

**LCFS Expert Workgroup Draft Work Plan  
Subgroup:**

**Elasticity values – Input values used for land use modeling for different fuels**

1. **Membership:** Chair, other EWG members, and ARB staff representative

Bruce Babcock (Chair), Angelo Gurgel, Mark Stower  
ARB staff representative?

2. **Prioritized list of topics/questions that the subgroup proposes to address:**

Priority should be given to those topics most likely to impact the LUC estimate. ARB is required to return to the Board with regulatory amendments and recommendations in December 2010. Therefore, we ask that you distinguish between topics/questions which can be resolved in the short term (this year) and those which are longer term.

- a. Translate GTAP constant elasticity of land transformation into own and cross price supply elasticities and calculate implied elasticities for important AEZ's (U.S. and Brazil at a minimum).  
It involves: literature review, research, talking to other experts
- b. Determine "reasonable" estimates of own and cross price elasticities taking into account time period  
It involves: literature review, research, talking to other experts
- c. Compare GTAP AEZ elasticities to reasonable estimates. Determine the feasibility of calibrating GTAP with the reasonable elasticities with and without new programming.  
It involves: research, talking to other experts
- d. Develop procedures and estimate elasticity of crop yields with respect to area expansion in the U.S. and Brazil for multiple crops.  
It involves: literature review, research, talking to other experts
- e. Develop a procedure to allow for the possibility of increasing productivity of pasture in response to higher livestock returns.  
Review available data to determine if pasture productivity response can be estimated.  
It involves: literature review, research, talking to other experts
- f. Rerun GTAP using the same combination of elasticities and database for all biofuel pathways.  
It involves: re-running GTAP

3. **Invited technical advisors and other additional support needed:** The working subgroups may include invited technical advisors who possess expertise on the topic. The draft work plan should include a proposed list of technical advisors who are willing to contribute to the subgroup. Note: the request to participate will be made by ARB. Also, attempt to identify those topics which may require activities such as research, modeling, etc which will require additional funding or other forms of support.

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We suggest Andre Nassar, from the Brazilian Institute for International Trade Negotiations – ICONE, as an expert about land use dynamics in Brazil to help with the subgroup tasks. Ken Copenhaver from the University of Illinois, Chicago is also a suggested for help in compiling satellite data of land use.

4. **Timeline for addressing topics:** In order to plan dates and agendas for future EWG meetings, a timeline for resolving subgroup issues and preparing materials for full EWG consideration is needed. We are planning for the expert workgroup to meet monthly through November 2010.

| TOPICS  | April            | May              | June             | July             | Aug.             | Sept.            | Oct.             | Nov. | Dec. |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------|------|
| Translate GTAP constant elasticity of land transformation into own and cross price supply elasticities<br>- literature review<br>- research<br>- talking to other experts | X<br>x<br>x<br>x | X<br>x<br>x<br>x |                  |                  |                  |                  |                  |      |      |
| Determine “reasonable” estimates of own and cross price elasticities<br>- literature review<br>- research<br>- talking to other experts                                   |                  | X<br>x<br>x<br>x | X<br>x<br>x<br>x |                  |                  |                  |                  |      |      |
| Compare GTAP AEZ elasticities to reasonable estimates<br>- research<br>- talking to other experts   |                  |                  | X<br>x<br>x      | X<br>x<br>x      |                  |                  |                  |      |      |
| Estimate elasticity of crop yields with respect to area expansion<br>- literature review<br>- research<br>- talking to other experts                                      |                  |                  |                  | X<br>x<br>x<br>x | X<br>x<br>x<br>x | X<br>x<br>x<br>x |                  |      |      |
| Develop a procedure of increasing productivity of pasture in response to higher livestock returns<br>- literature review<br>- research<br>- talking to other experts      |                  |                  |                  |                  | X<br>x<br>x<br>x | X<br>x<br>x<br>x | X<br>x<br>x<br>x |      |      |
| Rerun GTAP using the same combination of  |                  |                  |                  |                  |                  | X                | X                | X    |      |

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|---|--|--|--|--|--|---|---|---|---|
| elasticities and database for all biofuel pathways<br>re-running GTAP |  |  |  |  |  | x | x | x |   |
| Report with results and recommendations to CARB                       |  |  |  |  |  |   |   | X | X |

5. **Identify responsibilities for subgroup members:** Subgroups may want to divide the tasks among members with each member taking the lead on a particular topic or task. If so, identify the responsibilities of each subgroup member.

|  | <b>Responsibilities</b><br>(Suggestion: name in bold takes the lead) |
|--|--|
| Translate GTAP constant elasticity of land transformation into own and cross price supply elasticities | <b>Bruce Babcock</b> , Angelo Gurgel, Mark Stower                    |
| Determine “reasonable” estimates of own and cross price elasticities                                   | <b>Bruce Babcock</b> , Angelo Gurgel, Mark Stower                    |
| Compare GTAP AEZ elasticities to reasonable estimates  | Bruce Babcock, <b>Angelo Gurgel</b> , Mark Stower                    |
| Estimate elasticity of crop yields with respect to area expansion                                      | Bruce Babcock, <b>Angelo Gurgel</b> , Mark Stower                    |
| Develop a procedure of increasing productivity of pasture in response to higher livestock returns      | <b>Bruce Babcock</b> , Angelo Gurgel, Mark Stower                    |
| Rerun GTAP using the same combination of elasticities and database for all biofuel pathways            | Bruce Babcock , <b>Angelo Gurgel</b> , Mark Stower                   |
| Report with results and recommendations to CARB  | <b>Bruce Babcock</b> , Angelo Gurgel, Mark Stower                    |