

Market Development in the Niger Delta (MADE)

POULTRY INTERVENTION CASE STUDY



ABOUT MADE

Market Development in the Niger Delta (MADE) programme is advancing rural agricultural markets and other sectors that impact on poor people, to reduce poverty and conflict in the Niger Delta region. Funded by the UK Department for International Development (DFID) and implemented by Development Alternatives Incorporated (DAI), the programme is facilitating increase in income for poor smallholder farmers and entrepreneurs in target sectors of cassava, fisheries, agricultural inputs, oil palm and poultry. The first phase of programming (September 2013 – February 2018) made significant progress and was able to surpass its target in achieving a 15% income increase for 150,000 people in the Niger Delta area.

Building on the success of MADE I, DFID approved a costed extension for an additional two years (March 2018 – February 2020) and has another target of 155,000 smallholder farmers and entrepreneurs with increased incomes. The expectation is that 30,000 of those with increased incomes will be poor low-skilled youths and women from Edo State, who are susceptible to human trafficking.

The sectors that the MADE programme intervened include Agricultural Inputs, Cassava, Fisheries, Leather, Palm Oil and Poultry in 9 Niger States - Abia, Akwa Ibom, Bayelsa, Cross River, Delta, Edo, Imo, Ondo and Rivers. The programme also worked in the cross-cutting area of access to finance and gender. This case looks at the work of MADE programme in Micro and small-scale Poultry sector and intended for the practitioners and enthusiasts in the development sector of Nigeria and around the world.



ABSTRACT

MADE designed its poultry intervention to address conditions facing smallholder poultry farmers in the Niger Delta especially high rates of mortality stemming from diseases. The objective was to reduce mortality in the small-scale poultry sector from preventable diseases, thereby improving both the performance of poultry flock and smallholder farmer income from poultry rearing. The intervention sought to improve access to poultry health information, products and services driven by veterinary pharmaceutical companies and distributors through the development of last mile retail channels consisting of knowledgeable village level dealers and vaccinators, ensuring accessibility and availability of poultry health information and products. By implementing this intervention over four years, MADE encouraged the entrance of three veterinary pharmaceutical companies, Turner Wright, Zygosis and ACI and strengthened their capacity as lead firms to establish reliable and efficient distribution channels that serve small poultry farmers (1-1,000 flock sizes) with vaccines, drugs, multivitamins and other poultry health related products and services. These firms also promoted good poultry management practices among small scale poultry farmers through the engagement of 188 service providers to reach 69,915 farmers. This led to the development of distribution channels for supply of appropriately sized and affordable poultry health vaccines and the bulk breaking of those products to reach small scale poultry farmers particularly in the hard to reach rural areas using private company driven commercial extension services provided by Village Level Vaccinators (VLV) and village level dealers (VLD). Additionally, the intervention facilitated the adaptation of the Nigerian Agricultural Enterprise Curriculum (NAEC) trainings to empower poultry farmers with business and financial management skills. The intervention has reached over 69,000 farmers who have been exposed to good poultry keeping practices and quality inputs from the services provided by the village level dealers. With improved access to poultry health products and good poultry management practices, small scale poultry farmers are now recording increased income from 30% value of savings from birds not dying. They are using the knowledge of enterprise management to scale up their businesses. The intervention and business models have undergone several adaptations ranging from the shift in focus from women poultry farmers with flock size of less than 50 to include SME poultry farmers of flock size up to 400 and other changes introduced by the vet companies including Turner Wright changing its employee driven model, Zygosis' entrepreneurial model and the evolution of village level vaccinators into village level dealers to describe the full range of services they began to provide beyond vaccination. Details of these processes and adaptations are discussed in this case study.

