Tools 2017-2019

GCAN Framework

- Online interactive tool with examples (forthcoming).
- Framework (short): Conceptual framework: Gender, climate change, and nutrition integration initiative. [GCAN Policy Note 7](#). Washington, D.C.: IFPRI. (also available in French and Spanish).
- Framework (long): [Gender-sensitive, climate-smart agriculture for improved nutrition in Africa south of the Sahara](#). Washington, D.C.: IFPRI.

GCAN Publications

I. Climate Change-Nutrition Linkages

1. Fanzo, J., C. Davis, R. McLaren and J. Choufani. 2018. The effect of climate change across food systems: Implications for nutrition outcomes. [Global Food Security](#) 18(September 2018): 12-19.
2. Fanzo, J., R. McLaren, C. Davis and J. Choufani. 2017. Climate change and variability: What are the risks for nutrition, diets, and food systems? [IFPRI Discussion Paper 1645](#). Washington, D.C.: IFPRI.
3. Fanzo, J., R. McLaren, C. Davis and J. Choufani. 2017. How to ensure nutrition for everyone under climate change and variability. [GCAN Policy Note 1](#). Washington, D.C.: IFPRI. (also available in French and Spanish)
4. Cooper, M., M. Brown, C. Azzarri, and R. Meinzen-Dick. 2019. Hunger, nutrition, and precipitation: Evidence from Ghana and Bangladesh. [Population and Environment](#).
5. Smith, M.R., P.K. Thornton and S. Myers. 2018. The impact of rising carbon dioxide levels on crop nutrients and human health. [GCAN Policy Note 10](#). Washington, DC: IFPRI.
6. De Pinto, A., V.H. Smith and R.D. Robertson. Forthcoming. The role of risk in the context of climate change, land use choices and crop production: evidence from Zambia. [Climate Research](#).

II. Aflatoxins: Hotspots under climate change and linkages with gender and nutrition

7. Thomas, T.S., R.D. Robertson and K.J. Boote. 2019. Evaluating risk of aflatoxin field contamination from climate change using new modules inside DSSAT. [IFPRI Discussion Paper 1859](#). Washington, DC: IFPRI.
8. Brown, L.R. 2018. Aflatoxins in food and feed: Impacts risks, and management strategies. [GCAN Policy Note 9](#). Washington, DC: IFPRI.
9. Thomas, T.S., R.D. Robertson and K.J. Boote. 2019. Evaluating the risk of climate change-induced aflatoxin contamination in groundnuts and maize: Result of modeling analyses in six countries. [GCAN Policy Note 12](#). Washington, D.C: IFPRI.

III. Women's empowerment, agricultural practices and technologies and climate resilience and nutrition

10. De Pinto, A., G. Seymour, E. Bryan and P. Bhandary. 2019. Women's empowerment and crop diversification in Bangladesh: A possible pathway to climate change adaptation and better nutrition. [IFPRI Discussion Paper 1849](#). Washington, DC: IFPRI
11. Theis, S., T.J. Krupnik, N. Sultana, S.-U. Rahman, G. Seymour and N. Abedin. 2019. Gender and agricultural mechanization: A mixed-methods exploration of the impacts of multi-crop reaper-harvester service provision in Bangladesh. [IFPRI Discussion Paper 1837](#). Washington, DC: IFPRI.
12. Theis, S., N. Sultana and T. Krupnik. 2018. Overcoming gender gaps in rural mechanization: Lessons from reaper-harvester service provision in Bangladesh. [GCAN Policy Note 8](#). CSISA Research Note 9. Washington, DC: IFPRI.
13. Theis, S., E. Bryan, J. Choufani, C. Ringler and R.S. Meinzen-Dick. 2018. Building resilience for all: The gender and social dynamics of resilience. [GCAN Policy Note 11](#). Washington, DC: IFPRI.

14. Bourdier, T. 2019. Women's empowerment and child nutrition in polygynous households of Northern Ghana. [IFPRI Discussion Paper 1809](#). Washington, DC: IFPRI. [GCAN student paper]
15. Theys, N. 2018. Can women's empowerment increase animal source food consumption in flood prone areas of Bangladesh? [IFPRI Discussion Paper 1736](#). Washington, DC: IFPRI. [GCAN student paper]
16. Cooper, M. 2018. Using natural areas and empowering women to buffer food security and nutrition from climate shocks: Evidence from Ghana, Zambia, and Bangladesh. [IFPRI Discussion Paper 1717](#). Washington, DC: IFPRI. [GCAN student paper]
17. Bryan et al. 2019. Do awareness and access to information close the gender gap in adoption of climate-smart agriculture: Evidence from Bangladesh. Forthcoming.
18. Msangi, S. 2017. The role of agricultural insurance: Gender and nutrition dimensions. [GCAN Policy Note 6](#). Washington, D.C.: IFPRI.
19. Seymour et al. Forthcoming. Impacts of climate change on women's decision-making and asset ownership: Evidence from Feed the Future surveys in 10 countries. Forthcoming GCAN policy note.
20. Azzarri et al. Forthcoming. Gender-Based Violence and the role of climate. Forthcoming GCAN policy note.
21. Haile et al. Hierarchical modelling of the constraints to irrigation adoption in Ghana, Ethiopia, and Tanzania. Forthcoming research paper.
22. Cooper, M. et al. Droughts Associated with Higher Probability of Gender-Based Violence Across 44 Developing Countries. Forthcoming research paper.
23. Theis, S., E. Bryan and C. Ringler 2019. Addressing Gender and Social Dynamics to Strengthen Resilience for All. Forthcoming. ATOR.

IV. Policy Notes

1. Climate change, gender, and nutrition linkages: Research priorities for Zambia. [GCAN Policy Note 2](#). Washington, D.C.: IFPRI.
2. Climate change, gender, and nutrition: Support to USAID programs in Nigeria. [GCAN Policy Note 3](#). Washington, D.C.: IFPRI.
3. Climate change, gender, and nutrition linkages: Research priorities for Bangladesh. [GCAN Policy Note 4](#). Washington, D.C.: IFPRI.
4. Climate change, gender, and nutrition linkages: Research priorities for Bangladesh. [GCAN Policy Note 4](#). Washington, D.C.: IFPRI.
5. Climate change, gender, and nutrition linkages: Research priorities in Cambodia. [GCAN Policy Note 5](#). Washington, D.C.: IFPRI.

