

The role of family poultry production systems in developing countries

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ABSTRACT: Poultry plays a key role in many households across the globe. Family poultry makes a significant contribution to poverty alleviation, food security, HIV/AIDS mitigation, empowerment of women and wildlife conservation in many countries. Poultry can include a wide range of birds from indigenous and commercial breeds of chickens to muscovy ducks, mallard ducks, pigeons, guinea fowl, geese, quail and turkeys. Chickens are the most frequently commercialized of all these birds. In most developing countries, indigenous poultry genotypes constitute between 80 and 99% of the poultry populations that are kept in villages. The birds largely subsist on scavenging in gardens, village alleys and surroundings of the farms by feeding on crop residues, insects, worms and green forage. While for the poor members of society this system provides a subsidiary income, the present dimensions of traditional backyard poultry production have changed drastically and crossed the boundaries of the economically weaker sectors.

Keywords: Role, Family poultry production systems, Developing countries

Introduction

The United Nations has launched the 2014 International Year of Family Farming (IYFF) to stress the vast potential family farmers have to eradicate hunger and preserve natural resources. The 2014 IYFF aims to raise the profile of family farming and smallholder farming by focusing world attention on its significant role in eradicating hunger and poverty, providing food security and nutrition, improving livelihoods, managing natural resources, protecting the environment, and achieving sustainable development, in particular in rural areas. Family farming includes all family-based agricultural activities, and it is linked to several areas of rural development. It is a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production which is managed and operated by a family and predominantly reliant on family labour, including both women's and men's. Family farming is the predominant form of agriculture in the food production sector in both devel-

oping and developed countries (FAO, 2014a). Family poultry is an integral component of the livelihoods of poor rural households, and is likely to continue playing this role for the foreseeable future. It makes a substantial contribution to food security and poverty alleviation in many countries around the world and thus represents a major contribution towards achieving Millennium Development Goal (MDG) (halve the number of poor people in the world by 2015). It also contributes to achieving the MDGs with respect to gender equity and women's empowerment and promoting the well-being of rural populations (FAO, 2014b). The role of family poultry production systems in developing countries are described in the following sections.

Defining family poultry production systems

The term "Family poultry" used to describe the full variety of small-scale poultry production systems that are found in rural, urban and peri-urban areas of developing countries. Rather than

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defining the production systems *per se*, the term is used to describe poultry production that is practised by individual families as a means of obtaining food security, income and gainful employment (FAO, 2014b). Being called ‘Family poultry’, ‘Small-holder poultry’, ‘Scavenging poultry’, or “Village poultry” the different systems of poultry rearing with various levels of intensification are now adopted by poor, marginal as well as richer mem-

bers of the society with intensification according to their economical status and requirements (INFPD/FAO/IFAD, 2011). There are four broad well recognized family poultry production systems as identified from INFPD/FAO/IFAD (2011) and FAO (2014b) are: (1) Free-range extensive system, (2) Backyard extensive system, (3) Semi-scavenging system, and (4) Small-scale intensive system (Tables 1 and 2).

Table 1 The four broad well recognized family poultry production systems (after INFPD/FAO/IFAD, 2011;FAO, 2014b).

Production systems	General description
Free-range extensive system	The birds are not confined and can move over a wide area for scavenging. Shelters may or may not be used. The birds usually roost in trees and nest in the bush. It is nowadays getting less common.
Backyard extensive system	Poultry are housed at night and are allowed to scavenge during the day. Farmers usually provide grains, grain by-products and kitchen waste etc. in the morning and/or evening to supplement scavenging. This is the most widely followed by farmers of Asia, Africa and Latin America.
Semi-scavenging system	Birds are confined to a certain area with access to shelter. They are allowed a part of the day, for instance, 6 – 8 hours for scavenging. Supplementary feeding is a must which is usually carried out with homegrown grains, grains by-products, kitchen waste etc. It has become an issue for debate since achieving biosecurity of the birds reared under the system is difficult and they may contribute to the spread of diseases like Avian Influenza (AI).
Small-scale intensive system	Birds are totally kept confined under this system. Home-made feeds or commercial feeds are supplied in the poultry house. Small scale commercial layers and broilers are produced within this system. In some countries, productive native breeds or cross-breeds are reared. This system is important for self-employment, maintenance of livelihood and to ensure food and nutrition security. The number of birds to be raised (flock size) in this system varies depending on perception and priorities, financial capacity and facilities of the poultry producers.

In general, for a husbandry system to be considered as less intensive or ‘alternative system’, it should be: (1) less confining – birds kept in cages should have more room to get up and lie down fully; (2) less crowded – birds in pens should be

kept in smaller groups and with more floor area per bird; and (3) better able to meet the bird’s food and perching requirements (Bailey *et al.*, 2010). In other words, family poultry can also be considered as less intensive or ‘alternative system’ (Figure 1).

