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ORIGINAL PAPERS

PARTICIPATORY BASELINE SURVEY OF A CASE STUDY RURAL LIVESTOCK HEALTH MANAGEMENT PRACTICE IN NIGERIA: THE PLACE OF COMMUNITY BASED ANIMAL HEALTH WORKERS

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Abstract

A Participatory Baseline Survey study of a typical community based livestock production system in Igangan, Ibarapa North Local Government of Oyo State, Nigeria was under taken in August 2010. The objective was to identify local animal health and management problems faced by livestock farmers in the study area and understand the local preferences for animal health management practices, including the place of community based animal health workers (CBAHW) in rural livestock health and production management, in the study area. The main research method was through an interactive participatory workshop discussion with identified livestock farmers in the community who responded to invitation to a community livestock discussion workshop. Participants consisted of a total of one hundred and twenty (120) livestock farmers, made up of thirty (30) indigenous Yoruba farmers and ninety (90) Fulani and non-Fulani residents of the government Grazing Reserve in the community. Major livestock health and management problems unanimously highlighted by respondents during the interactive semi-structured interview included Foot-and-Mouth Disease, Contagious Bovine pleuropneumonia outbreaks (*Here* in Fulani), Diarrhoea in calves and severe respiratory problems in small ruminants; as well as crop farmers' encroachment, occasional physical clashes with crop farmers, overpopulation and inadequate grazing space. While more respondents (45.83%) rate modern animal health practitioners as more effective than Fulani pastoralist (29.17%) and local healers (25%), modern health practitioners were described as less available (93.33%), less truthful/unreliable (91.67%), inaccessible (81.67%), and most expensive (62.5%). The outcome/result of the workshop discussion are similar to those obtained in other studies on the place of CBAHW and the health issues highlighted by the community based

rural livestock farmers could be adequately addressed by raising trained Community based Animal Health Workers among such rural livestock farmers in Nigeria

Introduction

Over the past few decades, government allocation for non-recurrent salary budgets in African countries has been on the decline, resulting in inefficient delivery of (veterinary) services. It was also realized that the remote areas were not being adequately served by the central government veterinary services for reasons, which included:

- The vastness and the remoteness of the areas and the sparse human population density.
- Poor infrastructure.
- Poverty. Charges were unaffordable and/or the value of the animal was not worth investment.
- Insecurity.
- Fewer veterinary staff due to non-recruitment by the government as a result of Structural Adjustment Programs (SAPs).
- Veterinarians unwilling to work in remote areas.
- Poor distribution of veterinarians, many of whom lack the initial capital that is necessary for the establishment of private services.
- Nomadism.

The absence of veterinary services in such rural areas led to the development of community-based animal health care (http://www.appropedia.org/Community-based_animal_health_care).

The African Union/InterAfrican Bureau for Animal Resources (AU/IBAR) has since 2003 realized the need for a paradigm shift towards strengthening primary-level veterinary services in Africa through the use of community-based animal health workers (CBAHW). The bureau thus institutionalized a paradigm which defines a 'community-based animal health worker' as a person who performs a limited range of veterinary tasks as defined by the statutory body in a given country. Within the Code of the International Office of Epizootics/World Animal Health Organization (OIE/WAHO), a CBAHW is regarded by as a category of Para-professional (AU/IBAR (2003), http://www.eldis.org/fulltext/cape_new/PolicystatementCAHWs.pdf. http://www.eldis.org/pastoralism/cape/index.htm)

In the animal health sector in Africa, attention to the involvement of local people in service provision was evident during the colonial period. Before independence, many Veterinary services used trained livestock herders as vaccinators, or reporters of disease outbreaks. These workers were given basic training and accounts of their activities in Nigeria (Henderson *et al.*, 1973), Uganda (Carmichael, 1973), Sudan (Jack, 1961), Botswana (Falconer, 1973), Tanzania (Lowe, 1973) and Northern Somalia (Peck, 1973). At that stage in the history of primary animal health services, paravets (veterinary assistants) and veterinary scouts (personnel trained to do the work of veterinarians) were used to control diseases which were prioritized by Governments. Following independence in Africa, there was a lull in the use of primary – level field workers for over 10 years as new African Governments trained their own Veterinarians and other types

of workers using formal systems of education (Baumann, 1990).