TABLE OF CONTENT

SUMMARY **05**

CHAPTER 01
BACKGROUND **07**

CHAPTER 02
UNDERSTANDING THE CHALLENGES
AND POTENTIAL OPPORTUNITIES **15**

CHAPTER 03
MADE'S STRATEGY FOR
INTERVENTION WITHIN THE POULTRY SECTOR **19**

CHAPTER 04
CHALLENGES, RISKS AND
LESSONS LEARNED **25**

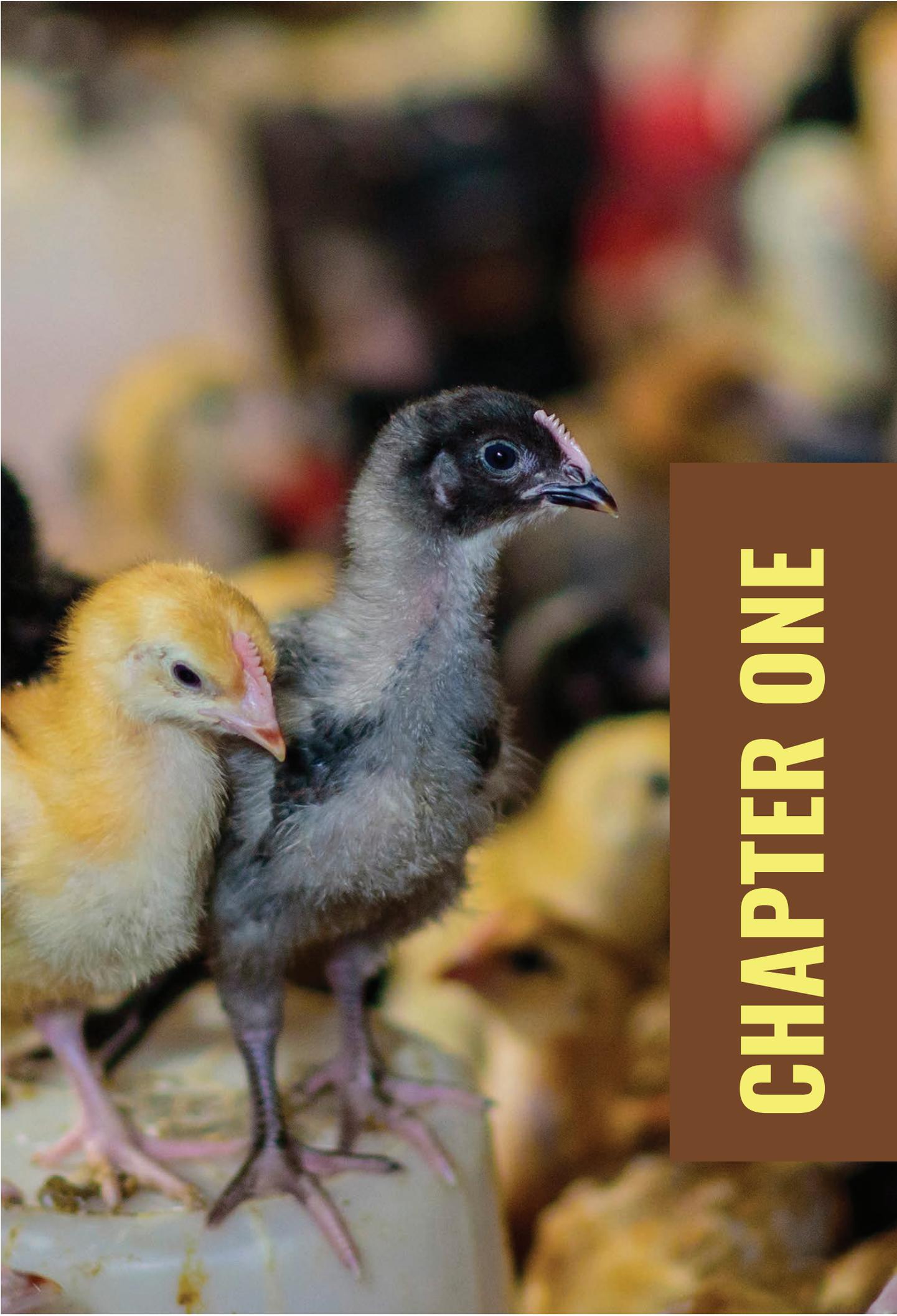
SUMMARY

A major constraint for small-scale poultry farmers in the rural areas of the Niger Delta is the periodic outbreak of Newcastle Disease (NCD) and other preventable diseases. Mortality rates due to these diseases is over 30% with an estimated loss of eight billion Naira per year. MADE identified that the prevalence of the diseases can be reduced significantly through sustainable access to vaccination for the small-scale farmers. The programme, therefore, carried out a feasibility study to identify market-based solutions which can extend the supply of NCD vaccination to the region's rural areas in an affordable, pro-poor manner. MADE initially focused on traditional birds, but later, extended to include all bird species.

MADE, drawing from the experiences of the PropCom Maikarfi intervention in Northern Nigeria, designed its poultry intervention to suit conditions in the Niger Delta. The intended impact was to reduce mortality in the small-scale poultry sector from preventable diseases, thereby improving both the performance of poultry flock and income from poultry rearing. The key idea was to improve access to poultry health information and products for the small-scale poultry farmers through an effective last mile retail channel.

Veterinary pharmaceutical companies and distributors ensured product availability and knowledge, while well-trained village level dealers and vaccinators delivered products and information to the poultry farmers. The intervention has exposed over 69,000 farmers to information on good poultry keeping practices and access to quality inputs. Over 63,000 are accessing poultry health products including vaccination and applying good poultry management practices which has led to 30% reduction in mortality rates of their birds, and an income increase between 25 - 30% for small scale poultry farmers in the Niger Delta.

This case study lays out MADE's poultry intervention, highlighting the intervention's implementation, experiences. The case analyses MADE's rationale, challenges, methodology, changes, lessons, innovations, and overall impact. The document is expected to add to the body of knowledge and be useful to other implementing stakeholders within and outside the sector, for learning, adoption and adaptation.



CHAPTER ONE

BACKGROUND

Poultry currently contributes 25% of the agricultural Gross Domestic Product (GDP) of the Nigerian economy valued at NGN 1.2 trillion.



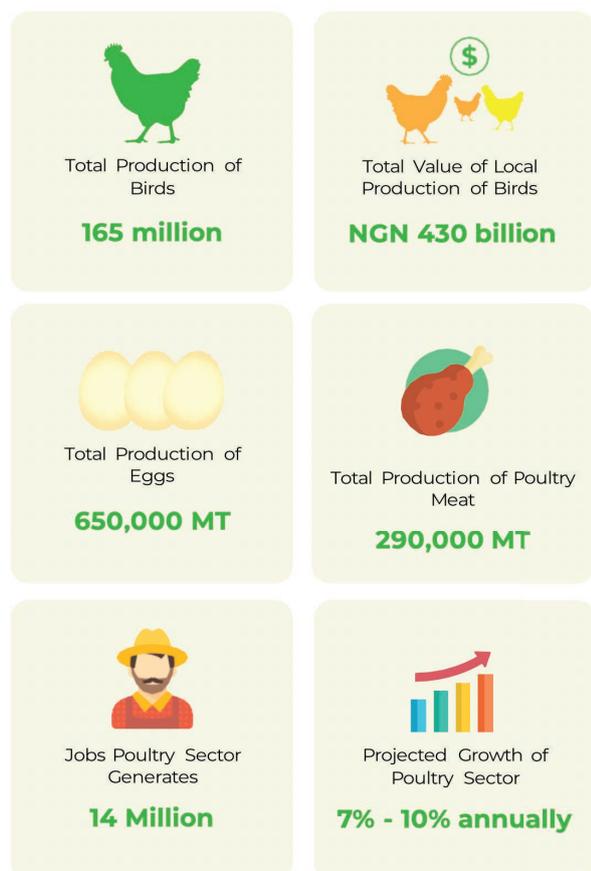
Importance of the Sector to the Poor

Poultry currently contributes 25% of the agricultural Gross Domestic Product (GDP) of the Nigerian economy valued at NGN 1.2 trillion. Local production of 165 million birds, valued at NGN 430 billion, meets only about a third of the potential market demand. The total production of eggs was 650,000 MT in 2013, and 290,000 MT of chicken meat the same year. From a market size perspective, Nigeria's egg production is the largest in Africa; it has the 2nd largest chicken population after South Africa's 200 million birds. The ban on importation of poultry (apart from day-old-chicks) since 2003 spurred growth in domestic poultry production.

The poultry sector in Nigeria generates about 14 million direct and indirect jobs; it has a capacity to create even more employment as the sector is projected to grow between 7-10% annually over the next 10 years. While the sector continues to grow, smallholder poultry farmers have been unable to tap into this opportunity due to low outputs arising from high mortality rates.

Nationally, over 90% of poultry production in Nigeria is done as a backyard operation of less than 1,500 birds and reared by poultry farmers who normally have alternate sources of primary income from crops and/or livestock, or even other jobs.

In the Niger Delta, at least 3 million households keep poultry. By MADE's analysis, the average flock size is 24 for traditional breeds which accounts for 70% of poultry produced in the Niger Delta; flock size for broilers and layers are 117 and 355 respectively. Poultry is primarily reared to meet households' nutritional needs, to be used as gifts, or a source of extra income during emergencies or financial hardship, and as a business. Farmers need a relatively small amount of capital to start a poultry farm. The production cycle for hybrid broilers by commercial farmers is short at six to eight weeks, so money is not tied up over a long period. Poultry meat and eggs are considered staple foods in the Niger Delta. Meat from poultry is popular, as chickens are cheaper than other livestock.



Demand and Supply Trend

There is substantial demand for chicken meat and eggs in the Niger Delta, and it is increasing because of the growing population, higher per capita incomes, increased urbanization, and an ever-increasing fast-food sector. While the rise in demand is primarily being met by expanding commercial production of poultry, the small-scale poultry sector constitutes the bulk of the region's poultry population.

On the supply side, with a few changes in production practices, the poultry sector has been increasing at a rate of 10%. This growth has been propelled by the ban on importation of chicken meat into Nigeria. However, there is still a large shortfall of 110 million birds required to meet local production., which can be largely attributed to inadequate production due to poor farm management practices and high input costs.

