Review on Advantages and Disadvantages of Scavenging Rural Poultry Production Systems

Nebi Husein

Nebi Husein
Adami Tulu Agricultural Research Center
Oromia Agricultural Research Institute
Ziway, Ethiopia

Abstract: The paper was designed to review on the advantages and disadvantages of scavenging rural poultry production systems. Rural poultry production is an important part of the farming system and needs relatively few additional resources and inputs. In scavenging poultry production, chickens are free to walk everywhere on the farm grounds and search for their own feed from locally available feed resource and less compete with other feeds. Eggs are laid outside in simple nests and are mainly used to keep the number of chickens at a certain level. In many cases, up to 75% of the eggs have to be hatched because the mortality rate among baby chicks is high. The advantage of this system is that less labor is needed and waste food can be used efficiently. Very low costs can offset low production levels so that keeping chickens around the house can be profitable if certain improvements are improved. It is most suitable if you have a lot of space, preferably covered with grass. At night, the chickens can be kept in any kind of shelter which should be as roomy, airy and clean as possible. The disadvantages of these production systems are easily transmission of disease between the flocks within the neighboring village, loses of eggs, high mortality rate, less productive, young and also older chickens are affected by different predators and weather condition, stolen by thieves and their eggs are eaten by snake, cat and dogs.

Keywords: Poultry, Rural and Scavenging.

1. Introduction
In Ethiopia chickens are the most widespread and almost every rural family owns chickens, which provide a valuable source of family protein and income (Tadelle, et al., 2003). The total chicken population in the country is estimated to be 56.5 million with native chicken representing 96.9%, hybrid chicken 0.54% and exotic breeds 2.56% (CSA, 2014). The most dominant chicken types reared in Ethiopia
are local ecotypes, which show a large variation in body position, plumage color, comb type and productivity (Halima, 2007). However, the economic contribution of the sector is not still proportional to the huge chicken numbers, attributed to the presence of many productions, reproduction and infrastructural constraints (Aberra, 2000; Halima, 2007).

The chicken production system in Ethiopia can be characterized by not market oriented, low input, scavenging and traditional management system consisting of local breeds (Alemu and Tadelle, 1997). The indigenous birds are small in body size and low producers of meat and egg (EARO, 2000). For example, the productivity of scavenging hens is 40-60 small-sized eggs/bird/year (Tadelle 1996; Alemu and Tadelle, 1997). The total chicken egg and meat production in Ethiopia is estimated to be about 78,000 and 72,300 metric tons, respectively (Tadelle, 1996). The most dominant (75%) chicken production system in the country is free range /scavenging type/ using a majority (95.8%) of local chicken ecotypes, with only seasonal feed supplementation and scavenging only. Therefore the paper was designed to review the advantages and disadvantages of scavenging production systems.

2. Poultry production systems

   Chicken can be reared in different management and production systems. Based on chicken breed type, input and output level, the purpose of production, growth rate and number of chickens reared. In Ethiopia, there are three types of chicken production systems (ANRS BoARD, 2006). Those are scavenging production system, semi-intensive production system and intensive production system.

3. Scavenging poultry production

   This production system is practiced in most rural areas of the country and objectives of production are for household consumption and as a source of additional income for the household. It covers 95-98% of the chicken production system of the country and it is not profitable since it is not market oriented. It contains smaller flock sizes (5-20 chickens per household) which are indigenous breed types, mostly depend on locally available feed resource with low health services and with poor management practices. The chicken does not have their own constructed chicken house rather maintained in the main house with the family. Chicken brooding and rearing is only the care they obtain from their mother/hen. Because of this there is a high mortality rate of chicken and long broody periods and there is a risk of exposure for different chicken diseases and predators. The major feed sources for chicken are free scavenging worms, legumes, and cereals and sometimes there is supplemental. The amount of they get is small and do not fulfill their nutrient requirement. Because of this their productivity is low. Indigenous poultry breed in this system of production does not produce more than 60 eggs per hen per year (Tadelle, 1996; Alemu and Tadelle, 1997).

Figure 1. Scavenging poultry production systems
4. Advantages of scavenging poultry production systems

The advantages of scavenging chicken production system include, the chickens are healthy since they exercise in the open air freely, there is minimal infection with parasites if enough space is available and well cleaned environments which causes disease to poultry, there is little or no labor input for management purpose, waste food can be used efficiently, chickens get enough sun light, they need low initial capital investment for production, their house and nests are constructed from locally available materials (uses less expensive equipment’s for production), improve poultry welfare, Under this production systems chickens obtain feed from the pasture (young growing vegetation, this results in eggs with a deep yellow color and feed from insects and worms which are source of protein) and in other hand they control insects or worm from the environment, improve land fertility (improve pasture quality and increase crop production by improving soil fertility) and improve the general welfare of the birds (if appropriate managements is applied). Profitable if certain improvements are made (N.Van Eekeren et al., 2006). Larger chickens will even catch and eat small rodents and lizards.

![Figure 2. Advantages of scavenging poultry production systems](image)

5. Disadvantages of scavenging poultry production systems

The disadvantages of scavenging chicken production system include, it is difficult to control and manage the chicken especially the young chicks are easily exposed for predators and un favorable weather conditions, the chickens eat sown seed when looking for feed, they do not obtain sufficient supplement feed, require more land, loss of chicken due to thieves, large percentage of the eggs can be lost as the laying hens are not accustomed to laying nests, high diseases transmission and occurrence of high death, chickens are less productive. Total output of scavenging birds is low, not only because of low egg production, but also due to high chick mortality as half of the eggs are hatched to replace birds that have died, and the brooding time of the mother bird is long in order to compensate for its unsuccessful Brooding (Tadelle, 1996). Chick mortality represents a major loss in scavenging village chicken production systems (Table 1), and reports from different countries show that 50-80% of chicks die in the first 6 to 8 weeks of ages.

![Figure 3. Disadvantages of scavenging poultry production systems](image)
Table 1. Reported chick mortality in scavenging production systems in different African and Asian countries in the first 6 to 8 weeks of ages

<table>
<thead>
<tr>
<th>Country</th>
<th>% Mortality rate</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sri Lanka</td>
<td>65</td>
<td>Gunaratne et al. (1992)</td>
</tr>
<tr>
<td></td>
<td>46</td>
<td>Roberts (1994)</td>
</tr>
<tr>
<td>Indonesia</td>
<td>79</td>
<td>Kingston and Cresswell (1982)</td>
</tr>
<tr>
<td>Northern Ghana</td>
<td>80</td>
<td>Veluw (1987)</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>61</td>
<td>Tadelle and Ogle (1996)</td>
</tr>
<tr>
<td>Cote d'Ivoire</td>
<td>50</td>
<td>Diambra (1990)</td>
</tr>
</tbody>
</table>

6. Recommendation

a. Chicken should be reared in and around the house rather far from the house since it helps to protect the chicken from predators and also laying eggs at hiding surround.
b. Poultry house should be constructed as other livestock production in separated from household and other livestock.
c. Chickens should be separated from the adult chickens since the chicks are easily exposed to diseases and the disease can be easily transmitted to chicks
d. Chicken should be supplied with clean water and balanced ration to make the chicken strong, healthy and to increase productivity with low input than other production systems
e. The new introduced chicken must be separated and quarantine at least for one month
f. The unhealthy or sick bird must be isolated and called for the veterinarian or health assistant for disease identification and further advice.
g. Dead chicken should be burned it or bury it, germs are not left on the ground to be passed on to the other chickens

7. Reference