The idea to use primary animal health workers in Africa resurrected in 1976 when a rangelands project in Ethiopia used Veterinary scouts to provide a limited range of vaccination and treatment services (Sanford, 1981). Veterinarians in Sudan also began to promote the paravets, barefoot vet or similar type of workers (Schwabe, 1980; Schwabe and Kuojok, 1981; Halpin, 1981) and in Somalia, nomadic animal health auxiliaries were used to good effect in the central rangelands (Baumann, 1990). The common feature of these projects was greater use of local people to identify key problems, select people for training as animal health workers and support these workers via schemes. Hence communities began to participate more fully in the design and delivery of veterinary services.

Using the principle of community-based approaches which had been developed by NGO's, the Pan African Rinderpest Campaign (PARC) began to use CBAHW to vaccinate cattle in the Afar region of Ethiopia and southern Sudan. No outbreaks of Rinderpest were reported from Afar after November 1995 and PARC suggested that the success in the Afar region is perhaps the most striking example of the impact of participatory techniques in remote, marginalized communities (PARC, 1996).

In southern Sudan, community-based Rinderpest vaccination has formed the basis for animal health service delivery since 1993 (Blakeway, 1995; Leyland, 1996, 1997; Jones *et al.*, 1998). The experience of facilitating community-based animal health services (CBAHS) in southern Sudan started as community-based Rinderpest control programme in 1993. In 1994, the programme widened its control of other diseases through development of CBAHS, through activities involved in setting up a CBHC System which included:

- Conducting baseline surveys to get acquainted with the livestock health situation in the working area and create a better understanding between the communities and the implementing agency.
- Holding a community dialogue workshop to discuss CBAHC concept where the roles of the participants are defined; selection of trainees is done by the community on the basis of set criteria such as interest in animal health welfare, honesty and literacy.
- Training the selected trainees.
- Providing material support – after the completion of the training, CBAHWs are equipped with veterinary drug kits to take back to their respective communities where they start operating under supervision of veterinary technical staff.
- Undertaking monitoring and evaluation during the initial stages. Intensive monitoring should be carried out to assess whether the CBAHWs are following what they were taught and whether the objectives are being met.
- Conduct refresher courses at regular intervals based on the CBAHWs performance assessed during the monitoring. Retraining is devised based on the findings.

The first process in initiating a Community Based Animal Health Scheme is to conduct a participatory baseline survey to get acquainted

with the livestock health situation in the area and create a better understanding between the communities and the implementing agency. Participatory Baseline Survey (PBS) is a Rapid Appraisal tool that plays an important role in developing existing indigenous veterinary knowledge and using it as a foundation on which to build more productive, sustainable and stable rural communities (Majiyagbe and Majasan 2006). Over the last few decades, collection of existing veterinary knowledge through surveys became an important method for the identification and prioritization of animal health problems within communities. Often times, these ethno-veterinary surveys have been carried out as part of a baseline study for an animal health project. More recently, the use of rapid rural appraisal or participatory rural appraisal techniques as a general project design and monitoring tool have been shown to be a timely, accurate and cost-effective means of collecting essential information for project formulation. Rapid rural appraisal is an effective technique for researchers to collect data at the community level. Participatory rural appraisal evolved out of RRA and places more emphasis on the empowerment of the community to process and utilize the information on their own behalf (Catley and Mariner 2002).

A major criticism by conventional scientists against participatory appraisal methods is that they are 'non-scientific' because they are largely based on 'subjective' qualitative, rather than 'objective' quantitative, techniques of an intelligence gathering nature. Any form of veterinary investigation (epizootiological, pathological or clinical) may yield either qualitative or quantitative information or both (Catley, 1999). Procedures such as history taking, clinical examinations and post mortem examinations are common diagnostic tasks performed by field veterinarians, and are largely subjective (Mariner, 2000).

