Tropentag, September 17-19, 2018, Ghent

"Global food security and food safety:
The role of universities"

Regional Differences in Farmers' Preferences for A Native Bee Conservation Policy: the Case of Farming Communities in Northern and Eastern Thailand

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Abstract

Evidence points to past bee-mediated crop pollination deficits in Chanthaburi province, Eastern Thailand. Conversely, no such evidence has yet been reported for Chiang Mai province (Northern Thailand), suggesting that wild pollination is delivered there above the requirements of local orchards. Discrete choice experiments (DCE) were conducted separately in each of these two ecologically different regions to elicit the preferences of pollinator-dependent orchard farmers with regard to the possible effects on local native bee populations resulting from the implementation of a conservation policy. Such hypothetical policy would consist of at least one of the following three measures: (i) offering farmers bee-friendly alternatives to conventional agro-chemicals, (ii) enabling the protection and/or rehabilitation of natural bee habitats near cropland, and (iii) fostering the husbandry of native bee species by transferring technical knowledge on the practice of on-farm beekeeping. We fitted mixed logit (ML) models on the resulting data to capture preference heterogeneity and to obtain willingness to pay (WTP) point estimates. Generalized mixed logit (GMXL) models were also fitted on the pooled datasets in order to inspect for (potentially bias generating) choice behaviour differences between both regions, considering that respondents in Chiang Mai may have incorporated more unobserved factors into their choices than their counterparts in Chanthaburi, who were likely to provide less erratic answers due to their familiarity with crop pollination deficits. This yielded WTP space estimates (i.e., directly from the WTP distributions) and made possible the comparison of farmers' preferences for a native bee conservation policy in both regions. The results hint at significant WTP differences for some of the conservation policy attributes between both provinces. Furthermore, unobserved contributions to choice decisions seem to have been more random in Chiang Mai. Our analyses also suggest that farmers who engage in bee-related activities are WTP more for a conservation policy that includes bee husbandry.

Keywords: Conservation policy, crop pollination, generalised mixed logit, native bees, scale heterogeneity, thailand

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