

Transforming Traditional Poultry Keeping into a Commercial Venture

The Experience of RLDC with the Comprehensive Poultry Rearing Model



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LIST OF ABBREVIATIONS

- DOCs Day-old-chicks
- EC Executive Committee
- FAO Food and Agriculture Organisation, the United Nations
- LSC Local Scavenging Chickens
- RLDC Rural Livelihood Development Company
- S&L Saving and Lending
- TZS Tanzanian Shillings
- VSL Village Saving and Lending

Chapter One: Introduction

In the poverty stricken Central Corridor of Tanzania poultry keeping forms an integral part of household activities, providing food and generating additional family income. Poultry keeping makes an important contribution to the livelihoods of the most vulnerable rural households. Chicken production also improves household nutrition standards and helps meet family and social obligations.

Poultry raised in the Central Corridor also contributes significantly to meet the rapidly growing demand for poultry products in Tanzania.

RLDC is working in the central corridor poultry sub sector with a view to transform it into an industry that will cater for the needs of poor households.

This case study aims to provide direct practical information to all stakeholders active in the poultry sub sector. It focuses mainly on RLDC's approach and experiences with the so-called Comprehensive Poultry Rearing Model implemented in the Bariadi district of Tanzania's Simiyu region, its success and failures, the lessons learnt and the way forward in the improvement of the poultry sector in Tanzania.

Chapter two gives more background information on the poultry sector.

Chapter three focuses on the theoretical Model, which puts emphasis on better administration of poultry production and marketing through specialisation of tasks in community groups. Small subgroups within the group acquire technical competencies and specialise in their allocated tasks.

Chapter four explains the application of the model in Bariadi and its replication in seven other districts. It illustrates practical aspects, then highlights successes and analyses remaining challenges.

Chapter five concludes and lists recommendations for further projects.



Chapter Two: Background on Poultry Farming in Tanzania

In 2008, 36.2 million chickens were kept in Tanzania out of which almost 95% were local chickens and the rest were exotic breeds. Most of the local chickens are reared by rural households. In the central corridor there are about 9.2 million chickens kept by 60% of the rural households (or about 1.17 million households) of which the vast majority (98%) are local breeds¹ . Most of these rural households keep local chicken for subsistence as well as for income generation. Relatively poor rural households (and women in particular) keep chickens, as they do not require much by way of resources and investment. In fact the local scavenging chickens almost take care of themselves and still provide food and limited income for the family. In addition, the Central Corridor is also endowed with the production of a variety of cereals such as sunflower, maize, legumes, millets and sorghum which form a good source of chicken feed.

On the demand side, there is a ready demand for chicken in Tanzania, as it is quite common for a household to eat chicken or give a chicken as a present when visiting relatives or friends. Celebrations in Tanzania without chicken are practically unheard of and there is a clear consumer preference for local chicken meat over the alternatives. Hence, poultry keeping in the Central Corridor has potential which is bolstered by access to markets in towns such as Dodoma, Mwanza, Musoma, Arusha and Dar-Es-Salaam.

However, keeping chicken in rural areas is plagued by challenges that discourage many households to keep large $flocks^2$. The challenges include:

- 1. High mortality rate due to diseases, predators and theft
- 2. Poor nutrition and husbandry management

- 3. Lack of organisation among producers
- 4. Lack of a regulatory body
- 5. Lack of organised marketing and processing
- 6. Low productivity per producer

The value chain is highly fragmented with each producer doing task individually and inefficiently, particularly because of weak supply of inputs and insufficient extension services. This results in poor quality and unreliable supply of poultry products.

Traditionally, chicken keeping in rural areas is a women and children dominated activity. FAO's Emmanuelle Guerne-Bleich says a major motivation for promoting family poultry is that "women are often the main beneficiaries"³. Nevertheless, the fruits from chicken keeping are beneficial for the whole household: in particular meat and eggs become easily available.

