24 November, 2022

Ms. Liane Randolph  
Chair, California Air Resource Board 1001 I Street Sacramento, CA 95814

RE: California Air Resources Board’s Low Carbon Fuel Standard (LCFS) Public Workshop: Concepts and Tools for Compliance Target Modeling. November 9, 2022 public workshop.

Dear Chair Randolph,

Thank you for providing the opportunity to provide comments on California Air Resources Board’s Low Carbon Fuel Standard (LCFS) Public Workshop: Concepts and Tools for Compliance Target Modeling . I appreciate staff time in reviewing these comments.

In the workshop, CARB staff mentioned having received mixed comments from stakeholders regarding promoting the production of crop-based biofuel as an alternate fuel. CARB must consider the negative impacts associated with indirect land use changes (ILUC) such as potential deforestation and land use conversation resulting from crop-based biofuel production. The regional and international impacts and social inequities of ILUC should also be considered. Loss of agricultural lands from ILUC is going to reduce the food supply and will exacerbate continued increases in food prices. It is the marginalized population with low income who will suffer from hunger and malnutrition due to higher food cost. Increased food insecurity and land conversion may also lead to forced migration from the developing countries. These impacts will be disproportionately felt in developing countries, where again marginalized populations will face these challenges more acutely.

Unconstrained credits for the generation of crop-based biofuel will encourage further production of crop-based biofuel and attendant negative impacts. Food insecurity and rising prices are motivating the continued clearing of historically forested lands for producing crops for food production. Perhaps most importantly, the Amazon rain forest has been losing land areas for cultivation crops to meet the demand of biofuel production in more developed markets like the US. The continued destruction of native rain forests for food production will have a two-fold impact on climate, first through increased emissions from development and agricultural production, and second through the loss of traditional forest carbon sinks. While the consequent emission will impact at global scale, perhaps the most critical impacts will be felt by local populations. For these reasons, biodiversity loss from ILUC should also be considered in the framework of LCSF.

CARB should consider the need to more accurate and regionally appropriate valuation of ILUC impacts within LCSF framework. Key factors that should be considered in this valuation include: the potential for impacting local food prices, revenue loss from tourists not visiting forest areas due to reduction, local health impacts resulting from ILUC, impacts of land conversion on land value, and the potential displacement of local persons. A thorough economic evaluation of the impacts of ILUC is critical. A combination of the economic evaluation method hedonic price method (HPM), travel cost method (TCM), Productivity method, and Contingent Valuation Method (CVM) can be applied in this regard for the valuation on non-marketable services. HPM is the commonly used method to dictate changes in house pricing resulting from the change in environmental attributes. TCM determines the recreational value of an environmental amenity-based travel cost (fuel cost/fare), monetary valuation of travel time, parking fee, and other relevant costs to visiting that site. Productivity method values for ecosystem products or services that contribute to the production of commercially marketed goods and can be applied to determine loss of production of other agricultural commodities in lieu of crop-based biofuels***.*** A contingent valuation of deforestation and biodiversity lost can be conducted using the stated preference of the local community. Derived economic value from different methods that can be compared and combined to better understand the impact of ILUC on deforestation and biodiversity loss. Henceforth, I urge CARB to conduct an economic evaluation of ILUC from biofuel production.

I would like to again thank the Chair and CARB staff for the opportunity to comment on the proposed changes to the LCFS and their time in reviewing these comments. I would be glad to elaborate on any comments made on this document. If there are any questions, please feel free to contact to Md Musfiqur Rahman Bhuiya (mrbhuiya@ucdavis.edu).

Sincerely

Md Musfiqur (Sifat) Rahman Bhuiya

Graduate Research Student,

Institute of Transportation Studies, University of California Davis, USA.