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| Journal Name: | [**International Journal of Environment and Climate Change**](https://journalijecc.com/index.php/IJECC) |
| Manuscript Number: | **Ms\_IJECC\_136764** |
| Title of the Manuscript: | **Estimating the Economic Value of Water Supply Function of Forests: The Case of Karabük Yenice Forests, Türkiye** |
| Type of the Article | **Original Research Article** |

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **Author’s Feedback** (It is mandatory that authors should write his/her feedback here) |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | This study addresses an important topic—estimating the economic value of forest ecosystem services, specifically water supply, using the Contingent Valuation Method (CVM) in the Yenice Forests of Karabük Province, Türkiye. While the methodology is appropriate, several revisions are needed to improve the scientific clarity and applicability. The manuscript should better justify the use of CVM and include a comparison with revealed preference methods, especially as water now holds market value. Inclusion of multi-criteria analysis (MCA) would help address the limitations of single-method approaches. The choice of Karabük Province as the study site should be supported by ecological, hydrological, or socio-economic background to contextualize the findings. Moreover, the CVM’s reliance on WTP requires demographic representativeness; the current sampling approach may introduce bias. The discussion should reflect how rising global environmental awareness could influence WTP estimates, possibly inflating them and limiting comparability. The manuscript would benefit from referencing comparable case studies and methodological frameworks to strengthen both methods and discussion. I recommend citing relevant literature listed below.  Suggested References:   1. Prakoso, S.B. and Soedjoko, S.A. (2018). Water Spring Evaluation and Forest Ecosystem Conservation of Mount Merbabu National Park for Tourism in New Selo Yogyakarta. https://www.researchgate.net/publication/380487323\_Water\_Spring\_Evaluation\_and\_Forest\_Ecosystem\_Conservation\_of\_Mount\_Merbabu\_National\_Park\_For\_Tourism\_in\_New\_Selo\_Yogyakarta 2. Brouwer, R., et al. (2006). A General Model for Estimating the Economic Benefits of Groundwater Protection. Water Resources Research, 42(6). https://doi.org/10.1029/2005WR004387 3. Pavia, T., et al. (2005). Exploring Water Consumption Using a Gender Continuum: The Case of the American West. https://www.researchgate.net/profile/Teresa-Pavia/publication/255587623\_Exploring\_Water\_Consumption\_Using\_a\_Gender\_Continuum\_The\_Case\_of\_the\_American\_West/links/55450b040cf24107d397aef0/Exploring-Water-Consumption-Using-a-Gender-Continuum-The-Case-of-the 4. Dlamini, W.M. (2017). A GIS-based Multi-criteria Decision Analysis Approach for Forest Ecosystem Service Valuation. Environmental Modelling & Software, 93, 368–380. https://doi.org/10.1016/j.envsoft.2017.06.035 5. Prakoso, S.B., et al. (2023). Impact of Land Use on Water Quality and Invertebrate Assemblages. Limnologica, 102, 126082. https://doi.org/10.1016/j.limno.2023.126082 6. Prakoso, S.B. (2024). Development of Invertebrate Indices for Stream Water Quality Assessment. Journal of Freshwater Ecology. https://doi.org/10.1080/13416979.2024.2358257 7. Yilmaz, B., et al. (2022). Forest Ecosystem Services and Policy Integration: Insights from Eastern Europe. Forest Policy and Economics, 141, 102721. https://doi.org/10.1016/j.forpol.2022.102721 | Although we would like to add new references in line with the suggestions of the reviewer, unfortunately, it is seen that the suggested references are incorrect/ missing. For this reason, the references were not understood and could not be used in the article. The explanations for each reference are as follows:  Suggested References:   1. Is not related to topic of our manuscript. 2. Based on the doi number, the title of this reference is “Mountain hydrology of the western United States” not “A General Model for Estimating the Economic Benefits of Groundwater Protection”. Also name of the authors are not same. This reference is also not related to our manuscript. 3. The suggested third reference “contends that the consumption decisions regarding such a complex good as water reflect larger cultural values and norms, including gendered constructs and the term gendered constructs will be used to capture social notions of attributes that are deemed "masculine" or "feminine,". They use the terms masculine and feminine to describe aspects of the relationship humans have with water. The use of the term relationship in this setting captures how humans think about, experience and value water.” Therefore, the purpose, content and scope of this reference do not align with our study. 4. Based on the doi number, the title of this reference is “Measuring water use, conservation, and differences by gender using an inexpensive, high frequency metering system”. Also name of the authors are not same. This reference is also not related to our manuscript. 5. The suggested fifth reference was aimed to conducted a field survey of stream invertebrates and habitat characteristics in 23 streams with different land use conditions in Yogyakarta Province, Java Island, Indonesia. Relationships among catchment land use, habitat characteristics, and invertebrate assemblages were analyzed using a wide variety of land use and habitat variables to elucidate the relative importance of land use and water quality in determining invertebrate assemblages. Therefore, the purpose, content and scope of this reference do not align with our study. 