**Valuing crop diversity conservation in the Czech Republic using a discrete choice experiment**

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We use a discrete choice experiment to elicit public preferences for the conservation of wine, hop, and fruit tree varieties in the Czech Republic. Determining the value of crop diversity conservation for the public is important, since the total economic value of plant genetic resources is likely much greater than its current use value. Obtaining information about public preferences for conserving different crop types can help both to obtain an appropriate level of financial support from governmental budgets as well as to pinpoint areas where conservation efforts should be expanded. Rigorous estimates of the economic value of crop diversity are essential for justifying expenditures on the conservation of these genetic resources.

WTP values are derived from a sample representative of the general Czech population (n=805) and a sample of respondents living in the South Moravian region (n=463). Data were collected with the Computer-Assisted Self Interviewing (CASI) method during the summer of 2016, using an online survey instrument. The survey instrument was programmed and maintained by the Centrum pro otázky životního prostředí of Univerzita Karlova, as were the output data matrices making up the database of results. The hired firm (STEM/MARK) was responsible for incentivizing respondents to answer to the survey, to manage the quotas, and to carry out the data collection according to the standards of the international research association ESOMAR. Respondents were sampled from an internet panel, properly managed by Český Národní Panel. A 3-day pilot was run to collect initial data and to allow the survey instrument and experiment designs to be optimized. One component of the survey used a discrete choice experiment approach to elicit preferences for the conservation of hop, fruit tree and wine varieties, and asked the respondent to choose between several conservation options characterized by varying attribute levels (cost and number of varieties conserved).

Data were analyzed using the software packages R and SAS. Because the discrete choice experiment used in the specific crop conservation experiment had multiple responses, multinomial models were used for analysis. Both the conditional logit and generalized logit models were employed. The conditional logit focuses on the characteristics of the alternatives in the choice set, while the general MNL model focuses on the characteristics of the respondent (and uses these as explanatory variables). This general approach was used to identify both how the cost attribute and the quantities of hops, fruit tree and wine varieties included in each conservation option affected the respondents’ choice, as well as the effect the respondents’ own characteristics (such as income or region) had on their choices. The analysis of the data using these models also enabled the derivation of a mean WTP of the Czech population for the conservation of fruit tree varieties over a 10-year period, the main result of this choice experiment.

We demonstrate a strong preference for conserving fruit trees over hop and wine varieties, and derive a positive and significant mean WTP of the Czech population for fruit tree conservation of 56 Kč ($2.26), translating into an aggregate, country-wide WTP of ~410 million Kč ($16.8 million). On average, residents of South Moravia were found to have a greater WTP for fruit tree conservation, with a mean WTP of 130 Kč ($5.30), twice that of the general Czech sample. In total, the Czech adult population had an aggregate WTP for fruit tree conservation that outweigh the costs, revealing the previously unmeasured social welfare benefits of these activities. The estimated benefits of fruit tree conservation are an important contribution to the valuation of a historic Czech resource with potential for climate change adaptation in the agriculture sector.