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POULTRY MANAGEMENT IN EAST AFRICA (GUIDELINES FOR REARING CHICKEN)

A well established and managed chicken rearing enterprise can be a profitable undertaking, especially in areas with good market for poultry products. Each farmer has to decide whether the best market is for eggs or chicken meat. Depending on choice the farmer will develop a layers enterprise (chicken reared for eggs) or broilers (for meat). Before starting a chicken project, the following four important things should be considered:

1. Capital
2. Farm
3. Management
4. Marketing

Capital

The capital needed to start off depends largely on the intended size of the enterprise. A chicken rearing enterprise requires substantial initial investments before returns can be realized. Capital needs are as follows:

- (a) Fixed costs will include the following:
1. Chicken house materials and construction labour costs.. The area for each bird should be sufficient. Most published information suggests one square foot per bird, but experienced farmers recommend about 1.5-1.8 square feet.
 2. Water tank. Chicken need a constant supply of clean fresh water. Investing in a large water tank is advisable especially to offset potential shortages during dry weather periods. If the enterprise is supplied from piped water, sufficient storage capacity is also necessary considering that unexpected breakdowns in supply can occur.
 3. Provide water drinkers for chicks (4 drinkers per 100 birds). Bigger drinkers will be needed later when the birds grow bigger. If automatic drinkers are provided 2 units should be provided per 100 birds. Drinkers should be sufficient to avoid overcrowding.
 4. Heater or charcoal burner: Heat is required especially at the stage when chicks are in brooders. Chicks are highly vulnerable to low temperatures and need to be kept warm until they are about 1 month old when they are old enough to cope on their own. In small scale enterprises heating is provided using specially constructed charcoal stoves, with sufficient protection to shield the chicks from hot surfaces. Where electricity is available, heat can be provided

using Infrared heating elements, which also provide light. However, these can be costly to install.

5. In addition to heat, chicks also need light in the brooder. Even if electricity is available it is important to buy kerosene or gas lamps to be used in case electricity supply goes off, even if only temporarily.
6. Feed troughs for chicks should also be provided. Three troughs should be provided per 100 birds. If hanging troughs are provided 2 units should be provided for every 100 birds. The feeding troughs will need to be replaced with bigger ones when the birds enter growers stage.
7. In addition to the chicken house extra space should be constructed as storage room for apparatus and feeds. The storage area is also used for keeping eggs when laying commences. The smaller troughs and drinkers should be kept well for use with the next batch of chicks in future.

(b) Recurrent costs will include

1. *Chicks*: Chicks are normally obtained when they are one day old (after hatching) and should always be purchased from a reputable hatchery.
2. *Heating and lighting expense*, especially at the early stages of when the chicks are young. Heating expenses can vary depending on environment (either cold or warm) where the farm is located or the season of the year. Costs also depend on the type of heating and lighting (whether electrical, charcoal, kerosene or gas).
3. *Poultry Feed*: The type of feed depends on whether the chickens are layers or broilers. Chicks start feeding immediately after hatching and will continue feeding (**without returns!!**) for the next 4 months.
 - a. Layers:
 - i. For layers the first feed is called *chick mash*, and is needed until the chicks are 8-9 weeks old. Chick mash for age 1 day – 8 weeks (Crude Protein content = 22 – 24%).
 - ii. The next feed type is called *growers mash* and is fed until the chicken are 18 weeks old. Growers mash for age 8 weeks – 20 weeks (Crude Protein content = 14%).
 - iii. The chicks commence laying when they are 18-20 weeks old, after which they are continuously fed on *layers mash*. Layers mash for age 21 weeks – end of lay (Crude Protein content = 16 – 20%)
 - b. Broilers: There are 2 types of feed for broiler chicken:
 - i. Chick or broiler starter feed for ages from 1 day – 4 weeks (Crude Protein content = 22 – 24%).
 - ii. Broiler Finisher feed for ages 5 weeks – 7 weeks (when sale starts) (Crude Protein content = 19 – 20%).
4. Chicken are highly vulnerable to *diseases* and require various types of vaccines and drugs to keep them healthy. The vaccines are administered at different stages of growth and thus costs will be spread over time. Consult your veterinarian for the appropriate vaccine schedule for your area.
5. Provision is needed to cater for depreciation of buildings (5 years) and apparatus (3 years). Repair and maintenance costs are also likely to be incurred after each batch of chicken has been cleared and before the next lot comes in.
6. In case the farmer had acquired a loan from a bank to start the enterprise, provision would be necessary to pay off accruing interest.
7. *Labor expenses*: A layers enterprise can be highly demanding in labor requirements, depending on number of birds, and stage of growth of the birds.

Chicken need almost continuous monitoring, feeding, watering and collection of eggs. For a broilers enterprise continuous feeding, watering, weighing, slaughtering, marketing and delivery of products requires labor.

8. Other unexpected expenditures might arise, thus contingency provision is needed.

Farm and site selection

(a) Choosing of Area

1. The area selected for building the chicken house should have sufficient area/space. Land on higher ground should be preferred as it allows better air ventilation.
2. The site should not be close to human activities, but it should have good road connection for bringing in feeds and transporting eggs to markets.
3. The area should have a good and reliable supply of electricity and clean water.
4. It is very important to select an area that reduces vulnerability of chicken to potential predators, e.g. foxes, dogs, squirrels, cats.
5. Different kinds of poultry should not be mixed with chicken as this increases chances of diseases spreading, e.g. ducks, turkey or other local chicken. The location should also be further from housing estates or unrestricted human access.

