



Re: Terra's Public Comments in the "Discussion Draft of the Rice Cultivation Projects Compliance Offsets Protocol" made available on March 17, 2014

April 1, 2014

Dear Air Resources Board,

Thank you very much for the effort you undertook to create the "Discussion Draft of the Rice Cultivation Projects Compliance Offsets Protocol" made available on March 17, 2014. We appreciate the significant amount of work that went into drafting this protocol and we understand the importance of making sure that the protocol delivers real, permanent, quantifiable, verifiable, enforceable, and additional offsets to ensure that California's cap-and-trade program remains in place and is not subject to criticism and further law suits. We are very much in support of market-based mechanisms for conservation and see the importance of offsets being in line the state's interests of providing a cost effective cap and trade compliance system and encouraging improved agriculture, soil conservation, and lowering GHG emissions. As a significant amount of global GHG emissions originate from the agriculture sector, it is imperative that agriculture offsets should be the foremost interest to ARB. As California is the largest agricultural state in the U.S. it is important that its compliance markets do all they can to support farmers and rural livelihoods to produce food in the most sustainable manner.

As background to our responses, Terra Global Capital, LLC was founded in 2006 to facilitate market and results-based payment approaches for forest and land-use emission reductions. Terra is now the leader in forest and land-use GHG analytics and finance, providing technical expertise and investment capital to their global client base in a collaborative and innovative manner. Terra Global has been a leader in the development of new protocols for low emission rice as the author of the approved American Carbon Registry Protocol "Voluntary Emission Reductions in Rice Management Systems." We are also working directly with the first rice growers who are adopting this protocol in California and the Mid-South to prepare their project plans and verify their emission reductions. This provides us with a deep understanding of the issues that lead to farmer adoption and the economics of producing emission reductions under protocols. We are one of the first organizations that is actually helped growers collect management and baseline data, estimated the costs of applying protocols and who is performing the GHG emission calculations using DNDC model accordance to the American Carbon Registry protocol.

The short comment period of only 15 days, only allows us time to provide limited comments, where we believe that more substantive comments would be helpful in ensuring the integrity and viability of the ARB rice protocol. On the technical GHG qualification aspects, it seems that many of the key details (such as sampling approaches to verification) that were developed by industry experts and a public review process under both the American Carbon Registry and the Climate Action Reserve were not incorporated or are unclear in the ARB draft protocol. We very much welcome the opportunity to provide more detailed technical comments that we believe can improve the rice protocol considerably, but this cannot achieved in the 15 days that we were provided to comment.

Please accept Terra's following high level comments:



Multiple Farmer Aggregation

Currently, the protocol and AB 32 regulations do not support the type of aggregation that is necessary to make the rice protocol economically viable for growers to adopt. Aggregation mechanisms must allow multiple growers to be registered under “one project aggregate” that is represented by one APD. The rules need to allow that a single verification could be performed on the project aggregate through the APD, with a desk review for all the fields/farmers in project aggregate, and then a sampling approach (based on type of practice data provided and a verifier’s risk assessment) would be used to determine the required field visits. The ACR protocol provides guidance for ways to allow for sampling while still maintaining the integrity of the verification process.

A very practical illustration of the need to allow for aggregation that supports spreading the costs of verification across a large group of farmers with minimal number of field visits (which are costly) is the following:

It is estimated that 40% of rice growers in the U.S. have total farm sizes of less than 240 acres. Assuming that these growers implement all the low emission practices, including bailing, they would generate an estimated 0.90 tons emission reductions of CO₂e per acre/year. With the current carbon pricing (using CCO price of \$9), this would generate total gross revenue of \$1,944 (240 X 0.9 X \$9). From this the grower at very minimum (even if they prepared the OPDRs themselves) would have to pay for 3rd party verification costs. The verification costs that involved a detailed desk review and any field visit, for even a single farmer would far exceed the total revenue generated. As a point of reference, the verification costs for Terra Global’s emissions from electricity usage under the batch processing mechanism of The Climate Registry, with no complex calculations and zero field visits, is \$600 per year.

Terra has prepared economic models based on actual costs, that have been shared with ARB demonstrating the requirements for aggregation and sampled field visits to make the low emission rice protocol viable for growers to adopt.

In addition, the treatment of aggregates in the case of invalidation, would need to be structured such that invalidation could be applied to the entire aggregate or to the emission reductions from an individual farmer within the aggregate. The protocol would prescribe the cases when invalidation would apply to the whole aggregate versus an individual grower. Only in cases where the invalidation can be tracked, quantified and 3rd party verified as an event that applies only to a specific grower would only that grower’s emission reductions be invalidated. In cases where the direct connection between the invalidation events cannot be made and verified as only applicable to a specific grower, the whole aggregate be invalidated.

Inclusion of Bailing as an Eligible Practice

When bailing is combined with winter flooding, it has the potential to generate net emission reductions of bailing alone of 0.20 – 0.30 tons of CO₂e. While this may not seem like a significant amount of emission reductions, when compared to with other eligible practices it could account to 30% - 40% of total emission reductions generated on a field. If conservation concerns were the reason for elimination of bailing, this is not supported by creditable sustained research, only a limited source. ARB should be flexible to allow practices that are scientifically based, and should be open to allowing new practices as the scientific research becomes available. The elimination of bailing reduces the growers revenue by 30% and could create implicit disincentive for growers to practice bailing which reduces emissions and



provides valuable feedstock that can be sold for compost, livestock feed and bedding, natural building materials and for erosion control. By reducing the potential for rice straw to be used for other purposes, we may see an increase in non-renewable materials and higher GHG footprints.

Terra, along with other market leaders, innovative farmers, and conservation organizations have worked for years to build voluntary market programs that produce real, permanent, quantifiable, verifiable, and additional offsets as a way to build a “proving ground” for future adoption into California’s compliance market. The current momentum in the agriculture offsets market is only due to the fact that farmers can join an aggregation to diversify costs and risk. We encourage ARB to not go forward with the existing protocol without including aggregation. If aggregation is not included in the ARB protocol from the start; farmers will become discouraged from entering the market and likely drop out of the active pilot programs, investors will lose interest in providing the financial resources needed to build a supply of compliance offsets, and service providers (project developers and verifiers) will stop making the investments need to facilitate an efficient market.

We would be happy to productively engage with ARB in any way possible to make the necessary changes to the protocol to have it be viable for producing offsets under California’s compliance market.

Thank you,

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke extending to the right.

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