

A COMPARISON OF WETLAND VALUATION PURPOSES IN LAGOS METROPOLIS AND THE NIGER DELTA, NIGERIA

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Abstract

Valuation assignments are carried out for various purposes usually determined by the client. Various studies showed that, in addition to the general purposes, wetland valuation could also be required for conservation, rating of oil installations and environmental restitution. The study compared wetland valuation purposes between Lagos Metropolis and the Niger Delta, Nigeria. A total of 163 copies questionnaire were retrieved from Lagos Metropolis while 72 were retrieved from the Niger Delta. In analysing the primary data collected, frequency tables and percentage were adopted. The study revealed that respondents perceived wetland as swampy land, marchland, poorly drained land and infested land. Also the study showed that wetland resources are majorly carried out for loan facilities (98.8%, RII = 4.15) and advice on sales (85.1%, RII = 3.49) in Lagos Metropolis while the prominent purposes for wetland valuation in the Niger Delta are compensation (94.4%, RII = 3.85), rating of oil installations (69.4%, RII = 3.76) and environmental restitution (66.7%, RII = 3.31). The study recommends that NIESV and ESVARBON should compel institutions offering Estate Management to include environmental valuation as a core course and also organise regular professional training/workshop for practicing Estate Surveyors and Valuers. Also, NIESV should incorporate environmental valuation in the curriculum for professional examinations.

Keywords: Lagos Metropolis, Niger Delta, Wetland Valuation, Purposes of Valuation,

Introduction

The word valuation has been defined in various ways and therefore it is pertinent from the beginning to settle this in order to avoid any confusion that may arise from its usage. According to Richmond (1981) valuation is the estimation of the capital or rental value of land and/or buildings at a certain time. On his own part, Millington (2006) defined valuation as “the art, or science, of estimating the value for a specific purpose of a particular interest in property at a particular moment in time, taking into account all the features of the property and also considering all the underlying economic factors of the market, including the range of alternative investments”. Royal Institution of Chartered Surveyors (RICS, 2008) defines valuation as an opinion of the value of a specified interest or interests in a property, at the date of valuation, given in writing. In other words, valuation is the determination of the worth of an interest in a property for a particular purpose and at a specific time period.

From the above definitions it is established that valuation could be required for a variety of reasons (purposes). The definitions also suggested that valuations are carried out on the basis of market determined factors of demand and supply. With all these definitions and deductions one could safely claim that the valuation of wetland resources is not taken care off. Wetland ecosystems, which are an important environmental/natural resource, form part of the total wealth of a nation. However, because many of its services are not traded in the open market and their values are not captured using the conventional approaches to valuation, they are usually ignored in the systems of national accounts. As a result, conventional measures of wealth give incorrect indications of the state of its well-being, leading to misinformed policy actions, poorly informed decision-making, or ill-advised strategic social choices, especially for compensation purposes.

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Wetland Functions

The benefits people derive from wetlands are supported by the variety of environmental functions performed by these complex and sensitive environments. McCartney, et. al. (2004) identifies eight major wetland functions: storage of precipitation and runoff, groundwater discharge, groundwater recharge, sediment retention, nutrient transformation, biomass production, maintenance of biodiversity, chemical cycling. Woodward and Wui (2001) add two other ones: habitat for aquatic species and habitat for terrestrial and avian species. These functions benefit not only people living within or near wetlands but also have effects on users downstream. Wetlands can provide habitat and food for diverse range of species, aid in groundwater recharge and water retention, provide erosion and sedimentation controls between adjacent ecosystems, improve water quality through filtering sediment and metals from groundwater, and cycle nutrients to terrestrial and aqueous environments within the wetlands and between ecosystems.

Specifically wetlands, as transitional zones between land and water, provide a natural protection against extreme floods and storm surges. Wetland resources are abundant and diverse ranging from marshes to wooded swamps and bogs, from sedge meadows to peatlands and vernal pools, wetlands benefit the people in countless ways. They help prevent flooding by slowing down and absorbing water, which might otherwise end up on properties, or in basements. Wetlands gradually release stored water to rivers and streams to maintain flow throughout the dry season, and recharge ground water aquifers so that wells do not go dry. They protect shorelines from erosion by absorbing the shock of wave action, and preserve water quality by retaining sediment, nutrients and other pollutants. They provide critical habitat for a myriad of species that form a delicate and complex web of life. Frogs, salamanders, turtles, fish, insects, songbirds, waterfowl, deer and moose are just some of the creatures that depend on wetlands for food, shelter and/or breeding habitat. Adamus, Stockwell, Clairain, Morrow, Rozas, and Smith (1991)

identify the functional values of natural wetlands that are important to society to include: groundwater recharge, groundwater discharge, floodwater alteration, sediment stabilization, sediment toxicant retention, nutrient removal transformation, production export, aquatic and wildlife diversity abundance, storm buffering, recreation, and uniqueness heritage.