(b) Housing Design and System

1. The house should be designed to ensure each chicken is allocated sufficient space (experienced farmers suggest 1.5 – 1.8 sq. ft). A house that is too small will lead to overcrowding and death of chicken, or reduced productivity. A house that is too big is also unnecessary as it wastes space and money.
2. The chicken house should have good air ventilation to dry up the moisture and minimize accumulation of ammonia gas.
3. Location of the house should be oriented in the East – West direction, in order to avoid direct hot sun.

(c) Housing System

The housing system can be divided into 2:

1. Raised floor system using cages – also known as Battery Cage system. The chickens are usually in individual cages where they only leave in case of illness or when production period is over. Advantage of this system is that a farmer is able to monitor the health and production of each individual chicken.
2. Deep litter system- is where chicken are raised in a house with the floor covered with wood shavings. They share feeders, drinkers and laying boxes.

CHICK BROODER

This is where the young day old chicks should be put to start growing.

- A brooder can be one corner of the chicken house where it can be expanded to give more space as the chicks grow. A brooder can also be in a separate room from where the chicks are transferred once they need no more heating.

- A brooder should be warmed to between 38-40°C using charcoal burners or infrared bulbs. The special charcoal burners for brooders are locally fabricated and can be specified as needed. The brooder should be well ventilated to allow carbon monoxide from the charcoal burner to leave the brooder and fresh air to enter into the brooder.
- A brooder should be well disinfected before the chicks arrive and disinfectant leg dips should be put outside the brooder.

On arrival the chicks should be provided with a mixture of vitamins and glucose dissolved in warm water. This mixture will revitalize them in case they are too tired to feed. To stimulate them to feed chick feed should be sprinkled on the surface of old newspapers (they should be disinfected). After 3 days the chicks should be introduced to take feed from the feeders.

Management

The success or failure of the project will depend on the level of competence and attention paid to management. A competent farmer will look into all aspects of management in order to maximize income with minimum expenditure. The following management aspects should be seriously considered:

(a) Feed

Feed is one of the major factors that should be seriously considered as it amounts to no less than 2/3 of the total cost of production. All wastage during feeding time and in storage should be prevented. It is recommended to fill the feeders halfway and then add later in the day when the amount of feed has reduced in the troughs. Avoid filling feeder to the full because chicken will scatter and waste a lot, and when the bottom feed gets stale they refuse to feed on it. Chicken will also consume fresh feed better.

(b) Prevention and Control of Diseases

There are many types of chicken diseases and some come from management problems e.g coccidiosis. This disease comes mainly from dirty drinkers, contaminated feed and wetness in the chicken house. Drinkers should be cleaned every day to avoid slime accumulating on them. The hens easily perch on some types of feeders, leading to contamination of feeds with chicken faeces. This problem can be avoided by using hanging feeders, to better prevent coccidiosis. Wetness in the chicken house can also increase especially around the drinkers, since chicken naturally splash a lot of water as they drink. Coccidiosis is further propagated when chicken scratch and peck on the wet patches. Other common diseases which should be controlled from early stages are:

- Mareks Disease (vaccine is usually given in the hatchery).
- Gumboro
- Infectious Bronchitis
- Newcastle
- Fowl pox
- Fowl typhoid

Farmers should consult the veterinarian for the appropriate vaccination program for your region.

(c) Access to the chicken house

Farmers should prevent the introduction of disease carrying agents, e.g. birds, roaming chickens and other livestock from entering the chicken house area. Visitors or outsiders should also not have unnecessary and uncontrolled access to the chicken house. If disease outbreaks are reported in an area all visitors should be completely banned from the chicken house area.

Marketing

Marketing of the chicken and chicken products should be planned before maturity of the birds. Success of the poultry project will largely depend on a good market and the prices offered. The farmers should consider four important factors:

(a) Location/place: A chicken enterprise should ideally be located near to the marketing place and with little or no communication problem e.g. good roads and good telecommunication.

(b) Products: The products can be sold either as live chicken, processed and frozen, cuts or eggs.

(c) Price: The farmer should be well informed about the demand of poultry products and change in prices, which depend a lot on the location, season and supply.

(d) Advertisement: One can choose to advertise their products in the market place as is usually done by the big companies.

Record Keeping

It is important to keep records of every activity undertaken and the associated costs. The types of records that can be made are: -

1. Number of chicken,
2. Mortality (deaths),
3. Feed records,
4. Veterinarian visits Plus vitamin supplements, deworming, medicines, vaccines,
5. Sales records,
6. Labor, water, security and electricity costs,

Records are useful for the following purposes:

- 1) To correct the weakness of management.
- 2) To make sure the breeds chosen are good.
- 3) To make sure the feeds are good.
- 4) To minimize the mortality rate.
- 5) To ensure suitable medication is used.
- 6) Financial Records are kept so as
 - i. To know the profit/loss level
 - ii. To minimize wastage cost
 - iii. As a guide in preparing paper work for expanding project in future.

This information is available packaged as a brochure with colour images. Contact us for more training materials on poultry management.

Any comments or questions on this article?

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