

Revenue channels and challenges associated with effective collection in Ogun State forestry service

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Abstract

The sale of forest resources is one of the major ways in which government interacts closely with people through the government of economic, social and cultural activities. Effective revenue generation is necessary for continued production of forest goods and services. However, in some designated forest reserves in Ogun State, Nigeria forest revenue collection has been inadequate and lack proper coordination for achieving the goal of sustainable forest management. Therefore, the various revenue channels and challenges associated with effective collection in Ogun State Forestry service were investigated. Simple random sampling was used to select 85 forest officials across board in all the forestry administrative zones, representing 50% sampling intensity of forest officials identified in the department of forestry in Ogun State: Egba (9), Yewa (18), Ijebu (38), Remo (2) and headquarters on tapped revenue channels in the State; while a set of questionnaire was used to obtain data on the promising untapped revenue channels; challenges confronting effective revenue collection and problems facing adequate revenue remittance. Data were analyzed using descriptive statistics and logit regression at $\alpha_{0.05}$. The average age of the respondents was 38.4 ± 6.7 years and mostly male (81.5%). Most of the respondents had tertiary education (98.5%) and they had worked for over 10 years. Identified tapped revenue channels included entrance permit into the forest reserve, issuance/renewal of contractors' property hammers and payment made at control post within the State and interstates' boundaries. Prominent untapped revenue channels identified were harvesting of other Non-Timber Forest Products (27.7%), harvesting of some perennial crops' trees as logs (20%) and evacuation of gravel and sand from the government reserves (9%). Challenges confronting effective collection included executive fiat, insincerity of field staff, inadequate communication network and location of resources with odds-ratio of 47.21, 16.5, 12.48 and 12.4 respectively. Problems facing adequate revenue remittance included lack of provision of incentive for running cost by the government and inaccessibility of banks due to attributed difficult terrain of forest resources with odds-ratio of 10.47 and 2.0 respectively. Existence of diverse revenue channels were confirmed in which timber exploitation was found to be more prominent and satisfactorily harnessed among other sources, however, there is an urgent need for the State Forestry Service to utilize the untapped identified revenue sources to improving the revenue propensity of the forestry sector in the State and also, address the identified challenges confronting effective collection of forest revenue and remittance in the State.

Keyword: Revenue channels, revenue collection, revenue remittance, untapped sources.

Introduction

A variety of resources abound in the forests of Nigeria and they include soil and its mineral deposits, water sources, rock outcrops, rare landscapes and, in the biological sense, plant and animals in all their various forms. The forest is, therefore, an economic treasure house of resources and if properly managed can supply its people's needs in perpetuity (FAO, 2001). These resources are important because of the value that society attaches to them.

Timber, for example, is universally enjoyed for its varying and various functions. Although fruits, fungi, herbs, bees and other non-timber do not enjoy the universality and the versatility of Timber but they are also important. There is, therefore, a wide range of demand for these resources and, consequently, differences in the sales level and the charges attached to them.

The sale of forest resources is one of the major ways in which government interacts closely with the people through the generation of economic, social and cultural activities. These activities become the source of employment for timber contractors, tree takers, sawmillers, timber lorry drivers, machine operators, log rolling crew, timber clerks and gatherers of non-wood forest products (Ajayi and Omoluabi, 1993). It is from this plethora of activities that government derives its policy for attaining specific forestry goals and implementation aspects of this policy is the forest revenue system, which is essentially the sale of forest goods and services (FAO, 2001).

The forest revenue system is an instrument used by government to achieve various goals and objectives in forest management. It is also a tool for obtaining maximum benefits from the management of forest resources. Such benefits include the stimulation of industrial development, efficiency in the utilization of wood, promotion of private sector activities in natural forest management and forest plantation development as a business, the enhancement of the marketing of forest products and sustaining the diversity of the forests (FAO, 2001). The objectives of the forest revenue system play a significant role in the choice of models for fixing charges on forest products and services. Besides this, other factors, such as disagreement among professional forestry practitioners about what model of forest revenues should be adopted have to be considered.

