Low-Cost Cage and Free-Range Containment

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Summary

Housing poultry protects birds from predators and climate extremes in ways that minimize stress and enhance productive gain. In addition, suitable housing contributes to ease of collecting wastes, biosecurity, sanitation, and feed management. Commercial poultry production requires sophisticated housing types and automated equipment. However, most smallholder farmers cannot afford the cost of building elaborate poultry houses. In addition, consumer interest is growing with regard to organically produced foods and free-range birds receiving access to green vegetation and outdoor, rather than caged conditions. As a result, there is rapid growth in demand for construction and deployment of movable pens. This mobility also prevents the accumulation of pests and disease, reduces feed costs, and naturally spreads manure across fields.

Technical Description

Moveable, low-cost poultry sheds accommodate free-range chickens. These houses provide night shelter and are usually equipped with nests and perches. During the day, birds are permitted access to surrounding fields where they scavenge and feed. The birds are not confined to battery cages or crowed pens like in conventional industrial scale production systems. Improved dual purpose chicken breeds such as Kuroiler and Sasso are best raised in low-cost, free-range conditions. Besides shelter, the chickens receive supplementary feeds in form of formulated ration, water, and necessary vaccinations against virus diseases. In contrast to intensively reared chickens, free-run chickens are usually not administered antibiotics. Access to green leaves, insects and worms assures a strong immune system and healthy chickens. Organic chicken production is more feasible under free-range conditions.

Uses

Low-cost, movable containment and free-run poultry operations chickens is practiced at a commercial scale in many countries, including Kenya, Nigeria, Cote D’Ivoire, Ethiopia and Ghana. This production is well suited to peri-urban areas and integrated into cropping by moving chickens around within blocks of open land.

Composition

The materials required for constructing a movable, free-run chicken pen includes wood, roofing sheets and flexible galvanized chicken mesh of 0.3 cm to 1.0 cm dimensions.

Chickens require about 0.2 m2 of floor each or 20 m2 for 100 birds. For layers, an additional 0.03 m2 nest box is required, positioned in ways that allows easy access to eggs. In general, houses should not be longer than 5m to 8m or they become too difficult to move. Larger houses can be equipped with wheels or rollers for ease of moving it around.

Means of application

Poultry houses should have good ventilation by providing about 30 cm of mesh on top of two opposite sides. Ventilation provides fresh air and regulates house temperature. It facilitates expelling of CO2, ammonia, moisture, dust, and odor. It should have a disinfectant dipping vat at the entrance. The house should be cleaned and disinfected between production batches and after removal of accumulated manure. Other basic requirements for these poultry houses include good drainage, placement on level surfaces and secured entry against predators, wild birds, and rodents. The house should be aligned in an east-west orientation to minimize prolonged sunshine inside the house. The floor of the house can be raised about 0.2 m from the ground and finished with mesh to permit dropping to fall through to the ground.

Agroecologies	All Agroecologies.
Regions	Africa South of Sahara.
Developed in Countries	Zimbabwe, Zambia, Uganda, Tanzania, South Sudan, Somalia, Sierra Leone, Senegal, Rwanda, Nigeria, Niger, Mozambique, Malawi, Madagascar, Kenya, Ivory Coast, Guinea, Ghana, Gabon, Ethiopia, Democratic Republic of the Congo, Central African Republic, Burundi, Botswana, Benin.
Available in	Zimbabwe, Zambia, Uganda, Tanzania, South Sudan, Somalia, Sierra Leone, Senegal, Rwanda, Nigeria, Niger, Mozambique, Malawi, Madagascar, Kenya, Ivory Coast, Guinea, Ghana, Gabon, Ethiopia, Democratic Republic of the Congo, Central African Republic, Burundi, Botswana, Benin.
Solution Forms	Equipment, Management.
Solution Applications	Livestock Production.
Agricultural Commodities	Poultry.

Target Beneficiaries	Agro-dealers, Commercial farmers, Small-scale farmers.

Commercialization

Commercialization Category

Commercially available

Startup Requirements

Start-up begins with access to suitable land for free-range production. This land should be flat or gently sloped and contain edible green vegetation, but not crops that can be damaged by foraging birds. Prospective poultry farmers should conduct market assessment to determine that there is demand free-range chickens.

Production Costs

Once housing is secured, costs depend on whether the land is bought or leased, the cost of chicks, supplemental feeds, veterinary care and marketing. An estimated US $350 is sufficient to raise 150 to 200 chickens under a free-run system.

Customer Segmentation

There is strong market demand for free-range chickens and willingness of consumers to pay a premium for them. The dividing line between traditional free-range chickens and free-run improved chickens can be thin and will depend mainly on the breed of chicken used.

Potential Profitability

Free-run meat chickens attain a mature weight of 2.0 to 2.5 kg in 3 to 4 months compared with commercial broilers that reach the same weight in only six weeks. Free-range birds may also be raised for eggs, providing about 180-200 eggs per year. The eggs from free-run chickens have bright yellow yokes due to the consumption of carotenoids in green leaves. The meat and egg from free-run chickens are considered tastier but usually cost more than commercial broilers. Birds raised for US $3 each can typically be sold for US $4 to $5 each, resulting in a return on investment of 50% on investment. This return does not consider enhancement of land quality within the free-range area.

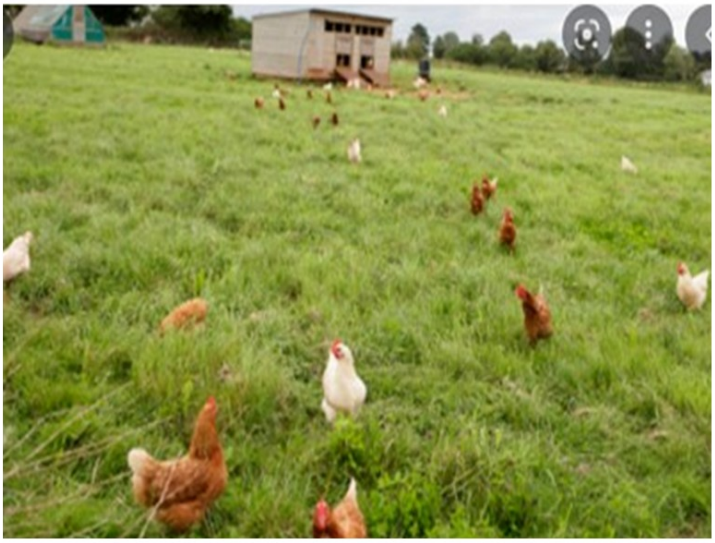
Licensing Requirements

There are no licensing requirements for operating a low-containment free-run chicken. Nor are there usually authentication mechanisms for claims of free-range and organic production.

Innovation as Public Good

The solution is regional public good disseminated by the International Livestock Research Institute.

Solution Images



Free-range chickens in a pasture



A moveable poultry house for free-range production with sheltered forage area

Institutions



Accompanying Solutions

Biosecurity for Disease Prevention