

PERCEIVED EFFECT OF LIVESTOCK WASTE ON WELLBEING OF FARM WORKERS AND RESIDENTS WITHIN FARM CATCHMENT AREA IN ABIA STATE, NIGERIA

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ABSTRACT

The drive to boost livestock output in Nigeria in an effort to enhance protein consumption creating a rise in waste generation. This study, examined how people in the farm catchment area of Abia State assessed the impact of animal waste on their well-being. A multistage sampling method was employed to choose 148 participants for the research. A systematic interview schedule was used to elicit information from the workers, and descriptive statistics like frequency, percentages, and the t-test were used to analyze the results. There was a significant difference ($t = 3.684$, $P = 0.001$) in how study area inhabitants and farm workers perceive the impact of animal wastes on their well-being. Residents and farm workers thought livestock waste had little impact on their well-being. Wellbeing of residents was more affected with livestock waste than that of farm workers. There is a need to formulate rules and regulations governing safe handling of waste to minimise its impact on the wellbeing of citizens.

Keywords: animal; environment; hazard; health; manure; pollution; protein.

INTRODUCTION

Research has shown that the per capita protein intake in developing nations, including Nigeria (Abdulraheem et al., 2016), is very low. This can be attributed to a deficiency in the overall protein supply and an excess of carbs, which are primarily ingested as starch. But because of this arrangement, there are now more animals kept in close quarters inside a comparatively small land area. As a result, the amount of animal manure produced and deposited has been increasing recently (Costantini et al., 2007). Manure from cattle and poultry, bedding and litters, wastewater, dead animals, feedlot runoff, and wasted feed are additional examples of animal wastes (Ajayi, 2008; Iheke, 2016). Livestock wastes are recognized as an important resource for agriculture, serving as a supplement to or partial substitute for commercial fertilizers. Even though raising livestock is the primary activity in both urban and rural areas of Abia state, governments appear to be doing little to nothing to actively suppress the growth of poultry and piggeries, which pose a threat to human health and the environment due to their rapid expansion in recent years (Anyanwu, 2013; Fadairo and Ajayi, 2016). Furthermore, it's unclear why residents of the neighborhood still permit the raising of animals. Therefore, it is imperative to find out how the people who live close to these farms feel about the wastes these animals produce and how it affects their quality of life. The study specifically examined perceived effect of livestock wastes on the wellbeing of residents and farm workers. Our working hypothesis was that there is no significant difference between resident's and farm workers' perception of livestock wastes on their wellbeing in the study area.

MATERIALS AND METHODS

The study was conducted in Abia State. Abia State is populated by 1,904,908 persons made up of 933,030 males and 971,878 females (NPC, 2006). The population of the study comprised of farm workers and residents within selected farm catchment areas in Abia State. Multistage sampling procedure was used to select respondents for this study. At the first stage, purposive sampling was used to select Ikwuano, Bende, Umuahia North and Umuahia South areas of Abia state based on the concentration of livestock farms in these areas. The second stage involved the use of snowball sampling technique to get livestock farms within these areas and simple random sampling was used to select representative proportion of the farm workers from Ikwuano, Bende, Umuahia North and Umuahia South to give a sample size of 58 while accidental sampling procedure was used to select eighty (70) residents from the radius of less than 100 m, between 101 and 200 m and beyond 200 m from each of the selected farm centre given a total sample size of 128 respondents for the study.

RESULTS AND DISCUSSION**Table 1. Categorisation of respondents based on perceived effect of livestock waste on their social well-being (Mean = 14.42)**

Perceived Social impact	Scores	Frequency	Percentage
High	41–69	63	49.2
Low	21–40	65	50.8

Table 1 shows that 50.8% of the respondents perceived social effect of livestock wastes generated from farm around their residence as low. This indicates that livestock wastes when not properly managed can affect the social wellbeing of people living near and around farm locations.

Table 2. Categorisation of respondents based on perceived effect of livestock wastes on their environmental wellbeing (Mean = 52.71)

Environmental effect	Scores	Frequency	Percentage
High	53–78	65	50.8
Low	34–52	63	49.2

Table 2 showed that 50.8% perceived the environmental effect of livestock waste as high, suggesting that neighbours are aware of the negative consequences of waste on their environment. Perceived effect of livestock waste on the environment will not be porous if the waste are properly managed, disposed and used effectively for other farming activities. It is evident from the study that farm workers are at greater risk than residents. This implies that perceived effect of livestock waste on the respondents does not favour their wellbeing.

