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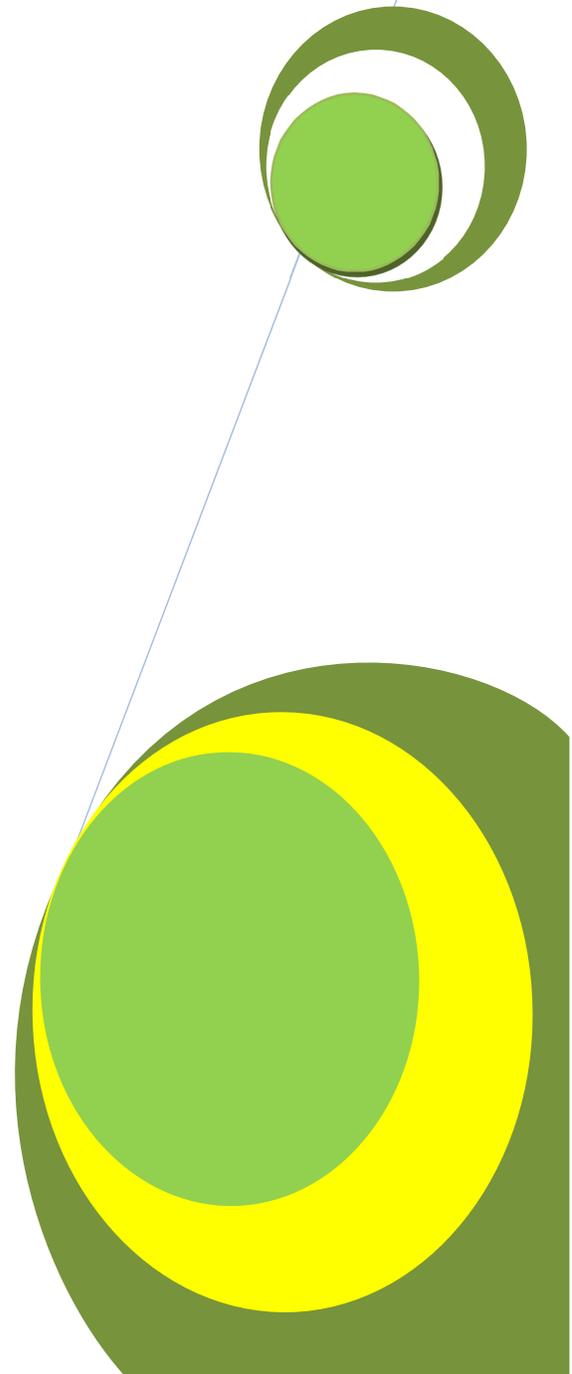
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ABSTRACT

Participatory disease surveillance involves the use of participatory methods in disease surveillance systems. A total of 21 villages/communities were visited in 2 local government areas (L.G.A.s) of Kaduna state. Focus group semi-structured interviews were the chief form of information extraction in addition to other Participatory epidemiological tools. The general occupation of the inhabitants, their major challenges in animal farming, major animals kept and the most important diseases affecting their livestock were deduced and discussed in the paper. Also deduced were the indigenous means of treatment and control available. The importance of Participatory Epidemiology in rapid rural appraisal and disease surveillance is also discussed.

Key Words: Participatory, surveillance, disease, villages, livestock, Kaduna.

INTRODUCTION

It has been said that many livestock development projects and control programs have been unsuccessful due to the non-involvement or participation of the target beneficiaries in the design, appraisal, implementation, monitoring and evaluation of such projects (Babalobi *et al.*, 2006). It therefore became necessary to employ participatory methods in disease epidemiology. Thus, the development of Participatory epidemiology.

Participatory epidemiology (PE) is based on conventional epidemiological concepts but uses participatory methods to solve epidemiological problems. It is a practical approach to epidemiology that gives stakeholders a greater role in shaping programs for public health, animal health, disease surveillance and research (Jost *et al.*, 2007).

The techniques of participatory rural appraisal (PRA) are used to formulate the program objectives, gather epidemiological data and intelligence, and analyze information. PE recognizes that local people have very rich and detailed knowledge (termed 'existing veterinary knowledge' in this case) about the animals they keep and the infectious and zoonotic diseases that can gravely affect their livelihoods and endanger human health. It then takes advantage of this information gleaned from it and helping to further understand the diseases, control measures that can be carried out against them and the specific needs and possible inputs of the peoples it affects (Jost *et al.*, 2007, Catley 1999).

PE has of recent also involved participatory disease surveillance (PDS) which has been used worldwide (particularly in developing countries) to combat disease such as Rinderpest, Avian influenza and Trypanosomiasis (Jost *et al.*, 2007, Riedel *et al.*, 2007, Catley & Irungu 2000).

This study involved a PDS survey in 2 local government areas of Kaduna state, Nigeria.

METHODOLOGY

Chukun and Igabi LGAs are located in Kaduna state in the Northern part of Nigeria. 20 villages and 1 sheep market were visited. The survey was carried out in the months of March and April 2011. A sensitization visit was first made to any community earmarked for the survey in order to inform relevant authorities of the intentions of the team and mobilize support for the study. The relevant authorities were responsible for convening a focus group (consisting of relevant stakeholders) on a later date that was acceptable to both the members of the community and the PE team. The smallest focus group was 6 the largest over 20.

The PE tools used were based on three broad methods:

- Semi structured interviews (single and focus group interviews),
- Ranking and scoring techniques (e.g. simple ranking, matrix scoring).
- Visualization and diagramming techniques (e.g. mapping and seasonal calendars).

