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THE WORKING ENVIRONMENT AND LIVESTOCK PRODUCTION SYSTEMS IN NIGERIA

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Abstract

Favourable and safe working conditions are important factors in animal production. In urban and peri-urban areas of Nigeria, most the livestock are kept under the extensive system where animals are exposed to industrial wastes, oil spills and domestic effluents, which might have serious effects on the health of the animals. And for a country that has an annual record of over a thousand oil spillages, pollution of soils often leads to destruction of pasture land and death of water animals. In its drive to increase food production, many Nigerian farmers have been using pesticides on their farms. Animals in search of forage and water are often killed when they come in contact with pesticide treated farms and contaminated water. The poisoning of sheep and goats by organochlorine residues on cocoa farms have been recorded in many parts of the country and birds have also been known to be poisoned by acaricides which are used as washes or dusting powders for the treatment of fleas and lice. This paper thus describes the various deleterious effects of common pollutants on the livestock production system in Nigeria. Suggestions were also made on the ways and means of reducing exposure of animals to environmental toxicants.

Introduction

The term environment describes all the physical, biological, social and cultural factors and conditions, which influence the growth and wellbeing of an organism. The environment has been known over the years to have marked effects on the health of man and his livestock. Man through his economic and social activities have changed the nature of the Nigerian environment consciously or unconsciously and each of these activities has one effect or another on the livestock production system in Nigeria.

Nigeria occupies a landmass of 913,000 km^2 with varied ecological zones. As indicated in Figure 1, and according to Ibe (1998), 13% of the land mass is covered by rivers, lakes, ponds and pools. The duration and intensity of rainfall decreased from coastal regions to the more arid northern states. Expectedly, the vegetation zones are forest in the coastal and savanna in the northern regions except for Adamawa and Jos highlands where the vegetation is montane.

Of the ruminant animals, goats are the most numerous (48%), sheep (24%) and cattle (28%), as shown in Table 1, and most of the country's livestock population are kept in the dry savanna of the Northern States (Oyedipe, 1995). The implications of these are that animals are regularly moved from the drier zones to the moist forest zones and during transit, the flocks are subject to various environmental stress that often result in death or ill-health of animals.

Table 1: Projected livestock numbers in Nigeria (,000)

Livestock	1996	1997	1998	1999
Chicken	112,489	120,626	129,995	139,745
Guinea fowl	7,491	7,678	7,870	8,067
Turkey	620	629	639	648
Ducks	1,603	1,630	1,651	1,676
Pigs	7,705	8,013	8,334	8,667
Rabbits	6,386	7,022	7,724	8,496
Sheep	20,639	20,949	21,263	21,581
Goats	30,259	30,712	31,173	31,641
Cattle	14,459	14,531	14,604	14,677
Horses	222	228	233	239
Donkeys	514	516	519	521
Camels	356	365	374	384

Source Presidential task force on alternative formulation of livestock feeds (1992).
1990 figures: Projected yearly figures based on the factors relating to husbandry and reproductive potentials of the different animal species.

Effects of agricultural activities on livestock production

In the drive to increase its food production to feed the growing population, there is exploitation and destruction of vast areas of grazing land for agricultural purposes. In the Kainji lake Basin, over 1000 hectares of savanna bush have been cleared while the Niger Basin Development Authority has cleared some thousands of hectares (Chaudhuryi, 1982). These indiscriminate cultivation and agricultural land use of grazing land and watercourses, have destroyed many grazing land and resulted in the regimentation of rivers. Also, indiscriminate

burning of bush causes leaching of soil minerals and often results in food scarcity for the animals.

Hungry and thirsty animals are not too selective in their eating habits and are forced to eat and drink from a heavily polluted environment. The situation is made worse by the fact that agricultural pesticides are used in Nigeria without proper control and education. Most of the illiterate farmers are unaware of the residual effects of pesticides on man, livestock and the environment (Fadina *et al* 1999). Because of their ignorance, animals are often seen grazing on previously sprayed farms while Lindane (a WHO class Ia pesticide) is extensively used for fishing. Chronic symptoms of pesticide poisoning such as genetic mutations and birth defects (in man and livestock) have been reported in various locations in the country.

In a report by Awoniyi *et al* (1995), some goats, rabbits, and chickens kept under semi-intensive systems showed some neurological signs and finally died after being allowed to graze on a plot of land on which Premextra and Gramozone had been sprayed. It is therefore important that more research studies are carried out to analyze the status of chemical pesticides in the Nigerian environment. Poisoning of livestock by acaricides is also a common occurrence where animals are kept under semi-intensive systems. Here, poisoning may arise from dips or sprays at wrong concentrations or by accidental ingestion.

The savanna zone in Nigeria, includes a larger part of the middle belt, which is the "food basket" of the country. In this area, vast areas of vegetation have been cleared for mass farming activity (shifting cultivation) leading to bare large expanses of land. The open nature of this depleted vegetation expose soil to direct sunlight and rainfall leading to serious erosion, drought and famine. Drought and famine take a heavy toll on man and his livestock. All these lead to reduction in or loss of production, high disease incidence, animal mortality and loss of productive assets (Obot, 1993). It is therefore important to understand the fact that whatever modifications are made by man to the environment they will have a reciprocal effect. And this could be avoided through proper management, environmental awareness and enforcement of laid down control measures against environmental degradation.

