

# Determinants of Wellbeing among Agroforestry Farmers in Edo State, Nigeria

<sup>1</sup>Ojedokun, C. A., <sup>2</sup>Akinbile, L. A., <sup>3</sup>Ugege, B.H., <sup>1</sup>Adebayo, D.O

<sup>1</sup>Forestry Research Institute of Nigeria,  
Ibadan

<sup>2</sup>Agricultural extension and Rural Development Department,  
University of Ibadan

<sup>3</sup>Federal College of Forestry,  
Ibadan.

Email: christyabiodun92@gmail.com

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## Abstract

*A fundamental concern of any government is the wellbeing of its citizens. Therefore, this study seeks to investigate the determinants of wellbeing among agroforestry farmers in Edo state, Nigeria. Respondents were selected using a multi-stage sampling procedure to select three forest enclaves based on the number of agroforestry farmers in the enclaves. These enclaves are Sakponba, Ubiaja and Agbede using 50%, 33% and 17% respectively, this percentage was based on the population of the enclave dwellers in each using simple random sampling, and a total of 120 respondents was obtained; data were analysed using descriptive and inferential statistics such as multinomial logit and multiple regression.*

*The result reveals that the mean age of the farmers was 45.6 years. Majority (85.8 %) were male and 78.3% were married. The mean household size was 5 persons, with 54.2% having household size of between 4 and 6 persons. Majority (84.2%) had formal education. Also, 65.8% had agroforestry farming as primary occupation, with source of income as main reason for involvement in agroforestry and average farm size of 8.4 hectares. Results of multiple regression analysis for relationship between contribution of the independent variable and farmers' wellbeing reveals a positive and significant relationship between farmers' level of income; economic and material wellbeing are not significant at any alpha level, social wellbeing ( $r = 0.217$ ,  $P \leq 0.10$ ) and psychological wellbeing ( $r = 0.283$ ,  $P \leq 0.05$ ), respectively. The positive and significant relationship implies that the higher the farmers' income level, the higher the economic, social and psychological wellbeing of the farmers. The study therefore, recommends that agroforestry support services like incentives, agricultural inputs and provision of soft loans should be provided by government and various NGOs to improve farmers' income.*

**Keywords:** Determinants, Agroforestry, Wellbeing, Farmers, Edo State

## INTRODUCTION

A fundamental concern of any government is the wellbeing of its citizens. Public policy are directed towards improving the wellbeing of citizens, or by creating the conditions in which citizens are capable of pursuing their own concept of wellbeing; Buttressing this is Angel

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\*Author for Correspondence

(2011) who opined that measuring progress of societies has been fundamental for development and policy making in general, thus, improving the quality of our lives should be the ultimate target of public policies. Tov and Diener (2008) submitted that individuals with high levels of well-being are more productive at work and are more likely to contribute to their communities.

Wellbeing is described as a positive physical, social and mental state; it is not just the absence of pain, discomfort and incapacity and this is not a result of individual's action, but from a collective contribution of good and inter-personal relationships with others, and that individual is able to achieve important personal goals and participate in society. Therefore, wellbeing is enhanced by conditions that include supportive personal relationships, community empowerment, good health, financial security, rewarding employment and a healthy attractive environment (UK Govt, 2006).

As at present there is no universally acceptable definition of well-being, but there is general agreement that at minimum, well-being includes the presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), and satisfaction with life, fulfillment and positive functioning. (Andrew and Withey, 1976; Frey and Stutzer, 2002). In simple terms, well-being can be described as judging life positively and feeling good (Veenhoven, 2008).

Well-being is a progressive outcome that is meaningful for people's lives and for many sectors of society, because it voices that people see that their lives are going well. Good living conditions (e.g., housing, employment) are fundamental to well-being. However, many indicators that measure living conditions fail to measure what people think and feel about their lives, such as the quality of their relationships, their positive emotions and resilience, the realization of their potential, or their overall satisfaction with life i.e., their "well-being" (Diener and Seligman, 2004; Diener, 2009). Well-being generally includes global judgments of life satisfaction and feelings ranging from depression to joy (Frey and Stutzer, 2002; Diener *et al*, 2009).

The term 'well-being' is most applied when relating what an individual considered to be ultimately good for such. There are two core notion associated with Well-being i.e. quality of life and happiness. These are related to the concepts of freedom, human rights and social progress. When evaluating the general well-being of individuals and societies, we usually refer to quality of life which are used in a wide range of contexts. However, it should be noted that well-being is quite different from the concept of standard of living, which is primarily based on income (GDP per capital). Over the years wellbeing has been largely assessed through the lens of aggregate income, typically measured by GDP (Karen and Louise, 2018 ) However, it should be noted that developed countries does not count on income as a means of increasing wellbeing, thus, most significant drivers of wellbeing are isolated from income even in developing countries.

