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Committee on Sanitary and Phytosanitary Measures

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TECHNICAL ASSISTANCE TO BT EGGPLANT (BRINJAL) PROJECT IN BANGLADESH

SUBMISSION BY THE UNITED STATES

The following document, received on 26 June 2020, is being circulated at the request of the delegation of the United States.

1.1. The United States is pleased to share with the Committee today background on a technical assistance project involving genetically engineered eggplant in Bangladesh and the results of two project assessment studies conducted by International Food Policy Research Institute (IFPRI) and Cornell University.

1.2. While eggplant is a popular in-country food staple, Bangladesh has traditionally experienced low production due to pests and disease, in particular the fruit-and-shoot borer.

1.3. The United States, as part of its "Feed the Future" initiative in Bangladesh, has supported the development, commercialization, and release of eggplant genetically engineered to be resistant to the fruit-and-shoot borer.

1.4. This project was a collaborative effort of the United States Agency for International Development (USAID), Cornell University (an American University), MAHYCO (a private sector Indian company) and the Bangladesh Agricultural Research Institute (BARI).

1.5. The biotech trait was donated royalty-free by MAHYCO and farmers may save their seeds from year-to-year.

1.6. Since the eggplant was first released to 120 farmers in 2014, the number of farmers planting the pest-resistant eggplant has steadily increased to 34,500 in 2018, the majority of which are smallholder farmers.

1.7. To understand how this technology has impacted the lives of Bangladesh farmers, IFPRI performed a randomized controlled trial study which included 1,200 smallholder farmers in 200 different villages. On average, the farmers in the study cultivated less than one hectare of land.

1.8. The study showed that growing these Bt eggplant varieties resulted in:

- 95% reduction in fruit-and-shoot borer infestation;
- 56% reduction in pesticide usage (controlling for pesticide toxicity);
- 10% reduction in adverse health effects associated with pesticide exposure among household members;
- 42% increase in yields;
- US\$400 increase in profits per hectare; and,
- Lower levels of infestations from other beetles, aphids, mites, and other pests in Bt eggplant.

1.9. Extrapolated to the national level, these results imply that the cultivation of Bt eggplant could prevent the application of over 230,000 liters of pesticides nationwide, save farmers over US\$2.7 million in pesticide costs, and increase farmers' incomes by over US\$14 million.

1.10. A 2020 Cornell University study on approximately 400 farmers across five districts also confirms the economic benefit of growing Bt eggplant. The study found that the Bt varieties provided, on average, a 20% increase in yield and a 22% increase in revenue, translating to about US\$664 of additional revenue per hectare.

1.11. The study also found that farmers who cultivated the Bt eggplant varieties were more likely to be satisfied with their yields (83%) compared to the farmers who cultivated non-Bt varieties (59%).

1.12. Additionally, farmers who are not yet aware of Bt varieties are willing to plant them if the benefits of these innovative products are properly communicated. The study found that 71% of farmers who were previously unaware of Bt varieties planned to use them in the next planting season after hearing about the benefits they provide.

1.13. The United States believes that this project demonstrates how technical assistance can be used to enable access to innovations that protect human health, protect the environment, improve food security, and lift farmers out of poverty.

1.14. Indeed, the analyses by IFPRI and Cornell University on Bt eggplant are consistent with the scientific literature on the impact of use of genetically engineered (GE) products.

1.15. A 2014 meta-analysis conducted by German scientists¹ of 147 original studies found robust evidence of GE crop benefits for farmers in developing and developed countries: a 37% average decline in chemical pesticide use, a 22% average increase in crop yield, and a 68% increase in farmer profit.

1.16. We congratulate Bangladesh on the success of Bt eggplant and look forward to future collaborations between governments, non-profits, and the private sector.

¹ Klümper W, Qaim M (2014) A Meta-Analysis of the Impacts of Genetically Modified Crops. PLoS ONE 9(11): e111629. doi:10.1371/journal.pone.0111629.