Rural Delivery of Newcastle Disease Vaccines in Nigeria
A Two-Pronged Approach to Poverty Reduction

Programme Background

The poultry sector in Nigeria is vital to the livelihoods of the rural poor and for women in particular. Over 60% of the country's poultry population is reared as free range chickens (village chickens) in the backyards of rural households. The flock sizes of these households typically range between 16-18 chickens per household, and are vital assets to rural smallholder farmers and their families, serving as a good source of protein and money to meet varying household needs which include food, medicine and schools fees.

The rural smallholder poultry farmer is inundated with a variety of problems, many of which are linked to the inaccessibility of veterinary products and services. Companies which should reach these farmers with vital goods and services do not understand the needs of these farmers or how to reach them. The companies also underestimate the revenue potential which lays in targeting this farmer demographic. The exclusion of this market segment is demonstrated in the unavailability of suitable products (pack and bottle sizes), absence of rural delivery/distribution channels to rural communities, and the absence of veterinarians and other trained personnel to provide vaccination services to their poultry.

Whereas diseases are the singular most important cause of poultry deaths in rural communities, Newcastle disease is known to have the most devastating effect on rural flock (chicken owners lose 50 – 100% of their flock annually) and on the economic capacity of rural households (Propcom Mai-karfi's Household Assessment, 2013). According to a 2006 FAO report, Newcastle disease alone accounts for over 60% of all disease induced loses in Nigeria.

There is a huge body of evidence establishing that the sustainable control of Newcastle disease is hinged on the commercialization of vaccine and vaccination services (Alders et al, 2010, Sonaiya, 2009), combined with appropriate distribution and extension service providers to farmers. Yet, rural distribution channels for vaccines and vaccinations in Nigeria remain underdeveloped. Veterinary shops are only found in urban or peri-urban areas or in poultry markets which are typically also only located in peri-urban areas.

Barriers to controlling Newcastle disease in rural poultry

Veterinary companies do not consider rural poultry farmers as a viable demographic for their goods and services, and as such:

1. Suitable products are not available (in affordable pack sizes and thermo-tolerant to withstand being transported across distances to rural communities)
2. Rural delivery channels for veterinary products are absent
3. Veterinary service providers are almost non-existent

Bridging the Gap in Rural Access to Newcastle Disease Vaccine – The Community Vaccinators' Model

In 2013, Propcom Mai-karfi (PM) partnered with the National Veterinary Research Institute (NVRI) to commence producing suitable products which effectively target rural smallholder farmers. Although the institute had a suitable product, the thermo-tolerant NDV-i2 vaccines, delivered intra-ocularly, the last mile delivery of these vaccines remained a limitation towards getting these products to the people who need it the most. Bridging the supply chain gap between where the vaccines were produced in Vom, Plateau state to rural communities across northern Nigeria required an innovative rural delivery model which would be commercially sustainable and address problems of product availability, information/awareness, and service delivery at the community level. PM designed the community vaccinator(also known and village-based inoculators, VBI) model to become that rural delivery bridge.

The community vaccinator model involved identifying peri-urban distributors and supporting them in the recruitment and training of individuals from various communities who will work as vaccinators. These vaccinators would then play the role of service providers, visiting rural households and vaccinating local chickens for a fee; typically ranging between NGN 20 – 50 per inoculation. When managed efficiently, investing N250 (≈60pennies) in one vial of a 50 dose NDV-12 earns a vaccinator between NGN 920 - 1,000 (£2) in revenue.

Using the 'making markets work for the poor' (M4P) methodology which is largely private sector-driven, PM developed a business case to show veterinary pharmaceutical companies how much they could benefit from stocking the Newcastle vaccine and selling these through the new last mile delivery model. Indigenous veterinary pharmaceutical company, Agriproject Concept International (ACI), was the first to adopt this model, entering several new market segments in northern and southern Nigeria.

Implementing the Community Vaccinator Model, first Piloted with Agriproject Concept International (ACI)

The first step for ACI's peri-urban distributors was to identify and recruit individuals who were self-driven and business-oriented. These individuals would receive vaccination training and work independently or in small teams of 2 – 4.

Identification

- Village-based inoculators (VBI) were identified from community churches, mosques, schools, health centers and village gatherings by peri-urban distributors, ACI's sales representatives and community-based organisations working with PM.

- Leveraging on existing rural channels, local businesses were also used to identify VBIs. One of the channels used was a partner's fertiliser rural promoter network.

These rural promoters already deliver fertilisers and product education to farmers and could add vaccines and vaccination services to their range of products for smallholder farmers.

