Participatory forest finance in Nigeria: Problems and prospects

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Abstract

This paper examines the potential of non-governmental sources for financing reforestation projects in Nigeria. The main objective was to investigate and evaluate the possible funding of reforestation projects from non-governmental sources. Nine states were selected across eco- vegetational zones in the country for field information gathering. The states are Benue, Cross River, Edo, Kano, Lagos, Ogun, Osun, Kaduna and the Federal Capital Territory (FCT). In each of the states, three Local Government Areas (LGAs) were selected to reflect rural, peri-urban and urban settings. Fifteen individuals from each of the LGAs were randomly selected for interview to elicit their Willingness To Pay (WTP) for reforestation in their localities. The findings indicate that 69.71% of the respondents were willing to pay amounts, ranging from N100 to N5, 000 for reforestation around their localities. However, responses varied by state: Cross River recorded 93.18% while Edo, Lagos, Ogun, Osun, FCT, Benue, Kaduna and Kano States recorded 76.00%, 57.58%, 53.33%, 60%, 74.42%, 63.41%, 70.45% and 73.33% positive responses respectively. Mean WTP values were N643.18, N832.00, N569.70, N496.67, N151.11, N481.40, N426.83, N354.55 and N364.44 in Cross River, Edo, Lagos, Ogun, Osun, FCT, Benue, Kaduna and Kano states respectively. This brings about national mean WTP value of N456.57. The modal WTP value for all the states and across all the socio-economic parameters considered (gender, nativity, and duration of stay in locality, marital status, educational attainment, employment status, income and age) was N100.00. The projections of total elicited WTP values for the states were based on the modal WTP value and it is a function of the Total Active Population (people between ages 15 and 65 years, assumed to be employed and willing and able to contribute financially to this reforestation fund). On the basis of this, Kano State which has the highest population has the highest aggregate WTP value ranging from N432.49 million for the first year 2003. The FCT with the lowest population has aggregate WTP value of N27.66 million for the year 2003. The primary importance of this study lies in the empirical evidence that there exists great potential for local non-governmental financing of forestry development in Nigeria.

Introduction

Overview of the forestry sub-sector in Nigeria

Nigerian forestry has had a chequered history. By the standards of public institutions, the forest service is an old agency in Nigeria. Few modern agencies can trace ancestry in a straight-line succession from 1908 when the first Forestry Department was created (Adeyoju, 1975). The major strategy then was to emphasize reservation even though exploitation was also going on to service the industries in Europe. The constitution of forests was not a total success as there was wide spread stiff opposition and resistance of local communities who held tenaciously onto their land by rightly establishing their claim on it. As a result of this, only 10% of the total land area of Nigeria had been reserved under forest as at 1970 (Table 1).

Even then, it should be noted that only 20 percent of the reserved forest land area or a mere two percent of Nigeria's total land area was reserved productive forest land, capable of producing useful industrial timber as at 1979 (FAO,1979). These constituted forests are scattered across the country though the bulk lies in the country's lowland rainforest belt in the south (Figure 1). Since 1960, with the transformation of the economy from agricultural to oil-based one,

Table 1: Area of constituted forests at 10-year periods up to 1970

Year	Forest Area (Km^2)	%Total land area
1900	971	0.01
1910	2590	0.27
1920	8143	0.88
1930	24887	3.20
1940	57366	6.40
1950	73320	7.90
1960	85631	9.50
1970	93420	10.00

Source: Adeyoju, 1975

large areas of the constituted forests have been de-reserved for political reasons or for "special projects" such as agricultural plantations, road construction, settlements and laying of petroleum pipe- lines. FORMECU (1996 and 1999) further confirms this (Table 2). By 1996, the total land area under constituted forest had shrunk to 49271km^2 or a mere 5.34% of the total land area of the country. Even if areas under forest plantation were considered, the increase in forest area would be about 0.3%. FAO (2001) has reported that barely 2% of the annual allocation of public funds to the Ministry of domiciliation of forestry was available to the Forestry Department. This is even worse at the state level where substantial proportions of their internally generated revenue (IGR) are obtained from the forestry sector. According to Famuyide and Popoola (in press) most of the states have very low amounts appropriated and in fact much lower amounts released for reforestation purposes. In all cases, fund released fell short of budgeted fund for reforestation. Except for the Cross River State which budgeted ₦154 million and got ₦120 million released for the year 2001, all the other states during the period 1991 to 2001 had less than ₦30million budgeted, out of which barely 50% was actually released (Table 3).