Qualitative research is based on the collection of observations, historical reports and opinions of informants as well as the direct observations of the researcher. Often, expert or key informants are used. For the most part, data is collected and recorded as non-numeric, non-categorical testimony, explanations and interpretations of the participants. During the process of qualitative reconnaissance, the data can be transformed into quantitative information at several points, if the investigator so desires. Participatory epidemiology can be used as part of the local development programme where the participants themselves formulate an action plan to improve animal health and productivity (Catley and Mariner 2002).

A Participatory Baseline Survey study of a typical community based livestock production system in Igangan, Ibarapa North Local Government of Oyo State, Nigeria was under taken in August 2010, through an interactive participatory workshop discussion with identified livestock farmers in the community to determine the sort of appropriate and sustainable animal health interventions that can be instituted in such a rural setting.

Materials and Method

Materials

The Case Study: Igangan (Figure 1) is a small town of about five thousand inhabitants with average of two-hundred houses where small holder livestock (mainly goat, sheep and poultry) rearing on free range is an age long traditional practice for both men and women. Igangan is located between Tapa and Elekokan towns in Ibarapa North Local Government Area

of Oyo State. The few non-indigenes living in the town are Fulanis and migrant farm laborer from Northern part of Nigeria and neighboring Benin Republic. The town also hosts the Igangan Grazing Reserve, with Fulani settler pastoral families (households) in the reserve varying annually from between twenty-seven (27) permanent settlers to up to forty-seven (47) households, depending on the season of the year. More than 75% of the Fulani live in the government owned Grazing Reserve in Igangan, with about thirty-five thousand cattle holding. The Fulani usually come out to trade on market days and every Friday for Moslem jumat prayers.

