ATTITUDINAL DISPOSITIONS AND SUSTAINABLE MANAGEMENT LIKELIHOOD OF DEGRADING WETLAND FOREST RESOURCES IN A NIGER DELTA REGION, NIGERIA

Emem B. Inyang, Inibehe E. Eka, Godwin M. Udoma, and Dominic Okon

ABSTRACT

Many programs have been either abandoned or out-right rejected over a period of time—thereby not achieving their lofty goals. This article makes attempts to explore such tendancies of withdrawal or sabotage of joint efforts to manage a degrading wetland forest ecosystem. The program was conceived through the establishment of a frog sanctuary as a strategy by the Center for Wetland Studies of University of Uyo, Nigeria, in collaboration with international partners and two participating rural villages. The rural folks consider the conservation program a foreign concept thereby increasing the risk of it being unsuccessfully implemented. The study assessed the Attitudinal Disposition Index of the dwellers of the host communities with the aim of predicting the sustainability likelihood of the project. The findings revealed that despite a favorable socio-cultural environment and a positive attitudinal perception towards the need for sustainable management of the wetland forest ecosystem, the distribution pattern of the Dwellers' Perceived Sustainability Likelihood (DPSL) indicates a negative rating of sustainability of the conservation program. Therefore, this calls for more robust ex-ante assessment studies to unravel some sensitive dimensions to ensure proper accountability on the part of all the stakeholders.

INTRODUCTION

According to Osemeobo (2001), Brown (1998), Udo (1997), Popoola (1998), Oseni (1975) and Adeyoju (1986), increasing population, poor policy administration, expanding demand for food and raw materials, misplaced social values, industrial activities especially in Niger Delta regions, and general over dependency on the environment are the main sources that have caused forest areas to be degraded. Primary forestlands have transited from secondary forest to degraded forestlands with the wetland forest areas of Niger Delta Region of Nigeria not an exemption. Two rural villages are also considered in this study. The need for sustainable conservation of the environment becomes paramount, prompting an adaptive approach to address the various human dimensions affecting the ecosystem. Following the realization of such need, the Center of Wetland Studies at the University of Uyo, in collaboration with international partners and villages, initiated a kind of regulated social forestry, adopting establishment of the frog sanctuary to protect the wetland forest due to the its economic, trado-social and natural endowments. In the conservation program, the villages are expected to own and jointly manage their resources while the university's Wetland Center in collaboration with the international partners jointly participate in the management by providing technical expertise on forestry and wildlife principles and other logistics where necessary.

In: Baumgartner, David M.; ed. Proceedings of Human Dimensions of Family, Farm, and Community Forestry International Symposium, March 29 – April 1, 2004. Washington State University, Pullman, WA, USA. Washington State University Extension MISC0526. *ISBN Number 0-9721994-5-4*

The planning, execution, and logistics were well explained to the elites and opinion leaders in the villages who okay the project; but what look worrisome is the human dimensions of the rural folks. The majority making up the study area—the rural poor and the disadvantaged groups—are apprehensive about the introduction of some restrictions and regulations; that, the "few" wish to deny them of their means of livelihood, thereby speculating the program to be a foreign concept. This situation is not new in Nigeria. A reflection of past experiences of projects executed in Nigeria affirm that in early days of introducing innovative change, much attention was not given to the opinions of rural dwellers at the formative stage. When attention was paid, it was not adequate enough to take into consideration the voices of the rural poor, whose sources of livelihood (land, forest and water) were being used for its implementation. When these projects were about to be implemented and/or were executed, mixed reactions and mistrust were generated, which were often overlooked or sometimes not appropriately addressed. These seemingly silent, but sensitive issues, grew to influence the degree of sustainability of most of those projects or programs. The reasons might not be unconnected to the differences in the psychosocial dimensions of the targeted or expected beneficiaries. That is, the states of their attitude, frustration, interests, trust/confidence in others. Considering the latter listing, attitudes seems to be a function of others, which leads to perception, conviction, and opinion an individual holds (Emeke 1996 and Allport 1954). In this case of non-indigenous conceptualized kind of a regulatory social forestry, the states of psychosocial variables of the expected beneficiaries potent a lot of implications on the program survival. The perception that this forest ecosystem conservation program is a foreign concept can truncate the entire process of sustaining this assisted project. This study attempted to examine selected personal characteristics of the dwellers, severity of socio-cultural dimensions affecting the utilization of the wetland forest resources, attitudinal dispositions differentials based on their selected personal characteristics, attitudinal perception towards the need for sustainable management of the wetland forest ecosystem and the dwellers perceived attitudinal dispositions index implication on the sustainability of the project.

