

TITLE: EPIDEMIOLOGICAL INFORMATION SYSTEM FOR COMMUNAL
AREAS - THE NAMIBIAN EXPERIENCE

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SUMMARY:

Export of livestock and animal product is a major economic activity in Namibia. The country's main trading partners only accept to import according to strict sanitary guarantees. Some of the main functions of the Directorate of Veterinary Services are diseases surveillance, control and reporting aiming at fulfilling the strict import requirements and maintaining a disease-free status in commercial areas. Therefore, an effective Epidemiological Information System (EIS) has been put in place in commercial areas since 1984 (Biggs, 1984).

This EIS has however not been as efficient in the Northern Communal Areas (NCA), where major diseases such as CBPP still occur. To complement the regular vaccination campaigns and the veterinary cordon fence, an effective EIS is essential to monitor the progress made in disease control and detection in emergent conditions. There is also a strong political desire to improve the animal health status in the NCA to increase the access of communal farmers to lucrative export markets. In order to obtain a disease free status, it is necessary to stop the vaccination, follow the OIE pathway and an efficient EIS is required for early detection and control of diseases.

To fulfill this need, a Franco-Namibian project was set-up to design and test a local adaptation of the national EIS, for use in communal areas. A pilot system was developed in the North-Central Division in close collaboration between the Namibian Veterinary Services and the French Technical Assistance. The system has been tested over a period of 4 months and proposals have been made for further improvements.

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INTRODUCTION:

➤ During the year 2000, Namibia has exported 10 000 tons of beef to the European Union; 10 000 tons of beef and 11 000 tons of goat meat to South Africa; 69 000 heads of cattle and 644 000 heads of small ruminants to South Africa. This represents 16 % of the exportations and contributes to 80% of the Agricultural GDP and 9% of the national GDP. To ensure this, appropriate sanitary requirements from trading partners had to be complied with and appropriate guarantee given to keep the foreign markets opened. By setting-up a national Epidemiological Information System (EIS) since the mid eighties (K.M. HARE and H.C. Biggs, 1985), Namibian authorities have early understood the strategic role it would play in building the confidence of importing countries.

➤ The national EIS mainly collects three types of data:

1. Data from veterinarians and submitted on a Disease Report Form (DRF) for all diseases investigated or reported. The DRF is sent to the Epidemiology unit and to the Laboratory when specimens have been submitted. This serves an early warning, and early reaction (EW-ER) system, and provides georeferenced maps of diseases outbreaks. State veterinarians are given the opportunity to validate their data.
2. The Animal Health Inspectors (AHI) also actively collecting data during their pre-programmed visits to farmers (Farm Visit Form: FVF). This form is meant to draw on a regular basis a general picture of the farming conditions: diseases observed, toxic plants, body scores, watering and grazing condition. In communal areas, the same kinds of data were previously collected by the AHI during the vaccination campaign (Crushpen visit Form).
3. Data are also collected during meat inspection in export abattoirs.

Regular reports are produced from the system as feedback to State Veterinarians, AHI and other stakeholders. The reports include an Epidemiology update, AHI update, disease listing, national summary reports, quarterly and annual reports...).

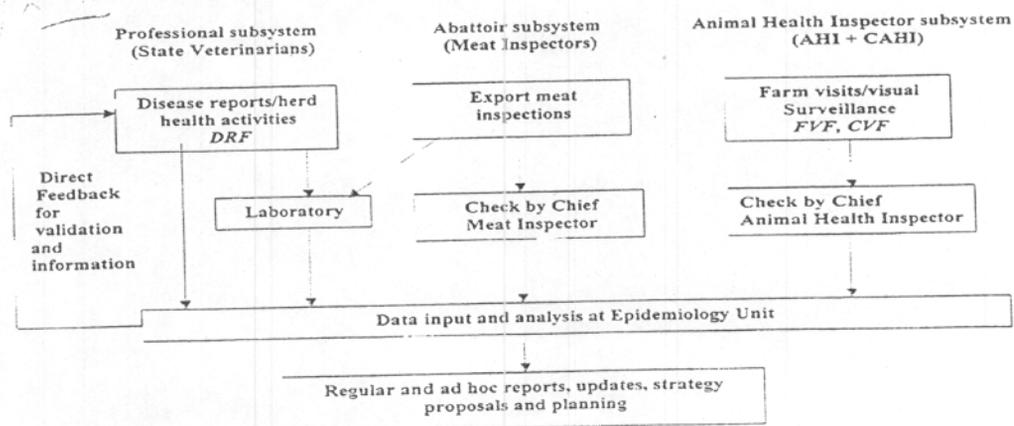
This system has proven to give a good picture of the animal health status in the commercial farms. The confidence and the regular contacts between commercial farmers and veterinary services allows a fast and reliable declaration of suspicious cases.