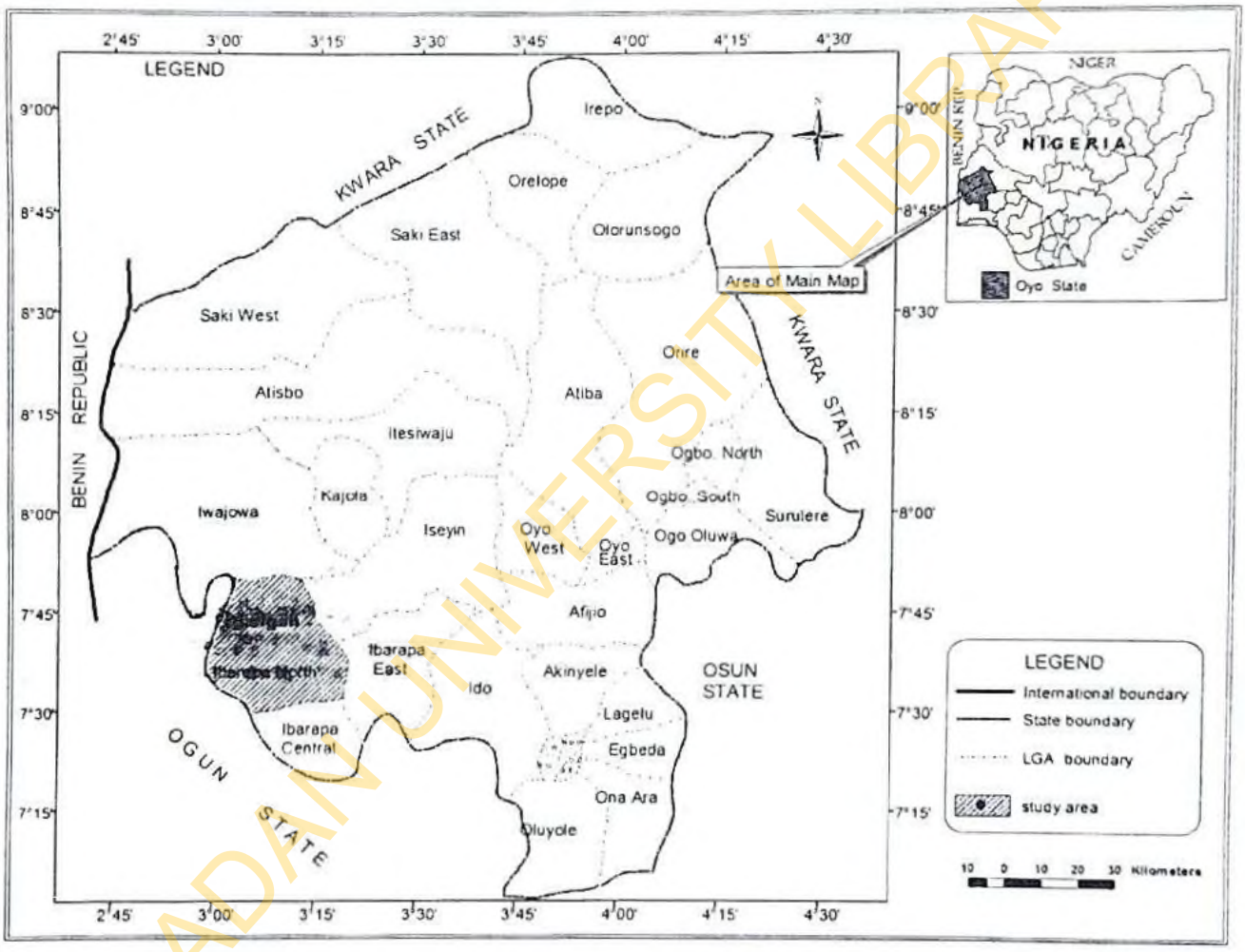

Figure 1: Map showing location of study area

The study area was chosen because the first author was involved in a participatory research of the Igangan Grazing Reserve, which is located in zone and also because the second

author was already familiar with the community, having been a team member there during a recent mass vaccination against the Contagious Bovine Pleural Pneumonia (CBPP) in cattle and PPR vaccination against Peste des Petit Ruminants (PPR) in goats and sheep, carried out by the Oyo State government. A three man team made up of two veterinarians (including the State Veterinary Monitoring Officer who had earlier being the State Epidemiology Officer in charge of the Igangan Grazing Reserve), and one animal health technologist constituted the field research team. All the team members were already familiar with the community, having been there during the vaccination programme organized by the Oyo State government against CBPP in cattle and PPR in sheep and goat. A 10.3 mega pixels digital camera, tape recorder and cassette were also acquired to aid in taking pictures and recording during the field work in August 2010.

Method

The main research tool used during the interactive participatory group discussion workshop was semi-structured interviews (Table 1), also known as Community Inventory, which involves interviewing community people in a way that allows for free and friendly discussion, so that participants can analyze their contributions. Interviewers do not work with any set of specific questions, but it is best to prepare a checklist of topics to cover and work from it so that all relevant topics are covered (see Table 1 for a checklist of questions that formed the basis of the semi-structured interview).

Table 1: Checklist of semi-structured interview points for the community dialogue workshop with livestock farmers in Igangan agro-pastoral zone, Oyo state, Nigeria.

1. Name of Local Government Area
2. Name of Town
3. Name of Livestock keeper
4. Type of Livestock kept
5. Husbandry system in use
6. Common husbandry problems encountered.
7. Common animal disease problems encountered
8. (a) Do you have animal health experts (veterinary doctors/animal health technologists) that treat your animals?
   (b) What form of animal health service do they provide?
   (c) How accessible are they?
   (d) How reliable?
   (e) How effective are their services?
   (f) How satisfied are you with their charges for services provided?
9. (a) Do you use any local remedies?
   (b) What form of animal health service do they provide?
   (c) How accessible are they?
   (d) How reliable?
   (e) How effective are their services?
   (f) How satisfied are you with their charges for services provided?
10. (a) Do you patronise Fulani animal healers for the treatment of your animals?
    (b) What form of animal health service do they provide?
    (c) How accessible are they?
    (d) How reliable?
    (e) How effective are their services?
    (f) How satisfied are you with their charges for services provided?