The manufacturing industries and livestock production

Nigeria is endowed with abundant natural and human resources which has attracted many manufacturing industries such as petrochemical industries, iron

and steel industries, science equipments centres and cement factories (Adejuyigbe, 1995). The resultant effect is that the country's land and water animals are exposed to toxic matter arising directly from industrial effluents and the occurrence of acid rains have been reported in the last 5 years. This is evidenced in communities like the Ewekoro cement factory, Ogun state where domestic livestock species have been reported to suffer varying degrees of respiratory diseases. In 1998, a commercial poultry farm had to fold up because of frequent high incidences of respiratory diseases in their flocks. The pollution of the aerial eco-system by industrial fumes, automobile and sundry sources directly and indirectly affect livestock. If these fumes are not acutely toxic, they may cause severe irritation of the upper respiratory system, thereby initiating or complicating innocuous respiratory or other systemic diseases. More recently, a National News paper reported that a community in Delta State has to be relocated because of salt rain caused by aerial pollution from a salt manufacturing company.

Manufacturing industries also dump huge amount of solid waste into land and water bodies in Nigeria. Many of such waste dumpsites are common in industrial cities like Lagos and Ibadan. And for a country where most of the livestock are raised under the extensive system, sheep, cattle, goats and poultry birds are often seen scavenging on these dumping sites. And this explains why there is a consistent finding of different sizes and composition of jute bags, bar soaps, sticks and stones from stomach of animals brought to the Department of Veterinary Clinic at the University of Ibadan (Taiwo and Fadina, 2001). The implications of such findings on the health of our livestock and on human health are yet to be quantified.

The aquatic animals do not operate within a stable environmental context but environmental variation has overwhelming effects on these water animals, the improper or proper use of this natural habitat will directly have effects on the sustainability of life. In Nigeria, the water bodies are constantly polluted by oil spills, human sewage and industrial wastes (Fadina and Annih, 2000). The polluted Lake Chad and the Lagos Lagoon are living examples of water bodies that are regularly polluted by industrial wastes. (Raji, 1992).

Another problem of industrialisation in Nigeria is the tragedy of improper disposal of petrochemical substances. Cattle and other roaming animals are known to lack gustatory discrimination, and they have been reported to consume crude petroleum and kerosene from spilled pools and grounds with disastrous consequences (Barber and Cousin, 1987). Since most of the livestock are kept in

the hands of smallholders, the free roaming animals are exposed to the danger of these inorganic pollutants. Gas flaring and noise created during oil drilling scare away animals (domestic and wildlife); the greatest menace of oil drilling is the toxic slime and oil spills that flow freely into surrounding lands including grazing lands, ponds, and rivers. The resultant effect is that those who earn a living from farming, animal husbandry and fishing are now starving because lower yields have been recorded every year. This part of the country is gradually withering away while little attention is being paid to the affected people.

The socio-cultural aspects of livestock production

Nigeria is endowed with abundant natural and human resources and the non-effective utilization of such blessings have been partly caused by some socio-cultural factors. Cattle are the most important source of animal protein. And 90% of cattle production is in the hands of the nomadic Fulani; even when efforts are made by the 'urban dwellers', they still employ the Fulani's to manage them (Oyeleye, 1981). These urban dwellers consume more than 60% of what is slaughtered every day on occasions like marriages, burials and chieftaincy ceremonies. The economic implications of this include loss of opportunity to achieve self-sufficiency in food production.

The nomadic Fulani's, for ecological reasons often travel long distances with their animals; in search of pasture and watering facilities. Their trans human nature often exposed the predominantly trans-nosusceptible cattle to the tsetse fly and trypanosomiasis zones. In the past, the nature of the nomadic pastorialism did not provide education facilities for the Fulani's and their children and they have therefore developed certain cultural practices against sustainable development of both human and environmental resources. They claimed rights to their traditional cattle routes and grazing land resulting in communal clashes and conflicts with farmers, and government officials in parks and reserves (Ikede *et al*, 1987). The absence of adequate number of grazing reserves in Nigeria has compounded this problem and this may continue indefinitely if adequate measures are not taken by the government (Taiwo and Fadina, 2001).

Suggestions for improvement

The role of livestock production for meat, hides and skins and dairy products is worthy in Nigeria. But the level of animal production is lower than required. There is therefore an urgent need for the development of an efficient livestock and range improvement system to increase domestic livestock production and expand export market.

The human and economic activities of the country centres around industrial oil exploration, agricultural establishment and fishing. All these activities often result in direct negative effects on the eco-system and an over-all adverse effect on the productivity potential of the country. There is therefore a need to appreciate the interdependence and balance of natural factors, as a shift in one affects the balance in the eco-system.

The greatest pollution problem experienced in Nigeria is aquatic pollution because water bodies are used as a medium for getting rid of wastes, thus introducing noxious substances into the environment. In Nigeria, anti pollution legislation is hardly enforced, which creates serious problems both to the land and water inhabitants (man and animals). It is therefore important to assess the quality of various effluents from industries. The indiscriminate dumping of untreated waste into our environment should also be checked. In addition, government should establish adequate grazing reserves in all states of the federation and provide animals with shade and water to avoid heat stress. Also, the nomadic education programme should be well funded and focused to improve the lots of the Nomads and their children so that they can contribute to the development of environmental resources. It is also important that research studies are guided towards the development of improved stocks that are well suitable to the Nigerian climate.

Human activities in agriculture and industries have stirred up various crises in the environment. There is therefore an urgent need for the development of a comprehensive and effective environmental protection law and a proper education of the Nigerian population to preserve the Nigerian environment for the present and future generations.

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