Woodward and Wui (2001) identify the various functions performed by wetlands, though not exhaustive, to include: reservoirs of biodiversity; climate change mitigation; cultural value; flood control; groundwater replenishment; wetland products; including fish and shellfish, blueberries, cranberries, timber, and wild rice, as well as medicines that are derived from wetland soils and plants; recreation/tourism; sediment and nutrient retention and export; shoreline stabilisation and storm protection and water purification. On his own part, Williams (1990) identified four categories of function; physical/hydrological, chemical, biological, and socio-economic.

Purposes of Valuation

Studies have shown that real estate could be valued for various purposes which include sales/purchase, letting, mortgage, insurance, compensation, rating and taxation etc. All these show that real estate is basically valued for the purposes that can be determined in the open market. In the case of wetland ecosystems their peculiarities lend them to assessment beyond the open market forces since they are not marketed like real estate. Therefore wetland valuation purposes transcend the usual reasons for valuing real estate. Despite their importance in maintaining the ecological balance and ensuring the sustainable livelihood of the human community, globally, wetlands are under heavy pressure due to unsustainable development practices followed (Mitsch and Gosselink, 2000).

Valuation is important because services provided by aquatic ecosystems have attributes of public goods. Public goods are non-rival and non-excludable in consumption, thus preventing markets from efficiently operating to allocate the services e.g. filtration

of groundwater. However, in the absence of any market for the provision of water through wetland filtration, then there would be no observed price to reveal how much each household or individual may be willing to pay for the benefits of such a service. However, non-market values can be estimated to assess whether the benefits of collective action—perhaps through a state environmental agency or the Federal Environmental Protection Agency (FEPA), exceed the cost of the proposed actions to protect the wetland, and consequently the wetland filtration process and the quality of the water in the aquifer for drinking purposes.

Some aquatic ecosystem services indirectly contribute to other services that are provided through a market but the value of this ecological service itself is not traded or exchanged in a market. For example, an estuarine marshland may provide an important “input” into a commercial coastal fishery by serving as the breeding ground and nursery habitat for fry (juvenile fish). Although disruption or conversion of marshland may affect the biological productivity of the marsh and thus, its commercial fishery, a market does not exist for the commercial fishery to pay to maintain the habitat service of the marshland. It is costly for participants in the commercial fishery to come together and negotiate with marshland owners and there may be many owners from whom protection agreements must be sought. Estimation of the implicit (non-market) value of the fishery of marsh habitat can be used to understand whether there are laws and rules that protect the breeding and nursery functions of the marsh.

Valuation helps to compare the real costs and benefits of ecosystem use and degradation, and allows more balanced decision-making regarding the protection and restoration versus degradation of wetlands. This facilitates optimal decision-making which maximises societal well-being. If monetary values of ecosystem services are not estimated, many of the major benefits of aquatic ecosystems will be excluded in benefit-cost computations. The likely outcome of such an omission would be too little

protection for aquatic ecosystems and as a consequence, the services that people directly or indirectly enjoy would be undersupplied. Valuation, therefore, can help to ensure that ecosystem services that are not traded in markets and do not have market prices receive explicit treatment in economic assessments. The purpose of valuation is to formally estimate the “non-market” values that people already hold with respect to aquatic ecosystems. Such information on non-market values will in turn assist in assessing whether or not to protect certain types of aquatic ecosystems enhance the provision of selected ecosystem services and/or restore damaged ecosystems. Finally, economic values are often used in litigation involving damage to aquatic ecosystems from pollution or other human actions. According to Barbier, Acreman and Knowler, (1997) wetland valuation is used to build local and political support for its conservation and sustainable use, help diagnose the causes of environmental degradation and biodiversity loss, allow more balanced planning and decision-making, and/or develop incentive and financing mechanisms for achieving conservation goals.

