



Do Neighbors Affect People's Demand for the Biodiversity Conservation Project in the U Minh Ha Peat Swamp Forest of the Mekong Delta, Vietnam?

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Despite incentives and measures taken to improve forest conservation, deforestation in Vietnam continues to increase. Seeking community participation in this activity is considered one of the most effective measures in developing countries. This research, therefore, applies the contingent valuation method (CVM) approach to estimate the residents' demand or willingness to pay for the U Minh Ha forest conservation project in Vietnam. The results indicated that respondents were willing to contribute about 4.3 kg of rice per month to the project. The results also indicated that respondents who knew neighbors' participation in the conservation project and thought that forest ecotourism had benefits for their families were more likely to contribute to the conservation project. We then conclude that forest sustainability in developing countries significantly depends on the community's preferences and is robust by neighbor participation.

Keywords: contingent valuation method, ecosystem conservation, preferences, sustainability, willingness to pay

INTRODUCTION

In emerging countries, urban population growth is exceptionally rapid, reaching 3.82% per year in Southeast Asia (UN-HABITAT, 2006). While forest functions serve as natural purifiers of the environment, the quality and amount of forest in any area can greatly affect human life and environmental quality. Many forest sustainability either in developed and developing countries have been conducted and well documented in the literature. Fortunately, conserving forest diversity in Vietnam has been an increasing concern by local authorities and international organizations. U Minh Ha Forest (UMH) has an ~8,527.8-ha area in total. The area is full of diversity: species of animals (e.g., deer, wild boar, monkey, snake, and turtle), 60 species of fish, and over 79 species of wild plants belonging to 65 genera, and 36 different flora families. UMH is of particular importance due to the many economic benefits of local and regional communities, including the provision of timber and non-timber forest products, stabilization of water quality and quantity, soil erosion control, climate control, as well as recreational and cultural services (Report on UMH of Ca Mau Province, 2013).

UMH still has many serious problems such as the increasing risk of forest fires and water shortages in the dry season. If this would continue, it could lead to an increasingly high rate of deforestation (Khai and Yabe, 2014a). Since residents change land use and the ineffective land plans from local authorities have changed natural capital and made unsustainable exploitation and ineffective use of natural resources, these lead to resource depletion, natural disasters, pollution, and poverty (Khai and Yabe, 2014a; Nuwer and Bell, 2014). We need to use the land wisely and sustainably not only for the present but also for future generations. Since many functions are associated with forests, in this research, however, sustainable development of forests has been defined as critical for economic and social development as well as the planet's life support systems (UNCED, 1993).

Over the years, the Government of Vietnam has made great efforts in organizing and taking action to protect and develop forests, enacting the legal system, many policies, and large funding sources to protect and develop forest resources. In particular, the Government has piloted the payment for forest environmental services according to Decision No. 380/QD-TTg dated April 10, 2008, of the Prime Minister, and recently the Government has issued Decree No. 99/2010/ND-CP dated September 24, 2010, on the policy of payment for forest environmental services. It is an economic tool used by those who earn benefits from forest environmental services to pay those who maintain, protect, and develop the ecosystem.

The Government promulgates a policy of payment for forest environment protection, which is a problem in promoting and socializing forest protection and development, gradually improving people's lives, and raising awareness of forest protection. However, clarifying how context information is processed is an intriguing and crucial point. It provides decision-makers with useful information for making choices among alternative uses of the forests' conservation options and options that meet the needs of various user groups because it increases available knowledge about the broad range of values (direct and indirect use values, option use-values, bequest use-values, and existence values) associated with forests. It also reflects the level of people's environmental care in monetary terms. Therefore, the research on the assessment of willingness to pay for forest protection is an urgent requirement. Recognizing the importance of the problem mentioned previously, this study was conducted to understand the perceptions and demands of residents for the forest conservation project by using the approach of contingent valuation model (CVM) to estimate their willingness to pay. The study could provide policymakers and other stakeholders with additional information on residents' perception of the environment and natural resources as well as the benefits of ecosystem conservation.

The study is designed as follows: The next section describes the methodology and data collection. This is followed by a presentation of some discussions on respondents' perceptions of forest conservation and use, the reasons for residents' unwillingness to pay for the proposed project, and the results from the estimation of willingness to pay (WTP) for the project. The final section presents the conclusion.

