



## The Role of Rural Women in improving households Nutritional Status and Food Security through Traditional Production System in Sudan

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### ABSTRACT

This study was conducted to investigate the role of rural women in improving household nutritional status and food security, through raising of family poultry; case study of Eastern Nile-Sudan. The main concept of this study is that family poultry form the basis for increasing food production and income in rural communities. The questionnaire was considered to be the main measuring instrument for data collection, two hundred and fifty two households were selected through systematic sampling and interviewed (From six villages in the area under study). Face to face method was, used, where an immediate feed- back was received. The obtained data were subjected to analysis, through the statistical Package for Social Science (SPSS). The study revealed that although family poultry is carried out with the minimal agricultural, veterinary, extension, training and marketing support. But, still it positively contributes in the improvement of the household nutritional status, income and food security. The study concluded that, improvement in housing, feeding, and diseases control, coupled by institutional support in the dissemination of information, capacity building training programs in poultry husbandry practices, veterinary, extension, and financial services, will ultimately enhance better production. In addition formation of women group can facilitate access to inputs and marketing services.

**KEY WORDS:** Rural women, household, nutritional status, traditional production system.

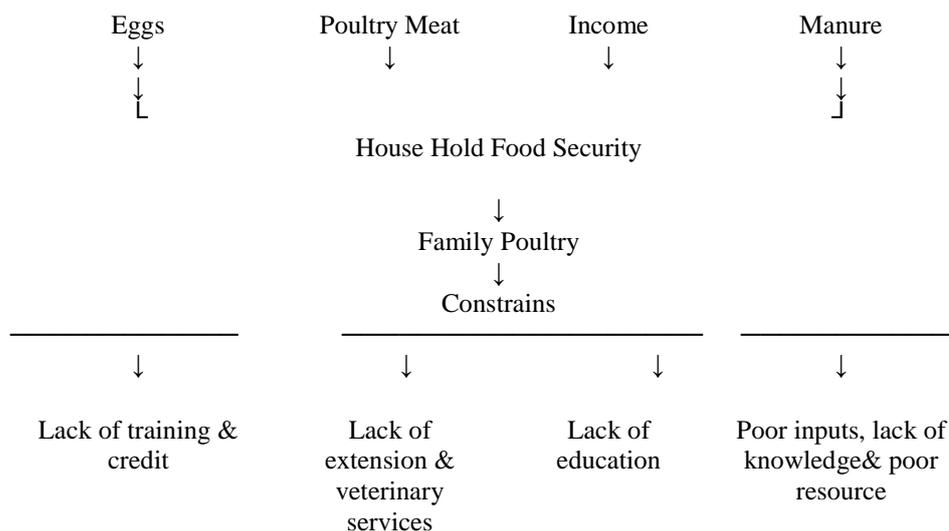
### INTRODUCTION

Poultry provides an immense supply of food for the world population. All over the globe poultry meat and eggs are preferred to other kind of animal food products (Mahapatra, 1990). Poultry rearing in rural areas can make an important contribution to improved household food security by improving food consumption. Furthermore, this may provide additional income to families from the sale of the surplus produce, utilizing the available family labor, space, and food. Aiming at better quality of life (FAO, 1996). Sudan like other developing countries faces a significant shortage in animal protein that lies below the recommended average daily intake, which was estimated to be about 0.6g/kg body weight (FAO, 1997).

Family poultry production plays a vital role in minimizing the gap between consumption and production of animal protein sources. It also acts as an income generating activity in small-scale production providing eggs and poultry meat for human consumption (Michael et al., 1992). Family poultry is truly the invisible animal, as it is hardly counted in wealth ranking as cattle, sheep and goat. Yet, they are important providers of eggs and meat (Gueye, 2001).

Women play vital role in sustaining food security at the household level, as well as contributing to cash crop production. Family poultry, long recognized as women activity. The International Labor Organization estimated that 78 percent of women in Africa are active in agriculture component. Although it was noticed that their role is being neglected and undermined as such, emphasis has to be put on them through the provision of inputs like credit, technology, extension and education (World Bank, 1990). Subsistence economy is the dominant mode of production in many parts of Sudan, rural women were highly contributed to this economic development (Dameen, 2005).