Wetland Valuation in Nigeria

Nigeria is blessed with diverse wetland locations which are broadly classified into two major categories by Agbi, Abang and Animashaun (1995) Saline Coastal Mangrove Swamps (MS) and Freshwater Floodplains (FF). Eregha and Irughe (2009) note that the mangrove swamps covers an area of 9,000km² in the coastal States of Akwa Ibom, Cross River, Delta, Edo, Lagos, Ondo and Rivers while floodplains covers an area of 2,585 km² mostly along Niger/Benue River system.

Considering the challenges faced on wetland valuation, Ijagbemi (2009) opine that the challenges encountered in carrying out wetland valuation include items of valuation, non-availability of data for wetland resources and that most of the properties involved are not income yielding or offered in the market. Reviewing the statutory provisions for compensation, Egbenta (2010) concludes that inadequacy of legal regulations is a major challenge frustrating wetland valuation. Examining the legal backings for wetland

valuation, Otegbulu (2005) argues that the provision of the laws did not capture the full value of natural resources as they do not place accurate value on them. Also, Otegbulu (2009) argues that there is an absence of policy and legal framework for assessing full economic value to individual species based on economic functions and for assessing the value of damage to natural resources. Onugu, Iwu, Schopp, Czabiniak and Otegbulu (2003) opine that imbalances in the law and practice of environmental valuation are central to the problem faced by communities and ecosystem in the Niger Delta.

Materials and Methods

Primary data used for this study was gathered through the use of survey methods, especially questionnaire and personal interviews. The questionnaire was administered to elicit information on respondents’ experience in wetland valuation, their perception about wetland ecosystems and the purposes for which wetland resources were valued in the study areas. Copies of the

questionnaire were administered the firms of Estate Surveyors and Valuers in Lagos Metropolis (163) and the Niger Delta (72). Secondary data was collected from previous publications such as journal publications, textbooks, NIESV directory, to mention just a few. In analysing the primary data collected, frequency tables and percentage were adopted. The results of the analysis are contained in Tables 1 to 9 under result and discussion.

Result and Discussion

In this section the data collected were collated and analysed with the discussion of each of the table following. Statistical Package for Social Sciences (SPSS) version 17.0 was used for coding and analysis. Three hundred and eighty-seven (387) questionnaires were administered on the respondents Estate Surveyors and Valuers in the two study areas. While two hundred and sixty-seven (267) were administered in Lagos Metropolis, one hundred and twenty (120) were administered in Niger Delta.

Table 1 Questionnaire Distribution and Retrieval

Location	Questionnaire Distributed	Questionnaire Retrieved
Lagos Metropolis	267	163 (61.0%)
Niger Delta	120	72 (60.0%)
Total	387	213 (60.7%)

The data in Table 1 shows that out of the two hundred and sixty-seven questionnaire administered in Lagos Metropolis, one hundred and sixty-three, representing 61% were retrieved. On the other hand seventy-two (60%) out of the one hundred and twenty questionnaire administered in the Niger Delta were retrieved. Overall, two hundred and thirteen (about 60%)

were retrieved out of the three hundred and eighty-seven questionnaires administered. Numerically, the results obtained were not unexpected since there are more Estate Surveying and Valuation firms in Lagos Metropolis than the core Niger Delta.

Table 2 Respondents’ Academic Qualifications

Qualification	Lagos Metropolis		Niger Delta	
	Frequency	Percentage	Frequency	Percentage
OND	1	0.6	1	1.4
HND	56	34.4	11	15.3
B. Sc	82	50.3	49	68.0
M. Sc	24	14.7	10	13.9
PhD	0	0.0	1	1.4
Total	163	100	72	100

Table 2 contains the analysis of the academic qualification of the respondents. The table shows that there was one respondent with OND form each of the study areas. A further probe revealed that the respondents concerned chose to write the professional examinations after their OND programme, hence they did not go for further academic studies. The table further revealed that respondents with B. Sc. degree were in the

majority in the two study areas; in Lagos Metropolis it was 50.3% while they accounted for 68% in the Niger Delta. While there was one respondent with PhD degree in the Niger Delta, there was none in Lagos Metropolis. The totality of the table reveals that all the respondents possessed requisite academic qualification for registration as Estate Surveyor and Valuer.