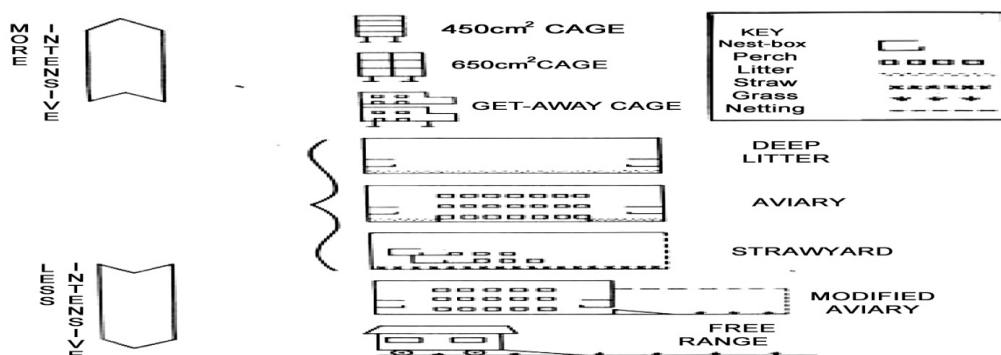


Figure 1 Housing systems for 'alternative systems' of poultry husbandry (from Bailey *et al.*, 2010: 336).

The role of family poultry production systems in developing countries

Poultry plays a key role in many households across the globe. As reported by FAO (2014b) worldwide, this poultry sector consists of chickens (90.55%), ducks (5.53%), geese and guinea fowl (1.67%), turkeys (2.09%), and other poultry (0.15%). Family poultry makes a significant contribution to poverty alleviation, food security, HIV/AIDS mitigation, empowerment of women and wildlife conservation in many countries. They makes up to 80% of poultry stocks in low-income food-deficit countries of developing countries where owners raise poultry in small numbers ranging from single birds up to a few hundred. Poultry can include a wide range of birds from indigenous and commercial breeds of chickens to muscovy ducks, mallard ducks, pigeons, guinea fowl, geese, quail and turkeys. Chickens are the most frequently commercialized of all these birds.

Without doubt, chickens are found everywhere around the world; every culture knows them and how to husband them. They are the world's major source of eggs and are a meat source that supports a food industry in virtually every country. They are extremely useful on a worldwide basis because

they offer great potential for improving the nutritional levels of all the world's peoples. They have been utilized for so many centuries that in most societies their use is ingrained (Bailey *et al.*, 2010). In most developing countries, indigenous poultry genotypes constitute between 80 and 99% of the poultry populations that are kept in villages. The birds largely subsist on scavenging in gardens, village alleys and surroundings of the farms by feeding on crop residues, insects, worms and green forage. While for the poor members of society this system provides a subsidiary income, the present dimensions of traditional backyard poultry production have changed drastically and crossed the boundaries of the economically weaker sectors (Table 2; FAO, 2014b). In many Asian countries, for example, are beset with many problems including unemployment and malnutrition. The majority of these countries boost their meat and egg production to meet an increasing "protein gap" in human food as their population growth rates continue to increase. The food and agriculture production of these countries however can not meet the increasing demand for these nutritious foods because their economy continues to be strangled by various economic and political crises. Their import

bill for food grains is currently increasing, leading to heavy loans and depleting foreign exchange reserves. Many such countries in Asia are carrying huge foreign debts of billions of US dollars to be

settled by future generations. Fortunately, the poultry sector has been of great help in easing the food situation amongst many poor nations in developing countries (Bailey *et al.*, 2010).

Table 2 Characteristics of the four family poultry production systems (from FAO, 2014b).

Criteria	Small intensive scavenging	Extensive scavenging	Semi-intensive	Small-scale intensive
Production/farming system	Mixed, poultry and crops, often landless	Mixed livestock and crops	Usually poultry only	Poultry only
Other livestock raised	Rarely	Usually	Sometimes	No
Flock size (adult birds)	1 – 5	5 – 50	50 – 200	>200 broilers >100 layers
Poultry breeds	Local	Local or crossbred	Commercial or crossbred or local	Commercial
Source of new chicks	Natural incubation	Natural incubation	Commercial DOC or natural incubation	Commercial DOC or pullets
Feed source	Scavenging; almost no supplementation	Scavenging; occasionally supplementation	Limited scavenging; regular supplementation	Commercial balanced ration
Poultry housing	Seldom; usually made from local materials or kept in the house	Sometimes; usually made from local materials	Yes; conventional materials; houses of variable quality	Yes; conventional materials; good quality houses
Access to veterinary services and veterinary pharmaceuticals	Rarely	Sometimes	Yes	Yes
Mortality	Very high >70%	Very high >70%	Medium to high 20% to >50%	Low to medium <20%
Access to reliable electricity supply	No	No	Yes	Yes
Existence of conventional cold chain	No	Rarely	Yes	Yes
Access to urban markets	Rarely	Rarely or indirect	Yes	Yes
Products	Live birds, meat	Live birds, meat, eggs	Live birds, meat, eggs	Live birds, meat, eggs
Time devoted each day to poultry management	< 30 minutes	< 1 hour	>1 hour	>1 hour

Conclusions

Family poultry makes a significant contribution to poverty alleviation, food security, HIV/AIDS mitigation, empowerment of women and wildlife conservation in many countries. They makes up to 80% of poultry stocks in low-income food-deficit countries of developing countries where owners raise poultry in small numbers ranging from single birds up to a few hundred.

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