The conceptual framework of this paper is based on the fact that, family poultry keeping has substantial contribution to household food security throughout rural Sudan. The activity helps to diversify income as well as to provide high quality food, energy, fertilizer and renewable assets in most of rural households. This activity is however, was constrained by poor access to poor inputs, market channels, weak institutions and lack of skills, knowledge and appropriate technologies. The ultimate result is that both production and productivity remain below potential, and losses and wastage can be high. Family poultry is limited by the high cost of inputs and poor husbandry practice. This study is an attempt to investigate the role of women in sustaining house food security through rearing of poultry (Fig. 1).



**Figure 1.** The conceptual framework

## MATERIAL AND METHODS

This study was conducted in the Eastern Nile Province- Sudan. Six villages were selected. The selection was based on the information that obtained from the Agricultural Extension Department-Khartoum North. This information is reflecting that, most of the families in these areas were involved in poultry rearing at the household level. Two hundred and forty six households were interviewed (forty two households from each village). Face-to-face method was used, where an immediate feed-back was received from the respondents. In addition observation was used as a complementary method for data collection. It is superior to other methods of data collection for describing and reflecting the actual behavior in certain situation. The data were analyzed through the Statistical Package for Social Sciences (SPSS).

## RESULTS AND DISCUSSION

### Household Size

The results show that most of the households under study, the number of the family members' range from 6-10, followed by households that have 1-5 members. These findings indicated that, households in the six villages are considered relatively big families. This situation necessitates more need for food of high quality and quantity. Family poultry can help to meet these needs to some extent (Malik, 2006).

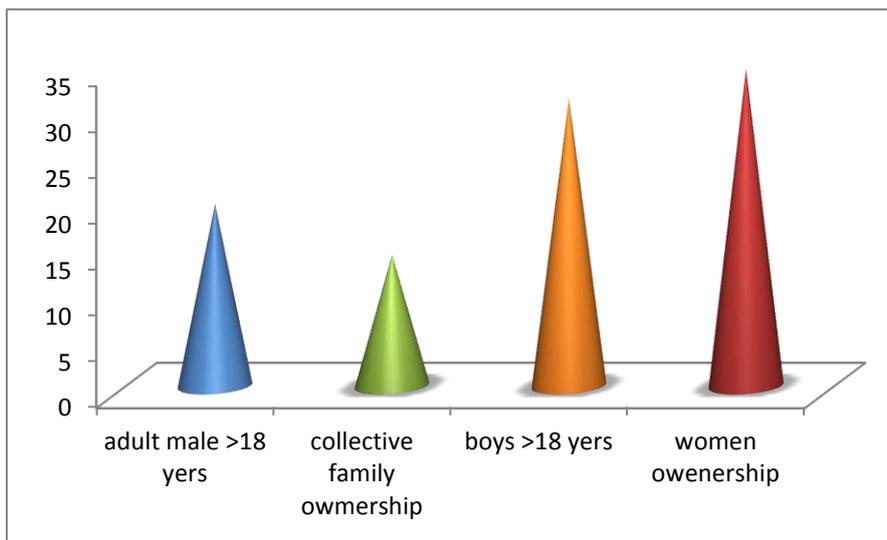
### Flock Ownership

Regarding flock ownership about 87% in the households under study, chicken were owned by females, while boys below 18 years ranked second. A small proportion of the ownership was by the family as a unit. Women were found to possess the higher percentage. This was attributed to the fact that, it is easier to operate a productive enterprise with small no of chickens, since the initial cost is lower (Miller, 2001). The main type of chicken raised was found to be layers, followed by dual purpose type, where layers slaughtered or sold at the end of the production cycle (Fig. 2).