METHODOLOGY

Data collection for the Joint Wetland Forest Ecosystem Conservation program took place in two villages: Afaha Obio Enwang and Ukpab Itak, located in Akwa Ibom State, a coastal state in the core area of the Niger Delta Region of Nigeria. Stratified simple random sampling was used to select 120 respondents from the households in these two villages. In-depth Interviews with key Informant (IDI) and Focus Group Discussion (FGD) were used to generate items for the design and development of the questionnaire.

A pretested, well-structured questionnaire was administered on the respondents and an interval-scales measurement was adopted. A Levene Statistic, testing the homogeneity of variance between the respondents from the two villages, showed that they did not differ significantly from each other. Therefore, based on the above result, the respondents from the two villages were pooled together

Table 1.—Personal Characteristics of the Dwellers.

Item(s)	Variable(s)	Percentage(s)
a.	Gender	
	Female	35.8
	Male	64.2
	Total	100.0
b.	Age	
	Youth (18-24)	23.3
	Middle age (25-40)	28.4
	Latter age (≥41)	48.3
	Total	100.0
c.	Educational status	
	No schooling	5.0
	Primary	44.2
	Secondary	46.7
	Post secondary	4.2
	Total	100.0

Source: Field survey, 2003

Table 2.—Prevailing Socio-cultural Dimension affecting Utilization of the Wetland Forest Resources.

Item(s)	Socio-cultural Dimension	Not at all	Low	High	Total
a	Unless announcement is made by the village council, nobody can exploit any of the resource	100.0*	0.0*	0.0*	100.0*
b.	Unless approval is sought, no female can extract any of the forest resource	100.0	0.0	0.0	100.0
c.	Some form of resource 4re utilized on some specific days according to tradition	100.0	0.0	0.0	100.0
d.	Some members of the village are not allowed to extract forest aquatic resources and cultivate land within the area	100.0	0.0	0.0	100.0
e.	Strangers are not permitted to extract both forest and aquatic resource	0.0	7.5	92.5	100.0
f.	Traditional activities are observed before you can use any resource in large quantities	100	0.0	0.0	100.0
g.	I use any resource that are beneficial to me and my household out of free will	0.00	0.0	100.0	100.0

Source: Field survey, 2003
** The values are represented in percentages*

for further analyses. The analytical tools adopted were descriptive and inferential statistics. Response Analysis and Attitudinal Disposition Index were also computed in order to predict the general sustainability management likelihood of the concept. In achieving the latter index, fourteen-attitudinal statements were generated to evaluate the dwellers' propensity to abide by the proposed introduction of a regulated wetland forest ecosystems sustainable management program based on four identified indicators, during the IDI and FGD exercises. These are propensity to respect village regulations on wetland management program, self-conscious adherence, perceived trust/confidence in other stakeholders, and perceived expected benefit from the program.

DATA ANALYSIS AND PRESENTATION

Selected Personal Characteristics of the Dwellers

One hundred and twenty (120) dwellers were interviewed, 60 each from Afaha Obio Enwang and Ukpab Itak villages. All, irrespective of the differences in their personal characteristics, generally utilize forest and non-forest products in the study area. The extent of utilization is influenced by the degree of dependency on the ecosystem for sustainable livelihood. Based on observation, utilization is influenced by a generation's interest and gender specific activity, purposefully, to ensure food and financial security. Results depicted in Table 1 show that 64.2% of the respondents were males and 35.8% were females. According to the age distribution pattern about 23.3% were youth, 18–24 years, about 28.4% were within the ages of 25–40 and could be regarded to be middle age. About 48.3% constituted those described as latter age, who were 41 years or older. Educationally, the study area could not be described as being highly literate. About 44.2% of the dwellers got at least a primary education while about 46.7% had completed secondary education. This distribution pattern portrays that the literacy level is low and the villages would require an intense awareness campaign to make for a change in their knowledge level and behavior. The low educational status of the dwellers could also be responsible for the difference in attitudinal-dispositions that will be presented later. (More information is depicted in Table 1.)