Rationale for working in the Sector

One significant constraint to output from local chickens is mortality from Newcastle's Disease (NCD). NCD causes over 30% mortality of chicken for the Niger Delta's local chicken population, causing losses estimated at 8 billion Naira per year. Deaths from NCD can be reduced significantly through vaccination. To address this, MADE implemented market-based interventions to extend the supply of affordable poultry drugs and NCD vaccination to the Niger Delta's rural small-scale farmers to stimulate economic growth that will benefit the poor. While MADE's initial focus was on the traditional bird sector, it later expanded to include high quality birds and a broader product range to include access to other poultry inputs not limited to drugs and vaccines but to feeds, provision of high quality day old chicks etc. and bird choice to include all birds reared by small

scale farmers, (since all bird types are susceptible to New Castle disease and all bird types need the full range of services). The key reasons for MADE's intervention in the sector are as follows:

a. Potential to generate increases in income:

MADE's analysis shows that monthly household earnings for an average farmer who maintains a flock of ten birds can increase by up to twenty-six per cent (about NGN 7,800 per production cycle) if supply of necessary poultry drugs and vaccines could be established.

b. Benefits for women: Traditionally, poultry keeping is primarily a women's activity regardless of ownership status. In most rural households, women oversee and take part in managing the income from local chickens. There is a high level of women participation in poultry production; they dominate (70%) the ownership of bird's flock sizes of less than 50. Even at larger flock sizes, women often jointly own the flock with their husbands or are employed as farm labourers. They actively participate at all levels of the value chain; as producers, collectors, retailers in both weekly

and daily markets, and as support services providers. Therefore, improving incomes of these women can lead to a direct improvement in their status within the family, along with the household income.

c. Impact in core states: The impact of the programme is most significant in Delta and Rivers States, where flocks are larger than the average in the rest of the Niger Delta region.

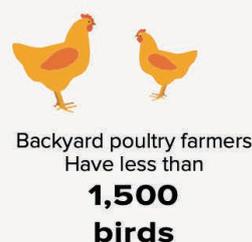
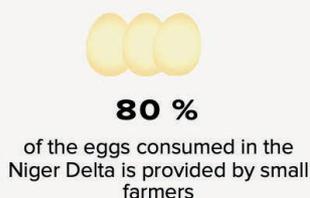
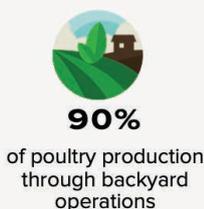
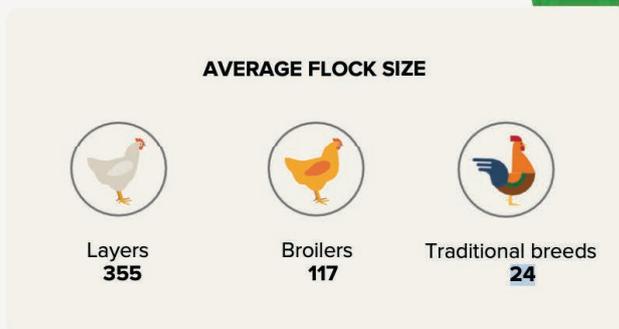
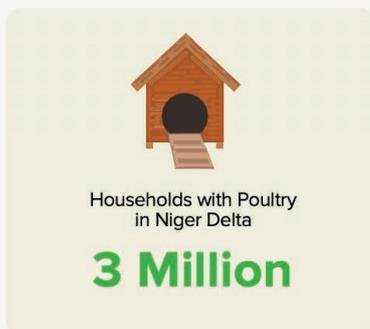
d. Feasibility: A similar intervention had been tried in Northern Nigeria with some success by the PropCom Mai-Karfi Project, which has demonstrated the feasibility of Propcom Markarfi had instituted a similar poultry intervention to meet and provide access to poultry input by small scale poultry farmers. It has been suitably modified to suit conditions in the Niger Delta.

e. Existing private sector partners: The availability of large Veterinary Pharmaceutical companies (mostly based outside the region) interested in expanding their distribution channels to the small poultry producers contributed towards the feasibility of the programme.



AUGUST 2017
Smallholder Poultry Forum (SPF) launched

Small poultry sector population in the Niger Delta estimated at **36,000,000** is million chickens.



Sector Diagnosis

In 2003, the Federal Government of Nigeria banned the importation of Poultry birds (except for day-old-chicks). The ban spurred growth in domestic poultry production and increased demand from the institutional buyers - eateries and hotels. It also encouraged the proliferation of smallholder poultry farmers to satisfy local demands.

Significant drivers of the proliferation include an increase in demand (for poultry meat) during the holidays, requests from eateries due to the changing lifestyle of the middle-class Nigerians, and government policies like the ban on importation of the poultry.

Input delivery systems

Poultry input companies sell through distributors and retailers who serve as the channels for the supply of their products to Retailers, Village Level Vaccinators/Dealers and poultry farmers. These market actors maintain the supply chain necessary for the transportation and storage of drugs and vaccines. Distributors buy directly from the poultry-input companies in large quantities; in the case of feed - up to a trailer load, worth N 1.5 million at a time, and up to N 2 million worth of drugs and vaccines. The distribution channels focused on the urban areas and large commercial farms; there were no firms overtly addressing the rural markets comprising largely of traditional birds.

These distributors are predominantly male; they cater to both men and women poultry farmers. Distributors are also predominantly veterinary doctors or graduates of agriculture related courses such as animal health and production. Some distributors employ a veterinary doctor or animal scientist on their payroll to provide technical information to farmers for free. Distributors maintain a network of retailers they sell through, and some sell directly to farmers too. They provide free technical advisory services and, in few instances, organise a formal training for farmers independent of poultry input companies. The retailers provide a range of services such as vaccination, fumigation, castration, sales of feeds- for different livestock, drugs, day-old chicks and other livestock equipment.

There are no formal legal barriers to starting and operating an agro dealership except if involved in the sales of drugs and vaccines. Distributors selling drugs and vaccines are required to do so under the license of a registered veterinary doctor.

Distributors are not exclusively tied to any lead firm and they do not have territory limits. They are at liberty to choose places of operations based on personal preferences - distance from their homes and clients. Typically, a distributor serves a minimum of 20 retailers and can serve upwards of 200 retailers yearly.

Commercial farms

The poultry sector is one of the most commercialized livestock sectors and about 10% of production is met by commercial poultry farmers with average flock size of 1,500 birds, who sell directly to institutional buyers such as hotels, eateries, supermarkets, schools etc. Some of the commercial poultry farms such as Obasanjo Farms, Zartech, and Chi Farms rear thousands of birds at relatively cheaper rates than small scale poultry farmers.

Larger commercial farms typically import their parent stock, and most of their input's vaccines, drugs etc., and produce their own feed. This helps to maintain the quality and keep the cost down. Very few of them have outgrower schemes where smallholder farmers grow birds for them. There are no very large scale commercial farms in the Niger Delta.



Distribution networks

Bird traders, also called ‘collectors’, work between producers and markets. They move from village to village to gather birds, which they then sell at community or urban live bird markets. Those transferring birds between rural and urban areas usually carry between ten to a few hundred per trip. Collectors have a variety of enterprise structures and make their sales decisions depending upon the prices of the day. Individual collectors can cover up to 20 villages per month, engaging 40 to 100 farmers, and selling in up to six markets, making a margin of between N100 to N500 per bird. Farm gate sales price for a mature hen to collectors varies from N1,000 to N1,200.

Community markets, also known as ‘intermediate’ or ‘weekly’ markets are located in rural and semi-urban areas. Majority of them are wholesale instead of retail markets, and feed into urban markets. Direct transactions between producers and consumers are rare at these markets – with usually one or more mediators involved. Capacity generally varies between a few hundred to several thousand birds, and the number of traders varies from ten to a hundred in each market. Eighty per cent (80%) of the birds are commercial birds; spent layers and broilers, and eggs also in the markets are primarily from commercial and small scale poultry producers.

Sales of traditional variety of chicken usually take place in nearby community markets to collectors and directly to consumers. Most communities have live bird markets.

Processing Infrastructure

Large commercial farms have integrated processing facilities, which they use to brand and to sell processed chickens to upscale supermarkets and restaurants.