The levels of reforestation achieved in some of the states are due to self-help efforts rather than a product of fiscal support from governments. There is no doubt that forestry investment patterns in the states are sub-optimal, considering the challenges of deforestation confronting them. Except for Benue State, the other three states i.e. Cross River, Edo and Ogun are in the rainforest belt, and there is the general notion that governments in this vegetation belt tend to place low priority on investment in reforestation. By contrast, it would appear that governments in the guinea savanna and the sudano-sahelian zones place greater priority on investment in forestry. Famuyide and Popoola (in press) observed that while governments in these two zones between 1986 and 1995 spent ₦813.91 million and ₦852.34 million representing 41.78% and 43.30% respectively of the total state expenditure, governments in the rainforest zone spent only ₦290.59 million representing 14.98% of total state expenditure. There appears therefore, to be a correlation between felt need for forest resources/benefits and willingness to invest in reforestation by governments.
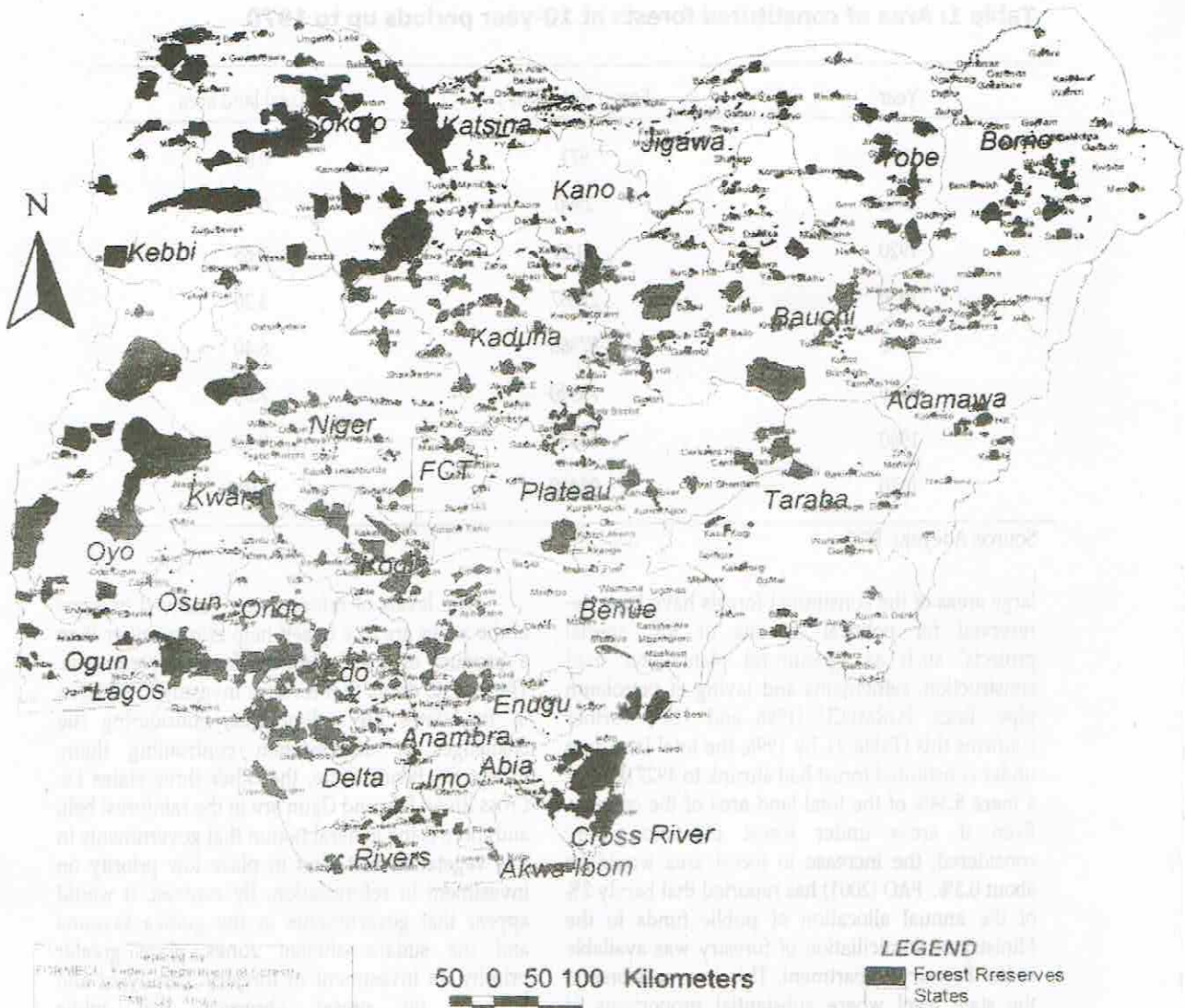
Figure 1: Map of Nigeria showing Forest Reserves