METHODOLOGY AND DATA COLLECTION

This study applied the CVM to identify residents' WTP. In other words, the local communities' demand for UMH conservation projects through this value is elicited. The CVM is one of the stated preference methods and is a more flexible tool than revealed preference methods because it could be used to examine preferences for provision levels of goods that are substantially different from what is currently observed or has been observed in the past (Carson and Czajkowski, 2014). CVM is a survey-based approach based on a hypothetical market for public goods not trading in private markets to estimate consumers' WTP for specific environmental goods and services (Mitchell and Carson, 1989; Pruckner, 1995). From the 1970s up to now, the CVM has been widely applied to measure the benefits of many non-market goods and services such as recreation, hunting, water quality, and decreased mortality risk from a nuclear power plant accident and toxic waste dumps (Wattage, 2002; Do and Bennett, 2009; Khai and Yabe, 2014b; Khai, 2015).

Among many ways to identify preference information in a CVM study, the use of discrete choice experiments is widely accepted (Carson et al., 2001; Carson and Czajkowski, 2014). The discrete choice experiment approach is analyzed using a random utility model (Bateman et al., 2002; Haab and McConnell, 2002). It is assumed that a respondent is asked to select a change from Q_0 (status quo) to Q_1 , which refers to the quality of environment (UMH conservation) and Q_1 is assumed to be preferred to Q_0 . A utility function of a respondent is described as $V(P, Q, I, Z, \epsilon)$, where P is the price vector of goods available in the markets, I is the income vector of a respondent and Z is the vector of respondent's characteristics, and ϵ is the error term of the utility function. Then if the respondent is asked whether he/she is willing to pay an amount of M to obtain Q_1 , his/her answer would be "yes" if the following condition holds (where Pr denotes the probability):

$$Pr(Yes) = Pr\{V(P, Q_1, I - M, Z) + \epsilon_1 \geq V(P, Q_0, I - 0, Z) + \epsilon_0\} \\ = Pr\{V(P, Q_1, I - M, Z) - V(P, Q_0, I - 0, Z) + \epsilon_1 - \epsilon_0 \geq 0\} \quad (1)$$

where ϵ_0 and ϵ_1 are unobservable components of the utility and identically and independently distributed (IID) random variables following a normal distribution $N(0, \sigma^2)$. If we define $\Delta V = V(P, Q_1, I - M, Z) - V(P, Q_0, I - 0, Z)$ and $\gamma = \epsilon_1 - \epsilon_0$, we derive

$$Pr(Yes) = Pr(\gamma \geq -\Delta V) = 1 - F_\gamma(-\Delta V) = F_\gamma(\Delta V) \quad (2)$$

where $F_\gamma(\Delta V)$ represents the cumulative density function of the respondent's true maximum WTP.

The discrete choice contingent valuation technique estimates the mean and median WTPs based on the coefficients related to the WTP responses against the regression constant and the *BID* coefficient. Additional coefficient vectors (X) including the respondent's awareness, perception, and demographic status may also affect. It is noted that there are several perception index scores that have been employed in previous research and such

indicators were performed such as Bahta et al. (2016) and Bahta (2021) used perception index score influences toward the resilience of agricultural drought, or Khong et al. (2020) used Likert scale as perception index to evaluate farmers' perception toward salinity intrusion. Therefore, this research employed index as suggested. To estimate the impacts of the variables affecting the probability to choose $Pr(Yes)$, we employed logistic regression. For the regression, we employed the model given:

$$Pr(Yes) = F_{\gamma}(\Delta V) = \log\left(\frac{Pr(Yes)}{1 - Pr(Yes)}\right) = \alpha + \beta_1 BID + \beta_2 X + \varepsilon \quad (3)$$

where α , β_1 , and β_2 are estimated coefficients; BID is the value in cash or in kind the respondents were asked to pay; X denotes the vector including factors affecting the target variables.

This logistic function was applied by the approach of maximum likelihood estimation (MLE). We assumed R_k to be an indicator variable for observation k , with

$$\begin{aligned} Pr(Yes) &= Pr(R_k = 1) = Pr(\gamma_k \leq V_k) = F_{\gamma}(V_k) \\ Pr(No) &= Pr(R_k = 0) = Pr(\gamma_k > V_k) = 1 - F_{\gamma}(V_k) \end{aligned} \quad (4)$$

The form of the log-likelihood function is presented as follows:

$$\log L = \sum_{k=1}^N \{R_k F_{\gamma}(V_k) + (1 - R_k) \ln(1 - F_{\gamma}(V_k))\} \quad (5)$$