There are three small operational processors in the Niger Delta – Premier Integrated with a processing capacity of 10,000 birds per week in Bayelsa,

Wenedell with a processing capacity of 8,000 birds per week in Delta state and Kilishikin Venture with a processing capacity of 5,000 per week in Akure. Amo Bygn has production facilities in Rivers and Akwa Ibom. However, these facilities are not operational. These processing plants find it challenging to aggregate birds to process and as such operate at 30-40% capacity. The main challenges are the high cost of available birds and the lack of consistent supply of birds. They are increasingly looking into organising outgrower schemes where they can get enough birds to process. Sourcing of birds is a significant challenge that all the processing plants share.

90% of poultry reared is sold in the live bird market where hygienic conditions are generally poor. Here, poultry aggregators sell live chicken to consumers. Buyers can request to have their chicken killed and de-feathered for an additional cost.



Bird traders (Collectors) move from village to village to collect birds



Individual collectors cover 20 villages per month engaging 40-100 farmers



Sell chickens in up to 6 markets making a margin between NGN 100-500/bird.



90% poultry in Niger Delta is sold in live market

Supporting services and interconnected industries

Given the low-input, minimal-management model of the small-scale poultry sector, support services, which include transport to market, feed, day-old chick, and feeding and watering implements are limited. However, access to and use of these services are limited primarily because of poor infrastructure and the cost of paying for these goods and services.

Extension Services and Technical Information

Two primary sources of veterinary services in the Niger Delta include the public and private. Private veterinary services are more useful but are focused on the commercial poultry sector. Vets and para-vets operate in urban and peri-urban areas and often run a pharmacy through which they derive their primary earnings. These vets are brought into villages occasionally; usually for larger commercial livestock such as cattle and goats. While vets get certified from the Veterinary Council of Nigeria, para-vets are not. They have often learned their trade through the experience of participating in the poultry business themselves.

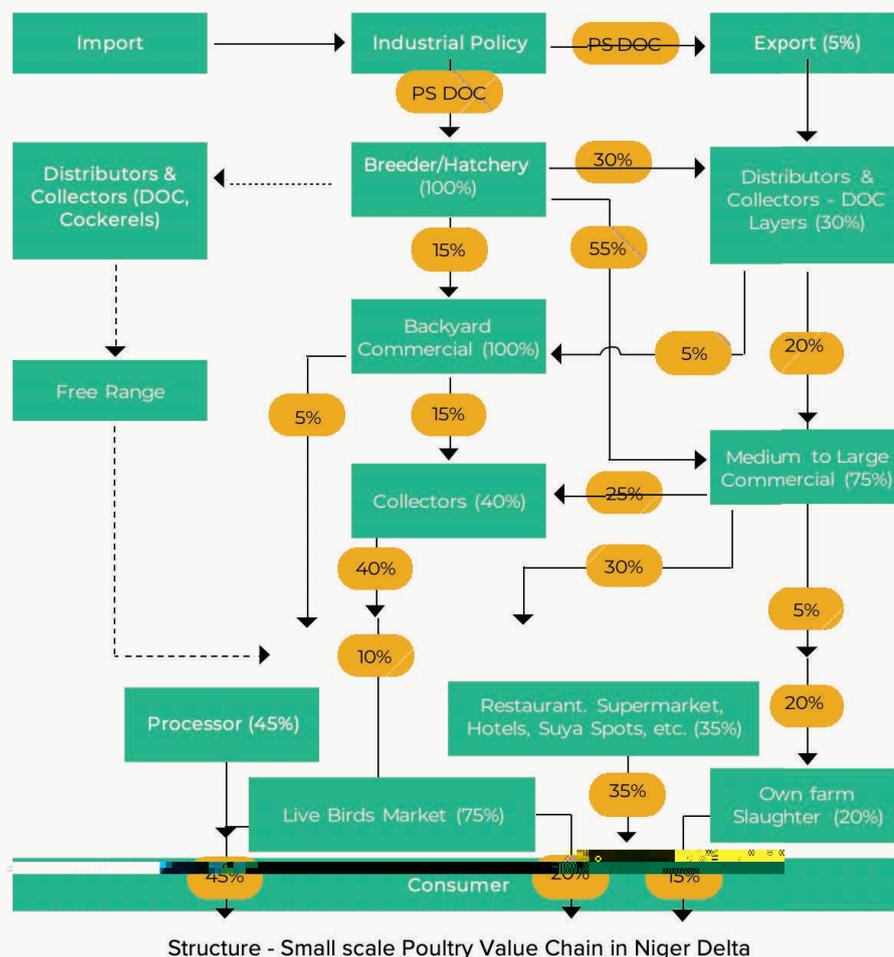
The primary agencies responsible for grassroots-levels extension in Nigeria are the state Agricultural Development Programmes (ADPs). The extension service system faces many challenges, which include

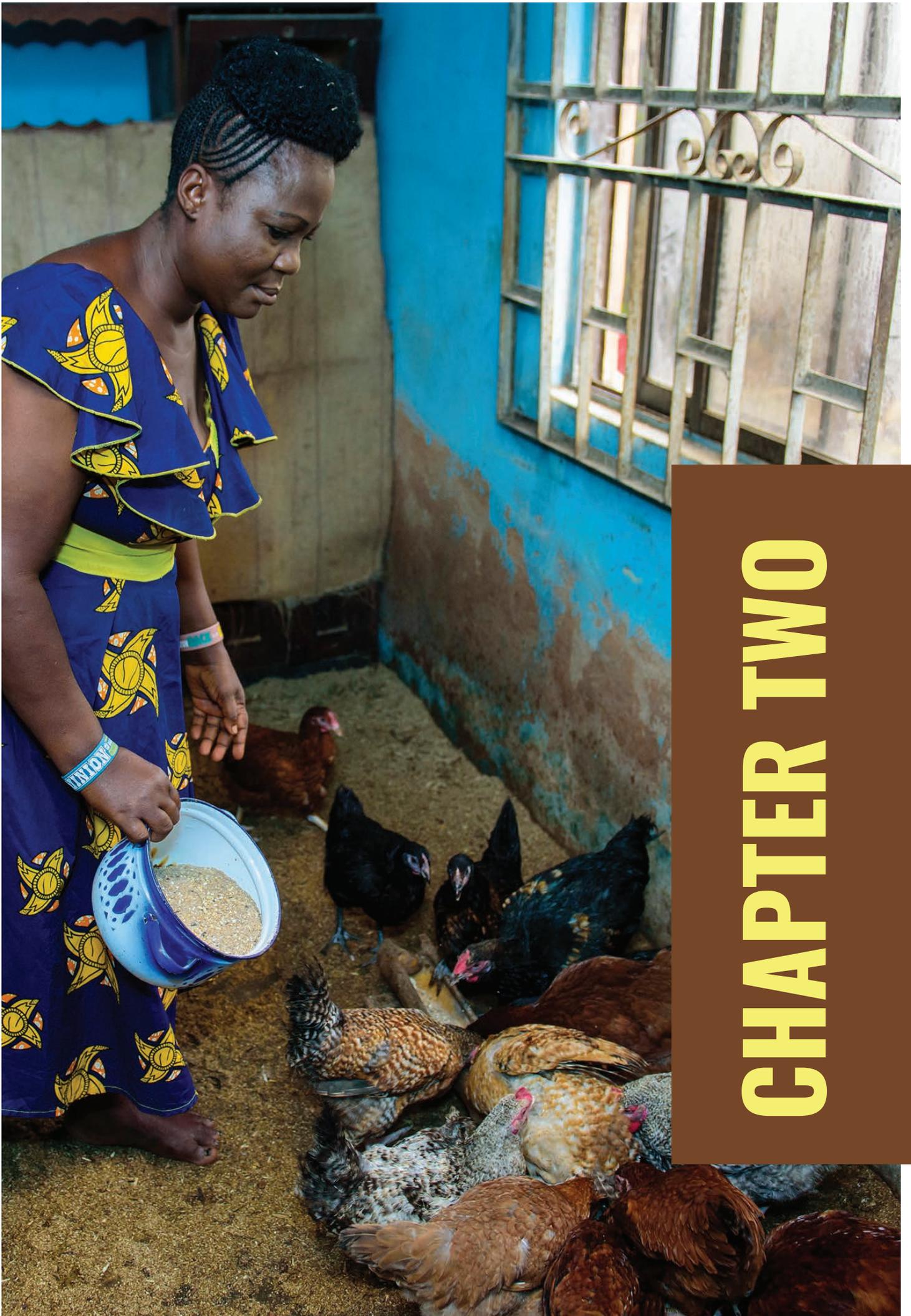
understaffing, inadequate and inconsistent funding, poor coordination, and a weak Research - Extension - Farmer - Inputs Linkages system.