➤ This EIS was not as efficient in the Northern Communal Areas (NCA), where major infectious diseases such as CBPP still occur. Great dependence was placed on the veterinary cordon fence and on the regular vaccination campaigns against CBPP and FMD. More recently, an increasing interest has raised for disease surveillance in NCA for the following reasons:

1. It is necessary to monitor closely the efficiency of the costly vaccination strategy,
2. There is an increasing political desire to provide communal farmers with an access to lucrative export markets. This would entail following the OIE pathway up to the disease free status recognition. To enable a move from vaccination to eradication strategy, when the disease incidence has fallen low enough, a reliable EIS is required to enable DVS to detect and quickly control any outbreak of contagious diseases.

- To support this evolution, a Franco-Namibian project has been set-up to design and test an adaptation of the national EIS in communal areas. A pilot system has been developed in the North-Central Division (NCD) in close collaboration between the Namibian Veterinary Services and the French Technical Assistance. The system has been tested over a 4 months period.
- This paper tries to give an accounts of the steps and methods used to develop and implement an Epidemiological Information System in a communal area where accurate reporting is made difficult by a semi-transhumant farming system.

Veterinary Services Epidemiology Information Flow



MATERIAL AND METHODS:

The methodology to improve the EIS in NCA has followed successive steps:

- 1) Identification of the weaknesses of the existing Epidemiological Information System (EIS) with the special reference to communal areas.
- 2) Design specific adaptations of the existing EIS to fit to NCA.
- 3) Implementation of these adaptations.
- 4) Assessment of results during a test period.

RESULTS

Weakness of the existing EIS in NCD

After a review of the existing information system, following issues were observed:

This list is flexible, and can be revised to take into account any epidemiological change.

- *For every priority disease, a specific surveillance protocol has been designed.* This protocol includes: the actors involved, the places where surveillance takes place, the procedures to follow, the symptoms leading to a suspicion, the specimens to take, the timing for transmission of specimens, forms and results, the immediate actions to take to inform the farmers and control the disease.
- *The Static file (location of villages) has been completed* with other available databases. A permanent updating system has been put in place in order to enable the location of diseases suspicions / outbreaks.

2- Improve the coverage of the early warning – early reaction (EW-ER) network

- *A new form has been designed, the Suspicion Form (SF).* It is similar to the DRF, but is filled by EIS field workers (see below) when they suspect a priority disease. This form is then forwarded in emergency to the State Veterinarian, who translates it into a DRF, and takes appropriate action.
- *New actors are involved in the EW-ER surveillance system:*
 - DVS field staff: 18 Stock Inspection Assistant (SIA) and 8 Animal Health Inspectors (AHI) have been trained to identify priority diseases, take sample and report (SF) them to the State veterinarians. Sampling kits and cool boxes have been provided;
 - 40 Community based Animal Health Agents (CAHA) have been trained to identify priority diseases and report (SF) them to the DVS staff, who is charged to take samples;
 - 15 Agricultural Extension Technicians (AET) have been trained to identify and report orally to DVS the suspicions of any priority disease;
 - 11 butchers have been trained to report to DVS the suspicious lesions on carcasses (Butcher form).
- *EW-ER procedures are implemented during vaccination campaign:*
DVS staff has been trained to identify and report priority diseases (SF + samples) during the vaccination campaign (focused on highly priority diseases: FMD, Rabies and CBPP).

3. Develop the active surveillance:

- After the vaccination campaign, *regular meetings with communities* are organized by the staff focusing on the priority diseases and the importance of their early reporting to DVS offices. Joined community visits are also conducted with AET, who are more traditionally crop oriented. Specific extension messages have been designed for them to inform farmers about the EIS and the reporting system.
- *Permanent surveillance is developed on markets* (along the Angolan border) through the traditional authorities,
DVS staff, in order to collect SF and maintain their dedication, organizes *regular visits to trained butchers and CAHAs in their area.*

4. Initiate a local coordination of the EIS

- *One State veterinarian is responsible for following EIS activities in order to keep* the dedication of field workers (training, meetings, newsletter) and to monitor the quality of the network (forms filling, quality of samples, data flow...).