Recently, agroforestry has been proposed and adopted by farmers and scientist as a means to improve ecosystem services and livelihoods especially in rural areas. Thorlakson and Neufeldt (2012) evaluated agroforestry as one possible means of improving farmers' well-being; this was done by comparing farmers engaged in an agroforestry project with a control group of neighboring farmers. They found that agroforestry practices do have substantial potential to help farmers improve their well-being and the environmental sustainability of their farms. Leaky (2010) on the other hands submitted that agroforestry improves farmers' well-being by improving farm productivity and incomes.

Idumah *et.al.* (2015) and Kanungwu *et al.* (2010) submitted that involvement in agroforestry practices improves farmer's wellbeing compared with subsistence agriculture, as it provides added benefit by generating cash income from the marketing of diverse product. Eva (2007) has described the world's forests as "fundamental" to human well-being and survival.

Buttressing this, she pointed out that trees provided a direct source of food, fuel and income, that food from the forests - like fruit, nuts, mushrooms, leaves, roots, insects and wild animals - often contributes a nutritious supplement to rural people and provides a safety net in times of hardship. They are fundamental to the survival of forest dwellers, including indigenous people and that it was time for the sector to shift its focus from trees to people (wellbeing). In his address at the first world agroforestry congress held in Florida, Hosny (2004) opined that the growing food insecurity and deteriorating livelihood situations call for concerted effort at national and international levels; to take advantage of the high potential of agroforestry, among other systems, for promoting best land use practices.

The main focus of this research will be on life satisfaction, which is the most commonly used evaluative measure of wellbeing. Life satisfaction is of interest in this case both because it captures the same sort of appraisals used to make decisions about living standards (Kahneman *et.al.*, (1999) and the availability of secondary data on this subject matter both at local and international level. Therefore, this study seek to investigate the determinants of wellbeing among agroforestry farmers and it is expected that responses of the respondents will form vital inputs in policy formulation and implementation strategies to improve farmers (agroforestry) wellbeing.

## **METHODOLOGY.**

### **Study Area**

The focus of this study is Edo State of Nigeria. It is located in the heart of the tropical rain forest and has a total land area of 19281.93 square kilometers (World Bank). Politically, the state is divided into eighteen (18) local government areas. Edo state is a low-lying area except in the northern part where it is characterized by rolling hills rising to a peak of about 572 metres and has a tropical climate with two major seasons - the wet and dry seasons. Vegetation is deciduous within the low land rain forest belt of the south and forest savannah in the north. There are abundant natural resources in the state. Virtually all species of hardwood can be found. Such as iroko, obeche, mahogany etc. The state produces a significant proportion of the country's rubber and crepe (Omofonmwan, 2007).