Most of the agro-vet companies organise farmers' fora as part of their selling strategy. These events get organised as "below the line" marketing campaign where farmers get taught on the benefits of using targeted drugs and vaccines. Generally, farmers often take this opportunity to ask various questions about their poultry rearing. However, the objective of these events is to create awareness among farmers for targeted products and to generate demand for it. They are not extension programmes in the strict sense.

In the absence of a functioning extension service system, farmers turn to other sources of technical information such as peer to peer learning, agro-vet dealers, and the internet.

Figure 1: Spent Layers Value Chain in Nigeria





CHAPTER TWO

UNDERSTANDING THE CHALLENGES AND POTENTIAL OPPORTUNITIES

The small scale poultry farmers are difficult to aggregate. The commercial distribution channel is centred on servicing commercial farms which are often in clusters.



There are many challenges that hinder the growth of the small-scale poultry industry in the region. Figure 2 illustrates the Market System Constraints in the small-scale poultry sector.

Constraints Analysis

Supply Side:

- a. NCD thermo-vaccine supply:** National Veterinary Research Institute (NVRI) is the sole producer of thermo-stable vaccines against diseases such as NCD, in Nigeria. Their capacity to supply such vaccines in suitable doses is limited and inconsistent.
- b. Access to Vaccination Services in the Niger Delta:** Poor public extension services and expensive private extension services limit the access that small poultry farmers have to vaccination services, resulting in poor poultry practices by small holder farmers.
- c.** Due to the small flock sizes and low purchasing power, Agro-veterinary companies do not view small scale poultry keepers as viable business prospects for private veterinary services.
- d.** Drugs and vaccines that must be kept cold to maintain their viability are affected negatively when the cold storage facilities are inadequate.

Demand Side:

- a. **Access to poultry inputs:** Farmer purchasing power often limits uptake of improved inputs. Poultry inputs such as feed, drugs and vaccines often come in large packs making them expensive for small poultry farmers. Farming poultry with optimum usage of inputs thus becomes expensive resulting to low outputs.
- b. **Farming/enterprise knowledge:** Farmers often lack basic planning skills, tools for evaluation and analysis to support the functioning and growth of their farms. This results in poorly run farms as farmers do not keep track/records of their expenses; they are not able to properly calculate their profitability and to access the needed finances from the banks.
- c. The small scale poultry farmers are difficult to aggregate. The commercial distribution channel is centred on servicing commercial farms which are often in clusters. Small flock sizes and low purchasing power makes the small-scale poultry farmer an unattractive and unviable market for the larger agrovet companies, who therefore make little efforts of serving them with much needed veterinary services and poultry feed.
- d. Accessing veterinary service is not common among smallholder poultry farmers, partly because the farmers (especially farmers that keep local breeds) see mortality as a normal poultry production problem that is inevitable, and because local breeds are generally stronger as opposed to hybrids. Even though they may be hardy, they still record high mortalities to pest and diseases, and they are often disease reservoirs that affect other birds.
- e. Farmers often have limited access to information on application of proper poultry rearing practices and business principles such as planning, record keeping, stock management etc. As a result, their productivity is low with high mortality and low profitability. The lack of adequate business information and proper financial records contribute to the factors limiting access to finance by poultry farmers which is necessary for expansion.

Given these circumstances, MADE implemented market-based interventions which extend the supply of poultry inputs - drugs and vaccines, improved breeds and enterprises/biosecurity training across the Niger Delta in an affordable, pro-poor manner. For such a system to get established, two elements needed to come together. First, the demand for these goods and services among rural farmers had to be catalysed by convincing them that the benefits far outweigh the costs. Second, the veterinary pharmaceutical companies needed a business case to convince them of the potential of this untapped market. MADE's analysis shows that if access to inputs, vaccines and improved breeds are improved for the small-scale poultry farmer, their incomes can be increased significantly. Given the high density of female involvement in the sector, such a change would have a direct positive impact on the economic position of women.

However, due to lessons learned facilitating such a market system change, MADE focused on risk mitigation plans that combat the high costs of sensitising villages for demand creation; and that provide strong incentives for agrovet companies and distributors to pioneer and develop the actions required for such a systemic change.

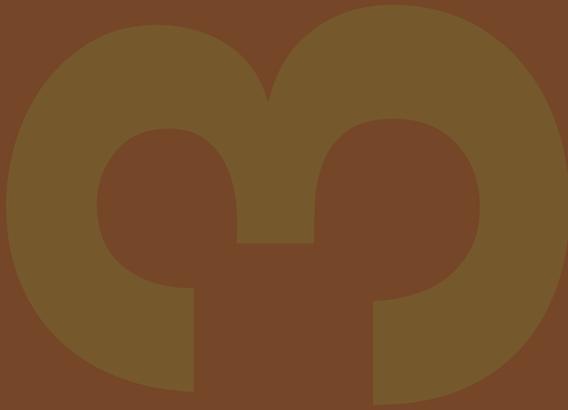






CHAPTER THREE

MADE'S STRATEGY FOR INTERVENTION WITHIN THE POULTRY SECTOR



MADE, in 2015, piloted the poultry intervention with a veterinary pharmaceutical company, AgriProject Concept International (ACI)

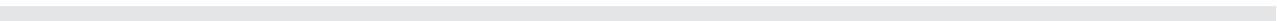


MADE's intervention within the poultry sector was focused on a two-fold objective: first was to establish reliable and efficient distribution channels that will serve small poultry farmers (between 25- 50 flock sizes) with vaccines, drugs, multivitamins, other poultry health related products and services, and the second was to promote good poultry management practices (technical and enterprise trainings) among small-scale poultry farmers in the Niger Delta.

The Pilot Phase: 2015 - 2016

MADE, in 2015, piloted the poultry intervention with a veterinary pharmaceutical company, AgriProject Concept International (ACI) over a 4-month period in Imo State. ACI, having worked with PropCom Maikarfi on a similar intervention wanted to expand their distribution channels to the Niger Delta. The target was to reach 1,667 households with 30,000 vaccinated birds and an additional income of N2,772 per household during the pilot.