Table 3 Working Experience as Estate Surveyor and Valuer

Experience	Lagos Metropolis		Niger Delta	
	Frequency	Percentage	Frequency	Percentage
≤ 5 years	20	12.3	4	5.6
6 – 10 years	46	28.2	15	20.8
11 – 15 years	34	20.9	20	27.8
< 15 years	63	38.6	33	45.8
Total	163	100	72	100

Table 3 displays the years of experience acquired by the respondents. As depicted on the table, 12.3% of respondents in Lagos Metropolis had between 0 and 5 years working experience, while Niger Delta had only 5.6%. Respondents with more than 15 years of experience were 38.6% in Lagos Metropolis and 45.8% in Niger Delta. Respondents with working experiences of between

6 and 15 years were closely proportional; 49.1% in Lagos Metropolis and 48.6 in Niger Delta. It could be deduced that respondents with longer years of experience may had at one time or the other take up personal development programme that would help them in wetland valuation assignments.

Table 4 Estate Surveyors and Valuers' Perception of Wetland

Description	Lagos Metropolis		Niger Delta	
	Yes	No	Yes	No
Wasteland	73 (44.8%)	90 (55.2%)	11 (15.3%)	61 (84.7%)
Poorly Drained Land	75 (46.0%)	88 (54.0%)	49 (68.1%)	23 (31.9%)
Swampy Land	111 (68.1%)	52 (31.9%)	59 (81.9%)	13 (18.1%)
Infested Land	35 (21.5%)	128 (78.5%)	13 (18.1%)	59 (81.9%)
Marshland	112 (68.7%)	51 (31.3%)	55 (76.4%)	17 (23.6%)

Table 4 reveals that there is slight difference in Estate Surveyors and Valuers perception about wetland from the two study areas. In Lagos Metropolis, a high proportion of the respondents described wetland as marchland (68.7%), swampy land (68.1%), poorly drained land (46%) and wasteland (44.8%). This could be the reason for the way wetland is converted to economic uses such as residential, commercial and industrial uses. On the other hand, respondents in the Niger Delta described wetland as swampy land (81.9%),

marshland (76.4%) or poorly drained land (68.1%). This position could possibly have given rise to the way wetland resources are being treated in the study area, that is, parcels of land to be converted to uses that can only be supported by economic activities of the multinational oil companies even at the expense of the livelihood of the common man in the region. The totality of deduction here is that respondents' perception would go a long way in affecting the way they respond to any programme to better their understanding of wetland ecosystems.

Table 5 Involvement in Wetland Valuation Exercises

Valuation Exercise	Lagos Metropolis		Niger Delta	
	Frequency	Percentage	Frequency	Percentage
Yes	18	11.0	55	76.4
No	145	89.0	17	23.6
Total	163	100	72	100

Results as contained in Table 5 show that only a few of the respondents (11%) in Lagos Metropolis had participated in wetland valuation while in Niger Delta majority of the respondent Estate Surveyors and Valuers (76.4%) had at one time or the other participated in wetland valuation. While the rate of participation in wetland valuation in Lagos Metropolis may be due to non-

provision for environmental resources in the Land Use Act, the high rate of participation in wetland valuation by Estate Surveyors and Valuers in the Niger Delta could be due to incessant oil spillages and physical development resulting from continuous expansion of companies involved in oil exploration.

Table 6 Environmental Valuation as part of School Curriculum in Higher Institution

Curriculum	Lagos Metropolis		Niger Delta	
	Frequency	Percentage	Frequency	Percentage
Yes	0	0	3	5.5
No	18	100	52	94.5
Total	18	100	55	100

The result as contained in Table 6 reveals that while none of the respondents in Lagos Metropolis took any course in environmental valuation in their undergraduate days, only (5.6%) of the respondents in the Niger Delta took any course in environmental valuation during their undergraduate school days. In-depth interviews with respondents who claimed that environmental valuation was part of the school curriculum in their higher institutions revealed that they trained in institutions outside Nigeria. Also the personal interview conducted on the officials of the

research department of NIESV revealed that environmental valuation is yet to be included in the Institution's curriculum for professional examinations. The import of all the above therefore was that Estate Management graduates are yet to be fully armed with adequate training in environmental valuation and by implication, wetland valuation and this may affect their perception and the choice of method used in wetland valuation.