At the moment, the effort by the government in providing effective, propoor support to rural economic activities is either ineffective or very minimal. The current livestock policies do not focus on poultry but only on cattle and goats. However, with improved productivity the subsector is expected to attract public and private investments in the future. The Tanzanian central government already envisions the Central Corridor as a potential area for local chicken production calling for some regional government's efforts to start investing in the sector. Several authorities are planning to buy incubators for hatching while others are planning to foster production.Therefore, with future private sector presence and government efforts getting in place, local chicken rearing faces a bright future.

¹Estimated figure in 2008 based on FAO, Livestock Sector Brief, 2005

² The average size of a household flock is about ten chickens with perhaps a few ducks, guinea fowl, and geese kept together

³ http://www.fao.org/english/newsroom/news/2003/13201-en.html

Chapter Three: The Comprehensive Poultry Rearing Model

The Comprehensive Poultry Rearing Model provides a methodology for small-scale rural producers to improve their lives through chicken keeping. The model puts emphasis on better administration of poultry production and marketing through specialisation of tasks in small community groups. Small production units acquire technical competencies and specialise in their allocated tasks.

This model borrows some of its key elements from the famous poultrykeeping model practiced in Bangladesh⁴.

3.1 Group organisation

- 3.1.1 Chicken keepers in a village constitute the **community group**. Each member must rear chickens from the age of one month until they are ready for sale. Traders, chicken feed producers, para vets or any other person are not allowed to become members of the community group unless they also keep chickens. The community group is thus a producer group.
- 3.1.2Each member of the community group must **also be a member in one of the six subgroups listed below.** Each member has thus at least two roles to perform in the group. The subgroups focus on the following tasks which are detailed later on:
 - Breeding and hatching
 - Rearing day-old-chicks (DOCs)
 - Animal health workers
 - Chicken feed producers

- Marketing and promotion
- Saving and lending

The first two subgroups might also be combined into one group depending on the situation in the village. This should be discussed in the initial training on group formation.

- 3.1.3Each subgroup elects a **chairperson** and a **deputy chairperson** from among its members. The community group also elects a chairperson and a deputy chairperson who should not hold office in any of the subgroups at the same time.All chairpersons and deputy chairpersons form the **Executive Committee** (EC) that meets regularly. The EC receives reports and proposals from the subgroups and has overall decision-making power in the community group. In particular, based on proposals by the subgroups, the EC will decide on all transaction prices within the community group, such as:
 - The price of day-old-chicks
 - The price of five week old chicks
 - The price for drugs and vaccinations
 - The price for chicken feeds
 - The fees for participating in joint marketing and promotion
 - The regulations and interest rates for loans

The decision on the pricing should be mainly based on costs (including amortisation of investments) and the subgroups should therefore attach cost details with their price proposal.

Members of the community group and of each subgroup will be trained for their various roles in respect of technical and

⁴ Jensen H.A (1996), Smallholder Poultry Model for Rural Development, Case from Bangladesh, Denmark

management skills. Reference material for the various roles will also be available for the members.

3.2 Group functions

- **3.1.1** The **breeding and hatching** subgroup maintains the parent stock of a suitable local breed and is responsible for cross breeding if required. Members of this subgroup apply traditional hatching techniques, however if at a later stage market demand requires a higher growth of chicken population, the group may decide to invest in incubators.
- **3.1.2** The **rearing of DOCs** from the age of one day to 5 weeks is done by members of the second subgroup. During the first five weeks of their lives, DOCs are normally vaccinated against common chicken diseases. The members of the subgroup invest in DOCs vaccination, health care and chicken coops that protect the delicate DOCs from predators, weather and disease. During that time chicken keepers require the services of two other subgroups, the animal health workers and the chicken feed producers. After five weeks, some of the DOCs are given to other members of the community group who will raise the chicken until they are ready for sale.
- **3.1.3** The **animal health workers** are trained to administer vaccinations and other drugs. They work in close collaboration with the local veterinary services and the vet shops. The members of this subgroup invest in drugs and cooling equipment.
- **3.1.4** The **chicken feed producers** process locally available feedstuff by grinding and mixing them. The complementary feeding of chicken reduces the duration necessary to reach the target weight for sale. The members of this subgroup invest in manual grinding and mixing machines.

