

## OS01: Energy, Environment and Earth System Science

## UNCOVERING THE HIDDEN VALUES OF WETLANDS TO LOCAL COMMUNITIES

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**ABSTRACT:** The values of wetlands are generally classified into use values and non-use values. The use values are straightforward and measurable values but the non-use values are not so. Hence they are most often neglected and not incorporated in wetlands assessment and conversion to other uses by policy makers. Although the wetlands under review are obviously being used for farming and fishing, we attempted establishing from the local users if they have other forms of values for them. We therefore interviewed four hundred and ninety four (494) wetlands users in seventeen riparian local communities in Lokoja, Nigeria. The result of our findings shows that apart from the direct use of the wetlands, other form of uses, the non-use values exists. Bequest value was however dominant among the identified non-use values. Unfortunately this type of value is not usually considered in decision making patterning to wetlands in local communities. We recommend valuation of both the use and non-use values of wetlands in local communities that are being considered for conversion to other uses. This is suggested because the unseen hidden values of wetlands can be uncovered only in a study of this nature.

### Introduction

Although wetlands support and provide goods and services to millions of people worldwide within and outside its boundaries, this values are often not capture in decision making. Wetlands values are generally classify

into use values and non-use values (Barbier *et al.*, 1997; Kulkarni and Ramanchadra 2006). Oglethorpe and Miliadou (2000) categorize it into three, by simply breaking down the first category, that is the use values further into direct use values and indirect use values and then the non-use values. Typically the use values involve some human interactions with the resources whereas non-use value do not have direct interactions but are use passively (Kulkarni and Ramanchadra 2006).

The direct use values are the benefits provided by wetlands which are of direct use to the people, being regarded as both consumption and non-consumptive in nature, components or assets values, or goods and services provided by the wetlands which are associated with actual use (Oglethorpe and Miliadou 2000; Kulkarni and Ramanchadra 2006; Barbier *et al.*, 1997; Brouwer *et al.*, 1999). While the indirect use values refers to the functional services which the wetlands provides to the society, whose benefits may not be derived directly but it implies (Oglethorpe and Miliadou 2000).

Non-use values are the intangible non-marketed values we derived from preservation of environmental assets, being referred to as passive current or future use values, whose values rest merely on the continual existence of that resource and is unrelated to its use, sometime referred to as diversity or attributes (Oglethorpe and Miliadou 2000, Anderson 2010; Kulkarni and Ramanchandra 2006; Barbier *et al.*, 1997). Non-use values are also sometimes referred to as the existence value Tietenberg and Lewis, 2009). All the descriptions suggest that the individual may never use the wetlands, but in their own right will want it preserved. Barbier *et al.*, (1997) establish that as a result of the intrinsic value of the non-use or existence value, it is extremely hard to measure, because its valuation may be subjective in nature. Couple with the fact that these forms of the wetlands values are not also sold in the market. This is the type of value that this study intends to establish because most times they are hidden and are not considered in decision making process.

A subset of the non-use value is referred to as bequest value (Barbier *et al.*, 1997). Which they referred to as a high value placed on the conservation of tropical wetlands by the older generations for the use of their children. They observed that, the local population currently using the wetlands may have high value for this, because they will want to pass their ways of life that has evolved in conjunction to the features of the wetlands to their heirs and future generations.

The natural world is often rated as having zero values in the political arena because of lack of tool in expressing its gains or losses in monetary terms (Boyer & Polasky 2004). Wetlands form part of this natural world. Lindsey (1994) concurred and asserts that lack of suitable methods for quantifying the worth of public goods has been the basic problem associated with valuing natural resources. However thirty years of research they said has led to the

adaptation of the contingent valuation method (CVM) as a technique for coping with the above problem. Wattage *et al.*, (2000) also reported that contingent valuation has been accepted as one of the renowned techniques available in placing values in immeasurable environmental goods in monetary form. The whole essence of CVM is to place economic values through monetary estimates on measurable and immeasurable environmental goods that are not sold in the market.

This is done by asking how much an individual will be willing to pay or willing to accept as compensation for an environmental good. Pearce *et al.*, (2002) noted that a number of scientists are completely or partially not bothered on what people care about. Garrod & Willis (1999) are of the opinion that the society should be given the chance to choose the quality of environmental goods it wishes to keep or produce amidst other goods and services since choices logically represent some form of valuation. Hanley *et al.*, (1997) also posit that, “Economists have a distinct definition of value based on the ideals rationality and consumer sovereignty- an individual consistently knows what he or she wants and needs (rationality) and is best able to make choices that affect his or her own welfare (consumer sovereignty)”. The study aim at using CVM to establish if the riparian wetlands local users in Lokoja derived non-use values from the wetlands through willingness to pay (WTP).