In this case, we assume a linear correlation between the dependent and BID variables; then the mean and median WTP are equal and calculated by the following formula:

$$Mean/median WTP = -\frac{(\hat{\alpha} + \hat{\beta}_2 \bar{X})}{\hat{\beta}_1} \quad (6)$$

This study is undertaken in the rural area around the UMH in 2017. The survey units are households living up to 20 km from the forest edge who have directly benefited from the forest. We sampled 375 residents randomly in the three villages (125 in Tran Van Thoi, 125 in Khanh Lam, and 125 in Khanh An) around the UMH. To ensure the sample size meets statistic requirements, the number of observations collected was calculated by the applied equation suggested by Cochran (1997). Based on this formula, 250 observations are required. Therefore, 375 observations were selected to meet this requirement. The questionnaire was first pretested with a small number of respondents to check the appropriateness of sentences, structure, and local languages to make sure respondents can understand the situation and elicit true value. The questionnaire was based on the following hypothesis:

- H1: The majority of local people are willing to pay for the UMH conservation project.
- H2: WTP for the UMH conservation project depends on people's socioeconomic characteristics.
- H3: WTP of forest conservation project also depends on neighbor participation level.

In this research, for the first time, we test the hypothesis of neighbor participation level on respondents' WTP level. In fact, in developing countries such as Indonesia and Vietnam, benefit-sharing mechanisms have been established several years ago; in this case, private sector participation is called to protect and plant a forest. To enhance the effects, people's livelihood has to be secured. This *win-win* mechanism is more successful because the forest has become part of people's lives and generations. Therefore, by testing hypothesis 3, this research explores another aspect based on the neighbor perspective. This concept if accepted by hypothesis testing can contribute by enhancing the level of community participation in forest conservation. Previous research has estimated the inflated WTP by employing inferred valuation using respondents' responses about their neighbors (Lusk and Norwood, 2009a,b; Khong et al., 2019). Interestingly, these WTP then be deflated or lower than values elicited directly by respondents (Yadav et al., 2013; Khong et al., 2019). Therefore, this study included neighbor payment into the regression model to test this effect on respondents' WTP. In other sectors such as transportation, neighborhood social effects have been interesting (Wang et al., 2015); however, research on environmental issues, to our knowledge, is rare. As a result, these issues could help policymakers regarding development programs in the forest sector in developing countries.

We presented the project scenario with a description of the current threats of UMH, including activities of local households such as logging, illegally encroaching forest land to raise shrimp, building houses, and illegal fishing. To prevent these activities to conserve UMH, the project will propose some biodiversity conservation activities as follows:

1. Planning forest to increase coverage and protect soil from erosion, landslides, and washout.
2. Promoting investment in upgrading roads to the U Minh Forest to create favorable conditions for tourists.
3. Collaborating with domestic and foreign agencies and organizations to conserve biodiversity.
4. Strengthening forest management and biodiversity conservation through programs to protect and restore forest ecosystems, improve law enforcement capacity, and state regulations on forest protection and development.

Following the establishment of the UMH conservation fund to support these biodiversity conservation activities, the vehicle payment of the fund is the resident's monthly contributions of rice and lasts for 3 years. Once residents are aware of the benefits of a conservation project that help improve their family's life and social benefits, they are willing to support and contribute to the conservation project. In the CVM question, respondents are asked whether they are willing to contribute to the fund for UMH conservation or not. Respondents' support was given as a contribution of 1, 2, 3, 4, or 5 kg of rice per month on the assumption that this rice is popular locally and has a value equivalent to the rice price of contribution year. The amount of rice is selected as a payment vehicle based on a preliminary survey of opinions from staff knowledgeable about the situation of U Minh Ha and the living conditions of residents in the study area. Each respondent was asked whether they are willing to pay one

TABLE 1 | Perceptions of forest conservation and forest use.

Statements	1	2	3	4	5
The protection of the UMH is very important for the livelihood of your family	2 (0.53%)	2 (0.53%)	51 (13.6%)	168 (44.80%)	152 (40.53%)
UMH is in good condition	3 (0.80%)	50 (13.33%)	68 (18.13%)	209 (55.73%)	45 (12%)
UMH has been greatly damaged for many years	25 (6.67%)	91 (24.27%)	122 (32.53%)	106 (28.27%)	31 (8.27%)
UMH may not provide your family with the products you need for many years	31 (8.27%)	76 (20.27%)	122 (32.53%)	109 (29.07%)	37 (9.87%)
The current management of UMH reflects community benefits	6 (1.6%)	10 (2.67%)	133 (35.47%)	191 (50.93%)	35 (9.33%)
Forest ecotourism has benefits for your family	20 (5.33%)	38 (10.13%)	90 (24%)	177 (47.2%)	50 (13.33%)
Human intervention in the UMH will lead to heavy damage to the forest	18 (4.8%)	51 (13.6%)	68 (18.13%)	167 (44.53%)	71 (18.93%)

Source: own estimates; data appendix available from authors.

of these aforementioned rice amounts. If the answer was “yes,” the list of “yes” reasons was then presented. If respondents do not agree to contribute, they are asked for reasons and other forms of contribution (if any).

