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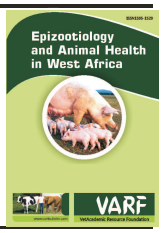

Animal health in the context of husbandry practices

Gabriel O. Esuruoso

Summary

Some of the ideals of a system that works in veterinary education and professional practices in Nigeria were based on earlier contributions of Desmond H. Hill, C.B.E., first Dean of Agriculture and first Dean of Veterinary Medicine at the University of Ibadan (1950-1982). Professor Hill started by teaching animal husbandry and health to students of Agriculture and later to students of Veterinary Science in the Faculty of Agriculture, Forestry and Veterinary Science up till 1975. By the end of the 1974/75 academic session, Desmond Hill's emphasis on animal husbandry and health was well-established in the mind of the institution and in actual teaching and practical application at the Teaching and Research Farm of the institution. This was the British foundation on which we later built the system that is now presented in this paper.

And so, when the new Department of Veterinary Public Health and Preventive Medicine (DVPHPM) was introduced in 1975, and this author was appointed the founding head, the decision was made to build a modern and more holistic structure on the foundation of health and husbandry already in place. Systems approach to curriculum development was adopted to actualize the set objective.

A careful search and constructive efforts were made, whereby it was decided that economic animal production systems should have the components of animal husbandry, animal health and the economics of both. And since the department was to be responsible for veterinary public health and preventive medicine, the curriculum of the new DVPHPM was designed to take care of **preventive veterinary medicine in the context of** a more holistic system. Its components are those of **economic animal production** through *animal husbandry, animal health, economics of both,* as well as meeting the requirements of public and environmental health in pract-

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ice. A curriculum established on epizootiological logic path was thus institutionalized. And the system was found to be working almost perfectly, except for the negative human factor effects that were ubiquitous. Hence, we introduced the sub-system of socio-economic jurisprudence (*sej*) as a prototype to take care of the much needed social health status of the human resources components in the black box of economic livestock production in diverse contexts. The details of the working system are presented in this paper.

Introduction

Some allusions from history to the recorded efforts of Professor Desmond H. Hill, D.V.M., C.B.E., M.R.C.V.S., are relevant to this subject matter for many reasons. First, the staging was made in honour of one who served an institution successfully in that area. It also provides *system's information* (Esuruoso, 1984) on the premise, highlighting the traditional role of veterinary surgeons (or doctors) in sustainable *economic livestock production* at its best, usually being most efficient in achieving the system's objectives. For example, at the outbreak of the First World War in 1914 (Badsay, 2008), it was British veterinary surgeons that were brought to Nigeria to start animal production units both in the south and in the north, in order to feed the army and the local communities properly with the much needed protein of animal origin. Hence the famous Agege dairy in Lagos which actually started in Yaba, the Shikka livestock farm in Zaria and the animal and vaccine production institute in Vom. Obviously in war situation, a wise nation would not normally leave the fate of its soldiers in the hands of civilians alone, even in matters of food security.

A military experience may offer salutary effects as observed in *War Against Indiscipline* (WAI) legislated in March, 1984 by a military decree in Nigeria (May, 1984). By 1984, protocols for managing the *social health* implications was introduced in the livestock development official policy document of the Federal Ministry of Agriculture and Natural Resources (FMANR), Nigeria, 1983-2000 (Esuruoso and Abdulkadir, 1984). The idea was to incorporate the component of '*socioeconomic jurisprudence*' (*sej*) as a subsystem. It was meant to provide basis for the management of human (social) factor effects in the system of livestock agriculture in Nigeria. The *sej component of all practice systems* today remains the only safe protocol for managing most intractable *social problems* which often befuddle efforts in healthy developments in all sectors of the national economy. And it seems to affect most nations worldwide in various dimensions based on their levels of development.

Indications that *sej* is still calling for dedicated attention can be found in a more recent official document of the aforementioned ministry's "*Blueprint on infrastructure for livestock and standards of veterinary services nationwide*" (Esuruoso *et. al.*, 2001). Now, the concerns of our educational system was articulated through a regular exercise in the identification of relevant issues, relationships, points of integration and co-ordination for system's success (Esuruoso, 1984; 1985). The concerns included animal husbandry, animal health, economics of both

in private and public sectors, and environmental health implications of economic livestock production practices (Esuruoso, 1976a). This is a key issue for ultimate and sustainable success.