Table 2: Total area under both natural and plantation forests in the1990s

Forest types	Area (Km²)	% of Country
Natural Forest	46,542.14	5.04
Forest Plantations	1,573	0.20
Teak Plantation	1,156	0.10
	49271.14	5.34

Source: Adapted from FORMECU (1996); and (1999)

Table 3: Forestry budgets (Million Naira), reforestation targets and levels of achievement (Hectares) in some of the states under study

States	Average amount appropriated/ udgeted(N)	Average amount actually released(N)	% deficit	Average target for reforestation (Ha)	Average aChievement for reforest- ation (Ha)	% deficit
CRS	57.29	42.45	25.90	1200	1190.33	0.81
Benue	14.45	Nil	100	126	70.50	46.25
Edo	21.00	Nil	100	120	Nil	100
Ogun	12.00	4.38	63.5	450	377.33	16.15
Total	104.74	46.83	55.29	1896	1638.16	13.60

Source: Famuyide & Popoola (in process)

Methodology

Field Study

Nine states were selected, based on a combination of factors such as level of forest resources endowment, geo-political and eco-vegetation groupings. This sampling represents 25% of the total number of states in Nigeria, and cuts across Nigeria's five broad eco-vegetation zones and six geo-political zones. The states selected for sampling (Table 4 and Figure 2) are Benue, Cross-River, Edo, FCT, Kano, Lagos, Ogun, Osun and Kaduna.

The second stage involved the purposive sampling of three Local Government Areas (LGAs) in each of the selected states to reflect rural, peri-urban, and urban settings of each state. The three LGAs selected represent at least 10% of the total number of LGAs in each state, since the average number of LGAs per state

Table 4: List of sampled states

States	Geo-political zones	Eco-vegetation zone
Benue	North east	Guinea Savanna
Cross River*	South – south	Mangrove
Edo*	South west	Rainforest
FCT+	Central	Guinea savanna
Kano	Northwest	Sudano-sahelian
Lagos+	Southwest	Rainforest
Ogun*	Southwest	Rainforest
Osun*	Southwest	Rainforest
Kaduna	Northwest	Guinea/Derived Savanna

* Major producers of forest products
+ Megalopolis

hovers around 30. Subsequently, 15 respondents were selected from across communities with forest estates, in and around their localities. Face-to-face interviews were conducted with 375 respondents using structured close-ended questionnaires to elicit responses for questions on their level of awareness of vegetation loss, and their willingness to pay for reforestation. Reforestation is being used in this case as the public good to pay for because de-reservation and degradation of forest estate have been on the increase since the 1960s in Nigeria. Because of the level of development and disposition of the Nigerian public to survey, payment-card format of Contingent Valuation Method (CVM), wherein the respondent is asked for how much he will be willing to pay from the array of amounts stated in the questionnaire, was adapted to elicit the amount individual respondents will be willing to pay for that public good (reforestation). Interviews were also conducted in the states with government officials responsible for forest conservation to elicit information on the levels and adequacy of funding by governments.

Conceptual framework

Willingness to pay (WTP) for particular goods and services is a technique employed under Contingent Valuation Method (CVM), to elicit monetary value for conventionally non-priced goods and services (Ajewole, 2000). It is a behavioural intention statement of economic value. In situations where markets for environmental goods and services do not exist or are not well developed or where there are no alternative markets or market prices that can be satisfactorily used as proxies or direct measures of value, it may not be possible to value environmental effects or services of a particular project or resource, by using the direct or indirect market pricing techniques. Popoola (1995) had identified the rich biodiversity of the tropical forests which separately elicits different value systems being ascribed to one single resource, by different people within and between communities adjoining such forests as serious limitations on proper valuation of any particular forest resources. In such instance, it is possible to question people directly about how they would react to a given situation, and based on their answers, the value of a good or service to each person can be determined and then extrapolated to determine the aggregate value of the goods or service under consideration. This can be achieved by the use of surveys, designed to estimate the