RESULTS AND DISCUSSION

Table 1 shows the respondent’s perceptions of forest conservation and forest use. Each respondent was asked to answer statements about forest conservation and use five answer options, including 1, strongly disagree; 2, disagree; 3, neutral; 4, agree; and 5, strongly agree.

Table 1 shows that more than 85% of respondents agree (44.80% agree and strongly agree 40.53%) with the statement “The protection of UMH is very important for the livelihood of your family.” Almost all respondents (67.7%) agreed with the assessment that “UMH is in good condition.” In addition, when asked further that “UMH has been greatly damaged for many years,” almost all respondents (32.2%) had no opinion and about 36.6% of respondents disagreed with this issue. This shows that most residents are interested and knowledgeable about the issues of the forest.

Due to the lack of knowledge about the positive protective effects of forests such as improving land loss and storing water in the dry season, up to 32.5% of respondents have no opinion and 28.6% disagreed with the saying that “UMH may not provide your family with the products you need for many years.” Most residents appreciate the benefits of ecotourism that could promote conservation, has a little negative impact on the environment, and create positive socioeconomic impacts for local communities. Therefore, over 60% of respondents agreed with the statement: “Forest ecotourism has benefits for your family.”

Most of the respondents (60.2%) are aware and agreed that “the current management of UMH reflects community benefits”. In addition, most residents are aware that human intervention makes forest destruction more severe, so 63.5% agree with the statement “Human intervention in the UMH will lead to heavy damage to the forest.”

TABLE 2 | Willingness and unwillingness to pay for the given discrete choice.

Bid level (kg)	Observations	The answer to WTP question			
		Willingness to pay		Unwillingness to pay	
		Number	Percent (%)	Number	Percent (%)
1	75	58	77.33	17	22.67
2	75	50	66.67	25	33.33
3	75	42	56.00	33	44.00
4	75	47	62.67	28	37.33
5	75	31	41.33	44	58.67
Total	375	228	60.80	147	39.20

Source: own estimates; data appendix available from authors.

The aforementioned statements show that residents have not fully promoted their importance in forest protection while they are directly or indirectly benefited from the forest. However, with the increasing understanding of the benefits of forests, they have been making efforts to overcome and minimize deforestation. This is a good sign that marks their awareness of the important role of forest protection.

Table 2 shows that the majority of respondents agree to pay for this project accounting for 60.8% and there is a negative correlation between rice quantity and people’s willingness to pay. Specifically, 77.33% of the respondents are willing to pay for the lowest rice amount of 1 kg and 41.33% of the respondents are willing to pay with the highest rice amount of 5 kg. This result is consistent with the hypothesis that the higher the quantity of rice, the lower the acceptance rate.

Table 3 shows that the majority of respondents are not willing to contribute to the UMH ecosystem conservation project with the reason “I cannot afford to pay/I have no spare money” accounting for 41.57%, followed by the reason “I feel this improvement will take place without my contribution” that accounts for 23.60% and the reason “I do not trust the institutions that will handle the money for this conservation work” with the rate of 20.79%. It shows that most of the respondents do not agree to contribute to the project because they do not have

TABLE 3 | Reasons for unwillingness to pay for the forest conservation project.

Reasons	Number of respondents	Proportions (%)
1. I cannot afford to pay/I have no spare money	74	41.57
2. I feel the environmental improvement of U Minh Ha is unimportant	4	2.25
3. I do not believe contributions will solve the problem	19	10.67
4. I feel this improvement will still take place without my contribution	42	23.60
5. I do not trust the authorities that will handle the fund for this conservation activity	37	20.79
6. Other reasons	2	1.12

Source: own estimates; data appendix available from authors.

enough financial resources or do not believe in the feasibility of the project.