Recruitment

VBIs were recruited using a cost recovery model as the immediate incentive to them. The cost recovery model involved free training for VBIs but which required them to purchase a starter pack of vaccine(s) and tools (at a cost between NGN 500 – 2,500) ahead of the training. This enabled them to start the vaccination business immediately following the training and to recover their initial investment. This initial investment covered at least 1 vial of the vaccine, a delivery kit and trainee handbook. Delivery kits consist of a dropper, diluent and syringe.

As members of the communities where they provide inoculation services, VBIs understand how to effectively create awareness on the benefits of the Newcastle vaccine and their inoculation services. An added benefit of having vaccinators based within and around the communities which they serve is that it allows them flexibility in scheduling their time to suit farmers' needs, while cutting out transportation costs. VBIs design their own business plan and logistics, and are typically branded and given marketing materials (visual aids) for mobilising clients by the veterinary pharmaceutical companies.

Small Bridges, Big Impact!

Effect of Newcastle Disease Distribution on the Rural Economy

The rural delivery of Newcastle vaccines has had 2 notable impact in communities where VBIs were recruited:

Smallholder poultry farmers have gained
Community vaccinators are profiting

The smallholder poultry farmers' gain

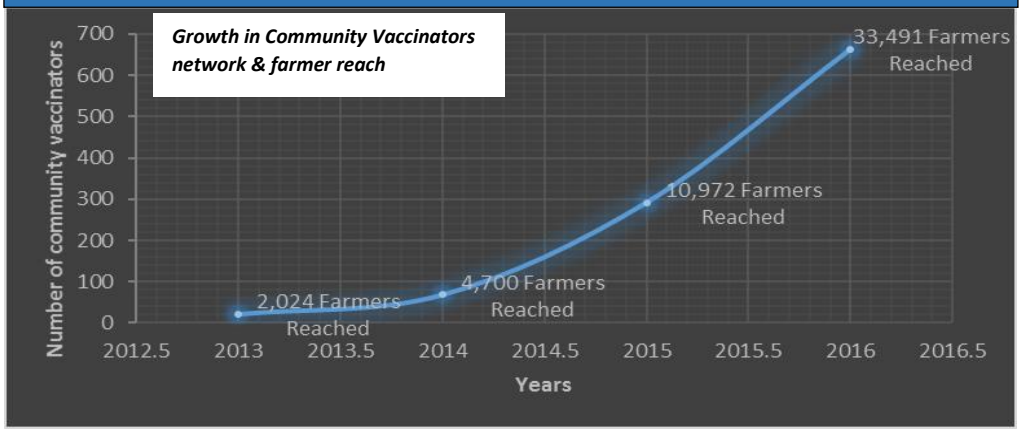
The presence of a vaccinator in each intervention community has resulted in a steady decline in poultry mortality attributed to Newcastle disease. Smallholder farmers have reported a three-fold increase in their flock sizes. These gains have been reported in over 50 local government areas spread across 13 states in northern Nigeria where the VBI network had been established.

The increases in productivity have motivated smallholder poultry farmers to engage in chicken production and sales as a major source of income. Many have also invested their additional income in other agribusinesses including rearing of larger ruminants and trading in grains and agricultural inputs, and others are better equipped to meet their households' financial needs.

The community vaccinators' profit

The prosperity of smallholder poultry farmers has upwardly driven the incomes of community vaccinators. Provision of vaccination services has become the main source of income for some VBIs. As the practice of vaccination has become engrained in the business behavior of farmers, the demand for vaccination has increased, transforming the lives of close to one thousand trained vaccinators and pulling them out of extreme financial insufficiency.

Through the networks of community vaccinators, over 1,000,000 doses of NDV-i2 have been delivered to rural smallholder poultry farmers from the pilot in 2013 to 2016, with vaccinators generating over ₦20 Million in revenue.



Sustaining the Rural Delivery Model

The sustainability of this rural delivery model depends on the amount of value every member of the value chain continues to derive. Beyond distributing Newcastle disease vaccines and vaccination services, PM is stimulating stakeholders in the value chain to utilise this model for the flow of other livestock products to rural households, meeting farmers' veterinary needs while generating additional income for the VBIs, peri-urban distributors and pharmaceutical company partners. The value derived will continue to drive the flow of goods and services into rural markets, bringing with it innovation for expansion and improved gain. ACI is already leveraging on the VBI model to distribute multivitamins and anthelminthic drugs.

PM's Poultry Health Team

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References

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