6. Based on the doi number, the title of this reference is “Willingness of payment for forest environmental services: a systematic literature review for determinants” not “Development of Invertebrate Indices for Stream Water Quality Assessment”. Also name of the authors are not same. We benefited from the article “Willingness of payment for forest environmental services: a systematic literature review for determinants” and cited it. 7. Based on the doi number, the title of this reference is “Forest benefits and willingness to pay for sustainable forest management” not “Forest Ecosystem Services and Policy Integration: Insights from Eastern Europe. Forest Policy and Economics”. Also name of the authors are not same. Reference with the title “Forest Ecosystem Services and Policy Integration: Insights from Eastern Europe. Forest Policy and Economics” could not found. |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | The current title does not clearly reflect the specific method used for the economic valuation. I recommend revising it to:“Estimating the Economic Value of Water Supply Function of Forests using the Contingent Valuation Method.” This will enhance clarity and methodological transparency.  Furthermore, the study should acknowledge that revealed preference methods may also be suitable for assessing the economic value of water supply functions, given the increasing market value of water. Additionally, the final estimation would be more robust if supported by a multi-criteria analysis (MCA) to account for methodological limitations. It is important that such limitations and justifications are reflected not only in the methods section but also briefly addressed in the title or abstract for clarity. | The title is changed as recommended. We added the statement regarding revealed preference methods may also be suitable for assessing the economic value of water supply functions.  Multi-criteria analysis (MCA) is not used in the study. But we emphasized the limitations of the contingent valuation method. |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here. | The abstract could be improved for comprehensiveness and clarity. It is recommended to briefly introduce the concept of use value and non-use value as part of the economic valuation framework, before discussing the application of the Contingent Valuation Method (CVM) and willingness to pay (WTP). Additionally, the rationale for selecting Karabük province, particularly the Yenice Forests, as a representative case study for estimating the water supply value of forests should be clearly stated.  The abstract should also acknowledge the limitations of the study in terms of representativeness. The current results may not sufficiently reflect broader population perspectives, especially considering the growing global willingness to invest in environmental restoration. Variability in socioeconomic conditions among respondents can influence WTP, and this should be addressed. Furthermore, forest condition (e.g., degradation levels) can influence WTP, and this context should be introduced earlier, ideally in the study area description and elaborated in the discussion, rather than only presenting quantitative results. | We tried to improve the abstract based on the recommendations.The concept of use value and non-use value are added.The rationale for selecting the Yenice Forests as study area is explained. Limitations of the study is added to abstract.  We also considered the reviewer’s comment regarding forest condition and its influence on willingness to pay. Necessary explanations were added to the manuscript accordingly. |
| Is the manuscript scientifically, correct? Please write here. | The manuscript presents an important topic on the economic valuation of forest ecosystem services; however, several scientific aspects require improvement to strengthen its validity and representativeness.  First, the selection of the study area could be reconsidered. Conducting the research in a natural or virgin forest—preferably in mountainous regions above 1000 meters above sea level—would better reflect the ecological potential for water catchment and infiltration. The study lacks geological and geographical context, which are essential to understand infiltration potential and the hydrological role of the forest. A higher precipitation area would be more appropriate for valuing the water supply function, as low rainfall regions inherently have reduced water resource potential, possibly skewing the valuation.  Second, the manuscript does not clarify whether the sampled population (219 respondents) is statistically representative of the Yenice district. Information on total population size and the justification of sample size, as well as the use of probability sampling techniques, is necessary. The current gender distribution (70.8% male, 29.2% female) suggests sampling bias, which can affect water use perceptions and willingness to pay (WTP). Furthermore, the study should ensure that respondents reflect a balanced socioeconomic distribution, especially given the role of income in determining WTP. Table data on monthly income should be analyzed to ensure that diverse prosperity levels are equitably represented.  Finally, suggestions for encouraging active public participation must be more specific and actionable, including education programs, stakeholder consultations, and policy integration to enhance community involvement in forest and water resource management. | • Explanation of how the sample size is calculated is added to the text.  We revised the manuscript to address the points raised. First, we clarified the suitability of the study area by emphasizing the ecological integrity, hydrological function, and localized environmental risks such as floods and landslides in the Yenice Forests. Second, we acknowledged the sampling limitations, including gender imbalance and socioeconomic representation, and added explanatory content referencing Table 2. Finally, the conclusion section was revised to include more concrete and actionable suggestions to encourage public participation, such as education campaigns, participatory forest planning, partnerships, and local incentives. |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | I recommend citing relevant literature listed below. Suggested References:  1.Prakoso, S.B. and Soedjoko, S.A. (2018). Water Spring Evaluation and Forest Ecosystem Conservation of Mount Merbabu National Park for Tourism in New Selo Yogyakarta. [https://www.researchgate.net/publication/380487323](https://www.researchgate.net/publication/380487323.)  