Socio-cultural Dimensions Affecting Utilization of Wetland Forest Resources

The general response pattern on the prevailing socio-cultural dimension of utilization on the wetland forest resources depicts that the villages have no indigenous regulatory tools, with respect to norms or mores pertaining strictly against the exploitation of the forest and non-forest resources. However, utilization in general is strictly reduced on days that coincide with weekdays set aside for observing a cultural display and traditional rite. Results show that 100% (Table 2) of the dwellers admitted utilization of the wetland forest resources does not depend on an announcement by the village council while 100% of the dwellers also affirmed females do not need any kind of approval to utilize these resources. A hundred percent of the dwellers asserted that no member of the villages is barred from extracting both forest and aquatic resources or cultivating farmlands adjoining or located within the area. However, the case of strangers or foreigners exploiting the forest and aquatic wetland resources was different. With reference to aquatic resource, strangers can utilize it without molestation, but with regards to forest resources, about 7.5% of the dwellers admitted a low level of restraint while about 92.5% of the dwellers affirmed a high restraint. On further investigation, low restraint is reserved for a particular class or category of forest product that is have less economic value provided permission was sought or harvest carried out under the supervision of one of the dwellers. Only dwellers were allowed free access to those products

Table 3.—Anova results on Attitudinal Dispositions Differentials based on personal characteristics of the dwellers.

Item(s)	Variable(s)	Means Dispositions	F Value	Significance
a.	Gender		4.350	0.041*
	Female	45.51		
	Male	47.01		
	Total	46.46		
b.	Age		0.880	0.582
	Youth (18-24)	45.0		
	Middle age (25-40)	46.0		
	Latter age (41)	46.30		
	Total	46.46		
c.	Educational status		2.416	0.098**
	No schooling	45.50		
	Primary	45.70		
	Secondary	47.01		
	Post Secondary	49.40		
	Total	46.46		

Source: Field survey, 2003
* Significant at 0.05 Level
** Significant at 0.10 Level

with more economic value. About 100% freely admitted use of any resource that is beneficial to him/her and the household. At the same time, all (100%) affirmed that no traditional activities were observed before any use of the resources in large quantities.

Attitudinal Disposition Differentials Based on Personal Characteristics

It was assumed that all the dwellers have the same attitudinal dispositions, regardless of the villages they belong to. Our research hypothesis on the homogeneity of variance was stated as follows Ho: $U_1 = U_2$. The Levene Statistic test of homogeneity of variance was, however, not significant. This means that the attitudinal dispositions of dwellers from the two villages were the same. Based on the latter fact, a series of Analysis of Variance (ANOVA) involving attitudinal dispositions according to personal characteristics of the dwellers were made (Table 3). ANOVA results reveal that the various groups, with reference to gender and educational status, did significantly affect the attitudinal disposition of the dwellers. With a mean disposition of 45.51, the females were not favorably disposed to the project probably because they would be affected more than their male dwellers with a mean disposition of 47.01. However, their mean difference was statistically significant. Differences in attitudinal dispositions due to generations: youth (18–24), middle age (25–41) and latter age ($\geq$ 41), was not statistically significant. They did not differ because exploitation is done for the welfare of the household and since exploitation is for the purpose of household food and financial security, their extent of utilization would probably not vary enormously. However, their relative mean disposition values toward the sustainability of the project increased as their ages increased. This portrays that as one advances in age, he is relatively less apprehensive of the project's outcome. As included in Table 3, youth had a mean attitudinal disposition of 45.0, middle age (46), while the latter age had a mean of 46.30. Educational status also had significantly affected the differences in attitudinal dispositions of dwellers. The trend indicates that as an individual achieves a higher academic attainment, his/her disposition shifts positively towards supporting the implementation of developmental projects. In the study area, those with higher academic attainment are relatively less apprehensive, easily persuaded, and seem to have livelihoods that are less dependent on the environment. Those dwellers who had no schooling experience had a mean disposition of 45.50, primary education (45.70), secondary education (47.01) and post secondary education (49.40). The differences in attitudinal disposition due to influence of educational attainment was significant at 90% probability level. On a whole, differences in attitudinal dispositions towards the ecosystem conservation program could intrinsically be traced to past experiences on the handling of a public project and how secure their livelihood activities alternatives would be. This is affirmed by studies of Brown (1998), that forest managers have been caught between interests of the rural communities and the policies of the State. That situation is worse because programs that were meant to develop the people end up worsening their previous condition.

Attitudinal Perception Towards the Need for Sustainable Management of the Wetland Forest Ecosystem

There is a growing recognition that the state of ecosystem presently is not the same as it was a decade or more ago. That good forest management is crucial to forest conservation and sustainable development; particularly where the local or national economy is based directly on the use of forest resources. When an opinion is made to find out its acceptability, there is always a resultant reaction. Depending on its direction, it can either indicate whether a project would be sustainable or not. This attitudinal perception towards the need for sustainable management of the wetland forest system was analyzed to gain insight of the dwellers mindset on the sustainable environmental consciousness. Table 4 shows the reactions of the dwellers to the question on how they feel about the need to protect the wetland forest ecosystem. Based on the response analysis from the questionnaire, the following postulations were derived:

(a) Those attached to conservation need.