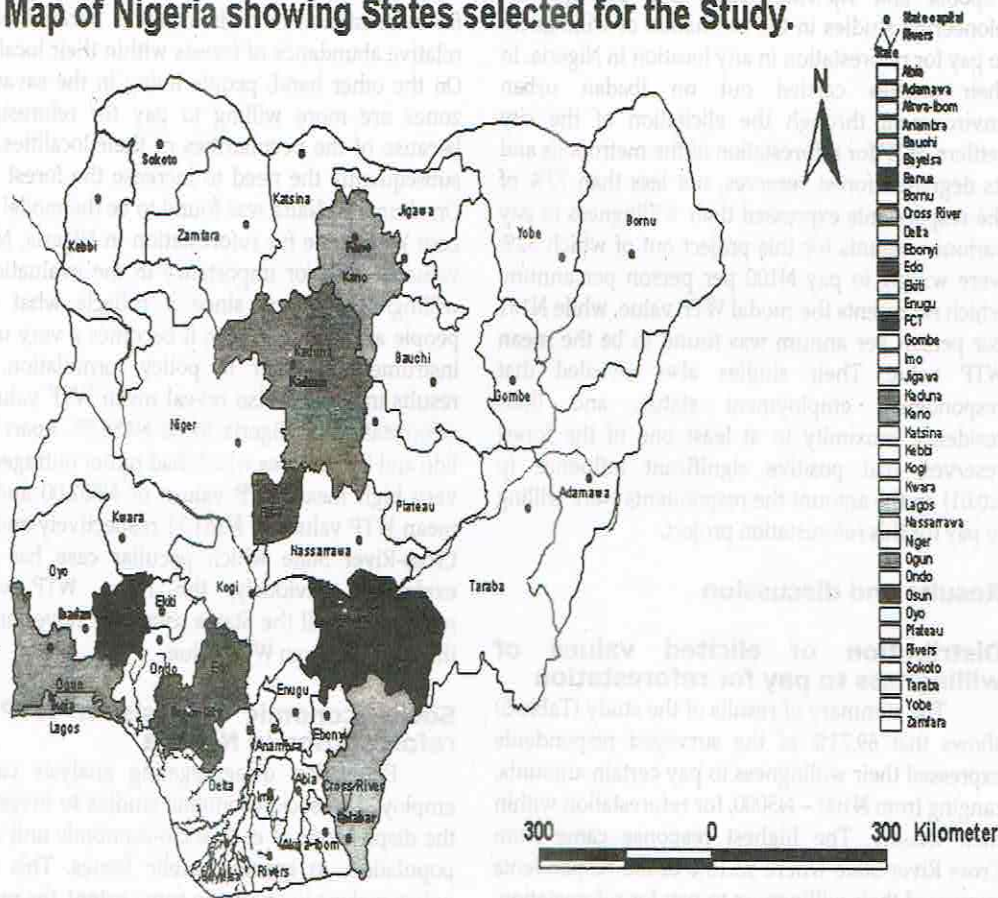# Map of Nigeria showing States selected for the Study.

Figure 2: Map of Nigeria showing States selected for the Study.

respondents' willingness to pay for particular goods and services. In Nigeria, Ajewole (2000) and Popoola and Ajewole (2002) are perhaps the pioneering studies in the estimation of willingness to pay for reforestation in any location in Nigeria. In their studies carried out on Ibadan urban environment through the elicitation of the city settlers' WTP for reforestation of the metropolis and its degraded forest reserves, not less than 77% of the respondents expressed their willingness to pay various amounts for this project out of which 52% were willing to pay ₦100 per person per annum; which represents the modal WTP value, while ₦161 per person per annum was found to be the mean WTP value. Their studies also revealed that respondents' employment status, and their residence proximity to at least one of the forest reserves, had positive significant influence (p <0.01) on the amount the respondents were willing to pay for this reforestation project.

Results and discussion

Distribution of elicited values of willingness to pay for reforestation

The summary of results of the study (Table 5) shows that 69.71% of the surveyed respondents expressed their willingness to pay certain amounts, ranging from ₦100 – ₦5000, for reforestation within their locality. The highest response came from Cross River State where 93.18% of the respondents expressed their willingness to pay for reforestation. This is somehow understandable since Cross River State has the largest reserved tropical forest in Nigeria, as well as the presence of many non–governmental conservation organizations, and indeed the best organized Community Forestry Programme in Nigeria, the Ekuri Initiative being the foremost. Edo State had 76% WTP. Apart from Cross River and Edo States, the general trend of the results varies basically along ecological zones. Hence, higher proportion of the respondents in the savannah zones – FCT; 74.42%, Kano; 73.33%, Kaduna; 70.45% and Benue 63.41%, expressed their willingness to pay for reforestation, compared with lower proportion of the respondents in the forest zones – Osun; 60%, Lagos 57.58% and Ogun 53.33%