Focus group interviews were then held on the days specified with relevant PE tools applied in order to verify information obtained from the interview. Interviews are designed to last for 30 minutes to 1 hour and are semi structured in nature but following a defined checklist as a guide. All information was validated by a process of 'probing' and 'triangulation' using the above mentioned tools. Individual interviews were also held where possible.

Results obtained are properly documented in relevant forms and sheets. Charts and diagrams are also stored for documentation and future analysis whenever needed.

RESULTS

A total of 19 villages and 1 ram market were surveyed. The major occupation of residents of these communities is crop farming with livestock farming at a subsistence level.

The major livestock kept are goats (60%), cattle (25%) and local chickens (5%). Cattle, goats and exotic/commercial poultry were regarded as the most economically important species. There was also an abundance of large commercial poultry farms in the areas surveyed, though most of the owners aren't regarded as members of the community.

Below is a table showing a list of diseases described by the farmers with their local names and the clinical signs identified with the disease along with the most probable name in English (deduced by the participatory epidemiologists):

Table 1: A list of diseases described by the farmers

Disease local name	Clinical signs described	Most probable English name
Hanta, Here, Shaka	In cattle and small ruminants. Rough hair coat, falling hair coat, poor appetite	Liverfluke (as well as other forms of helminthosis)
Huhu	In cattle and small ruminants. Coughing, labored breathing, disfigured lungs on opening carcass..	Contagious bovine or contagious caprinepleuropneumonia.
Samore	In cattle and small ruminants. Eating of sand, poor weight gain despite good appetite, loss of tail hair, rough hair coat.	Trypanosomiasis(may also involve Babesiosis)
Bakaale	In cattle. Abortion, still births or weak young, no milk production in dam.	Brucellosis
Ciwondaji/harbindaji	In cattle. From slight to advanced lameness if not treated, blackish coloration of limb affected.	Black leg
Bingiri, Dingiri, bugubugu, pakal, pakat, pukupuku, karedangi, ashashabi (in Gbagyi).	In chickens. Whitish diarrhoea, yellowish diarrhoea, birds are stationary and appear to be cold, cough/sneezing, labored breathing, vomition, 90 to 100% mortality	Newcastle disease, fowl typhoid complex (may occur separately.
Mulgwi	In ducks. Dragging of tail, inability to walk, diarrhoea, 90 to 100% mortality.	Duck viral enteritis
Zawo/gudawa	In cattle and small ruminants. Profuse diarrhoea leading to mortality.	Diarrhoea. Clinical sign of coccidiosis or helminthosis
Cisko/kuraje/kazuwa	In chickens. Pox lesions on the faces. Few mortality	Fowl pox
Bauru/boro	In cattle. Sores and wounds on the mouth and legs. Weakness and inability to walk and eat due to wounds.	Foot and mouth disease.

The major diseases affecting the species in all villages were:

- Liverfluke and Trypanosomiasis in Cattle.
- Liverfluke and 'diarrhoea' in small ruminants.
- Newcastle disease/fowl typhoid complex and fowl pox in local chickens.

There was no outbreak reported or diagnosed during the study.

On the seasonal calendar, the villagers put the major poultry disease at the harmattan period (December to January), Liver fluke all year round but mostly at the beginning of the rainy season, and Trypanosomiasis from the beginning of the rainy season to the end of it.

The treatment seeking behavior of the residents was mainly through the patronage of veterinary drug shops, particularly on market days, where the livestock owners describe clinical signs and are given drugs which they administer themselves. Quacks and Veterinary professionals (mostly in that order) are usually consulted in complicated cases as well as for mass treatment usually involving injectable drugs. Residents veterinary professionals serving the area privately or through the government were almost non-existent.

There is also the rampant practice of selling sick and diseased animals or slaughter and sell in order to curb losses.

Two villages gave estimates of about 5000 and 6000 cattle. There was also a report of biting flies in one of these villages. A community leader attested that some insecticidal spraying had been done in the area but could not recall when or by whom. Trypanosomiasis was the most important disease in that particular area.

The only disease that appears to affect the rams at selling point is Pneumonic Pasteurellosis or PPR related to stress due to the long and difficult road trip from Katsina & Niger republic to Kaduna.

DISCUSSION

The study showed the weakness of extension services in the area as well as government health intervention programs. This is because most of these residents were very familiar with the clinical signs of most diseases with clear names for most of the diseases but were handicapped in treatment and prevention of most diseases. Most were not familiar with vaccination schedules or vaccines available. There was also no proper channel for reporting of disease outbreaks.

The potential of a major outbreak in avian influenza in the area is of concern due to the inability of most farmers to distinguish it from other poultry diseases and also their willingness to sell such animals sick or after slaughter. The large commercial poultry farms in the area are also at risk due to generally very poor biosecurity measures and proximity to the villages.

There is however a lack of a 'business like' approach towards the rearing of these livestock by most of the farmers as more attention seemed to be paid to crop farming and other menial jobs for cash. Residents complained a lot about the insecurity of their stock due to theft which will also hamper the success of the venture as a business.

The health of livestock in rural areas can be said to be almost entirely in the hands of the owners with little or no government or external input in prevention and control of diseases. A little effort in sensitization through extension as well as properly coordinated control programs will go a long way in geometrically multiplying the livestock population in these areas. The results showed some similarity to a PE study carried out in Oyo state Southwestern Nigeria (Babalobi *et al.*, 2006).

CONCLUSION

It can be concluded that there are several species of livestock kept in these communities which are beneficial to the livelihood of the residents and this livestock venture is challenged by several diseases among other problems.

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