- 7 ▪ Limited coverage of the area of the early warning early reaction system. The system relies on only 3 State veterinarians and most of the DRF are filled for diseases suspected in the immediate vicinity of the State veterinarian offices.
- 7 ▪ There is no uniform procedure for the following up of cases
- 7 ▪ The geographical location of the suspicious cases with a GIS is made difficult because of the inaccuracy of the available static file for villages in NCD.
- 7 ▪ Active surveillance is only performed during the 5 months of vaccination campaign. Contacts at other times are limited to farmers coming to DVS field offices for consultation.
 - Some of the crushpen visit forms went missing or were wrongly filled.
 - The quality of data collected is questionable as most data was provided by herd boys and not by the owner.
 - The feedback of information received from the national Epidemiology Unit is mainly targeted to the State veterinarians, and rarely reaches the field staff.

Problems peculiar to communal areas.

- A very high number of farms (110 000 homesteads) are scattered over the region (few hundreds for the same surface in commercial areas), with difficult access.
- Only 3 State Veterinarians are in charge to cover the region.
- Farmers are often unaware of the existence of veterinary services, of the location of DVS offices and of the necessity to report diseases.
- Veterinary services are under-equipped (8 cars available for field staff, few telephones, 1 fax...)
- Veterinary field staff has got a poor level of education.
- No specific training has been organized on disease surveillance.

a) Necessary adaptation of the national EIS:

The following objectives have been targeted:

- 1- Improve the precision of data collected
- 2- Improve the geographical coverage of the network
- 3- Initiate a local coordination of the EIS
- 4- Improve the feedback of information to the field workers involved in the EIS

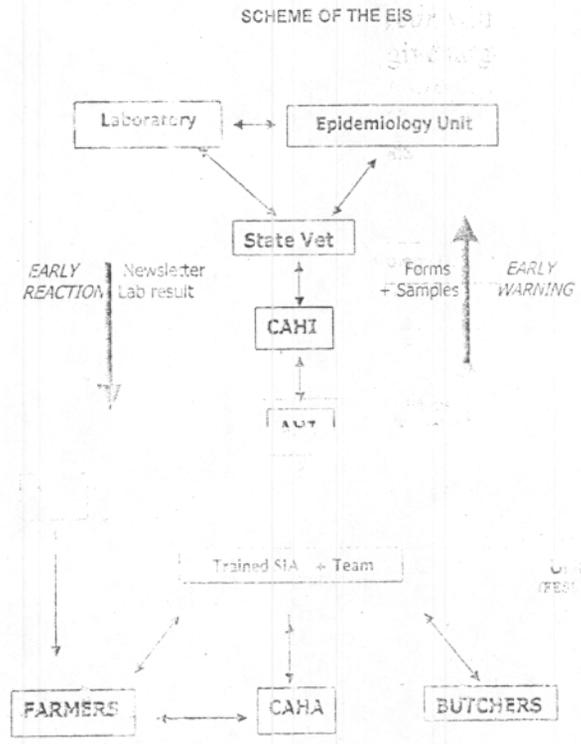
1- Improve the precision of data collected

➤ *The surveillance is focused on some priority diseases*, which have been selected by State Veterinarians and the Chiefs AHI according to their knowledge of the field and taking into consideration 6 criteria: mortality rate, contagious power, zoonotic nature, socio-economical consequences, possibility to control, international regulations. The priority diseases selected for the NCD are the following:

- Rabies
- CBPP
- Foot and mouth disease
- Botulism
- Mange for small stocks
- Internal Parasites

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- *Performance indicators are set-up to monitor the operation of the network (number of SF, number of samples, number of meetings to communities, timing...).*
5. Improve the feedback of information to the field workers involved in the EIS
- *Monthly meetings are organized between the supervisors and their EIS teams*
 - *A user-friendly bi-annual newsletter about the EIS is edited in English and Oshivambo (EIS results, interviews, technical focus on one specific disease...).*
 - *A general workshop is organized twice a year with EIS teams to discuss the results and the problems faced on the field, and to give targeted refresher lectures.*



Organization of the new EIS in the North-Central

b) Implementation of the adaptations:

- ❖ Initial training and refresher course for EIS field workers
Every actor of the EIS has received a training adapted to his role inside the EIS.
- ❖ Tools for change:
 - Monthly meeting with the EIS teams:
EIS agents have to fulfill a monthly program for surveillance activities (community visits, visit of butchers, visit of CAHAs, visits of markets...). During the monthly meeting, every EIS staff gives a feedback about the past month activities, builds his program for the following months and discusses problems with his supervisors.