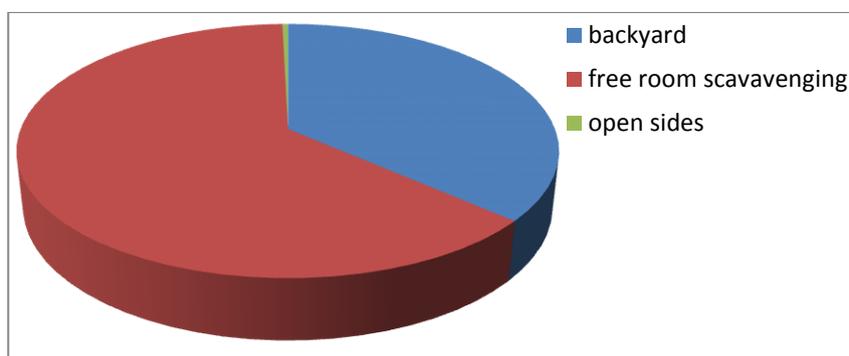
### Housing, Rearing System and Management

Poultry housing is an important input that accounts for a major component of the initial capital investment. But housing in rural poultry is still at rudimentary stage. The production system encountered in the households of the area under study was based on scavenging by indigenous chicken, which represents about 62.8% (Fig. 3). The results of the present study were in accordance with the surveys conducted in some African countries, where no housing or shelter is provided. Housing practiced for rural poultry in Africa reported to be influenced by the prevailing farming system (Huchzermeyer, 1983; Huit, Traore and Willson, 1986; Atunbi and Sonaiya, 1994, Yongolo, 1996). Under the backyard system the poultry house mostly constructed mainly from mud, and in few cases it was built up from mud bricks and some local materials like zinc. The windows were made from wire-netting. They are relatively small. The floor was covered with sand. This finding came in consistency with that reported from some African countries, where houses were provided to village chicken. The house is made from local available materials, such as wood, mud bricks, sugarcane stems, bamboo and cereal stoves (Atunbi and Sonaiya, 1994, Yongolo, 1994). This provides suitable and favorable media for the micro-organisms growth and occurrence. The poultry house is usually constructed at the back yard of the family house attached to the outer wall at the corner, in order to reduce the cost of the construction materials. But in fact

this location enhances the entrance of some parasites inside the house like ticks and mites. In addition to poor ventilation (Malik, 2006), the drinkers and feeders are made from local materials like plastic containers and dishes that are not so far used in the kitchen. Furthermore, some people constructed fixed cemented dishes on the ground especially in case of free system. Regarding managerial aspects all the entire operation, from feeding and management to marketing, was handled by women. Feeding and management of the birds was entirely looked after by women in more than 85% cases (Ibid).



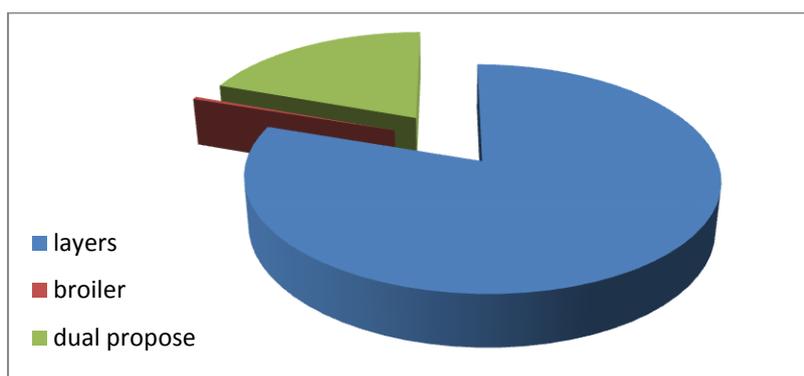
**Figure 2.** Flock ownership



**Figure 3.** Systems of poultry rearing

### Types of poultry raised

In addition to chicken, other types of poultry were raised, mainly; pigeon, turkey, ducks, geese, guinea fowl, rabbit, and some ornamental birds. The socio-cultural factors contribute to the wide response of poultry keepers. Even under identical economic conditions, many socio-cultural factors affect family poultry production. Some rural people ban ducks, as they presumed dirty and destructive. Other rural households regard pigeon as a sign of peace and concord. In such household, the presence of pigeon is regarded as a good omen, and their departures would presage disaster. On contrast other households regarded pigeon as an evil omen, especially for cattle owners. They think that the presence of pigeon negatively affect the cattle number. Few people think that pigeon can enhance the hygienic condition of the cattle, through feeding on the external parasites (biological control) (Malik, 2006) (Fig. 4).