In Nigeria, Ogun State can be considered as the cradle of forestry because the first forest reserve in the country is situated in Ogun State at Olokemeji and it was established in 1915. Apart from this, the State can also boast of the largest industrial tree plantation in the country and one of such industrial tree plant, Ogun State plantation project is the Area J4, occupying an area of 670.67sqkm. The importance of forestry in Ogun State is extensive. The forest makes valuable contributions to the development of the economy of the State and to the general standard of

the populace. Interestingly, Ogun State is naturally endowed with abundant forest resources which when harnessed could support wide range of economic activities in the State in particular and the nation in general. Hence, this paper revealed both tapped and untapped promising revenue channels in Ogun State forestry service, identified challenges confronting effective revenue collection and problems facing adequate remittance, with a view to harmonizing mitigations' strategy towards adequate revenue generation in the State.

Methodology

Study Area

The study area is Ogun State, Southwestern Nigeria. The State was created in 1976 from old western State. It borders to Lagos State to the South and Osun State to the North, Ondo to the East and the Republic of Benin to the West. Abeokuta is the capital of the State and is the largest city in the State. The State's nickname is 'gateway to Nigeria'. It lies within Latitude 7⁰N and 6⁰N, and Longitude 2.5⁰E and 5⁰E. The area is dominated by two seasons, viz the dry and rainy season with dry season usually begin from November to March while the rainy season starts from April to October.

Data Collection and Analysis

Simple random sampling was used to select 85 forest officials across board in all the forestry administrative zones, representing 50% sampling intensity in the State department of forestry in Ogun State out of the 170 forest officials identified: Egba (9), Yewa (18), Ijebu (38), Remo (2) and headquarters in Abeokuta (18). Therefore, a total of 85 structured questionnaires were administered to the respondents in the entire study area. However, 65 questionnaires were retrieved from the field which represents 76.47% returns. Data collected were subjected to descriptive statistics and Logit regression analysis.

Results and Discussion

Demographic characteristics

Table 1: Demographic Characteristics of the Respondents

Demographic Characteristics	Frequency	Percentage (%)
Sex		
Male	53	81.5
Female	12	18.5
Total	65	100
Age		
21-30	7	10.8
31-40	33	50.8
41-50	24	36.9
51-60	1	1.5
Total	65	100
Marital Status		
Single	8	12.3
Married	55	84.6
Divorced	1	1.5
Widow	1	1.5
Total	65	100
Educational Distribution		
No Formal Education	0	0
Secondary Education	1	1.5
Tertiary Education	64	98.5
Total	65	100
Work Experience (Years)		
1-5	5	7.7
6-10	25	38.5
>10	35	53.8
Total	65	100

Source: Field Survey, 2017

Table 1 showed the demographic characteristics of the respondents. Information on gender revealed that 81.5% of the respondents were male while 18.5% were female. The low involvement of female observed may be as a result of risk associated with women working alone in densely forested areas as they could be attacked or sexually molested. Despite the foreseeing risks associated with working female in remote areas, it is known that the knowledge, skills and practices of both men and women contributes to the management and improvement of natural resources (Gurunget. *al*, 2000).

The average age of the respondents was 38.4 ± 6.7 years. The table also revealed that 61.6% of the respondents were below 40 years of age while 38.4% were 41 years and above. It could be inferred that most of the respondents were in their economic active age. This conforms to the report of NSSC, (2011) which observed that economic active age is anticipated within the age bracket 35 – 50.

The studies on marital status of the respondents revealed that majority of them were married (84.6%). This is an indication that most of them were people of high responsibilities in which their level of commitment is

expected to be high. This agrees with Taphone, (2009) who reported that married people have more responsibilities (provision of foods, education, health, well-being of their spouses and children) than singles and this may be the reason why this occupation is dominated by them so as to be able to meet these responsibilities.

Information on the respondents' educational status revealed that majority of them had tertiary education. High level of education attainment has been observed to be leading to more skilled and productive workforce, producing more efficiently a higher standard of goods and services, which in turn forms the basis for faster economic growth and rising living standards (ILO, 2010).

Finally, the study on work experience of the respondents revealed that majority of them (53.8%) had worked for over 10 years. This is a pointer to the fact that more reliable information would have been gotten from them due to their long years of experience.