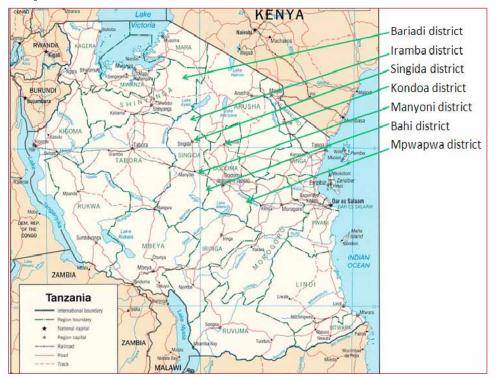
- 3.1.5 The marketing and **promotion subgroup** links the entire community group to traders and organises local chicken markets in the village. Since each member will be making his or her own sales of chicken and eggs, the members of this subgroup have a coordinating function only. They mainly invest by meeting expenses for travelling to and organising local markets.
- **3.1.6 The saving and lending subgroup (S&L)** takes the lead in organising and administering saving and lending for the entire community group. RLDC adopts the tested VSL model of Care International5 and introduces it by way of training. RLDC does not lend any money to the saving and lending subgroup. It is proposed to apply compulsory saving from every external sale of eggs and chicken but it is up to each community group to agree with the proposal and set the rate of compulsory saving. On proposal of the S&L subgroup, detailed regulations for lending will be worked out and approved by the entire community group. The members of the S&L subgroup will then be charged with administering the saving and lending regulations.

⁵http://vsla.net/

Chapter Four: Application of the Model and Results

This chapter highlights the application and results of a pilot project that RLDC launched and financed first in the Bariadi district of the Simiyu region. Rural poultry keepers in the villages of Mbiti (MKOMBOZI group) and Bupandagila (MWAKUBU group) have improved their lives through the skills they acquired with this pilot project. Poultry keepers have formed large production groups subdivided in small subgroups to cater for specific roles. It is however to be noted that the subgroups have mostly not been working so that specific roles have been either undertaken by individuals or neglected.

Map of the intervention



With the experience gathered in the Bariadi district and after having conducted a sector assessment, RLDC decided to replicate the model in seven other districts of the Central Corridor of Tanzania. In 2009 replication of the model was supported in Manyoni and Kondoa districts reaching about 1,820 local chicken producers while in 2010 the support went to Bahi, Mpwapwa, Iramba, Singida and Kondoa districts. In December 2011, this intervention had cumulatively reached 7,200 local chicken producers.

According to local conditions and the experience gathered in Bariadi, most of the model components were replicated in the seven replication projects. The main difference was that the two subgroups responsible for "Breeding and hatching" and "Rearing day-old-chicks" were merged into one, as the rationale for having two groups was not well understood by farmers.

4.1 Group Formation and Training

Two community groups of 91 members in Mbiti village and 71 members in Bupandagila village were formed. Other groups comprising between 30 and 70 members were formed during the replication phase.

Group formation was meant to bring people together for easy access to services like training, veterinary services and even credit facilities. General training was offered to the entire community group while subgroups were trained for breeding and hatching, chick keeping, administering vaccinations and drugs, feed mixing, marketing and savings techniques.

Membership has evolved markedly during the lifetime of the project. In some cases it went up (for instance from 38 to 60 in Nkhome Village, Bahi district) while mostly it went slightly or markedly down (from 71 to 35 members in Bupandagila village). The number of members alone is not an indicator of success as in some cases membership was down but only very motivated members stayed while on the other hand there were instances where membership was up but many members reverted to the local scavenging model.





Community groups in Kingiti and Kibakwe villages, Mpwapwa district

Functioning of the groups

One of the assumptions of the model was that division of roles was necessary for the model to work successfully. Having a subgroup concentrating on a particular task is economically more viable than a single person doing all the work in the chicken production chain. The focus on a single role not only brings relief for poultry producers but also increases competences and thereby builds opportunities to share other services.

Contrary to this, most of the subgroups do not work and the practice of "everybody does everything" still persists. Group members still mostly hatch, raise chicks, vaccinate and market chickens individually. However, this setback has not impeded the project yielding benefits to the members.