One hundred and twenty (120) livestock farmers comprising of some 90 resident and non-resident Fulanis and 30 indigenous non-

Fulani Yorubas, who responded to a community discussion invitation, actively participated in the meeting held in the town. The greater proportion of Fulanis who responded to the invitation was a reflection of their concern of issues affecting the greater contribution of livestock to their pastoral livelihood, compared to the indigenous Yorubas who keep small holder livestock (mainly goat, sheep and poultry) on free range. The interactive semi-structured interviews were conducted in Yoruba language and translated to Hausa language (though most of the livestock farmers understood Yoruba).

Results

The major livestock health problems unanimously identified by the participating respondents in response to the semi-structured interview were:

i. Foot-and-Mouth Disease,

ii. Contagious Bovine pleuropneumonia (*Here* in Fulani) CBPP outbreaks,

iii. Diarrhea in calves and

iv. Severe respiratory problems in small ruminants

v. Other animal management problems highlighted included crop farmers' encroachment, occasional physical clashes with crop farmers, overpopulation and inadequate grazing space.

Participants were also asked to highlight the sources and preferences of Animal Health/ Disease Control services available to them (Table 1). More respondents (45.83%) rate modern animal health practitioners as more effective than Fulani pastoralist (29.17%) and local healers (25%), modern animal health practitioners were described as least truthful/unreliable (91.67%), less available (93.33%), inaccessible (81.67%) and most expensive (62.5%).

Results were similar to those obtained in other studies on the place of CBAHW (Mugunieri L.G. et al 2002, Catley 2004, Idowu 2005, Idowu and Babalobi 2007, 2010, Babalobi 2009).

Table 1: Sources and preferences of Animal Health and Disease Control Services available in Igangan Agro-pastoral zone, Oyo State, Nigeria

Criteria	Animal health experts' from the towns	Local remedies known within the town	Fulani animal healers	Total number of respondents
Availability/readiness to provide services	8(6.67%)	37(30.83%)	75(62.5%)	120(100%)
Accessibility/nearness	22(18.33%)	80(66.67%)	18(15%)	120(100%)
Reliability/how truthful	10(8.33%)	65(54.17%)	45(37.5%)	120(100%)
Expensive cost of service	75(62.5%)	12(10%)	33(27.5%)	120(100%)
Effectiveness/ Does remedies work well	55(45.83%)	30(25%)	35(29.17%)	120(100%)

Discussion

Livestock owners are very vital in the epidemiology and the eradication of livestock diseases. It has been argued that CAHW systems have a key role in strengthening the capabilities (epidemiological surveillance, disease control, animal disease reporting systems) of veterinary services in remote and under-served areas. Community-based animal health delivery systems can also assist with animal identification systems, traceability systems, and animal movement control systems. In remote areas of developing countries where infrastructure and enforcement of regulations is weak, CAHWs have an important, but as yet untapped role to play in raising awareness on the need for these capabilities (Leyland and Catley 2002).

Although CAHWs can provide very useful primary veterinary care to livestock keepers, many projects have failed to address important technical, social and sustainability issue. Indeed, a very wide range of modes of project designs and implementation are currently used and with varying levels of success. Common problems include failure to fully involve communities in analysis of problems and solutions, and limited attention to financial sustainability (McCorkle, 2002). The key requirements for sustainable and effective community-based animal health delivery system have been highlighted by Leyland and Catley (2002) as follows:

i. Livestock owners perceive they have an animal health problem.

ii. Local communities participate in an inter-active way in all aspects of service development. This includes defining the problem, planning, contribution of time and resources, defining criteria for selection of CAHWs, agreeing a prescribed relationship with private veterinarians, i.e. this includes payment of full cost for services rendered by CAHWs and the government vets who regulate and monitor, selection of CAHWs, post training reviews, monitoring, de-selecting CAHWs who perform poorly, recognizing refresher training etc.

iii. The CAHW system is based on sound business principles in terms of capitalization, loans, turn-over, reinvestment and profit generation.

iv. Training is based on participatory and adult learning methods, standardized but flexible to respond to needs within different communities.

v. The roles and reporting relationships of the cadres of worker "CAHW" and "Animal Health Technician" and "veterinarians" are described and recognized by the veterinary authorities. This includes geographical definition of where CAHWs are allowed to operate that is where they will and will not be licensed to operate.

vi. The opportunity for private veterinary practitioners to be awarded contract for provision of public good services vaccination, disease surveillance and the so called "sanitary mandate" is availed.

vii. The policies and strategies of the veterinary authorities toward CAHs are in line with practice and enforcement of veterinary professional legislation including pharmaceutical supply laws.