Tapped Revenue Channels

Table 2: Tapped Revenue channels in Ogun State Forestry Service

S/No	Revenue Channels
1.	Entrance permit into the forest reserve
2.	Fees based on Out Turn Volume (OTV) in the reserve.
3.	Issuance of permit for firewood.
4.	Issuance of permit for sand evacuation in the government reserve
5.	Issuance of permit in the free areas (outside forest reserves)
6.	Payment for issuance/renewal of contractors' property hammers (Timber mark).
7.	Renewal of sawmills' licence of operation.
8.	Payment of fine by offenders (penalties for breaking of laws)
9.	Sale of seedlings.
10.	Central log control (CLC) –A monitoring unit for evacuated logs charged with the responsibility of seizure and imposition of fine on uncertified logs.
11.	Control post (checking) within the State and Inter-State.
12.	State Task Force (STF) – A general monitoring unit for law enforcement empowered to seize illegally evacuated forest products and imposition of fine accordingly.

Source: Ogun State Forestry Service, 2017

Table 2 showed the various tapped revenue channels in Ogun State forestry service. It could be observed that there were diverse ways in which revenues are being generated into the government account through the State forestry department. It is interesting to note that certain percentage of revenue were gotten from payment of fine by the offenders, it could be inferred that enforcement of forest laws are being given top priority in the State. It has been earlier identified by FORMECU, (1994) that Ogun State forestry service generates her revenue from: Timber production fees, Industry and enterprise fees, Non-wood and minor forest product fees, Hunting and recreational forest land-use fees, Penalties for breaking the law.

In Nigeria, forest permits means any written licence issued by or under authority of State forestry department, permitting the performance of a specified act or acts and of course, this attracts payment of certain fees in commensurate with the proposed act or acts, while OTV is fees based on out-turn volume and this is used for concessionaires who fell trees from concession areas without the use of permit system. The implementation of OTV involves a lot of laborious exercise since it requires the measurement and estimation of the actual volume of wood removed from the forest and, as such, is more precise than a per-tree fee, which does not consider differences in height and girth. The fee is based on the estimated volume of each log (calculated using approved tariff tables).

The use of Timber mark is also a common system in regulating timber exploitation in Nigeria, and this is popularly referred to as property hammer. Timber contractors are thereby charged with a lump sum of money to collect the hammer. The hammer is iron made with d inscription of number at both ends. So, the surfaces of the harvested logs are hammered so that the number could appear as a mark indicating that the logs are duly certified by appropriate authority. It is also mandatory for

the timber contractors to renew the hammer when due, hence revenue is being generated through this means.

Promising Untapped Revenue Channels

Table 3: Untapped Revenue Channels in Ogun State Forestry Service

Untapped Revenue Channels	Frequency	Percentage (%)
1. Conversion of wood to charcoal	6	9.23
2. Evacuation of gravel and sand in government reserves	9	13.85
3. Felling of matured (unproductive) oil palm trees in the reserve for conversion.	4	6.15
4. Effective collection and sales of firewood	2	3.08
5. Effective monitoring of fishing activities in the water bodies existing in forest reserves.	5	7.69
6. Harvesting of Kolanut and palm trees for conversion.	13	20
7. Harvesting of Non-Timber Forest Products (NTFP).	23	35.38
8. Collection of tax from forest dependent's communities.	3	4.62
Total	65	100

Source: Field Survey, 2017

Table 3 indicated responses of the respondents towards various untapped revenue channels within the study area. Prominent among them were harvesting of NTFPs (27.69%), harvesting of some perennial crops' trees as logs for conversion (20%, 4%) and evacuation of gravel and sand from the government reserves (9%). It is necessary to stress that collection of NTFPs as a means of revenue generation is just being given attention recently, although a lot has been said on its revenue potentials in the past. The categorization of NTFPs as promising untapped revenue channels in Ogun State may be traced to the fact that many of them are yet to be harnessed.

Having identified aforementioned promising untapped revenue sources, it could be presumed that there might be some challenges facing efficient or effective revenue collection from these sources. The possible challenges may include; nonchalant attitude of the forest department's management towards extraction, inability of government to provide necessary facilities such as motor bikes, field vehicle, other incentives to enhance the effective collection and monitoring, lack of well-trained wildlife/forest guard personnel to ensure enforcement of laws, lack of communication facilities, lack of provision for boats and formal training for the field staff at the riverine area.

As a matter of fact, FAO, (2001) had earlier identified various challenges confronting effective revenue collection to include ineffective forest monitoring system to control

exploitation, lack of functional patrol vehicles and inadequate number of staff. Furthermore, it was also observed that the uniformed forestry staff was not motivated and equipped enough to enforce the laws involving forest exploitation.

