ROLE PERFORMANCE OF NIGERIA AGRICULTURAL QUARANTINE SERVICE STAFFERS IN PLANT PEST PREVENTION IN NIGERIA LAND BORDERS

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ABSTRACT

Arbitrary and illicit importation of plant materials without considering introduction of dangerous agricultural pests and diseases to our Country and create adverse implication on our national agricultural economy and safety, necessitated increased call on the government to establish an agency that will reduce or eradicate the menace, hence the establishment of the Nigeria plant quarantine service in 1959 and was saddled with the responsibility of food security and protection of the nation's agricultural economy from being destroyed by dangerous pests, diseases and noxious weeds. In evaluating the performance of this agency,74 officials of the agency were sampled for data collection. The parameters estimated included personal characteristics, expected and actual roles performed, skills possessed and other factors that can impede their performances. The statistical tools used were frequency tallies, means, percentages, and inferential statistics for hypothesis testing were Chi square and Pearson product moment correlation coefficient. Findings revealed that the staffers were between 30-40 years of age, married, educated and mainly Christians. The study revealed significant relationship between level of role performance of the staffers and age (χ^2 = 13.22, P<0.05), level of education (χ^2 = 34.98, P< 0.05), number of their children (χ^2 = 40.88, P< 0.05) household size (χ^2 = 26.51,P< 0.05), attitude (χ^2 = 0.36, P< 0.05)and professional competence(r = 0.644,P< 0.05). The staffers were involved in the inspection and certification of all plant imports and exports and therefore detected, recorded and reported any contravening materials. The limitations to their performance included lack of motivation in areas of salary and remunerations, transportation, compensation and logistics. The results also revealed that the more trainings and motivation for the staffers the more the increase in competence and performance. Hence, constant evaluation for provision of regular training to build competence and adequate motivation for better performance of staffers of the agency were recommended.

Keywords: Role performance, Quarantine service, Plant pest prevention, Nigeria Land Borders.

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Introduction

Plants and animal life has ever since been under the influence of human activities, the quest to live and feed made man to cut down natural vegetation for cultivation and hunt for animals. In the 19th-20th centuries, nations became more curious about the need to feed their citizens, hence agricultural development becoming main goals, also at the advent of means of transportation (road, rail, air and sea) human traffic became so extensive. Transportation of goods and merchandize become international, food crops, plants, animals, and other agricultural products not an exception. The action above made it possible for transfer of plant and animal products including their pest from one country to the other. Ecosystem made it possible for lower and higher animals to co-habit and this made it possible for the lower ones which are microscopic to live on higher ones e.g. microbe lives on plants and constitute health hazards or cause serious damage which could be of economic importance and regarded as plant pests (Onyeani,1998; Oyaide,1996). Pathogens such as blight (*Phytophthorainfestans*) from Central America pardymiddew (*Uncitiulanecator*) and *phylloxera*, the dowry mildew (*Plasmoparaviticola*) from America to France, chestnut blight (*Endothiaparasitica*) also from

orient America, the wild spread of epiphytotics of coffee leaf rust (*Hemilela vastarix)* and leaf minor (*Promecothecacumingi*) have been known to have caused crop failures all over the world (OECD,1999).

The above examples explain the risk involved in introduction of dangerous pests and diseases along with imported plant materials, hence the quarantine service providing regular checks and detection of such, and protection to national agriculture. According to Benbrook (1996) Government quarantine offers services which are beyond the capabilities of individual beneficiaries or that is difficult to obtain through other means at lower cost, therefore such agency could only succeed through the support of government, general public, farmers scientists, communication media and other security agencies. Also the staffers have been charged to be good ambassadors of the agency and government and discharge their duties with utmost intelligence, caution and courage needed to implement the quarantine regulation (Dent,1996).

Based on the above, Nigeria Agricultural quarantine service regulates the introduction of vegetative propagules and plant materials within the following context:

a). Complete embargo and prohibition: Product that has high risk and inadequate control measure

b). Post entry quarantine: Product with high pest risk but adequate pest control and safeguards available.

c). Restricted: Pest risk not high, accompany with import permit stipulating condition and treatment.

Problem statement.