Combining all the above parameters into one initiative that improves the quality of veterinary service delivery nationally is a complex task. It

does need long term strategic and operational plans that are regularly reviewed commitment and initiative. It requires strong vertical linkages between filed veterinary workers and veterinary authorities. It does require veterinary administrations to define the roles, relationships (legal and administrative) of the various cadres of veterinary worker to each other and to the national veterinary services. It certainly requires the ability to enforce appropriate legislation that deals with the veterinary profession and the supply of veterinary pharmaceuticals. These requirements are all basic evaluation criteria as described in the OIE's guidelines for the evaluation of veterinary services.

The criteria for sitting community-based animal health delivery system (CAHS) should largely relate to areas where conventional private practices would be uneconomic. For example CAHS should be allowed in remote, extensive grazing areas but not necessarily in peri-urban dairy, pig and poultry areas where conventional practices could be viable

Conclusion

The health issues highlighted by the community based rural livestock farmers could be adequately addressed by raising trained Community-based Animal Health Workers among such rural livestock farmers. In Nigeria, there is a need to ensure continued debate, research and development of CAHW systems. Community Based Animal Scheme should be embraced by all animal health experts (both Veterinarians and Animal Health technologists). Contrary to the erroneous belief that the introduction of Community Based Animal Health Workers will jeopardize their job and encourage quackery, rather it will complement the efforts of government and animal health experts for sustainable livestock health and production development, for good disease surveillance and disease reporting system in Nigeria. In Nigeria by 2005, the Department of Veterinary Public Health and Preventive Medicine. University of Ibadan, had adopted a paradigm shift by incorporating Community-Based Animal Health and Participatory Epizootiology into undergraduate and postgraduate curricula; and several postgraduate students have since been supervised to conduct participatory research in livestock keeping communities of southwestern Nigeria (Idowu 2005, Ogunwale 2007, Kareem 2010); as espoused by the AU/IBAR/PACE Community-based Animal Health and Participatory Epidemiology CAPE Unit (Swift 1988 www.cape-ibar.org) and the Institutional and Policy Support Team (IPST), its 2005-2010 successor. (AU/IBAR http://www.eldis.org/pastoralism/cape/index.htm)

It is expected that other veterinary schools in Nigeria will adopt this paradigm of positive change in the training and practical exposure of undergraduate and postgraduates to the principles and practice of community-based animal health services, and adopt a *Paradigm Shift* – a change to a new game, a new set of rules – and not suffer from '*Paradigm Paralysis*' – the failure to recognize, and be willing to adopt new paradigms (Barker 1992, Babalobi and Idowu 2005). It is therefore recommended that:

i. Both the Veterinary Council of Nigeria and Federal Livestock Department should recognize the Community Based Animal Health Scheme officially and encourage both the states and local government to embrace the scheme.

ii. The Community-based Animal Health Scheme should be implemented in Nigeria by appointing desk officer for the scheme as in the avian influenza outbreak who

will supervise the community-based animal health workers. Government should make budgetary provision for the scheme especially for takeoff.

iii. Participatory Research Epizootiology should be taught in both under graduate and post graduate curricular to enhance proper understanding of the scheme.

iv. The role of Animal Health Technologists and Technicians (Diploma holders) in the provision of veterinary services in Nigeria should be defined by Veterinary Council of Nigeria and recognized them as part of animal health experts, because they are being trained by Veterinarians.

If all these recommendations listed above can be considered, a more appropriate and sustainable livestock health and production development and good disease reporting system and disease surveillance will be achieved in rural area.

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