Generally it can be said that the non-functioning of subgroups has three main reasons:

- The lack of habit of farmers to work in groups and not individually, and possibly also a lack of trust amongst group members. The benefits were not made clear enough to them during the training.
- The general reluctance of farmers to disburse cash to pay for services provided by other subgroups, especially if it appears likely that their own subgroup will not be working and will not enable them to earn an equivalent amount of cash.
- The too short support offered by the project for farmers to overcome those two major organisational challenges.

A more thorough analysis of each subgroup is provided below.

Improved Housing

Poultry rearing in these villages was not different from the usual practice in Africa. Chickens shared houses with people at night and wandered freely to scavenge during the day. Poultry rearing was not deemed as a profitable business and as such no one would think of investing in specialised housing. This practice limited the ability of chicken producers to carefully monitor chicken health and guard against theft and attack by predators).

RLDC through this intervention intended to change this practice. Keeping chickens in coops protect them better from disease, theft and attacks. It also allows farmers to feed them supplementary food with rich nutrients and to separate DOCs from mother hens, which results in hens laying more eggs and gaining weight faster. As such, an improved coop is a necessary complement to vaccination and complementary feeding and maximises their effect.

During the project intervention, poultry workers were sensitised and advised on the best housing and coops were built with locally available materials such as wooden materials and bricks for the walls and readily available tree leaves and sand for the roofing.

A majority of group members built an improved coop. Those who did not named financial constraints as a reason (an improved coop costs upwards of 100,000 TZS or 64 US \$ at the time of writing). The members who built an improved coop experienced the benefits listed above.

However, there were two major challenges that annihilated those advantages for about half of the members:

- When vaccination is not done a high mortality is still experienced, rendering an improved coop useless
- A majority of improved coops were destroyed by heavy rain during the rainy season. Chicken keepers have shown reluctance to invest again, especially if they have also experienced high mortality amongst their chickens.

The pictures below show different types of chicken coops



Examples of chicken coops before the project (in the few cases where they existed)



Improved chicken coops after the project, using locally available materials

4.2 Breeding and hatching

Breeding and hatching was meant to be done by a specialised subgroup. However it never happened as chicken producers preferred to keep doing this task personally and did not grasp the benefits associated with doing this collectively.

Originally, the model planned to use incubators. Two electricity-operated incubators were provided in the villages of Mbiti and Bupandagila but they failed as the electricity supply in both villages did not allow proper operation.

Nevertheless, groups generally communicated that they would be willing to invest in incubators. Incubators would increase production so much that other factors would probably become limiting (housing, feeding). Incubators should therefore only be used in a second stage of developing productivity and should be hybrid (electricity and kerosene) operated to cope with the erratic power supply in Tanzania.

4.3 Rearing of day-old-chicks (DOCs)

Community members were trained to take care of chicks that have been separated from their mothers. They were trained on how to keep the temperature conducive for chicks, feed them and vaccinate them. This arrangement was meant to relieve older chickens from taking care of chicks and enable them lay more eggs: it can increase the frequency of cycles for laying eggs fourfold. The rearing of chicks was meant to be done by a subgroup but this is also not the case.

Only some chicken keepers who own improved coops have started to separate DOCs. They have observed a faster growth rate and received more eggs as a result.

Those who did not separate DOCs claimed it was difficult to do without an improved coop, while others were not aware or convinced of the advantages associated with separating DOCs.

4.4 Improved extension services and availability of vaccination

A major problem faced by the sector is the almost total absence of good quality extension services. A direct result of this is the lack of vaccines and knowledge of how to use them translating to the loss of nearly 100% of stock in the event of an outbreak of diseases such as Newcastle disease and fowl pox.

RLDC trained some community members on the provision of vaccination services, diagnosis of chicken diseases and administration of drugs. In addition all members were trained in elementary disease control such as identifying symptoms and causes as well as controlling and treating poultry diseases. These health officers were meant to obtain vaccines and drugs on behalf of the group from district centres and administer them at the village level. By sharing the cost of the vaccine across the group, prices for vaccinations could range from 100-250 TZS (between 0.06 and 0.16 US \$ at the time of writing) per bird per vaccine.