Table 7 Training/Workshop/Seminar on Wetland Valuation between 2005 and 2010

Training/Workshop/Seminar on Wetland Valuation	Lagos Metropolis		Niger Delta	
	Frequency	Percentage	Frequency	Percentage
Yes	60	36.8	41	56.9
No	103	63.2	31	43.1
Total	163	100	72	100

In Table 7 only a small proportion (37%) of respondents from Lagos Metropolis claimed that they had attended training/workshop/seminar on wetland valuation within the specified period. On the other hand, 56.9% of the respondents in the

Niger Delta had attended training/workshop/seminar on wetland valuation within the specified period. From the result obtained, it could be inferred that majority of the respondent Estate Surveyors and Valuers (56.9%)

in practice within the Niger Delta have the knowledge of wetland ecosystems. The 56.9% achieved, as contained in the Table 7 could be attributable to the conferences organised by the Nigerian Institution of Estate Surveyors and Valuers in Port Harcourt (2005) and Warri (2007) where issues relating aspects of wetland as a

natural resource were discussed. It is worthy of note that lack of adequate training/workshop/seminar on wetland valuation may automatically give rise to the application of inappropriate valuation method(s) when and where such opinions are demanded.

Table 8 Number of Training/Workshop/Seminar attended between 2005 and 2010

Number of Training/Workshop/Seminar on Wetland Valuation	Lagos Metropolis		Niger Delta	
	Frequency	Percentage	Frequency	Percentage
Less than 5	60	36.8	41	56.9
5 – 10	0	0	0	0
Above 10	0	0	0	0
None	103	63.2	31	43.1
Total	163	100	72	100

Table 8 reveals that all the respondents in the study areas; (Lagos Metropolis, 36.8% and the Niger Delta, 56.9%) who claimed to have attended training/workshop/seminar had actually attended less than five of such training/workshop/seminar within the specified period. The reason for this could be traced to the few number of training/workshop/seminar on wetland valuation

organised by NIESV and ESVARBON, coupled with the fact that such training/workshop/seminar were not mandatory. It could be inferred from the table that Estate Surveyors and Valuers in the study areas might had limited training on wetland valuation and this will impact on their perception and valuation of wetland resources.

Table 9 Purposes of Valuation

Purpose	Lagos Metropolis		Niger Delta	
	Yes	No	Yes	No
Financial Statements	77 (47.2%)	86 (52.8%)	0 (0.0%)	72 (100.0%)
Advice on Sale	139 (85.1%)	24 (14.9%)	0 (0.0%)	72 (100.0%)
Loan Facilities	161 (98.8%)	2 (1.2%)	1 (1.4%)	71 (98.6%)
Compensation	33 (20.5%)	130 (79.5%)	68 (94.4%)	4 (5.6%)
Conservation	0 (0.0%)	163 (100.0%)	25 (34.7%)	47 (65.3)
Rating of Oil Installation	0 (0.0%)	163 (100.0%)	50 (69.4%)	22 (30.6%)
Environmental Restitution	0 (0.0%)	163 (100.0%)	48 (66.7%)	24 (33.3%)

Table 9 contains the various purposes for which wetland resources could be valued. It is evident from the table that there are divergent purposes for which wetland resources are valued in the study areas. In Lagos Metropolis, wetland resources are valued for loan facilities (98.8%), advice on sale (85.1%), compensation (20.5%) and financial statements (47.2%). On the contrary, wetland resources in the Niger Delta are valued for compensation (94.4%), rating of oil installation

(69.4%), environmental restitution (66.7%) and conservation (34.7%) purposes. The situation depicted in the table might not be unconnected to the peculiarity of the environment. The prevailing situation in Lagos Metropolis is the conversion of wetland ecosystems to commercially viable uses backed by market forces with which the investors are usually concerned with. When there is acquisition, compensation is usually determined on statutory basis using the Land Use Act. On the other hand, in the Niger Delta, wetland ecosystems

(environment) has suffered a lot damaging effects from the activities of the multinational oil companies, hence majority of the valuation

assignments were carried out either for compensation or for environmental restitution purposes.