- **Meeting with the management of the State Veterinarian office:**

Every 2 weeks, a local management meeting is organized by the coordinator, with State veterinarians and Chief AHL, to assess the EIS activities, propose improvements, monitor the progress made and organize training.

- **Technical committee:**

Every 4 months, a meeting is organized with DVS and laboratory specialists to monitor the technical development of the EIS. Once a year, a steering committee with the top management discusses the results and gives appropriate guidelines for future activities.

- **EIS newsletter:**

Published every 6 months and widely spread, the newsletter contributes to the dedication of the EIS actors and is a good communication tool toward the Ministry and the stakeholders.

- ❖ **Implementation of the strategy:**

Most of the strategy has already been put in place except:

- The surveillance on markets, still to be finalised;
- The first epidemiological newsletter, about to be released (June 2001);
- The performance indicators, still to be designed.

- ❖ **Some of the EIS results:**

These are some of the main results of the EIS activities between November 2000 and February 2001 (4 months):

SUSPICION FORMS	61 Suspicions done by DVS staff
	9 of Botulism
	14 of Internal Parasites
	8 of Mance
	14 of CBPP: only 2 suspicions with samples
	2 of rabies: 1 suspicion with sample
	14 suspicions of no Priority diseases
	Samples
	9 suspicions with samples
	22 Suspicions done by CAHAs
	2 of botulism
	3 of Internal parasites
	6 of Mance
	4 of CBPP
5 of Rabies	
CVF	36 Communities visited
	770 farmers involved
	27 dogs vaccinated
	36 cats vaccinated

DISCUSSION

The first results show that the system is already operational. The coverage of the surveillance has been increased, and is now performed by 3 State Veterinarians, 20 AHI, 40 CAHAs, 15 AET and 11 butchers. Within 4 months, the field actors have made more than eighty suspicions all over the region, which represents 1/3 of the total number of suspicions during the period (2/3 of DRF directly filled by State veterinarians). Nearly 40 community meetings have been organized gathering nearly 800 farmers. These results, although still insufficient (160 communities were supposed to be visited if according to the objectives), represent a revolution for most of the field staff, previously focused on their vaccination campaign duties only. This evolution has been welcome very positively by most of them, who are proud of their new responsibilities. The close supervision of the teams, which is allowed by the monthly EIS meeting with EIS teams is a very strong asset for the EIS. The contact with farmers has also considerably improved, and all the office registers have shown a clear increase in the number of farmers coming to the DVS offices. The collaboration initiated with the Agricultural Extension Services, with common visits to communities planned with AETs, gives a more coherent image of the Ministry to the farmers. This evolution is reinforced by the improvement of the veterinary drug distribution (implementation of a veterinary revolving fund in the region, also supported by the French Cooperation, with a privatization process going on): more drugs available urging more farmers to come into the offices and more data to be collected.

Weaknesses of the surveillance system

- The surveillance based on butchers has been relatively weak due to a poor following up. The surveillance should probably be more focused on CBFR, with a closer linkage with Veterinary Services. The possibility to give butchers the responsibility for samples taking should be studied.
- Many suspicions still reach the State veterinarian without samples, which deprives DVS of the data validation.
- Overloaded with their clinical activities, state veterinarians do not have enough time to follow all the suspicions made, especially when no sample was taken and further investigations is required. There is a risk to discourage the reporting and to disappoint the farmers. Efforts should be made to increase the immediate sample by following up the farmers.
- The visits to communities have to be increased to reach a significant number of farmers, covering remote places (a lot of the communities visited are in the immediate vicinity of the field offices).

A very good asset of the EIS is the full involvement of the local and the national management, with good prospects for the sustainability of the system. The performance indicators will provide regional and national management a very useful tool to monitor and supervise the EIS. The connection with the other partners (especially butchers and CAHAs) is more fragile, and will have to be maintained regularly (refresher courses, meeting, newsletter...).