It is believed that to increase world's food production, food loss due to diseases and infestation must be curtailed. Therefore the Act No 28 of 1959 established the quarantine service to secure the nation's economy against dangerous foreign pests. (Edache, 1994).

NAQS staffers are seen as compromising with no promptness by plant importers and breeders, that when they deposit their plant materials in quarantine stations, the result are delayed, hence their unco-operative attitude (Ada-Adaogu,1994).

Despite efforts of the plant quarantine service to ensure clean plant importation, there is increased activities of circumvention by smugglers. Lack of team work or it's inadequacy among other security agencies cannot be overemphasized, the security outfits are not working together enough despite the fact that they have one common goal which is security (Iloba, 2000).

There are no adequate legislation by government to aid the operation of the plant quarantine services. NAQS plant pests detection stands out among other factors affecting the contributions of NAQS to the development of Nigeria agriculture, since the success or failure would depend to a large extent on the ability of the plant quarantine officials to detect and impound pests and pathogens that may be associated with agriculture. (Aluko,1984).

The study was therefore guided by the following research questions

a. what are the socio-economic characteristics of NAQS staffers

b. what are the expected roles of NAQS officials at land border stations

c. what are the activities performed by the NAQS staffers at the land border stations

d. do they possess the skills and competencies needed for effective performance of the activities

e. what are the factors militating against NAQS officials` role performance

Objectives of the study

The main objective was to investigate the role performed by NAQS officials in plant pests prevention at Nigeria Land borders. Specific objectives were to:-

a. describe the personal characteristics of NAQS officials

b. ascertain the expected and actual roles of NAQS official in relation to plant pest prevention.

c. determine the extent to which the NAQS officials perform their activities

d. examine the skills and competencies possessed by NAQS officials.

e. investigate the factors militating against NAQS officials` roles performances.

Hypotheses of the study

The following hypotheses stated in null form were tested.

Ho[1]There is no significant relationship between the role performance of NAQS officials in preventing plant pests and the selected personal characteristics

of NAQS officials.

Ho^2There is no significant relationship between the role performance of NAQS officials in preventing plant pests and the profession competencies possessed by NAQS officials.

Ho^3There is no significant relationship between the role performance of the NAQS officials in preventing plant pest and the factors militating against their effective performance.

METHODOLOGY

Study Area

The operation of Nigeria Agricultural Quarantine Service is carried out in four zones, the South West, The North West, South East and North East zones and the National headquarters at Abuja, however, the study focused on Nigeria land borders because most smugglings of agricultural products are through land borders, and Ogun state has the largest land entry parts.

All staffers of the Nigerian Agricultural Quarantine Service at the land borders in Nigeria comprised the population of the study.

Sampling Procedure and Sample Size

Stratified sampling technique was used in selecting the sample. From the four zones or strata available, A stratum, south west zone, was chosen at 25% intensity. Hence, total enumeration of all NAQS staffers /officials in all border stations of Ogun state was carried out, 42 NAQS officers from Idiroko, 8 from Ohumbe, 7 from Imeko, 7 from Akere Ijofin, 6 from Ijoun and 4 from Idopetu, made a total sample size of 74, from the six border stations of Ogun state for the study.

Development of Research Instrument

A well-structured questionnaire was developed and used to elicit information from the respondents, questions were drawn relevant to the study`s objectives. Section A contained personal and socio-economics characteristics of Nigeria Agricultural Quarantine Service staffers, Section B contained Expected roles, Section C role performed by Nigeria Agricultural Quarantine Service staffers, Section D skills and competencies possessed by NAQS staffers, Section E was on attitude of NAQS staffers towards role performance, and Section F contained factors militating against role performance, The collected data were analyzed using frequency tallies, means, percentages, and the inferential statistics were Chi-squareand Pearson product moment correlation coefficient.

RESULTS AND DISCUSSION

Personal and socio-economic characteristics of the NAQS staffers.

Age of respondents

The respondents were able bodied people, About 64% were between 30 and 40 years of age, while 34% were between41and 50 years. Only about 3% were above 50years of age. Most respondents were matured adults and were married, Only 12% were not married They were mainly (83.3%) Christians while only 10% were Muslims.

