Peer Review Plan

Preliminary Title: Evaluating the Prediction Performance of the International Food Security Assessment's Production Models: A Cross Validation Approach

Type of Report (ERR, EIB, EB) TB

[X]   Influential Scientific Information

Agency: Economic Research Service USDA   [ ]   Highly Influential Scientific Assessment

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Subject of Review: This research extends the IFSA's existing production model to help conduct a model-based performance evaluation criterion to select the best performing model specification. To do so, we use a "leave-one-out-cross-validation" (LOOCV) to simulate their out-of-sample model prediction performance. The best performing model is chosen using a Mean Squared Error (MSE). The data for the analyses come from the IFSA 2020/21 model dataset. Four model specifications are developed in this exercise using the 2020/21 IFSA dataset. The first specification estimates the yield model using pooled data for all 76 countries, which does not allow for regional or sub-regional heterogeneity in the model's parameters. Two other specifications are estimated using regional and sub-regional disaggregated dataset allowing for heterogeneity among the diverse countries included in the IFSA model. Model based projection performance is assessed in terms of how well the specified model can be expected to perform on an independent (out-of-sample) dataset, often assessed by the actual estimate of the out-of-sample MSE.

Purpose of Review: The purpose of the review is to ensure the high-quality of the economic analysis, transparent explanation of methods, objective interpretation of results, and effective communication to the intended audience.

Type of Review: [ ]   Panel Review   [X]   Individual Reviewers

[ ]   Alternative Process (Briefly Explain):

Timing of Review (Est.):   Start: 12/09/2021   Completed: 06/07/2022

Number of Reviewers: [ ]   3 or fewer   [X]   4 to 10   [ ]   More than 10

Primary Disciplines/Types of Expertise Needed for Review: Economists

Reviewers selected by: [X]   Agency   [ ]   Designated Outside Organization

Opportunities for Public Comment?   [ ]   Yes   [X]   No

    If yes, briefly state how and when these opportunities will be provided:

    How:

    When:

Peer Reviewers Provided with Public Comments?   [ ]   Yes   [X]   No

Public Nominations Requested for Review Panel?   [ ]   Yes   [X]   No