MADE linked ACI to the Nigerian Veterinary Research Institute (NVRI), the only producer and supplier of both thermostable and small dose vaccines in Nigeria, with the aim of establishing a commercial relationship for the supply of small packed (50-200 doses) vaccines and drugs and to expand distribution and ensure availability in local poultry production clusters. Specific attention was on the Newcastle vaccine since Newcastle disease accounts



for 54.5% of poultry mortality. To make it suitable for small holders, the products had to be packed in small dose vials because they are more tolerant to storage conditions since they can be stored outside the cold chain for 2 months and can be used for 3 days after opening.

To strengthen the distribution channels, MADE encouraged the agrovet companies through their distributors to recruit and train village level vaccinators (VLVs) specifically to target smallholder farmers. The VLVs were trained to recognise common poultry pest and disease attacks and administer drugs and vaccines to prevent and cure these pests and diseases. The VLVs were independent entrepreneurs but worked under the supervision of a vet doctor. However, the pilot reached only 78 households. A high attrition rate of vaccinators at 90%, was a significant reason for the weak pilot report. The vaccination service was not very profitable as a standalone business, with gross revenue of N2,400 per month for each VLV - meaning high opportunity cost. This made the VLVs to drop out.

Although the pilot missed the targets, it helped MADE to learn valuable lessons about the ideal profiles of the VLVs and develop strategies to reduce attrition, increase demand creation, vaccination storage and build brand trust which were all reasons for the failed pilot.

Drawing from those lessons, MADE organised a consultative and experience sharing meeting with 12 leading veterinary pharmaceutical companies (VPCs) to have industry stakeholders design a more workable model. Following this meeting, a Grant Request for Proposal was sent out to 22 agrovet companies on how they can develop distribution channels to serve smallholders. Six companies sent in their proposals which were assessed against pre-set sustainability criteria. The top four projects got selected for further engagement. MADE worked with them to fine-tune their approach and strengthen their plans. Out of the four, two (Turner Wright Nigeria Limited and Zygosis Nigeria Limited) were finally chosen to receive grants. The award of grant was designed to be a counterpart

funding of 40% of the cost of developing the channel and to support the selected agrovet companies to reduce their investment risks.

New Pilot and Scale up

MADE implemented an extended pilot over 12 months with Turner Wright and Zygosis and incorporated two important changes to the intervention:

- a. **The target was redefined:** The target beneficiaries of the project were changed from traditional backyard poultry (averaging 25-50 birds per household) to the households with small-scale poultry farmers of up to 400 bird flock size. This change broadened the range of chickens vaccinated to include hybrids and increased the number of birds to be treated in each household - potentially increasing the revenue of the smallholders. This made the intervention much more interesting to the partner agrovet firms, increasing their buy-in while serving project targets.
- b. Changed the focus of the intervention from addressing the problems of just Newcastle Disease to creating distribution channels for agrovet companies to serve small-scale poultry farmers in general. This extension increased the product flow in the chain and significantly increased profitability for the Village Level Vaccinators.
- c. More attention was put on the vaccinator profile from the learning that vaccination service was profitable as a side/additional business and not as a sole business. MADE with the VPCs designed target-based incentives to stem vaccination attrition. The VPCs had to brand and equip the vaccinators with a kit. The kit included a lab coat that attracted more trust from the farmers and thus more business, as well as training manuals and vaccine application materials) necessary for their outreach activities.
- d. The VPCs supported the VLVs with target-based incentives which were tailored to the materials needed for effective and efficient VLV service delivery (e.g. fridge for preserving the vaccines and motorbikes for increased mobility and access)

- e. The VPCs supported the vaccinators to stimulate demand for vaccination services by creating awareness programmes – which include organising community-based farmers’ fora and radio jingles to raise awareness of the VLV services locally available to farmers. Given the constraints, the demand for vaccination services among small-scale poultry farmers had to get catalysed; smallholder poultry farmers had to understand and appreciate the value proposition of vaccination services, and veterinary pharmaceutical companies had to follow the potential market size of smallholder poultry farmers and develop products and services to target them specifically. Through the farmers’ fora, farmers got information on the companies’ products, biosecurity measures, good poultry keeping practices and information about the village level vaccinators in their communities.

During the second pilot phase, the two VPCs, Zygosis and Turner Wright trained 50 village level vaccinators. Thirty-five of these trained vaccinators remained in business and sold vaccination services to 5,387 small poultry farmers in 2015 and early 2016.

Post-pilot evaluation highlighted the need for micro-enterprise training for the VLVs and the farmers they were reaching. MADE, therefore supported the adaptation of the Nigeria Agricultural Enterprise Curriculum (NAEC) to suit poultry enterprises. NAEC aids agribusinesses/agri-entrepreneurs to gain basic knowledge of business management relative to their agricultural enterprise. It provides practical methods and techniques for planning, income projection, risk assessment, monitoring, costing of operations, debt management, savings and profit maximization. It also helps to highlight the importance of better financial management (including cash flow), record keeping and market analysis. The curriculum provides its learners with tools to formulate individual action plans to implement what they have learned. The NAEC training helped the village level vaccinators/dealers to improve their business performance thus increasing the number of farmers with increased access to essential veterinary services and products as well as enterprise knowledge which is leading to increased productivity and profitability.

VLD pricing model

The table shows the VLD model and its pricing structure. The sales prices listed are per vial, and each vial contains 50 doses. Under this model, NVRI supplies the vaccine to the project’s private vaccine distribution partner at NGN200/vial. The distribution company then sells the vaccine to smaller urban distributors at NGN 250-300/vial, who sell it onward to VLVs at NGN 300-350/vial. VLVs sell the vial for NGN 1000, by charging farmers about NGN20 for each dose. They make a net profit of NGN650-700 per vial (variation due to transport costs). The value of a bird is N3,000.

Table 1: VLD Model and Pricing Structure

Indicator	Quantity/Value
Starting Flock Size	383
Chicken deaths due to NCD	114.9
NCD Mortality Rate	30%
Total savings	NGN 344,700
Vaccination requirement	383
Vaccination cost	NGN 7,660
Net savings	NGN 337,040