who expressed their willingness to pay for reforestation in their localities. This trend suggests that people in the forest areas are less willing to pay for reforestation in their localities because of the relative abundance of forests within their localities. On the other hand, people living in the savannah zones are more willing to pay for reforestation because of the peculiarities of their localities, and subsequently the need to increase the forest area. One hundred Naira was found to be the modal non-zero WTP value for reforestation in Nigeria. Modal value is of major importance in the evaluation of willingness to pay, since it reflects what most people are willing to pay; it becomes a very useful instrument/indicator in policy formulation. The results in Table 5 also reveal mean WTP value for reforestation in Nigeria to be ₦456.57. Apart from Edo and Osun States which had rather outrageously very high mean WTP values of ₦832.00 and low mean WTP values of ₦151.11 respectively and also Cross-River State which peculiar case has been explained previously, the mean WTP values recorded for all the States somehow hover around the national mean WTP value.

Socio-economic analysis of WTP for reforestation in Nigeria

Population disaggregating analysis can be employed in socio-economic studies to investigate the dispositions of each socio-economic unit of the population, to specific public issues. This helps policy makers to predict to some extent, the public's possible reaction to prospective policies on such issues. Hence, this study disaggregated the sampled population by different socio- economic criteria/units such as gender marital status, educational attainment, age, professional and employment status, nativity, duration of residence in the study area, prior knowledge of existence of forest reserves or other forests within the locality as well as level of income. In order to compensate for the variations in the frequency/number of different components of specific socio-economic units/classes, the sampled population of each component of a particular socio-economic unit was taken to be 100% and analysis of this component's disposition was carried out on the component's population

within a specific socio-economic unit. For instance, where the survey recorded 18 male respondents and 27 female respondents, out of which 9 males and 18 females were willing to pay for reforestation, the percentages of males and females that were willing to pay were taken to be 50% and 66.67% respectively. In this case, the 18 males and 27 females randomly surveyed from the study population become the representative sampled population of males and females respectively. Table 6 shows the relationship of these socio-economic and location factors on one hand and the proportion of respondents willing to pay for reforestation as well as mean WTP on the other. From the Table, 83.17% of respondents from the rural areas were willing to pay for reforestation, compared with the 64.93% and 63.48% of the urban and peri-urban dwellers respectively that expressed their willingness to pay. The urban respondents recorded the highest mean WTP value – N508.21, while the rural dwellers still recorded a mean WTP value of N480.20, which is quite close to the urban mean WTP value, and even higher than the peri-urban mean WTP value of N375.65. This tends to portray a great commitment on the part of the rural dwellers to increase the area of forests within their localities. Gender analysis from the Table shows that 73.73% and 61.40% of the sampled males and females respectively were willing to pay for reforestation within their localities.

Interestingly, there is not much difference between the mean WTP values of male – N453.14 and that of female – N442.98. More of the sampled indigenes (75.11%) expressed their willingness to pay for reforestation, and also recorded higher mean WTP value than the non- indigenes, 60% of who expressed their willingness to pay for reforestation, and with mean WTP value of N423.20.This observation corroborates the *a-prior,* expectation that indigenes will be more committed to development projects within their localities than the non-indigenes. The expected influence of the duration of residence of the respondents on their expression of WTP for reforestation and the mean WTP value is similar to the foregoing. However the mean WTP value does not seem to follow any specific pattern, with respondents who have spent

between 10-20 years in the localities recording the highest mean WTP value of N624.19, followed by those who have spent between 21-30 years which recorded N419.72, followed by those who have spent less than 10 years which recorded N391.74, and lastly, those who have spent over 30 years which recorded the least mean WTP value of N367.39. This duration range incidentally has the greatest proportion 78.18% of the sampled respondents who expressed their WTP for reforestation. The results also reveal a wide difference among the expressed WTP for reforestation by the employed (75.13%), self employed (67.80%) and unemployed (48.72%). This trend is also the same for their mean WTP values where N629.53 was recorded for the employed respondents, N291.53 for the self-employed and N100.00 for the unemployed.

Age was found to influence the WTP for reforestation. The trend indicates that willingness to pay for reforestation increases with age of the respondent up to a point, and then decreases with increasing age. Thus the proportion of respondents willing to pay for reforestation increased from 61.11% recorded for respondents who are less than 25 years of age, increased to 66.38% for those between 25-34 years of age, and then to 69.03% for the age group 35-44, and then further to 71.23% for age group 45-54. It reached the peak with age group 55-64, recording 94.44% of the sampled respondents willing to pay for reforestation. Above this age group (65 and above), the proportion of the respondents willing to pay for reforestation diminished to 75%. The mean WTP values of these different age groups followed the same trend. Respondents who were less than 25 years of age recorded mean WTP value of N266.67, followed by N365.52 for those in age group 25-35 years, and reached a peak of N701.37 for the age group 45-54. From this point, mean WTP values fell to N238.89 for age group 55-64, and dropped to N91.57 for respondents above 65 years of age. The *a-priori* position of the possible effect of prior knowledge of constituted forests around the respondents' localities is aptly corroborated by the observed results in Table 6.