The actual experience of groups varied significantly:

- There are groups were this subgroup is working. The designated person procures the vaccine and organises vaccination for most of the members who can afford the vaccine fee. As a result of consequent vaccination (once every three months) mortality has decreased markedly, allowing flock sizes to increase rapidly⁶.
- There are groups were some individuals procure the vaccine for themselves and experience a very low mortality for their flock. Other members do not benefit from it even though a bottle of vaccine is usually enough to vaccinate many flocks. This sad situation comes from lack of communication between chicken producers as well as their insistence on getting individual doses of vaccine.

- There are groups were most members do not vaccinate or vaccinate irregularly or using traditional medicines. As a result mortality is still very high and chicken producers lost the motivation to invest in improved coops or chicken feed.
- There was also a group that did vaccinate using locally sourced vaccine that might have expired or that vaccinated too late when the chickens were already infected, resulting in the chickens' death and destroying their faith in vaccines.

The experience gathered has demonstrated that vaccination is of foremost importance. If vaccination fails, then the whole investments made in improved coops or chicken feed is rendered useless. Moreover a general discouragement can take place and threaten the whole project. In light of this it is important to analyse why vaccination sometimes failed:

- Lack of ability to do cost benefit analysis: The training has not been able to change totally the mindset of chicken producers. Some of them still apply vaccines infrequently or only after the flock gets sick, thereby showing that they have not understood the working of a vaccine. Some of them do not want to invest money in vaccines even though it is only a small amount compared to having one's flock totally wiped out.
- Poor group dynamic and foresight: The vaccines are not readily available. Sometimes group members have not been able to source vaccines even in regional centres, have faced long delays or have lacked the foresight to send further afield for drugs. Conversely agro-dealers do not know these groups or think to come to them. What's more only the vaccine for Newcastle disease is generally available in Tanzania while the vaccine for Fowl pox disease is almost impossible to source except in Dar es Salaam.
- Challenge of maintaining the cold chain: Vaccines have to be stored in cold rooms or fridges in order to maintain their efficiency. However,

 $^{^6}$ On average, the flock's range went from 5 to 15 chickens before the intervention to 30 to 50 chickens after the intervention

the cold chain for vaccines cannot be assured with local retailers or farmers storing the vaccines inappropriately. A deficient vaccine might then reinforce already ingrained mistrust against vaccines.

4.5 Chicken Feed Production and Chicken Feeding

Traditionally, local scavenging chickens are left to forage for their own food with no supplementary food offered to them. This leads to modest and slow chicken growth rate: chickens are sold as late as six to nine months old and their meat is no longer tender.

Feeder group were trained to identify potential chicken feed material available in their locality and given information on how to mix them to get the best contents required for chicken growth and health.

The vast majority of trained chicken farmers now feed their chickens. They prepare the feed mix individually and not as a subgroup. As a result of feeding chickens can be sold after three to five months, they are significantly heavier and produce more (and bigger) eggs.

Some farmers still do not feed their chickens and cited the high mortality and a difficulty in feeding chickens when they didn't have improved coops as reasons for this.

4.6 Marketing and Promotion

This subgroup is also not working. All group members sell chickens individually.

Some groups tried to establish more links with traders or market their chickens directly in bulk but the prices they were offered were disappointing.

Globally chicken producers commented that they were mostly able to sell their production when they wanted, but the market situation varies across groups, reflecting local demand and proximity to

towns. Generally chicken producers reported getting higher prices⁷ due to the heavier weight of their chickens. In some villages more traders started to come after noticing production was on the increase.

4.7 Financial Services / Saving and lending

The saving and lending subgroup is the only one functioning in all cases. It has helped rural producers access needed capital to invest in different economic ventures, ensuring that revolving capital is available and accessible. Accessing loans through established financial institutions is almost impossible for small scale farmers lacking collateral and record keeping.

Thanks to this subgroup, farmers have been able to re-invest in chicken coops, feeding, vaccines and even increasing their stocks. However, many farmers also decided to invest in other agricultural inputs or livestock such as cows and goats. Some of them also used the loans to pay for school fees, medicines or house improvements.