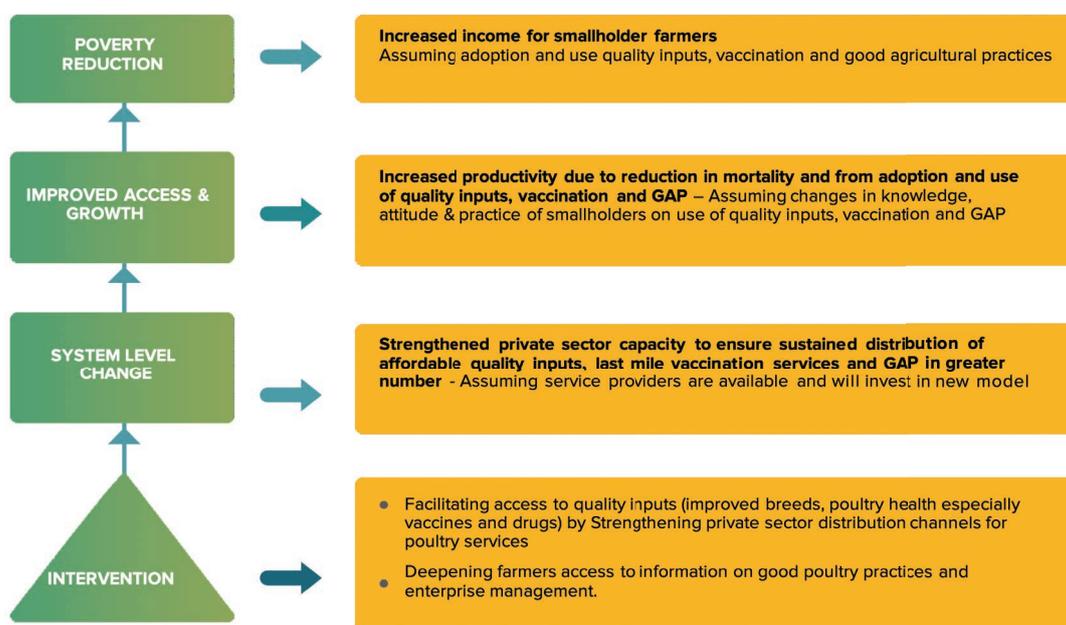
Source: MADE Team Analysis

Facilitating the Wider Systemic Changes

MADE worked closely with poultry input companies’, particularly VPCs to develop stronger distribution systems to reach smallholder poultry farmers in the Niger Delta. These companies have improved knowledge of their end clients and are incentivised to sell their products directly to the small farmers, using tools such as appropriate packaging and improved access to their products. They also provide sound technical advice to demonstrate the value proposition of using their inputs. Through

strengthened distribution channels, farmers started consuming more resources, increasing their profitability and subsequent demand for more resources delivered directly to them by profitable village level dealers who are close to the farmers. The net result is increased productivity, enhanced competitiveness and increased incomes. Figure below outlines the theory of change envisioned for the intervention.

Figure 3: Theory of Change



Adapting Vaccination Delivery Models

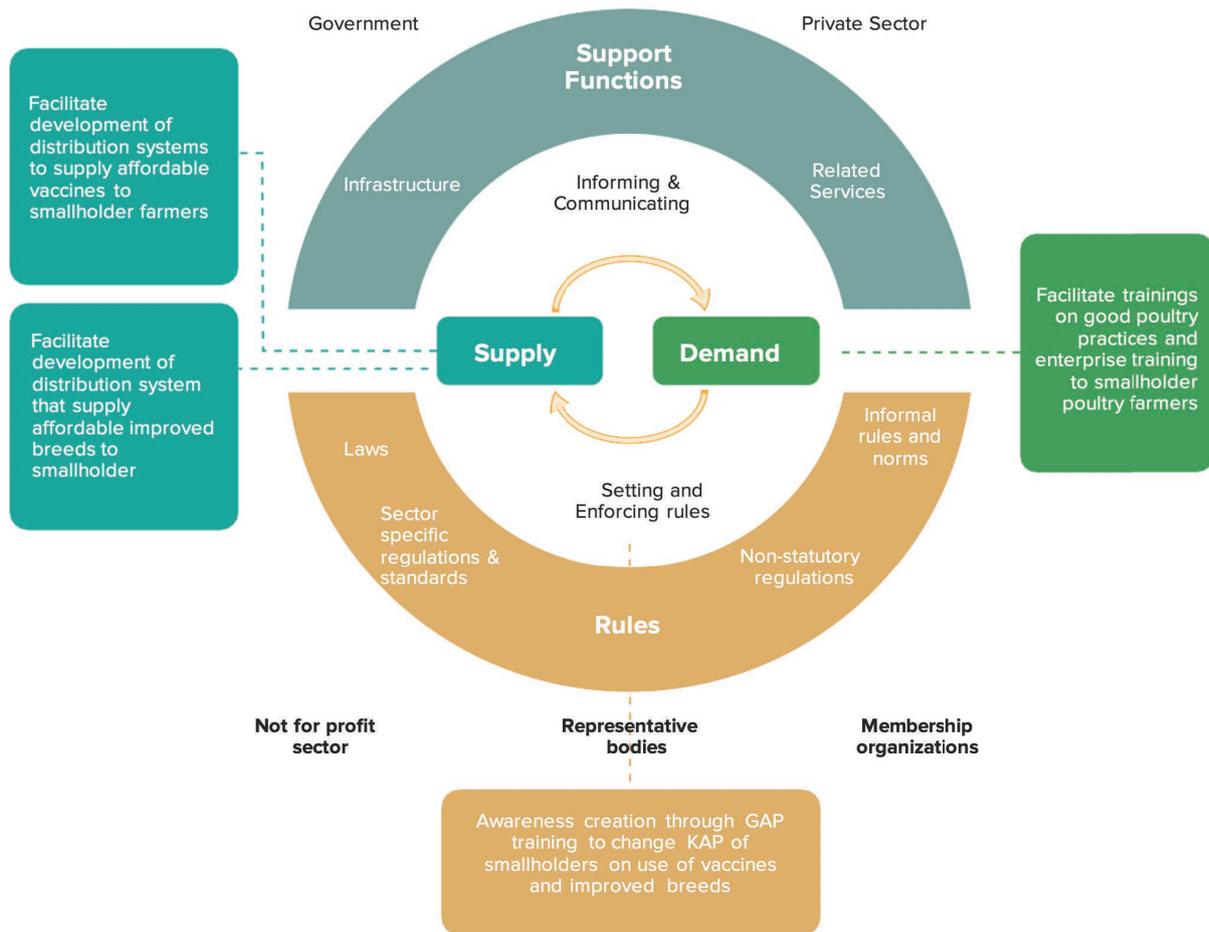
Zygosis and Turner Wright used different models to develop their distribution channels. Turner Wright proposed and implemented a vaccination model where the vaccinators were salaried. It did this because it wanted to ensure the quality of the services rendered by the vaccinators. The vaccinators were kitted and seen as an extension of the company.

Zygosis, on the other hand, proposed and implemented a vaccination model where the vaccinators were independent entrepreneurs who were resident within the target smallholder poultry producing clusters - village level vaccinators (VLVs). This initiative kept the cost of engaging the vaccinators low and gave them the option of diversifying into other services. Turner Wright soon adapted their model to copy the Zygosis franchise model. Both lead firms, following their introductory forays into rural areas, quickly realised that there was a very high population of small poultry farmers

to be serviced, which they had been unaware of before going out to the rural areas. They noticed a significant market opportunity for small-size packed poultry health vaccines and drugs, which targeted smallholder poultry farmers with flock sizes less than 1,000. This feedback helped MADE to expand the demographic target from households with flock size of fewer than 200 birds to farmers with flock size of up to 400 birds; but the VPCs could serve whatever available market they could see with up to 1,000 birds and more, they just would not count against their MADE targets. MADE continued to tailor the intervention towards smaller-sized flocks focusing on women, but the VPCs wanted to focus more on male-owned larger farms. But MADE still had to keep pressure on the VPCs to continue reaching the smallholders, who are largely women, not just the big farmers.

The agrovet companies continued their vaccinator recruitment activities and had 120 active Village Level Vaccinators by 2018.

Figure 4: Key Intervention Areas



Another interesting development during this time was the evolution of the Village Level Vaccinators (VLVs) into Village Level Dealers (VLDs). Some of the most entrepreneurial village level vaccinators expanded their product and service offering to include all vaccines and drugs, sales of feeds, day old chicks, poultry equipment, debeaking, disinfectants etc. thereby increasing their profitability. The upgraded VLVs essentially became Village Level Dealers (VLD), recruiting their own vaccinators in the process. This made the model more financially attractive for entry and adoption. The lead firms continued to invest and recruit more vaccinators as part of their business strategy and with the good VLVs evolving into VLDs, which has spurred the growth of the support market.

