UNIVERSITY OF ANTWERP

Academic year 2018-2019

Faculty of applied economics

Willingness to contribute for the protection and restoration of papyrus wetlands around Lake Tana, Ethiopia: a contingent valuation study

ALEX AMORGASTE

Master's Thesis submitted to obtain the degree of:

Master of Applied Economic Sciences: Business Engineering

Promotor:

Prof. dr. ir. Steven van Passel

Universiteit Antwerpen

Abstract

Willingness to contribute for the protection and restoration of papyrus wetlands around Lake Tana, Ethiopia: a contingent valuation study

The lake Tana region comprises a large number of wetlands, located around the shores of the lake, which is the largest fresh water body of Ethiopia. These wetlands are an integral part of the lake Tana ecosystem and were once dominated by the *Cyperus papyrus* vegetation. To date, the papyrus vegetation has significantly declined due to agricultural and other anthropogenic activities. There is a consensus that an efficient, integrated, comprehensive and sustainable wetland management is a necessity for the long-term survival of the papyrus wetlands, and lake Tana itself. In order to improve and support the current management concerning these wetlands, quantitative data is needed, and more specific the financial impact of the degradation on the local population. The total economic value should be incorporated in the decision making in order to maximise the contribution of the papyrus wetlands to the human welfare. The aim of this research was to provide this data through a contingent valuation study, by eliciting the willingness to pay and the willingness to contribute labour for a possible protection, preservation and restoration program for the papyrus vegetation. A total of 248 household heads was correctly interviewed in three study areas, located around lake Tana, all chosen because of their different relation with the papyrus vegetation. The willingness of contribution was questioned for a status-quo and an improvement scenario, the former keeps the level of papyrus vegetation constant at current levels rather than having it deteriorate/disappear further, the latter restores the papyrus vegetation to the level it used to be 10 years ago. The yearly mean willingness to pay is estimated at 263.83 ETB (≈ €8.3) for the status-quo scenario and 609.75 ETB (≈ €19.1) for the improvement scenario. The mean willingness to contribute labour is estimated at 12.4 man-days yearly for the status-quo scenario and 24.07 annual man-days for the improvement scenario. These values are used to extrapolate the results to all the households living in the concerning study areas, resulting in the aggregative willingness to pay and willingness to contribute labour. Next to the labour and cash sections of the willingness to contribute, there was also a combinational section, i.e. a yearly willingness of contribution of both cash and labour. Where for the status-quo scenario respondents are willing to contribute 531.2 ETB (≈ €16.6) and 13.9 man-days yearly, for the improvement scenario 868.3 ETB (≈ €27.1) and 25.3 man-days yearly. Furthermore, interval regressions were carried out in order to examine which parameters or variables exert a significant influence on the willingness to contribute.