Table 10a Ranking of Purposes of Valuation in Lagos Metropolis

Purpose	5	4	3	2	1	Total	RII	Ranking
Financial Statements	44	42	38	24	15	163		
Advice on Sale	$a_i n_i = 220$	$a_i n_i = 168$	$a_i n_i = 114$	$a_i n_i = 48$	$a_i n_i = 15$	565	3.47	3 rd
Loan Facilities	36	62	26	24	15	163		
	$a_i n_i = 180$	$a_i n_i = 248$	$a_i n_i = 78$	$a_i n_i = 48$	$a_i n_i = 15$	569	3.49	2 nd
Compensation	112	9	9	21	12	163		
	$a_i n_i = 560$	$a_i n_i = 36$	$a_i n_i = 27$	$a_i n_i = 42$	$a_i n_i = 12$	677	4.15	1 st
Conservation	15	62	33	15	38	163		
	$a_i n_i = 75$	$a_i n_i = 248$	$a_i n_i = 99$	$a_i n_i = 30$	$a_i n_i = 38$	490	3.00	4 th
Rating of Oil Installation	0	62	30	35	36	163		
	$a_i n_i = 0$	$a_i n_i = 248$	$a_i n_i = 90$	$a_i n_i = 70$	$a_i n_i = 36$	444	2.72	5 th
Environmental Restitution	0	0	18	23	122	163		
	$a_i n_i = 0$	$a_i n_i = 0$	$a_i n_i = 54$	$a_i n_i = 46$	$a_i n_i = 122$	222	1.36	7 th
	0	0	0	63	100	163		
	$a_i n_i = 0$	$a_i n_i = 0$	$a_i n_i = 0$	$a_i n_i = 126$	$a_i n_i = 100$	226	1.38	6 th

Table 10b Ranking of Purposes of Valuation in Niger Delta

Purpose	5	4	3	2	1	Total	RII	Ranking
Financial Statements	0	6	19	20	27	72		
Advice on Sale	$a_i n_i = 0$	$a_i n_i = 24$	$a_i n_i = 57$	$a_i n_i = 40$	$a_i n_i = 27$	148	2.06	6 th
Loan Facilities	4	17	11	10	30	72		
	$a_i n_i = 20$	$a_i n_i = 68$	$a_i n_i = 33$	$a_i n_i = 20$	$a_i n_i = 30$	171	2.38	5 th
Compensation	1	4	10	26	31	72		
	$a_i n_i = 5$	$a_i n_i = 16$	$a_i n_i = 30$	$a_i n_i = 52$	$a_i n_i = 31$	134	1.86	7 th
Conservation	38	8	13	3	10	72		
	$a_i n_i = 190$	$a_i n_i = 32$	$a_i n_i = 39$	$a_i n_i = 6$	$a_i n_i = 10$	277	3.85	1 st
Rating of Oil Installation	3	16	12	16	25	72		
	$a_i n_i = 15$	$a_i n_i = 64$	$a_i n_i = 36$	$a_i n_i = 32$	$a_i n_i = 25$	172	2.39	4 th
Environmental Restitution	36	15	5	0	16	72		
	$a_i n_i = 180$	$a_i n_i = 60$	$a_i n_i = 15$	$a_i n_i = 0$	$a_i n_i = 16$	271	3.76	2 nd
	17	20	17	4	14	72		
	$a_i n_i = 85$	$a_i n_i = 80$	$a_i n_i = 51$	$a_i n_i = 8$	$a_i n_i = 14$	238	3.31	3 rd

Further test was carried out on the purposes of wetland valuation using RII and ranking. The results are contained in Tables 10a & b. While loan facilities with RII of 4.15 was ranked the prominent purpose in Lagos metropolis (Table 10a), compensation with RII of 3.85 was ranked the number one purpose for which wetland valuation is required in the Niger Delta (Table 10b). These results further showed that there are

divergent purposes for wetland valuation in the study areas.

Conclusions and Recommendations

Valuation assignments are carried out for various purposes usually determined by the client. Various studies showed that, in addition to the general purposes, wetland valuation could also be required for conservation, rating of oil installations and environmental restitution. It is evident from

the study that wetland resources are majorly carried out for loan facilities (98.8%) and advice on sales (85.1%) in Lagos Metropolis while the prominent purposes for wetland valuation in the Niger Delta are compensation (94.4%), rating of oil installations (69.4%) and environmental restitution (66.7%). Most of the respondents did not have required academic and professional training in environmental valuation and this may impact on their perception and eventually affect the method(s) adopted in valuing environmental resources. In the light of this NIESV and ESVARBON should compel institutions offering Estate Management to include environmental valuation as a core course and also organise regular professional training/workshop for practicing Estate Surveyors and Valuers. Also, NIESV should incorporate environmental valuation in the curriculum for professional examinations.

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