Under *husbandry*, we considered as essential the components of studies and choices of the characteristics of species, breed, breeding (Dettmers and Hill, 1974) and genetics. Next, we considered studies and choices of animal food (or feed), feeding and nutrition. Our third consideration was methods of animal management systems in relation to conducive environment and variations across the age groups, production goals and necessary checks and balances. The forth issue was the general hygiene, which was of common concern for both husbandry practices and health maintenance for optimum production of the commodities in wholesome state.

Under *animal health* were considered the design and effect of preventive maintenance, control or management of real and evolving situations (Esuruoso, 1976b), zoo-sanitary measures (Esuruoso and Hill, 1971; Hill and Esuruoso, 1976) and necessary interventions which may include clinical, therapeutic, surgical, obstetric and disease containment and precise eradication assurance measures.

Under *economics of husbandry practices* and *health maintenance*, both husbandry and health were subjected to economic considerations. Defined starting goals of a production system under consideration (as defined at the onset in the feasibility report and guidelines) were revisited from time-to-time during implementation, for compliance or deliberate adjustment or tactical movements while still on the strategic course (Esuruoso, 1976a). Here, resource input or product output relationships must be measured. Not only were factors of production considered, but also the production functions by deliberate choices were identified for optimization (Hill and Upton, 1964).

In spite of all the above, the usual negative *human factor* effects had needed to be brought under effective control all the time (Esuruoso and Olugasa, 1997). This was best done under a system of *sej* as earlier presented *based on 'commonsense - without which all other senses were at best, at great risk, or at the worst, were simply useless'* (Esuruoso *et al*., 2000).

Animal husbandry

A consideration of animal husbandry covered types, practices, usual objectives and the likely outcomes in diverse circumstances. In working reality, animal husbandry (Williamson and Payne, 1978) considers types, practices, objectives and the usual desirable and undesirable outcomes of such practices. Consideration of all events were weighed in terms of possibility and probability. In doing this, specific processes and procedures were listed (Hill and Upton, 1964) after providing a definition of the subject.

Animal husbandry is the *scientific* (systematic and methodical) study and practices that deal with breeds, breeding and genetics (Payne and Wilson, 1999); feeds, feeding and nutrition; animal and environmental management and hygienic practices. It is thus, a multi-disciplinary, multi-faceted and multi-dimensional set of specialist activities; these are:-

i. *Breeds, breeding and genetics*
Coping with the realities of breed peculiarities, choosing the appropriate breeding practices and understanding and manipulating the genetic contents and potentials of available stock (Hill and Upton, 1964);

ii. *Feeds, feeding and nutrition*
Understanding what is, formulating or obtaining the right feed for the stage of life or production and feeding the right amounts at the right time - consistently even as the needs and circumstances change;

iii. *Management practices in appropriate environment*
Designing and applying the control of the environmental conditions that are concomitants of intensive, semi-intensive and extensive management systems for each type of species and production objectives;

iv. *Dealing with pest control problems*
Identifying, studying, understanding and coping with the menace of the various pests, predators and competitors in the ecosystem;

v. *Maintenance of general hygiene*
Achieving general hygienic imperatives, and controlling conditions that cause stress and (or suffering) or the failures in respect of achieving the optimum production capacity, and mitigating unhygienic causes of economic losses that may threaten profitability, breaking even or even the survival of the entrepreneur – in spite of these, all things being equal.

In summary, it was realized that animal husbandry practices consist essentially of adaptation, manipulation, optimization and of recent, re-engineering (to the point of achieving dangerously rapid evolution or even revolution) in the long established animal biological systems - based on tremendous scientific understanding - but yet inconclusive in terms of possible or even probable turn of events - in the near or distant future - that can only be vaguely envisioned - as likely to be for better or for worse for the human race, his animal species, plants and the common external environment.