**Figure 4.** Types of chickens

### The Feed Resources

Feed is the most important item in modern commercial (intensive) poultry production, in terms of its contribution to the cost of production. Feed cost accounts for about 60-90% of the production cost, depending on the availability of raw materials. Thus the cost can be considered zero or neglected in scavenging chicken production. However, the importance of feed in scavenging chicken production cannot be underestimated due to its direct and indirect effect on many aspects of the production. In the area under study the main feed ingredients found were mainly; kitchen waste (vegetables, *kisra* (bread of fermented sorghum) and bread), insects and grain sorghum. Almost all households under study gave feed supplement to their chicken. Self-formulated ration was the dominant. It is composed of wheat bran and crushed grain sorghum. Sometimes grain sorghum alone was provided to the flock. Moreover, agricultural products like alfalfa were provided in some cases (Malik, 2006).

### Economic Function of family Poultry

The objectives and outputs of poultry keeping are multiple and their ranking varies from area to another, and community to community and between men and women. The results reflect that the households ranked the function of the family poultry in order of importance as follows: It was reported that the main function of the family poultry from the households perspective is provision of meat and eggs for home consumption and subsistence, then for social functions, and lastly as a source of income. It was found that family poultry acts as a source of high quality food for the households' members, especially for young children and elder people. The consumption of the chicken products depends on the food habit within the different tribes inhabiting the six villages under study. Most of the tribes inhabiting the areas of the study depend on eggs as a highly nutritive and easily digestible food. Generally they are not used to consume chicken meat, with the exception of women post-delivery, those who got fractures, and sick people. On contrast the Tama tribe considers meat as the main source for animal protein. But they are not used to consume eggs. The philosophy behind that is eggs should be incubated for hatching to give new-off springs. Generally speaking it is clear that chicken products are contributing in improving the nutritional status of rural households (Fig. 5). It was reported earlier, women play important roles as producers of food, income earners, and caretakers of household food and nutrition security (Agen and Ruth, 2001). Moreover, despite the low productivity, rural family poultry can provide the population with cheap and readily harvested meat and eggs, which constitute a vital source of protein for immediate home consumption (Gue'ye, 2000). As far as social functions of the family poultry concerned. Usually chickens are given as gift for sick people, delivered women, and the first born child, especially boys. However, chickens on the other side acts as a source of income and ready cash for villagers to meet the daily needs. This reflected in better quality of life. In turns it helps to sustain the village economy to some extent and contributes to the reduction of poverty. The benefits from family poultry go directly to the rural poor (Fig. 5).

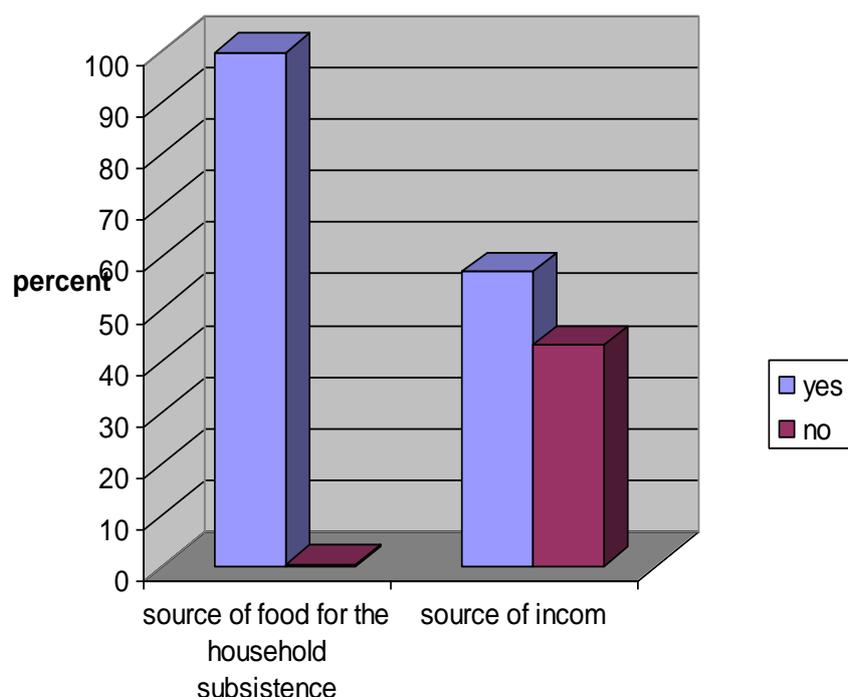


Figure 5. Family poultry as a source of food for household subsistence and income

