Post-ORNL BioLUC Workshop Action Items

1. Modeling Issues:
   1. Improve trade functionality
      1. Critique: Current trade framework doesn’t reflection economics well
      2. Action: Changes in structure would be too involved, but the model may need additional calibration
      3. Responsibility: Steve
   2. Endogenize yields
      1. Critique: Exogenous yields are suspect and may not well represent potential futures
      2. Action: Don’t change the structure, but make canned scenarios tell a story. I.e., thoughtfully pair yield assumptions with other variables. E.g., High demand scenarios would have slightly higher than base case yields to reflect intensification.
      3. Responsibility: Group decision on scenarios, execution by Ethan
   3. New land classes and structure (see figure at the end of this document)
      1. Critique: The model doesn’t track historic changes in “available” land well because it incorrectly models the drivers of the conversion of that land
      2. Action: Reclassify current land categories into “available”, latent, crops (including forage and managed pasture), and abandoned. Conversion from latent to “available” is a very slow process and conversion from “available” to latent is driven by a Kuznet or Mather curve linked to GDP/capita in each region. Virginia and Keith mentioned Brazil, US, Vietnam and other case studies as being available.
      3. Responsibility: Model structure by Steve. Data reorganization by Ethan. New data collection by Ethan? ICN for protected areas and other sources for urban?
   4. Switch for Model Land Use Logic
      1. Critique: Might be useful to create a switch in the model to switch between the logic in D above and the current demand pull logic.
      2. Action: None. A structural switch is too involved to implement
   5. New land outflows (see example figure at the end of this document)
      1. Critique: Urban land expansion and potential land allocation to set aside should be tracked. This would improve future usability of the model
      2. Action: Add new outflows to urban land and set-aside land
      3. Responsibility: Steve
   6. Stella Version
      1. Critique: Could convert to version 10
      2. Action: Convert to version 10
      3. Responsibility: Steve
   7. Model Shortfalls
      1. Critique: The model doesn’t seem very responsive to shortfalls even beyond the model trying to reach a dynamic equilibrium.
      2. Action: Review of the model?
      3. Responsibility: Steve or model testers?
2. Data Issues:
   1. Abandoned land conversion and reversion rates
      1. Critique: Abandoned land appears to be growing too rapidly
      2. Action: Will find/use another data set. There is some evidence that rates of abandonment are much lower post 1980s. Current trends are largely based on pre-mid 1980s data.
      3. Responsibility: Ethan
   2. Implicit Local Accounting
      1. Critique: The model does not account for misc. uses of land not linked directly to agricultural markets or tracked well. Examples given include foraging post-harvest of crop lands and holding of lands using animals. A
      2. Action: None? Can’t really be modeled and is a shortfall of the data
      3. Responsibility: None?
   3. Global land tracking
      1. Critique: The model could be improved for future users by tracking all land globally
      2. Action: Process all FAO land data and create bins for categories that are not going to be used in the model.
      3. Responsibility: Ethan
   4. New Scenarios
      1. Critique: Interest in looking at potential yield vs. actual yields
      2. Action: Find data on potential yields?
      3. Responsibility: Group decision on scenario expansion, execution by Ethan
3. Data/Modeling Issues:
   1. Model land Use Calibration
      1. Critique: BioLUC isn’t modeling 1991-2010 trends very well (i.e., slight decrease in available land)
      2. Action: Use FAO data for calibration. Also, improvements to forage crops and managed pasture land categories should improve this.
      3. Responsibility: Calibration by Steve, Data processing by Ethan
   2. Model and Data Labeling
      1. Critique: Labeling such as land classes is not always clear or consistent with a set of conventions (e.g., FAO)
      2. Action: ? Develop a standard and implement in testing
      3. Responsibility: ?
   3. Meat cross-walks
      1. Critique: Needs improved regionalized functionality to replace current kludges.
      2. Action: ? Go with action plan outlined in presentations?
      3. Responsibility: Steve and Danny?
4. Documentation:
   1. Meat Cross-Walk Documentation
      1. Critique: There needs to be a figure clearly connecting source data to the cross-walk used in the model.
      2. Action: ?
      3. Responsibility: ?
   2. Comparison to GTAP
      1. Critique: Create a table with side by side comparisons of GTAP and BioLUC terminology, classes and amounts. This would document the model well and square differences between GTAP and BioLUC goals. See one of Virginia’s paper for an example
      2. Action: ?
      3. Responsibility: ?
   3. Model Purpose/Goal
      1. Critique: Because there are things that model does and doesn’t do well the purpose and goal need to be very clear. For example, the model has the potential to look at biofuels as well as other users of land and that should be clear to users.
      2. Action: Include in documentation and in testing document
      3. Responsibility: Brian
   4. Kuznet and/or Mather curve documentation and report
      1. Critique: Analysis behind this model component should be documented in a curve
      2. Action: ?
      3. Responsibility: ?
5. Visualizations/Interface Suggestions:
   1. Excel visualizations
      1. Critique: Changes between scenarios are difficult to read. A suggestion for the use of histograms representing particular periods in time and the calculation of % change.
      2. Action: Completed
   2. Interface
      1. Critique: Add buttons for the loading of canned scenarios
      2. Action: ?
      3. Responsibility: Steve?