Table 5: Percentage distribution of elicited values of WTP for reforestation in Nigeria

States (N)		0	100	200	300	400	500	1000	2500	5000	Total	Mean WTP	Percentage of respondents willing to pay
Benue	No	15	7	3	4	-	5	5	1	1	41	426.38	63.41
	Freq %	36.59	17.07	7.32	9.76	-	12.20	12.20	2.44	2.44	100		
CR	No	3	18	6	1	5	3	4	1	3	44	6413.18	93.18
	Freq %	6.82	40.91	13.64	2.27	11.36	6.82	9.09	2.27	6.82	100		
Edo	No	6	1	3	2	-	6	4	1	2	25	832.00	76.00
	Freq %	24	4	12	8	-	24	16	4	8	100		
FCT	No	11	10	4	3	-	5	8	1	1	43	481.40	74.42
	Freq %	25.58	23.26	9.3	6.68	-	11.63	18.60	2.33	2.33	100		
Kaduna	No	13	12	3	3	-	7	4	-	1	44	354.55	70.45
	Freq %	29.55	27.27	6.82	6.82	-	15.91	9.09	-	2.27	100		
Kano	No	12	12	8	2	-	7	2	1	1	45	364.44	73.33
	Freq %	26.26	26.26	17.78	4.44	-	15.5	4.44	2.22	2.22	100		
Lagos	No	14	9	-	1	1	4	1	1	2	33	569.70	57.58
	Freq %	42.42	27.27	-	3.03	3.03	12.12	3.03	3.03	6.06	100		
Ogun	No	14	2	5	1	-	2	4	-	2	30	496.67	53.33
	Freq %	46.67	6.67	16.67	3.33	-	6.67	13.33	-	6.67	100		
Osun	No	18	17	4	1	-	2	3	-	-	45	151.11	60.00
	Freq %	40	37.78	8.89	2.22	-	4.44	6.67	-	-	100		
Total	No	106	88	36	17	8	41	35	6	13	350	456.57	
	Freq %	30.3	25.1	10.3	4.9	2.3	11.7	10.0	1.7	3.7	100		

Source: Field survey, 2001

CR = Cross River; ED = Edo; FCT = Federal Capital Territory; BN = Benue; OG = Ogun; OS = Osun; FCT = Osun; LG = Lagos; KN = Kano

KD = Kaduna; KN = Kano

Table 6: Effects of Socio-economic and Location Factors on the Proportion of people willing to pay for reforestation and Mean WTP values (₦)

Factor	Percent WTP >0	Mean WTP (₦)
Location		
Urban	64.93%	508.21
Peri-Urban	63.48%	375.65
Rural	83.17%	480.20
Gender		
Male	73.73	453.14
Female	61.40	442.98
Family History		
Native	75.11%	475.11
Non-native	60%	423.20
Factor	Percent >0	Mean WTP
Employment Status		
Employed	75.13	629.53
Self Employed	67.80	291.53
Unemployed	48.72	100.00
Income Group		
Under ₦ 5,000	56.36	165.45
₦ 5,001 – ₦ 10,000	70.15	474.63
₦ 10,001 – ₦15,000	76.12	275.12
₦ 15,001 - ₦ 20,000	75.86	425.86
Over ₦ 20,000	68.93	734.95
Age Group		
< 25 yrs	61.11	266.67
25 – 34	66.38	365.52
35 – 44	69.03	495.58
45 – 54	71.23	701.37
55 – 64	94.44	238.89
65 and above	75.00	91.57
Knowledge of Forests		
Yes	75.89	528.85
No	53.61	268.04
Duration of Residence		
< 10	60.33	391.74
10 – 20	74.19	624.19
21 – 30	70.42	419.72
Over 30 years	78.18	367.39
Marital Status		
Married	73.01	511.76
Single	54.10	195.08
Education		
No Education	60.61	154.55
Primary	82.69	267.31
Secondary	66.98	313.21
Tertiary	66.97	463.30
Postgraduate	74.00	1142.00

Prior knowledge of the existence and present condition of constituted forests is expected to engender greater concern for the fate of forests. This is quite manifested from the proportion (75.89%) of the sampled respondents that have prior knowledge of the existence of constituted forests around their localities, who expressed their willingness to pay for reforestation, and also recorded mean WTP value of N528.85. This can be compared to 53.61% of the sampled respondents who have no prior knowledge of the existence and condition of the constituted forests around their localities that expressed their willingness to pay a mean WTP value of N268.04. Similarly, the mean WTP values observed on the effect of educational attainment were direct and positive.