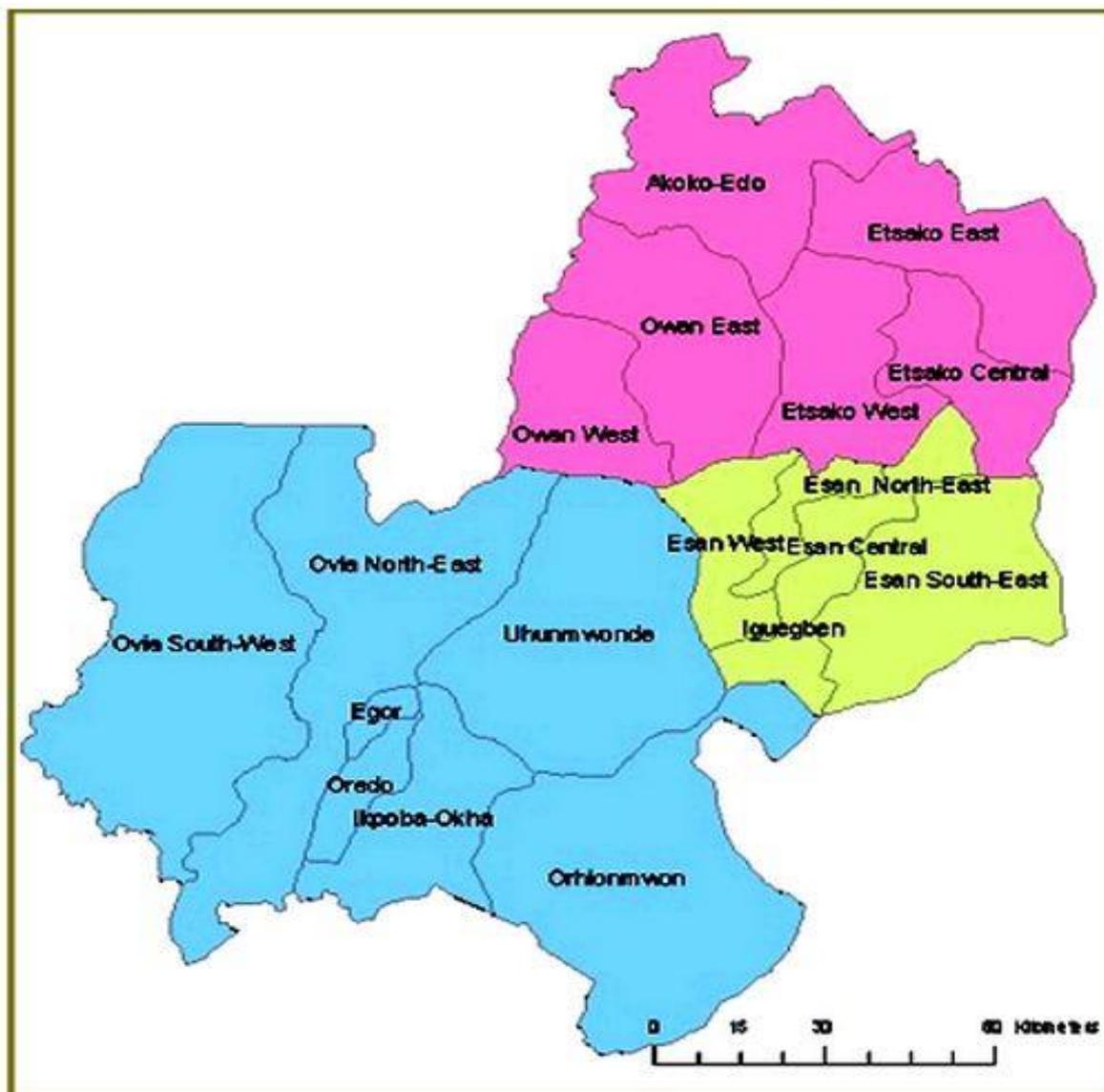


Fig 2 Map of Edo State showing various Local Government  
Source; Nigeria muse.htm

### Data Collection

Respondents were selected using a multi-stage sampling procedure. Primary data was obtained using purposive random sampling method. Six forest Reserve were identified in the study area among which three forest enclaves were selected based on the appreciable number of agroforestry farmers and the enclavers lists were obtainable; these enclaves are Sakponba, Ubiaja and Agbede using 50%, 33% and 17% respectively, percentage of which was premised on 50% of the enclave dwellers in each of them using simple random sampling, and a total number of 120 respondents were obtained.

### Data Analysis

Interview schedule using structured questionnaire was used both open and close ended questions were asked. Content and construct validity were conducted on the instrument to determine how well the behavioral constructs covered by the instrument matched. Also, a

reliability test was conducted with the use of test-retest method, a reliability coefficient of 0.7 confirmed the reliability of the instrument (Sangoseni et.al,2013)

**RESULTS AND DISCUSSION.**

**Table 1 Socio-economic characteristics of the respondents**

	Frequency	Percentage (%)
<b>Age</b>		
Less than 30	15	12.5
31-40	37	30.8
41-50	24	20.0
51-60	26	21.7
61 &Above	18	15.0
Total	120	100.0
<b>Marital status</b>		
Single	16	13.3
Married	94	78.3
Divorced	5	4.2
Widowed	5	4.2
Total	120	100.0
<b>Religion</b>		
Christianity	100	83.3
Islam	18	15.0
Tradition	2	1.7
Total	120	100
<b>Educational status</b>		
No formal education	8	6.7
Informal education	11	9.2
Primary education	39	32.5
Secondary education	39	32.5
Tertiary education	23	19.2
Total	120	100.0
<b>Primary occupation</b>		
Agroforestry	79	65.8
Artisan	2	1.7
Business	2	1.7
Civil-servant	18	15.0
Extension worker	1	0.8
Fishing	1	0.8
Pensioner	3	2.5
Teacher	6	5.0
Technician	2	1.7
Trading	6	5.0
Total	120	100
<b>Farm size(hectares)</b>		
<4.98	48	40.0
7.41-9.88	41	34.2
12.35-14.82	23	19.1
> 17.29	8	6.7
Total	120	100.0
<b>Reason for agroforestry</b>		
Relaxation	01	0.8
Source of food	47	39.2
Main source of income	72	60.0

