

Exploring the Perceptions of Experts on the Merits of Eco-Friendly Technologies to Reduce Chemical Fertilizer Usage in Paddy Farming in Sri Lanka

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Abstract

The use of agro-chemicals and inorganic fertilizers in Sri Lanka has a detrimental impact on environmental and safety in paddy farming. As a suggestion for above interrogations, there is an ongoing multi-stage multi-objective research study funded by the National Research Council (NRC) of Sri Lanka as an innovative concept referred to as “Eco-Friendly Technologies (EFTs)”. This research explores the attitudes and perceptions of purposive sampling of 32 experts in Sri Lankan agricultural research field, universities and organizations regarding the use of EFTs. ‘Slow release fertilizer’, ‘Organic carbon’ and ‘Microbes’ are produced by several work packages of this project and those are incorporated into the root ball of the rice plant at the nursery stage and then healthy seedlings are established in the paddy fields by way of ‘Parachute Technology’. Experts revealed their views in relation to six major criteria pertaining to EFTs with compared to broadcasting method which is considered as most popular rice establishment method and transplanting which is the best alternative method, including: (1) Acceptance; (2) Cost; (3) Environment; (4) Performance; (5) Regulation, and (6) Services. The scores provided by them on attitudinal statements on a 10-point like rt-scale were subjected to the tests on Scale Reliability and Unidimensionality and derived Aggregate Mean Scores. The results revealed that perceptions of experts on EFTs were in a “better” position in comparison to Broadcasting with respect to: Environment (-1.19), Performance (-1.17) and Regulation (-0.62) and “poor” on: Acceptance (1.60), Services (1.28) and Cost (0.99). In the context of EFTs vs. Transplanting, expert perceptions were “better” with regard to Cost (-0.79), Acceptance (-0.71) and Environment (-0.14) and “poor” on Services (0.30), Regulation (0.29) and Performance (0.23). This research concluded that acceptance, cost and services are the key factors considered by experts when replacing broadcasting method by EFT and services, regulation and performance are the key factors considered by experts when replacing transplanting method by EFT. As suggestions from this study it is important of setting up a proper institutional framework which is required to produce, promote and regulate these technologies before those EFTs are released to the society at large in order to avoid common policy failures that everybody will be seen and experienced in relation to paddy and fertilizer markets in the country as suggestions from this study.

Keywords: Eco-friendly technologies, Expert perceptions, Inorganic fertilizer, Paddy cultivation

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