Adapting the supply

Once the lead firms understood the sheer market potential of selling small vaccine dose vials to smallholder poultry farmers, they began autonomous investments to secure appropriately packaged thermo-stable small dose vials which would exclusively target poor farmers with small flock sizes (i.e. 100, 200, and 500 dose vials). Turner Wright has invested in bulk breaking four of its products (Piper vet, Lay wright, Embaceryl and Vita Wright) from 1,000mg /500mg to 30mg targeted at farmers with flock sizes of less than 50 birds. These changes show evidence of additional private sector buy-in and investment in serving MADE's target beneficiaries.



CHAPTER FOUR

CHALLENGES, RISKS AND LESSONS LEARNED

For the processing technologies intervention, MADE worked with commercial processors to strengthen their capacities to demonstrate the benefits and use of the improved technology to processors (women account for about 70% of processors)



The intervention was originally designed and piloted with Agriproject Concept International (ACI) as access to thermo-stable Newcastle Disease (NCD) vaccine for very small-scale traditional poultry farmers. This did not succeed in the Niger Delta. Following lessons learned MADE adapted the model and put out an offer for new partners. It conducted a longer pilot with two new agro-vet partners: Zygosia and Turner Wright. Through this process, the programme experienced some key challenges and risks but have also adapted as a result of the lessons learned

Challenges, Risks and Adaptation

- a. **Security Constraints:** Incidences of militancy disrupted poultry activities in Rivers and Cross Rivers States. This led to Turner Wright leaving Rivers State and reducing its operations in Cross River State. The programme collaborated with the Partner for Peace component of PIND to support with conflict sensitivity analysis and community security engagement strategies, with practical hand-holding of the lead firms.

b. Single Supplier Risk: NVRI had production

challenges that hampered its ability to deliver 50 dose vaccines to meet market demand. MADE collaborated with PropCom Maikarfi to work with the regulator (National Agency for Food and Drug Administration and Control - NAFDAC), NVRI and the lead firms (Turner Wright, Zygosis and ACI) on the importation of thermo-stable vaccines from overseas producers. MADE supported an advocacy drive to **(1) Increase support to Nigerian Veterinary Research Institute (NVRI) the only domestic producer of vaccines and biologicals for the entire country. (2) Ease the practicality of importation of animal drugs and vaccines from other countries into the country. (3) Increase private sector investment in the domestic production of vaccines and biologicals.**

c. Lack of standardization and quality assurance

in the poultry sector: This condition has resulted in low-quality day-old chick's production; from poor hatcheries, expired and fake drugs being allowed into the market. It has affected the small-scale poultry farmers' productivity and profitability. Identifying good quality chicks and buying from recognized, trusted agro dealers is part of the good poultry keeping curriculum/practices.

d. Bird flu in Delta, Edo, Imo and Rivers States:

During the implementation years, bird flu was recorded in some parts of the country, including five states in the Niger Delta - Akwa Ibom, Bayelsa, Delta, Edo and Rivers States. Small scale farmers are thus reluctant to stock/restock their poultry farms. This limited the demand for vaccinations and the number of birds available for vaccination. The management of bird flu is being incorporated into the good poultry keeping curriculum.

e. Village level dealers' attrition: The average earning from poultry vaccination per household is as low as NGN 210, and this led to village level dealers' attrition. To keep the village level dealers interested, this low income must be augmented by other sources of income. It also implied that the VPCs needed large pool of clients and to sell as

many different products as possible for the service delivery channels to be profitable. This meant targeting both farmers that keep local breeds and those in semi-commercial poultry to make vaccine distribution much more profitable and sustainable. The VPCs are actively encouraging the village level dealers to increase their range of products and services provided in order to be profitable and incorporating poultry/livestock outlets who did not provide vaccines to farmers. Village level dealers were often faced with the challenges of setting up business enterprises without the knowledge and application of basic business principles, concepts and market conditions. This situation naturally resulted in low productivity. This need is being met with the deployment of NAEC for the village level dealers.

Adapting to environmental challenges.

- a.** Foreign exchange fluctuation leads to increase in the cost of feeds and cost of poultry production: The cost of importation of vaccines into the country by pharmaceutical companies more than doubled because of the Naira's devaluation between 2015 and 2017. Foreign exchange fluctuation also led to increase in the cost of feeds and cost of poultry production.
- b.** Expectation of free services by Farmers-Activities of Projects and Government: Government interference such as the amnesty programme and N-Power, as well as conventional direct delivery approaches by other development agencies, had an adverse effect in the development of the market. These programmes provided subsidised inputs to the farmers, thus distorting the market. However, the adoption of good poultry keeping practices and utilization of VLV/VLD service providers has stimulated wider adoption; as more farmers began to see the benefits, additional new poultry farmers decided to copy.

- c. Availability of appropriately sized products could increase patronage and increased income for vaccine producers and retailers who service smallholders.
- d. Gender targeting: Having observed that women are predominantly involved in micro poultry production (1 – 50 flock size), MADE ensured that women were not left out of the intervention, by incentivizing the VPCs to continue to focus on the smallholder women poultry farmers, while also letting them service the large scale commercial farms which were largely owned by men. As they reached the critical mass of smallholder farmers, even that market segment became profitable.
- e. While the emphasis of the model was initially on the very smallholder traditional poultry sector, when the VPCs got to the field, they realised there was a largely untapped market for veterinary services by poor households with 100 to 500 birds, greatly increasing their business incentives. Including these small-scale farmers to the backyard farmers created a bigger market and business incentive for the village level dealers/vaccinators to participate in the intervention, driving sustainability. The village level dealers/ vaccinators see their investment in the sector as an opportunity to reach a much larger number of clients than they previously imagined. They are also helping households to move from subsistence poultry to a small/emerging commercial level which in turn will increase their market size. This opportunity has informed the decision of Turner Wright to break bulk with four of its products to provide small-scale poultry farmers with more options for cheaper poultry inputs. Consultancy as one of the suite of services provided to farmers has helped the the VLDs to become more profitable.
- f. The VPCs are using the distribution channel as means of retailing their own products, but also to provide a basket of other services for VLDs to sell to small-scale poultry farmers because income from vaccinations sales alone are unable to sustain the distribution channels.

Overall Intervention Impact on the Poor

Productivity of small farmers has improved as more farmers are adopting best practices. Since starting the intervention, 108,887 more smallholder poultry farmers have access to information on good poultry health hygiene, poultry health products and services. Of these, 72% have reduced mortality rates from a baseline mortality rate of 30% to 7%.

AVCs are increasing their revenue from this new market. Turner Wright reported 20% increase in sale of products targeting smallholders within the Niger Delta. ZygoSis, without financial support from the programme has sold 30,000 vials of thermostable vaccines needed to vaccinate 7,000,000 birds. ACI sold 21,100 vials of thermo-stable vaccines it bought from NVRI through its network of Village Level Dealers and distributors in the Niger Delta.



Access to information on good poultry health hygiene, poultry health products and services

108,887
poultry farmers



Mortality Rates

7%
from 30% among 78,398
(72%) farmers



Increase in sale of products targeting smallholders within the Niger Delta

20%
(Turner Wright)