Table 1 shows that most of the Agroforestry farmers (50.8%) are within the ages 31-50. This implies that the farmers were in their active ages. This correlates with the finding of (Adeola and Adetunbi, 2015) that active age is likely to make them more responsive to the adoption of innovations. The gender distribution shows that the majority 85.8% of the respondents were male; this implies that agroforestry farming in the area is mostly dominated by male. This study is in line with the findings of (Rocheleau and Edmunds, 1997) that reported that tree planting and felling have been primarily dominated by male while women have enjoyed use and access rights to fodder, fuelwood, fiber, fruits and mulch. The table further reveals that 78.3% were married; this implies that agroforestry farming in the area was dominated by married farmers. The results further reveal that 32.5% had both secondary and tertiary education, this indicate that the majority of the agroforestry farmers in the area are educated contrary to the apriority expectation that majority of the farmers are illiterate. The results further reveal that the mean farm size in the area was 8.4 hectare while the major reason for cultivation is for consumption and income generation, this agrees with the report of Adisa and Adekunle (2010) who reported that rural farmers do not see themselves farming just for subsistence, but rather as people involved in income-generating enterprises. Furthermore, 65.8% of the respondents had agroforestry farming as primary occupation while 60% of the respondents involved in agro forestry because it serves as a source of income.

**Table 2: Results of multinomial logit model**

Variable	Economic Wellbeing		Social Wellbeing	
	Coefficient	z - value	Coefficient	t - value
Constant	-2.766 (3.871)	-0.71	0.300 (3.569)	0.08
Age	0.030 (0.037)	0.82	0.049 (0.039)	1.27
Sex	1.229 (1.638)	0.75	-1.418 (1.003)	-1.41
Marital status	0.388 (0.970)	0.40	-0.734 (0.832)	-0.88
Religion	-1.263 (1.132)	-1.11	-0.456 (1.139)	-0.40
Household size	0.072 (0.181)	0.689	0.583 (0.212)	2.75***
Education	-0.048 (0.434)	-0.11	0.684 (0.425)	1.61
Farm size	-0.228 (0.188)	-1.21	-1.229 (0.280)	4.39***
Children number	-0.242 (0.296)	-0.82	-0.766 (0.316)	-2.42***
Type of school	1.160 (0.986)	1.18	0.983 (1.080)	0.91
Log likelihood	-67.565			
Chi-squared value	61.48			
Pseudo R <sup>2</sup>	0.313			

Source: Field survey, 2015

Note: \*\*\*Significant at 1% alpha level

Table 2 reveals the effects of socioeconomic variables on the wellbeing of the farmers. In the model, psychological wellbeing was used as the reference category while economic wellbeing and social wellbeing's determinants were computed. The Log likelihood, chi-square and Pseudo R<sup>2</sup> values were -67.565, 61.48 and 0.313, respectively. The diagnostic parameter shows the fitness of the model results. The results further reveal that none of the specified independent variables was statistically significantly influenced economic wellbeing of the farmers. However, age, sex, marital status had positive relationship with the economic wellbeing.

The results in the table also show that while household size was positive and significantly influenced social wellbeing at alpha level  $P \leq 0.01$ , while farm size and number of children were negative and significantly influenced social wellbeing at alpha  $P \leq 0.01$ . This implies

that the higher the number of children, the higher the expenses on home items and the less the social wellbeing and vice versa.

**Results of multiple regression analysis for relationship between contribution of the independent variable and farmers' wellbeing.**

Variable	Coefficients	Standard error	t-value
Constant	54.103	6.346	8.525
Monthly income	1.429	0.371	3.853***
Agroforestry type	0.641	1.049	0.611
Involvement in Agroforestry	-2.006	1.385	-1.449
Type of school	2.288	1.895	1.207
Constraints to agroforestry	-0.673	0.272	-2.476**
R <sup>2</sup> -value	0.510		
Adjusted R <sup>2</sup> -value	0.471		

Source: Field survey, 2015

Note: \*\*\*Significant at 1% alpha level

\*\*Significant at 5% alpha level

The results of the multiple linear models for the effects of the independent variables on the farmers' wellbeing reveal that while monthly income of the respondents was positive and significantly influenced farmers' wellbeing which is in line with Idumah et al (2015) who submitted that involvement in agroforestry practices improves farmer's wellbeing. Constraints to agroforestry was negative and significantly influenced farmers' wellbeing. The monthly income and constraints to agroforestry were significant at  $P \leq 0.01$  and  $P \leq 0.05$  alpha levels, respectively. The constant was significant at  $P \leq 0.01$  alpha level.

**CONCLUSION**

Agroforestry has been shown to provide a number of benefits to farmers in terms of income generation, based on the evidence presented by this study, it could be deduced that majority of the agroforestry farmers in the study area are still in their active years coupled with the fact that majority of them were educated, thus adopting new innovations to increase their productivity. Moreover, the wellbeing of agroforestry farmers when compared with the country HDI is better off and premised largely on their social, economic, material and psychological state. Therefore, this study recommend that farmers should be encouraged to embrace agroforestry practice through the availability of agroforestry support services like incentives, agricultural inputs and provision of soft loans to farmers. Recognition should be given to agroforestry farmers as this contribute to their psychological wellbeing.

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