Lokoja the study area is the state capital of Kogi state and situated in the north-central geopolitical zone of Nigeria. The Lokoja master plan takes its focal point from the general post office at 16 kilometre radius from this point and covers an area of 106, 203 hectares of land (Lokoja Master Plan, 2005). The town is located at the confluence of river Niger and Benue the two major rivers in the country, as shown in figure 1. Hence sizeable wetlands are found along the banks of these rivers

stretching from Lokoja town to other riparian communities in four other neighbouring local government areas.

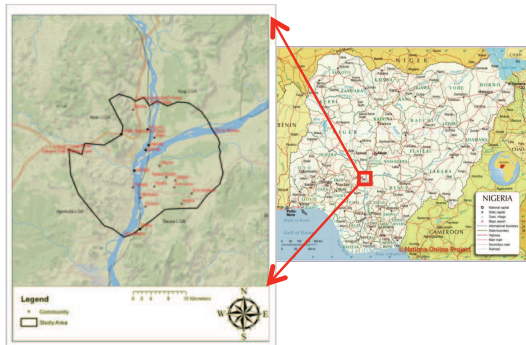


Figure 1. Map of the Study Area

### Research Design

Seventeen riparian farming and fishing communities within the master plan were randomly selected. as sample communities. Households were the unit of measurement and household heads were therefore the target respondents. Selection of household was done in a systematic sampling style since the population of the study area was homogeneous. Focus group discussions and pilot test preceded full study implementation as recommended in CV literatures ((Mitchell and Carson 1989; Shyamsundar and Kramer 1996; Brouwer 2000; Whittington 2002; McNally and Othman 2002). These did improve and change some aspects of the designed plans to fit the cultural setting of the study area. The individual household heads were first asked to identify the non-use values of the wetlands and to indicate their willingness to pay for the identified values. Data sorting, coding and analysis were done through the use of SPSS. The WTP by the individual heads of household were regressed against their socio-economic backgrounds so as to determine the variables that determine their bids as recommended in literatures (Mitchell and Carson 1989; McNally and Othman 2002)

### Results and Discussions

Non-use values of the wetlands exist asexpressed by 492 heads of households representing 100%. The numbers of those willing to pay for the non-use values of the wetlands is 360, representing 73%. The mean for those willing to pay is N294,938.89 (\$1,863.16). However 134 respondents representing 25% protested payment. The core reason for their protest is on the ground that they owns the wetlands and should not be expected to pay for any of its values.

The identified non-use values of the wetlands as shown in figure 2, include ancestral, cultural, bequest and existence. However bequest value, which is the expression of the desires of the wetlands users wanting to pass the wetlands to their children and younger generations, is the core non-use values of the wetlands as 459 heads of households representing 93% are having this value. This finding is in accordance with Barbier *et al.*, 1997 assertion who have earlier establish that in local communities' bequest value are usually rated high.

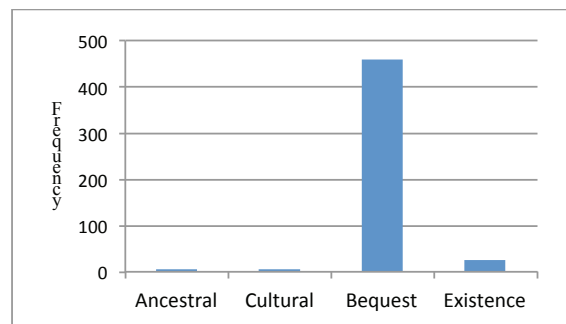


Figure 2. Non-use values of the wetlands

Significant relationship was also found with the socio-economic variables of the respondents with WTP where  $F = 19.6, p < .001$ . Length of use of the wetlands (beta 0.23,  $t = 3.91, p < .001$  and annual income of heads of households (beta 0.40,  $t = 8.28, p < .001$ ) were found to have positively influencedon WTP estimates. Household

size and education also shows a relationship but a negative one (beta  $-0.13$ ,  $t = 2.11$ ,  $p < .001$ ) and (beta  $-0.12$ ,  $t = 2.28$ ,  $p < .001$ ) respectively. Income is a better predictor of WTP in this study and income however has been found to be the only statistically significant variable in many CVM studies (Oglethorpe *et al.*, 2000).

### Conclusion

If the non-use values of the wetlands are not recognized, converting wetlands to more direct use commercial activities will be biased (Oglethorpe and Miliadou 2000). Hence wetlands with no direct market value may be perceived as having no values. Therefore if the non-use values of the wetlands are value correctly, significant justification for conservation rather than exploitation may become an alternative in some instances instead of the usual practice of outright conversion without first assessing its total economic values. Even where this is done, most times the non-use values as perceived by the local wetlands users are not usually considered.

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