Nevertheless handling cash requires great care with records which most rural people are not used to. This has been a challenge especially when the group is big and has made large contributions. At this point it becomes necessary to link the groups with financial institution for further support.

Finally, the interest rates applied are very high (5 to 10% a month) and do not permit long term investments.

⁷The price range varies greatly between regions and according to the proximity to a major town. On average, the range went from 2,000 TZS-6,000 TZS (1.3 US \$-3.9 US \$ at the time of writing) per chicken before the intervention to 6,000 TZS-10,000 TZS (3.9 US \$-6 US \$ at the time of writing) after the intervention.



Rural chicken rearing groups saving their money at the village of Mwanyonye, Singida district

4.8 Increased Poultry Production

The number of chickens kept per household has increased as a result of the project The intervention. number of chickens laying eggs has also therefore increased, increasing the number of chickens in a flock. On average, the range went from 5 to 15 before the intervention to 30 to 50 after the



A successful producer in Bupandagila Village managing to keep more than 100 chickens

intervention (at any one time). Some community members even reached 100 or 150 chickens. Also, due to the shorter maturity period, the turnover rate (the frequency at which chickens are sold) has increased.

Within the groups there are marked differences between members, reflecting the techniques employed. Those members building improved coops, vaccinating and feeding their chicken as well as separating DOCs form hens tend to reach flock sizes of 100. On the other hand, those members not vaccinating tend to be barely better off than before the intervention. While this sounds like an obvious statement to make, it is interesting to note that both examples may exist within the same group.

It is striking to see that even though most of the subgroups were not working, thereby undermining the subdivision or roles pushed by the model, most chicken producers are markedly better off than before as long as they vaccinated their chicken and provided them with an improved coop and supplementary feed.

4.9 Increased Household Income and economic empowerment

Household income has increased as a result of better poultry production techniques and larger quantities of chicken. It is a welcome additional income.

The situation of Ms Mariam Paul, a farmer in Sanjaranda, Manyoni District, is representative. She used to keep less than twenty chickens and now keeps thirty five chickens which are heavier, healthier and lay more eggs. She currently makes an income of 360,000TZS a year from chicken keeping, three times more than before the project started.

As direct benefits, families are now able to pay for school fees or other social needs with much less stress. In addition



Ms Mariam Paul

households and rural communities have access to protein rich foodstuff (eggs and chicken meat).

4.10 Gender

Relatively many women are involved in chicken rearing. This can be attributed to the fact that chicken rearing is considered a cottage industry which can be done with only a relatively low investment compared to other livestock. On average, about 60% of group members are women.



Women producers in the villages of Kingiti and Mwanyonye

Chapter Five: Conclusion and Recommendations

The introduction of the Comprehensive Poultry Rearing Model provides many interesting lessons and raises just as many questions for the future.

On the one hand, the project is a clear success with chicken producers markedly improving their flock sizes and incomes in most situations. They shifted from traditional subsistence chicken rearing to a more businesslike approach that produces higher and more regular income. This was the main goal of the project and it has been achieved. Vaccination, building improved coops and feeding chickens are the main reasons of this achievement.

On the other hand, the elaborated subdivision of roles that the model postulated has failed. This is mainly because the teaching was not intensive enough to convince farmers of the benefits of working in groups instead of individually and because it requires a complicated and potentially confusing circulation of cash between subgroups that leave some farmers fearing they will "lose" money. In addition, efficient communication between group members, today still lacking, is necessary to enable those mechanisms to work fully. It is now to be analysed if this model with subgroups is to be abandoned or pushed with more chances of success.

Vaccination also still poses important challenges. A lack of efficient vaccination has the potential to rapidly undermine the success of the project.

