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Draft Outline of Proposed Paper

- I. Introduction with a general overview of the issues and different approaches—CGE- GTAP, MIT-IGSM, FAPRI, FASOM.
- II. How is land supply handled, focusing specifically on GTAP and comparing to MIT-IGSM approaches including
 - a. aggregate supply—CET approach versus a land conversion approach--
 - b. land type resolution and crop use categories,
 - c. spatial resolution (i.e. AEZ compared with TEM 0.5 x 0.5 resolution.)
- III. What is the productivity of new land?
 - a. How is the TEM used in the revised GTAP approach to estimate comparative productivity of current and potential cropland, and what are the potential issues?
 - b. What other evidence exists and what are the possible issues in interpreting other evidence.
- IV. How are yields of crops determined?
 - a. Exogenous yield trend
 - b. Endogenous result of substitution because of changing relative prices.
 - c. Why is this important and what is the evidence?
- V. How are the greenhouse gas implications of land conversion addressed?
 - a. Spatial resolution?
 - b. Consistency with productivity estimates.
- VI. Demand and trade elasticities
 - a. Substitution among commodities
 - b. Trade elasticities—homogenous goods versus Armington trade elasticities.
- VII. How might dynamics affect the calculations?
 - a. GTAP Type I, II, III calculations.
 - b. Broader issues
- VIII. Comparing results to actual evidence on land use change:
 - a. Is it possible to ground-truth model-based projections with actual land use changes due to an expansion of biofuels?
 - b. Issues of attribution—can some biofuels be better than others?