Mozambican Field Experience — Gaza Province

J.S.R. Langa[1]

Abstract

This paper describes field experiences with the control of diseases in village chickens in Gaza Province. From 1994 onwards, several non-government organisations (NGOs) became involved in rural projects in Gaza Province, including vaccination campaigns to control disease, using mainly La Sota or Komarov vaccines and later thermostable Newcastle disease vaccines. The vaccination campaigns were carried out in the districts of Mabalane, Massingir, Chicualacuala, Guijá, Chókwé, Chibuto and Xai-Xai, through the NGOs and the Provincial Livestock Services (SPPs), using community livestock workers or community vaccinators.

GAZA PROVINCE is in southern Mozambique, 200 kilometres from Maputo. The province borders Kruger National Park, South Africa, in the southwest and west; Zimbabwe, and Manica and Inhambane Provinces in the north; and Inhambane Province and the Indian Ocean in the east. With a total area of almost 75 709 square kilometres (7 570 900 hectares), the province has 1 505 570 hectares used for cultivation, 3 407 225 hectares for forestry, and 2 008 580 hectares for livestock.

There are 11 districts in the province and the human population is around 1 118 542 (1997), with a projected population of 1 203 294 in the year 2000.

The climate is tropical with three different agro-ecological areas with very different rainfall: the coastal area receives 800 mm per year; the mid-Limpopo or central area approximately 400–600 mm; and the higher Limpopo or north area only 400 mm.

The people of Gaza Province keep ruminants such as cattle, as they are important in agriculture for animal traction as well as being a status symbol. The Provincial Veterinary Services dedicates more of its resources and makes more of an effort to provide assistance for cattle than it does for other animals, such as poultry.

[1] Provincial Livestock Services, Xai Xai, Gaza Province, Mozambique

Vaccination Campaigns

Campaigns to vaccinate chickens started in 1994 and involved participants such as community livestock workers (CLWs) and community vaccinators, and was coordinated by the Provincial Livestock Services (SPPs). Before this, vaccination was carried out only by individual farmers using La Sota or Komarov vaccines. One of the objectives of the vaccination campaigns was to increase poultry production by reducing losses due to diseases, particularly Newcastle disease (ND), and improve food security in rural areas.

In 1994, a NGO, World Relief, began vaccinating chickens with La Sota vaccine. This campaign focused on the northern Province in the Districts of Guijá, Mabalane and Chicualacuala, and involved community participation. Unfortunately, details of the vaccinations carried out under this project are not available due to the floods that occurred in the Province.

From 1998 to 1999, another British NGO, VETAID, under an Institutional Support Project financed by the European Union**,** implemented a ND control program in Gaza Province. This included five vaccination campaigns, one every 4 months from May 1998, using thermostable vaccines, such as I-2 and NDV4-HR. The districts involved were Massingir and Mabalane in Gaza Province, and Panda in Inhambane Province.

In 1999, the Rehabilitation Project financed by the African Development Bank organised a vaccination

campaign in two districts, Xai-Xai and Chibuto. This project used the inactivated ND vaccine Ita-New.

Strategy

In order to ensure sustainability of vaccination campaigns against ND, it was decided to work through the network of village livestock community livestock workers. These CLWs have autonomy but are under the control of Livestock Services and are employed on a cost-recovery basis. The CLWs were trained to treat and prevent the principal diseases in chickens, including one-week-old chicks. This training was organised in March and May 1998. In total, 27 CLWs were trained in 6 districts (Massangena, Chicualacuala, Massingir, Mabalane, Guijá and Chókwé).

The vaccine used was NDV4-HR, which was chosen for the following reasons:

- cheapness;
- ease of use (by eye drop);
- ease of conservation (thermostable for 8 weeks at 28 C°); and
- safety (apathogenic strain).

NDV4-HR vaccine was replaced by I-2 vaccine, which has been produced in Mozambique by the National Veterinary Research Institute (INIVE) since 1999. The I-2 vaccine was substantially cheaper (250 doses for 20 000 MZM, 500 doses for 25 000 MZM and 1000 doses for 30 000 MZM) than other ND vaccines. A disadvantage is that, although the vaccine protection period is good, it does not last as long as inactivated vaccines (4 months rather than 6).

Before each vaccination campaign, meetings were organised with the CLWs at district level to discuss the organisation of the campaign (estimation of needs, providing information to farmers, practical organisation and payment). Unfortunately, after the first campaign, the 3 CLWs of Chicualacuala and Massangena were not invited, for economic and logistical reasons.

From the start, payment for the vaccinations was introduced in all areas. One thousand pamphlets about vaccination against ND and its cost were distributed through the CLWs to the farmers. At the beginning, the price of the vaccination covered only the labour of the CLW (200 MZM per chicken). The vaccine itself was initially provided free as it was still in an experimental phase. From August 1999, the farmers paid for the vaccine, at a cost of 100 MZM per chicken.