Animal health

Animal health activities usually include:

i. *Maintenance of general hygiene*, which is of common interest with husbandry practices – an overlap of interest;

ii. *Zoo-sanitary measures* – including control of movement of animals, animal products, personnel and materials (quarantine of affected and exposed areas). Appropriate waste disposal, incineration, deep burial, disinfection, fumigation, other bio-security (and containment) measures and immunization - all in timely order;

iii. *Optimum animal health promotion and maintenance*, ensuring routine inspection, assessment of physical and material needs, general comfort of the animals, detection of elements in the environment and prevention of harm to the animals; *e.g.* fertilizer dumps prevention (Esuruoso *et. al.*, 2005);

iv. *Prevention of ill-health and related problems*, some of which arise from faults in any aspects of husbandry practices (including environmental systems, routine immunisation, deworming and deticking) (Esuruoso and Olugasa,1997);

v. *Epizootiological intelligence activities*, including surveys, monitoring, surveillance, strategic planning, and timely tactical operations (Esuruoso *et al*., 2005);

vi. *Diagnosis* as a network of activities, culminating in epizootiological diagnosis and prognosis in the herd and related contiguous and exposed areas (Esuruoso *et al*., 2005);

vii. *Interventions:* including clinical, therapeutic, surgical, obstetric, nutritional adjustments and supplements;

viii. *Situation appraisal following climatic disasters and seasonal changes*. This is usually followed by necessary reorganisation and adjustments in strategic plans to accommodate needs identified following a thorough appraisal of after-the-event situation.

Animal health in diverse contexts

Animal health promotion and maintenance practices may be considered in the diverse contexts of:

i. Husbandry practices;

ii. Production capacity attributes such as backyard production, subsistence production, economic production, commercial production;

iii. Production efficiency in the backyard production, in subsistence production, in economic production, commercial production, and;

iv. In relation to the imperatives of human health - physical, mental, moral, educational and spiritual health, also in relation to human capacity to be peace loving and promoting, being habitually security conscious and being time sensitive – all of which I earlier discussed under social health as a component of *sej* (Esuruoso *et al*., 1984; Esuruoso and Olugasa,1999). Other mandates of Veterinary Public Health concerns routinely taken in the stride of the veterinary doctor's professional activities include: contribution to farmers' health needs, wholesome meat for the nation, safety of animal by-product handler's, consumers' health protection, pet owner's health assurance, the veterinary surgeons' health and contribution to environmental health in the normal practice of the profession in divers circumstances.

Food, social and national security

There are many of such services, for which a description here would be superfluous. But veterinarians and other professionals who are actually involved in such services are fully aware of the importance of their contribution to food, social and national security. Anyone in doubt of their relevance should feel free to contact the author of this paper. Members of the State Security Services (SSS) in Nigeria, for example, should have a lot to teach to their personnel on such issues. Animal suitability for

military training and services is usually judged by both the service personnel and their specialist veterinary surgeons.

i. The animal's suitability

Animal suitability for physical work, specialist training, helping the disabled and carry out diverse social security services to both civilians and the armed forces.

ii. Economics of animal health, husbandry practices and production

Both the husbandry practices and the health maintenance activities must be achieved at cost-benefit performance ratio which must be much higher than one (Esuruoso, 1976b; 1985). All of these are intended when we wish to be holistic, realistic, and socio-economically compliant in both husbandry practices and in animal health promotion and maintenance as described above. This also is a key statement that will open the gate to cognitive understanding of the working knowledge of holistic intentions of animal health in the context of husbandry practices.

The formula to always remember is:

Economic Animal Production = Economic Animal Husbandry + Economic Animal Health

Conclusion

This is a system that works. And it was the original design of British traditions in livestock animal production, most prominent in times of crisis, even for the whole nation. This was effectively promoted by Professor Hill during the entire period of his services in Nigeria. May his soul rest in perfect peace. Amen. This system of veterinary education, practice and development is therefore recommended to countries of the West African sub-region emerging from civil war, natural disasters and likes of devastation.

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Being the text of Professor Emeritus D. H. Hill's 80th birthday anniversary lecture (in continuing recognition, appreciation and tribute to our most respected and loved predecessor and Emeritus Professor Desmond Howard Hill, D.V.M., FCVSN, C.B.E.) For some of his contributions to the development and realization of veterinary education, professional excellence and relevance in Nigeria from 1950 to 1982 AD.

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