Education of Respondents

The respondents education at recruitment period showed that about 80% were having only senior secondary education or grade II certificate but had decreased to only 22% while Ordinary National Diploma certificate holders, National Certificate Education, and Bachelor of Science were only 6.8% at recruitment period but had increased to 52% at survey period. Hence their educational level had been upgraded on-the-job as 54.4% had OND/HND and 20.3% had Bachelor of Science Degrees

Table 1. Socio-economic characteristics of respondents (n=74)

Personal characteristics	Frequency	Percentage %
Age		
30 - 40	47	63.5
41 – 50	25	33.8
50 – 60	02	2.9
Total	74	100
Marital Status		
Married	65	87.8
Never married	09	12.2
Total	74	100
Religion		
Christianity	62	83.8
Islam	12	16.2
Total	74	100
Level of education at recruitment		
Secondary	59	79.7
NCE	05	6.8
OND/HND	05	6.8
B.Sc	05	6.8
Total	74	100
Present educational level		
Grade II	16	21.6
NCE	05	6.8
OND/HND	38	51.4
B.Sc	15	20.3
Total	74	100
Monthly Income		
N10,000 – 20,000	16	21.7
N20,000 – 30,000	16	21.7
N30,000 – 40,000	33	43.6
N40,000 and above	9	12.2
Total	**74**	**100**

Expected role and actual roles performed by NAQS staffers

All officers were aware of all listed roles as expected roles, but not all were performed by them, Only 6.8% of NAQS staffers were involved in issuance of Phytosanitary certificate and import permit, while 23% were involved in fumigation activities, also 5.4% were involved in specimen analysis, while all(100%) were involved in inspection of goods (Table 2)

Table2: Distribution of NAQS staff by Roles Performed

Roles of NAQS Officers	Expected Roles	Actual Rolesperformed Level of role performance		
	Yes	Yes	Veryfrequent	Notfrequent
Inspection of plant merchandise for export	74 (100)	74 (100)	74 (100)	-
Inspection of goods e.g.plant vehicle	74 (100)	74 (100)	74 (100)	
Vessels for importation	74 (100)	74 (100)	74 (100)	
Detention of foreign plant material	74 (100)	74 (100)	74 (100)	-
Recording and reporting of any determinant	74 (100)	74 (100)	74 (100)	-
Issuance of Phytosanitary certificate for imports	74 (100)	5 (6.8)	-	5(6.8)
Issuance of import perform to importers	74 (100)	5 (6.8)	-	5(5.8)
Fumigation of plants products, vehicles & warehouse	74 (100)	17 (23.0)	17 (23.0)	-
Specimen analysis export lab.	74 (100)	4 (5.4)	-	4(5.4)
Specimen analysis of import materials	74 (100)	4 (5.4)	-	4((5.4

*Percentage in parentheses

Professional Competencies possessed by NAQS Staffers

All (100%) NAQS Staffers possessed skills and competencies in these six aspects**:** Physical observation, Pests detection technique, Phyto sanitary procedure, Certificate issuance procedure, Seed health testing and Vehicle Inspection, Not all of them possessed skills and competencies in others aspects, hence it decreases downward in the table for the next seven aspects from ability to record, analyze, interpret, and store data in retrieval facilities for future records by only 74.3%,Communication skills with ICT gadgets was possessed by only 33.8%,Skills in pest taxonomy by only 23% and speaking international language and the dialect of importers and exporters by only 18.9% but no NAQS staffer have skills in Tissue culture.(Table3)

Table 3: Distribution of NAQS staffers by professional competencies possessed (n = 74)

Skill/Competencies possessed by NAQS Officers	Yes	No
Physical observation skill	74 (100.00)	-
Pest detection technique	74 (100.00)	-
Phytosanitary procedure	74 (100.00)	-
Certificate issuance procedure	74 (100.00)	-
Seed health testing skills	74 (100.00)	-
Vehicle Inspection Skill	74 (100.0)	-
Possessing ability to record, analyze, interpret and store data in retrieval facilities for future records	55 (74.3)	19 (25.7)
Competence in screening exercise	52 (70.3)	22 (29.7)
Competence in fumigation and pre-shipment inspection	39 (52.7)	35 (47.3)
Communication skills with ICT gadgets	25 (33.8)	49 (66.2)
Skills in pest taxonomy	17 (23.0)	57(77.0)
Competence speaking international languages	14 (18.9)	60 (81.1)
Competencies in expressing oneself in the dialet of importers and exporters	14 (18.9)	60 (81.1)
Tissue culture skills	-	74 (100.0)