Secondly, the level of income is related to the level of education, all things being equal. Hence the highly educated ones with high earnings had higher WTP values. The foregoing, reveals that the people that have no education recorded mean WTP value of N154.55. This increased to N267.31 for those with primary education, N313.21 for those with secondary education, which further increased to N463.30 for those with tertiary education and with the peak of N1142 for those with postgraduate education. Lastly, it can also be observed from the Table, the relationship between the respondents' marital status and the mean WTP values. The results show that 73.01% of the married respondents and 54.10% of the unmarried (single) respondents expressed their willingness to pay for reforestation. The married respondents had a mean WTP value of N511.76, while the single respondents had a mean WTP value of N195.08.

Aggregate estimate value of elicited WTP for reforestation

The results of the study have so far shown that the modal WTP value across all the demographic parameters in Nigeria is N100.00 (approximately USD .0071). This represents about 0.09% of the Gross National Income (GNI) per capita. The GNI per capita for the country is USD 770.00, approximately N107, 800.00. This is among the lowest in West Africa, only higher than those of Mali- USD 740, Guinea Bissau- USD630 and Sierra Leone- USD 440. This low GNI per capita is,

however, not the true reflection of wealth (or poverty) distribution in the country. There are indeed extremes of individual wealth and poverty. In fact over 60% of the population actually earns less than the quoted GNI per capita. The modal WTP value of N100.00 may therefore be realistic, but perhaps also because it was the least non-zero value on the payment card used in the conduct of the survey. In computing the aggregate elicited WTP value, the following important demographic parameters were considered:

- Total population
- Total active population (ages 15-65 years)
- Total population with assumed ability to pay
- Population growth rate
- GNI per capita.

The last population census (1991) put Nigeria's population at 88,611,1537 people. Ten years after it has leaped to 112million people (about 27% increase). It currently stands at 115 million people. The percentage of the total population below age 15 and above age 65 is 47%, leaving 53% as active population. The active population is assumed to be employed and able to pay the modal elicited value and thus the estimates of WTP values are computed by state.

The model for estimating the aggregate value is therefore:

$$P_n = P_o\, e^{rt}$$

Where

P_n = Projected Population for the Current Year
P_o = Base year Population
e = Exponential
r = rate of population growth which is 2.83%/annum
t = time of population growth.

$$TAP_n = 0.53\, P_n$$

Where

TAP_n = Total Active Population for the Current Year.

$$AGG = WTP_{modal} \quad TAP_n$$

Where

AGG = Aggregate WTP value
WTP_{modal} = Modal Value of WTP (N)

Based on the above computational procedure, the lowest aggregate estimated WTP value for reforestation in Nigeria is N27, 664,569 being the lowest obtained from the Federal Capital Territory, which has the lowest population among the states. While the highest aggregate estimated WTP value for reforestation is N432, 487,473, obtained from Kano State, which is the state with highest population. However, it is expedient to investigate the extent of reforestation in the different ecological zones, achievable from these aggregate estimate WTP values. This in essence will give an idea of what can be achieved by a well-organized community forestry development programme. Estimating the reforestation area (ha) obtainable for state from their respective aggregated estimate WTP value is computed by taking into consideration the apparent variability in the cost of reforestation projects in different ecological zones. Reforestation projects in the semi-arid/savannah ecological zone cost less per hectare, than in rainforest ecological zone, apparently because; it is far more labour and capital intensive to prepare a forest area for reforestation.

Thus, based on past field experience, it will cost about N100, 000/ha for afforestation in the semi-arid/savannah ecological zone, while about N150, 000 will be needed to establish one hectare of forest plantation in the rain forest ecological zone of Nigeria. Furthermore, it can also be observed from Table 7 that the states in Savannah/Semi-arid ecological zone record in general more potential reforestation area (ha) obtainable from their respective aggregate estimate WTP value, since afforestation/reforestation costs less in this zone. Thus Cross River State has the lowest reforestation area (948.42 ha) obtainable, while Kano with 4,324.87 ha records the highest reforestation obtainable.