Table 4 shows descriptive statistics of the variables in the logit model. The results show that 60.8% of respondents are willing to pay for the UMH conservation project and more than 69.6% of respondents have ever contributed to charity. The average age of respondents is about 41 years, and the number of schooling years of the respondents is about 9 years, that is, most of the respondents have completed junior high school. About 88.3% of the respondents said that they would be willing to contribute to the forest conservation fund if they knew that the people around them also agreed to participate. Prior to performing logistic regression, the problem of multicollinearity was checked. The results show that the models do not have multicollinearity because all VIF values are <3 and the correlation coefficients between the independent variables are all <0.7 (Khai, 2015).

Table 5 presents the logistic regression results for estimating the willingness to pay for the UMH conservation project. Model 1 is estimated with only one independent variable, which is the amount of rice proposed by the project (*Bid*). Model 2 estimated *Bid* variable and other independent variables including the demographic characteristics (e.g., age, gender, marital status, and educational attainment) and other important variables of the respondents that can affect the willingness to pay for the conservation project. The results show that the percentage of correct prediction of model 1 is 64.27% and model 2 is 71.39%, so it can be assessed that model 2 is more acceptable than model 1. The study uses model 2 as a final result to estimate the willingness to pay for the conservation project.

The *Bid* variable in model 2 was negatively associated with willingness to pay and are statistically significant ($p = 0.000$), showing that the higher the amount of rice provided, the lower the respondents' willingness to pay for the project in both models, so it is consistent with the theory of the demand curve. The coefficient of the age variable (*Age*) has a positive sign and is at significant ($p = 0.083$) level, which means that the older the respondents, the higher their willingness to contribute to the forest protection project. This result is consistent with research

TABLE 4 | Descriptive statistics of variables in the logit model.

Variables	Description	Mean	SD
Choice	Willingness to pay for the conservation project (1 = yes, 0 = no)	0.608	0.489
<i>Bid</i>	Bid value (kg)	3.000	1.416
<i>Age</i>	Age of respondents (years)	40.955	13.051
<i>Gender</i>	Dummy variable (1 = male, 0 = female)	0.571	0.496
<i>Married</i>	Dummy variable (1 = got married, 0 = otherwise)	0.899	0.302
<i>Education</i>	The education of respondents (years)	8.920	3.956
<i>Knowledge</i>	Respondents' knowledge of UMH	2.315	0.894
<i>Poorper</i>	Dummy variable (1 = respondents think that they are poor, 0 = otherwise)	0.315	0.465
<i>Donation</i>	Dummy variable (1 = if respondents made any donations, 0 = otherwise)	0.696	0.461
<i>Effect</i>	Respondents are willing to pay for the project if other surrounding households also want to pay (1 = yes, 0 = no)	0.883	0.322
<i>Forcon</i>	UMH is in good condition	3.648	0.886
<i>Forimp</i>	The protection of the UMH is very important for the livelihood of your family	4.576	0.506
<i>Forabil</i>	UMH may not provide your family with the products you need for many years	3.120	1.099
<i>Tourist</i>	Forest ecotourism has benefits for your family	3.531	1.020
<i>Khanhan</i>	Dummy variable (1 = respondents live in Khanh An village, 0 = otherwise)	0.334	0.472
<i>Khanhlam</i>	Dummy variable (1 = respondents live in Khanh Lam village, 0 = otherwise)	0.333	0.472

Source: own estimates; data appendix available from authors. *Italic means variables in the model.*

by Chen and Jim (2010). With a negative value of the coefficient of *Poorper* variable affects significantly ($p = 0.003$), suggesting that the respondents think that they are poor, the likelihood of agreeing to be willing to pay for the conservation project decreases. Therefore, a different form of contribution and vehicle should be suggested as direct labor. People from various cultural and institutional backgrounds will have differing opinions on the acceptability of various payment methods [Morrison et al. (2000)].

In addition, the variable of *Effect* has a positive coefficient significantly ($p = 0.000$) as expected of the study, suggesting that the likelihood of respondents agreeing to contribute increases if everyone around them contributes. This can be explained

TABLE 5 | Logit analysis of willingness to pay for the UMH conservation project.