### Diseases Incidence

Diseases and poor health are considered as one of the most constraints for increasing poultry production. About 64.3% of the surveyed households experienced diseases problems in the previous years. The problems of diseases in family poultry is compounded by the interaction of different entities that are of significant importance to diseases epidemiology (Malik, 2006).

### Households Access to Vaccination and Credit Programs

All households under study have no access to neither vaccination nor credit programs. The complete absence of the vaccination programs in poultry free-range systems facilitate the spread of diseases through flocks contact. On the other hand the presence of credit institution is important in providing the poultry owners with some poultry production inputs; chicks, feed, and equipments. Credit program could be developed in an effort to enhance family chicken production. Women need both fixed and working capital for family poultry production.

### Accessibility to Extension, Veterinary Services and training programs

The results showed that traditional family poultry production was totally ignored by local and federal authorities. Women are constraint by lack of access to extension and veterinary services. Training programs for capacity building in issues related to poultry husbandry practices and marketing is crucial, with the objectives of improving the management related problems and effectively improve upon their household poultry production (Malik, 2006). There is a need for extension, and training for rural women and development of paravet which would be useful in controlling losses and improving productivity and profit (Rangnekar and Rangnekar, 2002).

### Marketing

Poultry products in most developing countries are still expensive. The marketing system is generally informal and poorly developed. Unlike eggs and meat from commercial hybrid, local consumers generally prefer those from local indigenous stock. There is a good demand for the products (eggs and birds). The sale of eggs and birds from the household (where middlemen and buyers come to purchase) was by women, irrespective of socio-economic class. The typical flow of products from the producers to the consumers is shown in Figure 6.

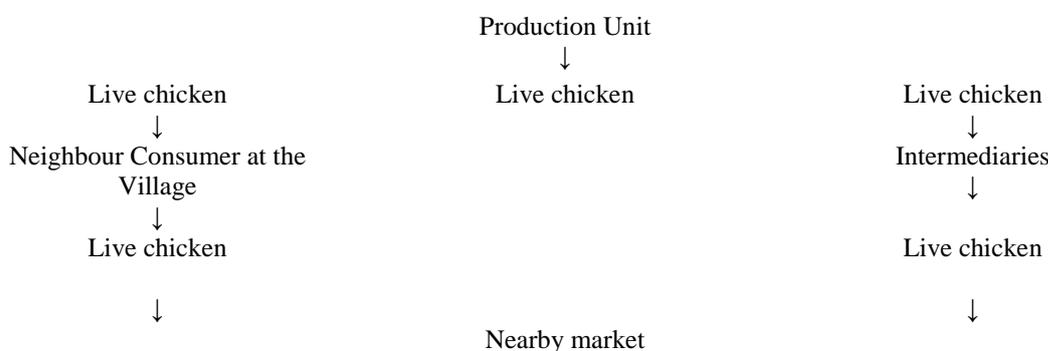


Figure 5. Marketing channels for family poultry products

## CONCLUSION

Scavenging is one of the most economical and sustainable feeding system to utilize feed resource in the village for production of high quality animal protein. The development of family poultry production has become an important element in social and economic development strategies in many developing countries. It is particularly used in struggle against feed shortage and poverty, and in policies that are aiming at empowering rural communities especially women. Strategies for improving production in rural poultry require community participation through women training programs by extension agents for improving their managerial skills and control of diseases. Moreover, capacity building training methodologies, must take account of the high level of illiteracy amongst resource limited household especially women. On the other hand micro-credit programs could be an advantage, through provision of credits and loans for rural communities. Aiming at improvement of both production and productivity. Women's empowerment could be strengthened through group action; formation of women service groups among rural communities can facilitate access to inputs and services.

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