Lessons learnt and their policy implications

The study has revealed that funding of reforestation projects is fast becoming a low priority issue of governments in most states of Nigeria. Budgetary allocations are therefore ridiculously low and are never released on time, if ever. However, the study has revealed the great potential for participatory funding of forestry development in Nigeria, particularly in the savanna/semi-arid zone. The implication of this is that an enabling policy on participatory financing of forestry projects will most likely receive greater enthusiasm and support in the semi-arid zone of the country than the rainforest zone. This should be a salient point to be considered when cognate policies are being formulated and implemented. In essence, this idea can first be tried in the semi-arid zone since it is more likely to receive greater support there. Having succeeded in this zone, it can then be used as a model in the rainforest zone, and backed with appropriate participatory forestry development model, which should ensure adequate power devolution and decentralization to guarantee optimum benefits for all the stakeholders. Another important revelation from this study is the urgent need for appropriate and adequate public enlightenment/education on the importance of the forests to individuals, communities, and the country as a whole, and for popular public participation in forestry development, as strategies for forest conservation. Public enlightenment and education will have to dwell on the size of constituted forests expected of countries by international forestry conventions. Community funding of forestry development will very likely receive low support, in a situation where the public is of the opinion that the existing forest estate is adequate or even too much. The citizens, most of who are resource-poor will need to be convinced that this mechanism is not taxation by other means. They will also need to be convinced that the money collected would be used for the intended purpose. Good governance and transparency are therefore germane to success of this finance mechanism.

Table 7: Summary of estimated WTP values and reforestation obtainable (ha) by states

State	Aggregate estimate WTP value	Estimated reforestation area Obtainable (ha)
Akwa Ibom	179,353,378	1,195.69
Anambra	208,148,490	1,387.66
Cross River	142,262,494	948.42
Edo	161667,649	1,077.78
Imo	185,011,870	1,233.41
Lagos	426,134,363	2,840.90
Ogun	173,704,903	1,158.03
Ondo	281,751,975	1,878.35
Oyo	256,994,403	1,713.30
Abia	174,059,314	1,160.40
Delta	192,816,597	1,285.44
Enugu	234,788,198	1,565.25
Osun	160,040,390	1,066.94
Bauchi	323,856,076	3,238.56
Benue	204,918,246	2,049.18
Borno	188,760,878	1,887.61
Adamawa	156,460,929	1,564.61
Kaduna	292,937,678	2,929.38
Kano	432,487,473	4,324.87
Katsina	279,354,838	2,793.55
Kwara	115,252,104	1,152.52
Niger	180,244,202	1,802.44
Plateau	246,550,912	2,465.51
Sokoto	332,726,103	3,327.26
Jigawa	214,032,338	2,140.32
Kebbi	153,962,774	1,539.63
Kogi	159,639,445	1,596.39
Taraba	112,553,980	1,125.54
Yobe	104,182,100	1,041.82
FCT	27,664,569	2,766.46

Recommendations

It is therefore recommended that:

- This report may be adopted as a basis for appropriate policies for people's participation in financing reforestation/ conservation projects. It is important that such policies go through the normal procedure for policy formulation to enjoy popular acceptance.
- Governments at all tiers should embark on sincere massive awareness campaigns to sensitize people on the present appalling situation of Nigeria's forest and its dire consequences.
- Forest and non-forest policies that will enhance people's incomes, standards of living and which will encourage them to participate in rehabilitating our degraded forest should be enacted.
- People should be encouraged to see the need for them to participate in cash and kind in reforestation.
- Similarly, moneys collected from people for reforestation should be utilized for the intended purpose. Many governments in developing countries are notorious in diverting funds for unintended purposes and into such projects, which have no direct benefits to the target beneficiaries of such funds.
- At community, local government, state and national levels, there will be the need to have steering/management committees for mobilization, collection and management of funds for the implementation of reforestation projects.

- At all times and at all levels there will be the need for clearly documented approaches to sharing of benefits.
- Periodic review of amounts payable per capita is recommended. This is to make for adjustment in case of inflation and other adverse economic indices in the larger economy. Of course, the review should also be applicable when there is a boom in the economy and when incomes are enhanced.

Conclusion

Eliciting people's willingness to pay for reforestation in Nigeria would appear to have opened a veritable avenue for financing reforestation projects in the country. The modal WTP ₦100.00 per capita appears quite small. It is however an amount that appears generally affordable across various socio-economic groups. As low as the amount is, its aggregate value at the state level and in fact nationally over the projected period is higher than the usual annual budgetary allocations. This innovative approach to financing forestry projects has the added advantage of ensuring adequate protection of forest resources since the people will see themselves as co-owners of the projects.

Acknowledgement

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