Variables	Model 1		Model 2	
	Coefficient	SE	Coefficient	SE
<i>Bid</i>	-0.329***	0.078	-0.392***	0.089
<i>Age</i>			0.019*	0.011
<i>Gender</i>			-0.376	0.249
<i>Married</i>			-0.350	0.420
<i>Education</i>			0.016	0.035
<i>Knowledge</i>			0.080	0.140
<i>Poorper</i>			-0.802***	0.261
<i>Donation</i>			-0.131	0.267
<i>Effect</i>			1.859***	0.411
<i>Forcon</i>			0.067	0.137
<i>Forimp</i>			0.071	0.243
<i>Forabil</i>			0.014	0.110
<i>Tourist</i>			0.317***	0.119
<i>Khanhan</i>			-0.175	0.298
<i>Khanhlam</i>			-0.182	0.299
Constant	1.448***	0.269	-1.786	1.477
Log-likelihood	-241.886		-216.708	
Pseudo R^2	0.037		0.134	
Correct prediction (%)	64.27		71.39	
Mean WTP (95% CI)	4.4 kg (3.69–5.87)		4.3 kg (3.70–5.46)	

95% CI is estimated by the Krinsky and Robb (1986).

***, ** and * significant at 1, 5, and 10%, respectively.

Source: Calculated from own estimates; data appendix available from authors. *Italic means variables in the model.*

because they believe that more people participating in the project prove that the project is supported by many people and the transparency of the project is higher. We had hypothesized that the preference of respondents influenced by a neighbor is true. This result indicates that future community participation calling programs, if any, may call for the power of the community to enhance the effectiveness. It is also worth mentioning that any conservation or protection of forest mechanisms could be based on this outcome.

The coefficient of the *Tourism* variable is negatively significant ($p = 0.008$), suggesting that if the respondents think that ecotourism benefits their family, their ability to support the project also increases. Moreover, using Equation (6) to estimate the mean amount to pay for the UMH conservation project (Table 5), model 2 shows an average rice contribution of 4.3 kg per month (95% CI, 3.7–5.46), which means that if the conservation project is implemented, residents will be willing to contribute monthly to the project with the equivalent value of about 4.3 kg of rice. This proves that the benefits of the project have been recognized and appreciated by local communities. Therefore, tourist service implementation and development in this area may provide more incentives to residents to improve UMH forest conservation. In comparison with previous research, environmental quality and forest conservation tended to receive different attention based on WTP

elicited (Pouta et al., 2000; Christie et al., 2006). Therefore, when providing extra benefit, the upper bound of WTP value in this research could be suggested included in the cost and benefit of any forest conservation project.

CONCLUSION

We used the CVM method to estimate the residents' perception of demand or willingness to pay for the forest conservation project. The finding demonstrates that majority of inhabitants are concerned about forest concerns and are aware of them such as recognizing the benefit values from UMH forest and the role of humans in this conservation. In addition, the results indicate that the percentage of respondents willing to pay for the UMH conservation project was about 61% and residents were willing to contribute to the project about 4.3 kg of rice per month. The results also imply that certain households are willing to support the proposed project if they are informed that neighboring households have also agreed to contribute. The residents are more likely to support the project if they think that forest ecotourism provides benefits for their families. Based on this result, we suggest that local authorities carefully consider the community participation in the program to increase willingness to pay level. The study also showed that the older the respondents, the more interested and supportive they were in the conservation project.

Most of the respondents are not willing to contribute to the project because they do not believe in the feasibility of the project. To promote the residents' contribution to forest protection, the following policy recommendations are proposed. Local authorities should provide more information on the current status of UMH to local communities to improve resident's understanding of the benefits of the forest as well as their losses if UMH is degraded, and thereby encourage them to care about the conservation of endangered animals and to care about forest conservation. The government can make an appropriate contribution to the project by the residents here equivalent to about 4 kg of rice per month as calculated by the study. The payment vehicle could be in rice collection or equivalent value in cash openly and transparently. Residents could be explained clearly the reason for the rice collection and the purpose of its use. At the same time, it is necessary to have appropriate propaganda solutions to make residents trust the project more and to be assured by the local government so that they believe that this project will ensure good implementation, protect forests, and show local communities the benefits to enjoy from the forest when the forest is well protected.

In future research, survey areas should be expanded to other areas to compare and propose to wider implement UMH forest conservation program in the Mekong River Delta. In addition, a pilot program with real payment should also be implemented. The purpose of this is to compare before and after to identify if the implemented program is successful or needs to consider more in terms of providing more information related to forest ecotourism and other benefits as respondents are concerned from findings mentioned previously.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

AUTHOR CONTRIBUTIONS

HK designed the study questionnaire, collected and analyzed the data, and drafted the article. YU supervised the research and made critical revisions to the article. TK and LK drafted the article. All authors read and approved the final article.

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