Table 3. Categorisation of respondents based on perceived effect of livestock wastes on their health well-being (Mean = 14.27)

Health effect	Scores	Frequency	Percentage
High	14–40	67	52.3
Low	0–13	61	47.7

Table 3 showed that 52.3% have a high health threat effect. This implies that most of the respondents perceived the effect of livestock waste on their health to be high.

Table 4. Categorisation of respondents based on perceived effect of livestock wastes on their overall well-being (Mean = 108.50)

Effect on well-being	Scores	Frequency	Percentage
High	109–165	59	46.1
Low	65–108	69	53.9

Table 4 indicated that the perceived effect of livestock wastes on their wellbeing was generally low among the respondents. However, the considerable proportion of the respondents (46.1%) that indicated high impact of livestock wastes on their wellbeing suggests that challenges posed by livestock wastes to the wellbeing of residents around farm locations is considerably significant.

Table 5. Independence sample test difference between resident's and farm workers perception of livestock wastes on all domains of well-being

Domains of well being	Respondents' category	Mean	SD	t-value	df	p-value
Social	Residents	42.18	8.13	3,358	146	0.001
	Workers	39.13	6.83			
Environmental	Residents	54.18	9.26	3,386	146	0.001
	Workers	49.03	9.33			
Health	Residents	13.93	8.78	0.852	146	0.001
	Workers	12.72	7.89			
Overall	Residents	112.29	18.13	3.684	146	0.001
	Workers	101.87	15.64			

Table 5 showed a significant difference between residents' and farm workers perception of livestock wastes effects on their social wellbeing ($t = 3,358$, $P = 0.001$), environmental ($t = 3,386$, $P = 0.001$) and overall wellbeing ($t = 3.684$, $P = 0.000$). This implies that there is a difference in the way farm workers and residents perceived the effects of livestock waste on their social, environmental and overall wellbeing. It was only the health wellbeing that was not significant ($t = 0.852$, $P = 0.391$). This may be due to the fact that health effects arising from poor waste management takes a longer time to be noticed when compared with environmental and social impacts. The mean values for social wellbeing (residents = 42.18, workers = 39.13), environmental (residents = 54.18, workers = 49.03), health (residents = 13.93, workers = 12.72) and overall wellbeing (residents = 112.29, workers = 101.87) suggests that residents were more at risk of the effects of livestock waste on their wellbeing than farm workers.

CONCLUSION AND RECOMMENDATIONS

The study concluded that respondents who lived close to farms were more prone to diseases caused by livestock waste. Perceived effect of livestock waste on social wellbeing was low; environmental and health wellbeing was high. Farm workers were more at risk of livestock waste than residents near farms. Wellbeing of residents was more affected with livestock waste than workers. Hence, there is a need to sensitize people on how to manage waste and how to put into consideration the waste management practices, especially composting. Stakeholders should be sensitized and aware of waste implications if not used efficiently; need to formulate rules and regulations governing safe handling of wastes in order to minimize its impact on the wellbeing of citizens is pertinent.

REFERENCES

- Abdulraheem M. A., Muhammed-Lawal A., Olasore A. B., Oni O. O. (2016): Assessment of animal protein consumption and food security among rural households in Kwara State, Nigeria. *American Journal of Business and Society* 1: 233–245, [http:// www.aiscience.org/journals/ajbs](http://www.aiscience.org/journals/ajbs).
- Anyanwu J. C. (2013): Marital status, household size and poverty in Nigeria; Evidence from the 2009/2010 survey data, African Development Bank Group Working paper series No 180.
- Ajayi F. F. (2008): Solid waste management problem and its implication on health. *Environmental Management* 11: 34–38.
- Fadairo O. S., Ajayi S. (2016): Use of antibiotics and compliance to standard practices in poultry health management among farmers in Oyo state, Nigeria. *African Journal of Sustainable Development* 6: 52–57.
- Iheke O. P. (2016): Analysis of livestock waste management practices among rural farmers in Abia State, Nigeria. *International Journal of Agricultural Science Research and Technology in Extension and Education Systems (IJASRT in EES)* 6: 21–27 [http:// ijasrt.iau-shoushtar.ac.ir](http://ijasrt.iau-shoushtar.ac.ir).
- NPC (2006): Nigeria Population Commission