This consists of those who are "strongly attached" and those who are "attached".

Total number of responses = 120

Maximum possible score 120 x 5 = 600

Score obtained from the analysis:

For "strongly attached" = 265

For " attached" = 305

Total score from analysis 265 + 305 = 570

Score as a % of maximum score = $\frac{570}{600} \times \frac{100}{1}$ = 94.5%

(b) Those Detached:

This consists of " Detached" and "strongly detached".

Total number of responses = 120

Maximum possible score 120 x 5 = 600

Score obtained from the analysis:

For "strongly detached" = 5

For " detached" = 15

Total score from analysis 5 + 15 = 20

Score as a % of maximum score = $\frac{20}{600} \times \frac{100}{1}$ = 3.3%

(c) Those Undecided:

Total number of responses = 120

Maximum possible score 120 x 5 = 600

Score obtained from the analysis = 10

Score as a % of maximum score = $\frac{10}{600} \times \frac{100}{1}$ = 1.7%

From the computation, it is evident that the majority of the dwellers of the two villages (94.8%) feel positive. This shows that there is a high consciousness of the long-term benefits that even the unborn generations would derive in the future, if the environment is protected.

Attitudinal Disposition Index (ADI) and Dwellers Perceived Sustainability Likelihood (DPSL)

Attitudinal Disposition Index (ADI) analysis was designed to generate values, which could be used for predicting dwellers perceived sustainability likelihood. The ADI holds the assumption that an individual plays a major role that can bring about a dynamic society due to his or her psychosocial variables. Attitude and perception can be likened to dynamite which can exert a direct influence on an individual depending on which way the state of mind goes (Allport, 1954). The primary focus of the paper is to discuss a tool that would help predict the likelihood of sabotage of this project. Four indicators were derived from the Focus Group Discussion (FGD) and In-depth Interview with Key Informant (IDI) exercises as earlier mentioned in the methodology.

Based on the four indicators, fourteen attitudinal disposition statements towards the sustainable management likelihood were made using the 5-point Likert scale. An individual that is totally favorably disposed earned a maximum attitudinal disposition rating score of 70 while the totally unfavorable made a score of 14. Subjecting the raw attitudinal disposition scores into attitudinal disposition index (ADI) analysis; led to percentage ADI and the implication was interpreted with respect to DPSL (Table 5). The primary focus of the study was to determine the attitudinal index (ADI) and to predict the sustainability likelihood by considering the distribution pattern within the two hosting villages. Findings reveal that about 15% of the dwellers perceived that the project would still collapse untimely while the majority (75.8%) of the rating suggested that the project would be less sustainable. About 9% were vividly sure that the project would be sustained. The distribution pattern of sustainability likelihood suggests that the conservation project might not be sustained, no matter what amount of money would be invested. A factor we should note clearly is the wetland had been free for exploitation, virtually by any one. Introducing social forestry should be executed or implemented with caution, not minding utilizing the rural participatory approach as recommended by Blasser and Douglas (2000). Generally, a high percentage distribution of the dwellers in the category of less sustainable likelihood could be due to past experiences of failed projects, the resources directly affect their livelihood and the general lack of provision of alternative means of livelihood. Studies of Udo (1997) and Koontz and O'Donnell (1976) had asserted that the inability to manage and conserve the forest effectively is influenced by societal oriented causes; these include the mounting pressure on available land, low ethical value of the society, that the situation is worse because alternative resources could not be identified and developed to replace existing resources used by the people. This often

Table 4.—Attitudinal perception toward the need for sustainable management of the wetland forest ecosystem.

Category of Response	Mark (X)	Response Frequency (RF)	Total score (RF) (5)	Percentage
Undecided (u)	1	2	10	1.7
Strongly Detached (SD)	2	1	5	0.8
Detached(D)	3	3	15	2.5
Attached(A)	4	61	305	50.5
Strongly Attached(SA)	5	53	265	44.0
Total	15	120	600	100.0

Source: Field survey, 2003

Table 5.—Distribution of respondents based on Percentage Attitudinal Disposition Index (PADI) Implication on the Dwellers Perceived Sustainability Likelihood (DPSL).

PADI	DPSL Implication	Dwellers Distribution (%)
≤40	Sabotage	0.0
41-51	Very unsustainable	0.0
52-60	Unsustainable	15.0
61-71	Less sustainable	75.8
72-80	Sustainable	8.3
81-91	Very sustainable	0.8
92-100	Excellent	0.0

Source: Field survey, 2003
- PADI = Percentage Attitudinal Disposition Index
- PSL= Dweller's Perceived Sustainability likelihood

results in tension and conflict probably due to rural people losing their sources of sustenance and therefore blaming government for incompetence, deceit, deprivation, and betrayals of trust.