After the first two campaigns, it became clear that payment would be the main problem in increasing the number of chickens vaccinated. By the end of 1998, it was decided to concentrate on intensive training and extension work. ACIAR/INIVE developed audiocassettes with songs and information in the local languages to inform farmers on ND and the advantages of vaccinating chickens. The material was duplicated and distributed to the villages. A copy was also given to the local radio, radio Xai-Xai.

Under the VETAID Project, training and extension material for the farmers was prepared, in Portuguese and Changane, for half-day training sessions. In March 1999, training in the villages started, conducted by the livestock officers in villages. The impact of the training has been difficult to measure, but the CLWs and livestock officers say that there has been a positive impact.

In August 1999, meetings were organised in the project districts with the CLWs and livestock officers in order to evaluate the activity and to identify a way for its continuation after the end of the project. The main decisions were that the project would facilitate the supply of the vaccine, and farmers would have to pay for the vaccine, as well as for the labour.

For large-scale vaccination to succeed, more farmers must become interested in vaccination of their chickens, and more vaccinators need to be involved. Because the vaccine is easy to use, vaccination can be done by farmers as well as CLWs.

For this reason, a new strategy was proposed. The livestock officers would organise meetings in the district to explain:

- the possibility of preventing ND with vaccinations;
- the frequency and cost of the vaccination; and
- that someone from the village could do the vaccination.

Two or three interested people were chosen for a half-day training in order to explain: how to handle the vaccine; how to dilute the vaccine; how to vaccinate a chicken; when to do the vaccination; and where to buy the vaccine.

To support this activity, the existing training/ extension material for farmers was revised in September 1999, and a booklet was developed and then sent to the livestock officers for distribution.

Difficulties with the Project

The major problem is the large human, organisational and financial resources required. This is particularly evident with the training and support of CLWs. Due to the low population density, a CLW can only cover an area containing around 2500 to 3500 inhabitants, the size of a big village.

A further problem is the shortage of SPP staff required to monitor the CLWs and also to follow up the activities after the end of the project.

The CLW does not always have sufficient education to enable good transmission of data. Even

though a CLW may have the confidence of the villagers, she/he does not always have all the educational and personal attributes that the project needs.

Payment is also a major constraint as farmers are not in the habit of paying for animal treatment, and place different priorities on the use of the little money they have. The districts where the scheme has been more successful are those ones where other NGOs, such as World Relief, have already worked on animal health projects, on a cost recovery basis.

The establishment of the support network for the CLWs and livestock officers was limited to certain areas or districts of the Province, and covered only 4 of the 11 districts.

To control ND, good vaccination cover is required, and chickens need to be vaccinated three times a year, which takes time and money.

Results

In order to evaluate the vaccination campaigns, a monitoring system was developed. Each CLW received a vaccination register to report data on the vaccinations. The first register was too complex, and results were inaccurate. For the second vaccination campaign, a simplified sheet was distributed to evaluate the numbers of chickens vaccinated, and how much vaccine was used per bottle. This was important because CLWs were using bottles of 100 and 1000 doses, and it was not known how much vaccination they used in one day. The data revealed that the average number of vaccinations used per bottle was: for bottles of 1000 doses, 323 vaccinations (never higher than 400); and for the bottle of 100 doses, 85 vaccinations. We can therefore assume that a CLW can do about 300 vaccinations in one day.

In total, there have been five vaccination campaigns to date. Between 40 000 and 54 000 doses of vaccine were distributed for each campaign, at no charge for the first four campaigns. Under the VETAID Project, it is estimated that between 20 000 and 25 000 chickens were vaccinated using I-2 during the first four campaigns, but data are uncertain. Under the 1999 African Development Bank Project in two districts of Chibuto and Xai-Xai, 51 218 chickens were vaccinated with Ita-New, using extension workers from the Provincial Agricultural Extension Service (*Serviços Provincias de Extensão Rural*), CLWs, and extension workers from the Association for the Development of Rural Communities (*Associação para Desenvolvimento das Comunidades Rurais*), a local NGO in Xai-Xai.

Impact on Production

Since the commencement of the vaccination programs, there has been an increase in chicken numbers. In the NDV4-HR/I-2 vaccination sites, the average flock size before vaccination was seven chickens and this increased to 20 chickens over a period of 6 months.

Before vaccination, 80% of flocks in the Province had fewer than 10 chickens. After 6 months, 53% of flocks had 11 to 30 chickens. The maximum flock size before vaccination was 29 chickens, which, following vaccination, had grown to 93 chickens after six months.

An interesting result, that while not quantifiable is promising, is the fact that since March 1999 in the district of Mabalane and Massingir, traders have been arriving regularly to buy chickens. They arrive by train in Mabalane and by road in Massingir. They also travel to quite isolated areas, such as Mavodze (140 km from Chókwé). The price of chickens in these areas is 20 000 to 25 000 MZM, depending on the size of the chickens, and in Xai-Xai or Maputo from 30 000 to 35 000 MZM. The reason seems to be that bush chickens are much more appreciated and can get a better price in town. Often the traders prefer to exchange goods for chickens, but there are still established rates. For example, in Mabalane a trader gives two little aluminium pans (3 litre capacity each) for 3 chickens.