*Percentage in parentheses

Sources of acquisition of skills &competencies

Involvement and participation in training programmes was the greatest sources of skills acquisition for 78 % of NAQS staffers. Followed by Announcements in the Newspapers for64.9%of staffers and On-the-job training in pest control for 31.1%. The least of the sources were Television/interlude for 13.5% and Seminar/conferences for 13.5% of NAQS staffers. as presented in Table 4 Distribution by type of skill possessed by NAQS officers were: by television and interlude 86.5%, seminars and conferences 86.5%, on the job training 68%, Newspaper and editorials 64.9%, participation in programmes and trainings 78.4%.

Table 4. Frequencies & Rate of NAQS staffers`acquisition of skills & competencies

Sources of Acquisition	Yes	Very frequent	frequent	Less frequent
Television/Interlude	10(13.5)	-	10(13.5)	64(86.5)
Seminar/Conferences	10(13.5)	5 (6.8)	5 (6.8)	64(86.5)
Announcement in the newspaper	48(64.9)	25 (33.8)	13(17.6)	36(48.6)
Participation in training program.	38(51.4)	40 (54.0)	13(17.6)	21 (28.4)
On-the-job training in pest control	23(31.1)	-	23(31.1)	51 (68.9)

*Percentage in parentheses

Hypotheses Testing

The results of the hypothesis testing indicated that Nigeria Agricultural quarantine Service staffers` characteristics that made significant contribution to role performance were age of staffers χ^2=13.22, $p < 0.05$ Education χ^2=34.98, $p < 0.05$, Number of children χ^2=40.48, $p < 0.05$; Household size χ^2=20.57, $p < 0.05$; while others were not significant such as sex, marital status, and religion as presented in Table 5

Table 5: Summary of Chi square results of Relationship between some selected socio-economic characteristics of NAQS staffers and their performance level,

Variables	d.f	X^2_{Cal}	P-value	Decision
Age	6	13.22	0.040	S
Sex	2	3.431	0.180	NS
Marital Status	2	4.918	0.860	NS
Education	6	34.98	0.000	S
Religion	2	4.157	0.125	NS
No of Children	4	40.88	0.000	S
Household Size	4	20.57	0.000	S

Table 6 showed a significant positive relationship between the level of role performance of NAQS staffers and the professional competencies possessed (r = 0.357, P< 0.05).There is direct relationship between professional competence and role performance, though the relationship is low, hence, the more competencies they acquired the better their performances.(see Table 6).An inverse relationship existed between role performance and factors militating against effective role performance (r=-0.644, P<0.05) reflects that the more militating factor increase the less the performance.

Table 6: Result of Correlation Coefficient of Role Performance, Professional competencies & militating factors

Levels of role performance and	N	r	P value	P level	Remarks
1. Professional competence possessed by NAQS staffers.	74	0.357	0.022	0.05	Significant
2.Factors militating against their effective role performance	74	-0.644	0.022	0.05	Significant

CONCLUSION

The study revealed that majority of NAQS staffers were aged between 30-40 years and earned 30,500 naira monthly, Christians and have post-secondary education, and are also vast in good and merchandize (plant materials) inspection, fumigation, detention, recording and reporting. The staffers were not so vast in pest taxonomy. Tissue culture skill, possession of communication skills with ICT gargets, and competent in speaking international languages. There was a positive significant relationship existing between level of role performance of NAQS staffers and their age, level of education, number of children, household size and professional competencies but negatively correlated with factors militating against performance while there was no significant relationship existing between level of role performance of NAQS staffers and their sex, marital status and religion.

RECOMMENDATION

Plant pest management which is also core to Agricultural sustainability is the major concern of the study hence the following recommendations were made:

Officials of the NAQS need constant training to improve their professional competencies in terms of skills and thus be improved upon through in-service training in order to overhaul the weakening NAQS services.

The government needs to provide a genuine information base for NAQS activities in the country to prevent the introduction of exotic pests and promotion of international agricultural trade that are pest free.

Finally, NAQS staffers be properly motivated for better performance in terms of remunerations and robust salary package, such that they will not be tempted to sabotage the agency.

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