Recommendations for further projects:

- Work on better provision and availability of vaccines. Vaccines are of the foremost importance for the working of the project. If an epidemic breaks out and kills the whole flock, then all other investments have been made in vain. The three following challenges are to be addressed:
 - Make vaccines more readily available, especially vaccines for the fowl pox disease. This might require working with importers and

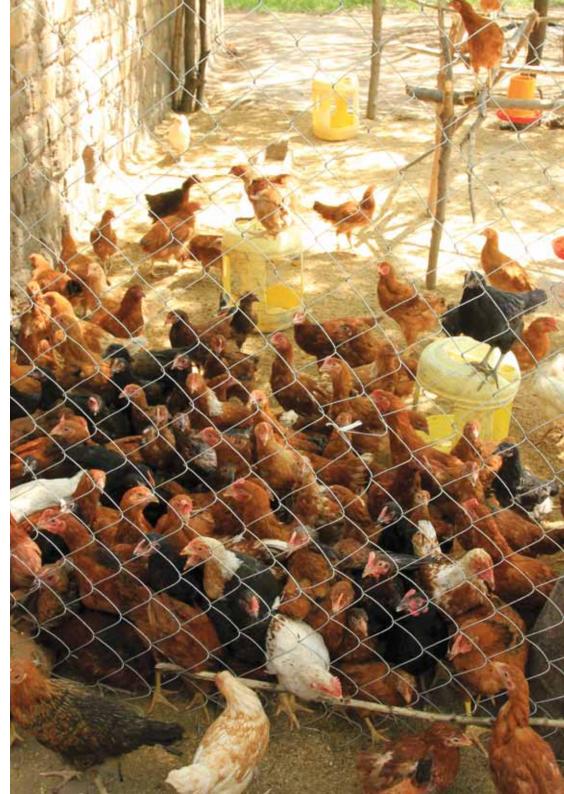
distributors of vaccines (including agro-dealers). It is not realistic to expect poor chicken producers to track down vaccines all the way to Dar es Salaam.

- Work on the cold chain. Vaccines are heat sensitive. Solutions have to be found to avoid that vaccines get damaged when locally stored. Linking local retailers or chicken producers groups with other businesses or hospitals possessing cold rooms might be an idea.
- Strengthen the teaching on vaccines. Chicken producers have to understand that vaccination is not only a good measure among many others but the foremost thing to do. It is also to be stressed that vaccines have to be applied preventively and not after chickens get sick.

Simplify the model or offer more support. The organisation and working of the subgroups has proven difficult and controversial. The many subgroups can also confuse producers and the interactions needed distract them from their core tasks. Hence two alternatives are proposed:

- As a priority it is proposed to simplify the model and focus only on what has proven to be most effective in terms of production: vaccinating, building improved coops, feeding chickens, separating DOCs from hens. All those tasks can be performed individually, except vaccination where a sourcing of the vaccines by a few dedicated members would be welcome. The saving and lending subgroup should be maintained as it works well.
- As an alternative, introduce the "full" model only in a second phase of developing productivity, focusing only then on incubators, marketing, hatching and rearing in subgroups. OR introduce the "full" model straight away BUT with a very strong local support that can offer advice and follow-up to the producers on a regular basis.

- Offer more support. The trainings were deemed to be very good but too short (a one-off three-day course). Some refresher course might be needed. They would be compulsory if the "full" model with subgroups is to be applied. Also more on coaching and follow up is needed.
- **Improve the technique for building coops.** Improved coops are a major factor of success of this project, but they are at the same time a very costly investment for producers. It is therefore necessary to improve their design to make them rain proof to avoid the total loss of this investment by producers. An idea would be to use locally available material in conjunction with an iron roof in order to minimise the costs and maximise the resistance to weather.

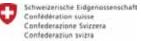




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This document is the sixth of a series aimed at sharing the experience of, and the lessons learned by the Rural Livelihood Development Programme (RLDP). It is a product of a "capitalisation of experience" process, meaning giving value to the experience made, which can also be called "evidence-based learning". While releasing this publication, the objective is to inform relevant development organization and partners about what worked and what did not worked in the frame and context of RLDP interventions. Certainly, at the time of publishing this document, things are already changing in the field or at policy level. But the aim is to keep institutional memory of what was done, as well as to share experience. This document will be followed by others like quality seeds, and service provision. Soft copies can be downloaded from this website: **www.rldc.co.tz**





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