CONCLUSION

Members of the public generally regard forest resources as a free gift from God that should not be protected from uncontrolled and unplanted harvests. This often promotes illegal forest exploitation. Introducing regulatory social forestry in an environment where the idea is not a part of their indigenous reasoning apparently seems to be the way out of unsustainable management of forest resources, although it has been skeptically accepted. Study reveals that there is growing consciousness of conserving the wetland forest resources. But the poor literate environment, the degree of dependence on alternative sources of livelihood, and the general poor rating in terms of perceived expected benefit, level of trust and confidence in other stake holders, are most likely among the determinants that could jeopardize the project over time and should be given robust research attention. More studies need to be executed in order to explore vividly the perspectives of the dwellers, which store a lot of opinion and perceptions rather than depending so much on the opinion leaders, elites, and community leaders. Since this project involved two communities, elements of conflict and sabotage should not be given less attention. Therefore, a frequent attitudinal dispositional index to cover multidimensional topics should be done for effective and efficient management and as well as accountability by all the stakeholders.

REFERENCES

Adeyoju, S. K. 1986. An Appraisal of Private Sector Participation in Nigerian Forestry Regulation. Nigerian Journal of Forestry 16(1&2): 6-10.

Allport, G. W. 1954. The Nature of Prejudice, Reading Mass: Addison Wiley.

Blaser, J. and Douglas. 2000. A Future for Forests Issues and Implications for the Emerging Forest Policy Strategy of the World Bank. World bank, Washington D.C. USA pp 9-14.

Brown, D. 1998. Participating Biodiversity Conservation Rethinking the Strategy in the Low Tourist Potential Areas of Tropical Africa, Natural Resources Perceptive 33:1-6.

Emeke, E. A. 1999. Psychological Dimension of Continuous Assessment Implementation on Teachers and Students in Secondary Schools in Oyo State. In Obemeata, J. O., S. O. Ayodele and M. A. Araroi. (Eds): Evaluation in Africa, Institute of Education, University of Ibadan, Stirling-Horden Publishers (Nig) Ltd.Pp83-103.

Koontz, H. and C. O'Donnell. 1976. Management: A Systems and Contingency Analysis of Management Functions. Sixth edition. McGraw Hill Book Company.

Osemeobo, G. J. 2001. Considerations for Ecosystem Conservation through Partnership in Forest Management in Nigeria In: 2001 FAN Conference Proceedings pp 85-91.

Oseni, A. M. 1975. Institutional Obstacles to Forest and Forest Industry. Paper presented at 6th Annual Conference of he Forestry Association of Nigeria Calabar. Dec 1-6.

Popoola, L. 1998. Economics of Diversified Food Production on Wetlands, Paper presented at the EPHTA Scientific workshop IITA, Ibadan, Nigeria. 17-20 Nov. pp 26.

Udo, E. S. 1985. Forest Plantation Establishment in Cross River State of Nigeria: Progress and Problems. The changing character of the Nigerian Forest resources and the implication for future development J.A. Okojie and O.O. Okoro (eds) pp 370-377.

Udo E. S. 1997. Forest Offences and Impediment to Forest Resources Conservation in Akwa-Ibom State. In: Proceedings of the 25th Annual Conference of the Forestry Association of Nigeria held in Ibadan Oyo State Nigeria.

ACKNOWLEDGEMENT

We wish to express our profound gratitude to Prof. David Baumgartner and Marlene Guse, both of Washington State University, for their all round support and encouragement, to ensure that this paper becomes a part of this proceedings. We are appreciative of the concerns and assistances we have received from our associates during the data collection and data processing stages of this research and also, we are grateful to you all for not minding the inconveniences you had suffered, without which this process would have been discontinued. We would ever remain thankful to you all.

AUTHORS

All form of enquiries should be directed to the Senior Author: Emem Inyang

Emem B. Inyang
International Centre for Educational Evaluation
Institute of Education, University of Ibadan, Nigeria.
P.O.Box 2921,
Uyo, Akwa Ibom State
Nigeria
embainy@yahoo.com

Inibehe E Eka
Dept of Agricultural Economics and Extension
University of Uyo, Nigeria

Godwin M. Udoma
Eket Zonal Manager
Akwa Ibom Agricultural Extension Program(AKADEP)
Akwa Ibom State, Nigeria

Dominic Okon,
Agricultural Education Unit,
Department of Vocational Education,
Faculty of Education, University of Uyo
Akwa Ibom State, Nigeria