Most often, forest products are exploited by rural communities bordering the forests without paying the necessary charges for permits to collect the products. According to ITTO (2010), many local communities living in or near transboundary conservation reserves have limited options for generating income. If they are to support transboundary conservation they must be able to pursue credible livelihood opportunities, and also be intimately involved in decisions on the management of the resource. Local people make wonderful partners in transboundary conservation, but it is essential that they have a strong incentive to be involved.

Challenges Confronting Effective Revenue Collection

Logit Regression Model for Challenges Confronting Effective Revenue Collection in Ogun State Forestry Service

The binary models

Binary regression models obtained for the challenges confronting effective revenue collection in Ogun State Forestry Service (Table 4).

$$CCERC = 51.88 - 2.3PC + 2.8IFS - 3.07TFO + 23.29ICN - 0.83AIF + 483LR + 3.86EF - 0.27LPLE$$

N = 65, Final loss = 45.12, Chi Square (df, 10) = 25.14, P = 0.0450

Odd-ratio (Unit change): Constant (51.88); NRRC (0.09); IFS (16.55); ICN (12.96); AIF (0.44); LR (12.48); EF (47.21); LPLE (0.76).

Where,

CCERC = Challenges Confronting Effective Revenue Collection
 NRRC = Non Remittance of Revenue by the Collectors
 IFS = Insincerity of Field Staff
 TFO = Lack of provision for Transportation of Field Officers
 ICN = Inadequate Communication Networks
 AIF = Armed Illegal Fellers
 LR = Location of Resources
 EF = Executive Fiat
 LPLE = Lack of Proper Law Enforcement

Table 4: Logit Binary Nature of Challenges Confronting Effective Collection of Revenue in OgunState Forestry Service

Dependent variable (CCERC) = Challenges Confronting Revenue Collection (Yes = 1), (No = 0)

Dependent variable	Coefficient	Odds-ratio
Whether presence of (NRRC) is responsible for ineffective revenue collection.	-2.36	0.09ns
Whether presence of (IFS) is responsible for ineffective revenue collection.	2.81	16.55*
Whether presence of (TFO) is responsible for ineffective revenue collection.	-3.07	0.05ns
Whether presence of (ICN) is responsible for ineffective revenue collection.	23.29	12.96*
Whether presence of (AIF) is responsible for ineffective revenue collection.	-0.83	0.44ns
Whether presence of (LR) is responsible for ineffective revenue collection.	4.83	12.48*
Whether presence of (EF) is responsible for ineffective revenue collection.	3.86	47.21*
Whether presence of (LPLE) is responsible for ineffective revenue collection.	-0.27	0.76ns
Model $\chi^2(df, 8) = 25.14$, Final loss = 45.12; $p < 0.05$		

*Significant at $p < 0.05$; ns = Not significant

Model presented above for Ogun State Forestry Service gave overall significant fit to the data judging from χ^2 value that was significant at $p < 0.05$. Executive Fiat (EF) had the highest odd-ratio of 47.21 followed by Insincerity of Field Officers (IFS) with the odd-ratio of 16.55, Inadequate Communication Network (ICN) with the odd-ratio of 12.96 and lastly, Location of Resources (LR) with the odd-ratio of 12.48 respectively.

Therefore, the factors identified to be responsible for ineffective revenue collection in Ogun State were Executive Fiat (EF) i.e undue political influence, Insincerity of Field Officers (IFS), Inadequate Communication Network (ICN) and Location of Resources (LR). There was sufficient evidence that the estimated coefficients for the factors were not zero. This implies that the regression

parameters in the model were statistically significant. In other words the higher the value of odds-ratio, the more likelihood the factors responsible for ineffective revenue collection in Ogun State Forestry Service. Hence, it clearly indicated the variable (s) i.e factors that mostly influence effective revenue collection in the study area. The implication was corroborated by Deeks, (1996); Bland and Altman, (2000) that the logit model provides information on the consequences of one variable on the other. Therefore, existence of these factors poses serious challenges to effective revenue collection in the study area.