2.Brouwer, R., et al. (2006). A General Model for Estimating the Economic Benefits of Groundwater Protection. Water Resources Research, 42(6). https://doi.org/10.1029/2005WR004387  3.Pavia, T., et al. (2005). Exploring Water Consumption Using a Gender Continuum: The Case of the American West. https://www.researchgate.net/profile/Teresa-Pavia/publication/255587623  4.Dlamini, W.M. (2017). A GIS-based Multi-criteria Decision Analysis Approach for Forest Ecosystem Service Valuation. Environmental Modelling & Software, 93, 368–380. https://doi.org/10.1016/j.envsoft.2017.06.035  5.Prakoso, S.B., et al. (2023). Impact of Land Use on Water Quality and Invertebrate Assemblages. Limnologica, 102, 126082. https://doi.org/10.1016/j.limno.2023.126082  6.Prakoso, S.B. (2024). Development of Invertebrate Indices for Stream Water Quality Assessment. Journal of Freshwater Ecology. https://doi.org/10.1080/13416979.2024.2358257  7.Yilmaz, B., et al. (2022). Forest Ecosystem Services and Policy Integration: Insights from Eastern Europe. Forest Policy and Economics, 141, 102721. https://doi.org/10.1016/j.forpol.2022.102721 | Although we would like to add new references in line with the suggestions of the reviewer, unfortunately, it is seen that the suggested references are incorrect/ missing. For this reason, the references were not understood and could not be used in the article. The explanations for each reference are as follows:  Suggested References:   1. Is not related to topic of our manuscript. 2. Based on the doi number, the title of this reference is “Mountain hydrology of the western United States” not “A General Model for Estimating the Economic Benefits of Groundwater Protection”. Also name of the authors are not same. This reference is also not related to our manuscript. 3. The suggested third reference “contends that the consumption decisions regarding such a complex good as water reflect larger cultural values and norms, including gendered constructs and the term gendered constructs will be used to capture social notions of attributes that are deemed "masculine" or "feminine,". They use the terms masculine and feminine to describe aspects of the relationship humans have with water. The use of the term relationship in this setting captures how humans think about, experience and value water.” Therefore, the purpose, content and scope of this reference do not align with our study. 4. Based on the doi number, the title of this reference is “Measuring water use, conservation, and differences by gender using an inexpensive, high frequency metering system”. Also name of the authors are not same. This reference is also not related to our manuscript. 5. The suggested fifth reference was aimed to conducted a field survey of stream invertebrates and habitat characteristics in 23 streams with different land use conditions in Yogyakarta Province, Java Island, Indonesia. Relationships among catchment land use, habitat characteristics, and invertebrate assemblages were analyzed using a wide variety of land use and habitat variables to elucidate the relative importance of land use and water quality in determining invertebrate assemblages. Therefore, the purpose, content and scope of this reference do not align with our study. 6. Based on the doi number, the title of this reference is “Willingness of payment for forest environmental services: a systematic literature review for determinants” not “Development of Invertebrate Indices for Stream Water Quality Assessment”. Also name of the authors are not same. We benefited from the article “Willingness of payment for forest environmental services: a systematic literature review for determinants” and cited it. 7. Based on the doi number, the title of this reference is “Forest benefits and willingness to pay for sustainable forest management” not “Forest Ecosystem Services and Policy Integration: Insights from Eastern Europe. Forest Policy and Economics”. Also name of the authors are not same. Reference with the title “Forest Ecosystem Services and Policy Integration: Insights from Eastern Europe. Forest Policy and Economics” could not found. |
| Is the language/English quality of the article suitable for scholarly communications? | The academically English was quite good |  |
| Optional/General comments | The discussion section currently emphasizes the presentation of results, but it lacks sufficient critical analysis and comparison with relevant literature. The authors should expand this section by comparing their findings with previous studies on the economic valuation of the water supply function of forests, particularly those that have applied the Contingent Valuation Method (CVM). Additionally, the manuscript should critically evaluate whether CVM is indeed the most suitable approach for this case study, compared to alternative valuation methods such as revealed preference techniques or those that incorporate both use and non-use values.  The authors are also encouraged to reflect on whether the use of the Willingness to Pay (WTP) approach sufficiently captures the total economic value (TEV) of forest water supply services, or if it underrepresents critical non-market benefits. Discussing these methodological choices will strengthen the justification for the chosen framework and increase the credibility of the valuation outcomes. Furthermore, a more detailed discussion of how demographic imbalances, such as unequal gender representation and income distribution among respondents, may influence the WTP results is essential for improving the interpretation and applicability of the findings. | In response to the reviewer’s comments, the discussion section was expanded to include a comparison of our findings with previous forest-related CVM studies. We also critically evaluated the suitability of CVM in light of alternative methods, and reflected on whether WTP fully captures the Total Economic Value (TEV) of the water supply service. In addition, the discussion already addresses the influence of demographic imbalances, particularly gender and income distribution, on WTP outcomes. |

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| **PART 2:** | | |
|  | **Reviewer’s comment** | **Author’s Feedback** (It is mandatory that authors should write his/her feedback here) |
| **Are there ethical issues in this manuscript?** | *(If yes, Kindly please write down the ethical issues here in details)* |  |