Problems Facing Adequate Revenue Remittance

Logit regression model for Revenue Remittance Adequacy in Ogun State Forestry Service

The Binary Models

Binary regression models obtained for Revenue Remittance Adequacy in Ogun State Forestry Service (Table 5).

$$RRA = 1.57 - 0.09RFS - 2.79RAS - 0.48PFR + 2.35LPI - 1.31MFS - 0.62BEA$$

N = 65, Final loss = 47.34, Chi square (df, 6) = 32.9, p = 0.0450

Odd-ratio (Unit change): Constant (1.57); RFS (0.92) ; RAS (0.06) ; PFR (0.62) ; LPI (10.47) ; MFS (0.27) ; BEA (1.86)

Where,

RRA = Revenue Remittance Adequacy
 RFS = Improper Remittance by Field Staff
 RAS = Improper Remittance by Account Staff
 PFR = Printing of Fake Receipt by Field Officers
 LPI = Lack of provision of Incentives for Field officers (running cost)
 MFS = Lack of provision for Mobility of Field staff
 BEA = Inaccessibility of Banks on Time by the Collectors

Table 5: Logit Binary Nature for Revenue Remittance Adequacy in Ogun State Forestry Service

Dependent variable (RRA) = Problems Facing Adequate Revenue Remittance (Yes = 1), (No = 0)

Dependent Variables	Coefficient	Odds-ratio
Whether presence of (RFS) is responsible for inadequate revenue remittance.	-0.09	0.92ns
Whether presence of (RAS) is responsible for inadequate revenue remittance.	-2.79	0.06ns
Whether presence of (PFR) is responsible for inadequate revenue remittance.	-0.48	0.62ns
Whether presence of (LPI) is responsible for inadequate revenue remittance.	2.35	10.47*
Whether presence of (MFS) is responsible for inadequate revenue remittance.	-1.31	0.27
Whether presence of (BEA) is responsible for inadequate revenue remittance.	0.62	2.00*
Model χ^2 (df, 8), = 32.9; Final Loss = 47.34; p<0.045		

*= Significant at p< 0.05; ns = Not Significant

Model presented above for Ogun State Forestry Service gave overall significant fit to the data judging from χ^2 value that was significant at p<0.05. Lack of Provision of Incentives (LPI) for field officers (running cost) by the government had the higher odd-ratio of 10.47 than Inaccessibility of Banks on Time by the Collectors (BEA) with odd-ratio of 2.00.

Therefore, the factors identified to be responsible for inadequate revenue remittance in Ogun State Forestry Service were Lack of Provision of Incentives (LPI) for field officers (running cost) by the government and Inaccessibility of Banks (BEA) on time by the collectors. Generally, it has become a common practice in Nigeria for government not to be releasing running cost, so officers are thereby expected to sort themselves out in this regards. This act paves way for officers to defraud the government by taking more than what they have used as their running cost. There was sufficient evidence that the

estimated coefficients for the factors were not zero. This implies that the regression parameters in the model were statistically significant. In other words the higher the value of odds-ratio, the more likelihood the factors responsible for inadequate revenue remittance in Ogun State Forestry Service. Hence, it clearly indicated the variable (s) i.e. factors that mostly influence adequate revenue remittance in the study area. Therefore, existence of these factors poses serious challenges to adequate revenue remittance in the study area.

Conclusion and Recommendations

This study established the existence of diverse revenue channels in the study area in which timber exploitation was revealed to be prominent among other sources. The study also identified various untapped revenue channels that could improve the revenue propensity of the Forestry

Department in the State. However, identified factors responsible for ineffective revenue collection in the study area were executive fiat, insincerity of field staff, inadequate communication network and location of resources while the identified factors responsible for inadequate revenue remittance were lack of provision of incentives for running cost by the government and inaccessibility of banks due to attributed difficult terrain of forest resources.

Therefore, identified untapped revenue channels should be looked into urgently by the State Forestry Service so as to boost the revenue propensity of the forestry department while undue influence of political office holders (executive fiat) should be curtailed as that poses serious challenges to effective revenue generation. Field staff must be properly remunerated so that they can do their job effectively. In the same vein, they should also be mobilized appropriately to ease their movement. Prompt release of incentives by the government for smooth running of the organization (forestry service) should be ensured so as to avoiding the use of individual financial resources to run government organization as such could give room for officers to defraud the government. Lastly, to facilitate prompt remittance of revenue to the appropriate government bank account, revenue collectors should be adequately mobilized.

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