International Journal of Science, Environment and Technology, Vol. 5, No 2, 2016, 489 – 498

ISSN 2278-3687 (O)
2277-663X (P)

TRADITIONAL RURAL CHICKEN PRODUCTION IN NORTHERN ODISHA: GENDER ROLE AND DECISION MAKING

T.K. Patbandha[1*], Rupal Pathak[2], B.R. Maharana[1], S. Marandi[1] and K.K. Sardar[3]

[1]College of Veterinary Science & Animal Husbandry, Junagadh Agricultural University, Junagadh-362001, Gujarat, India

[2]College of Agriculture & Research Station, Janjgir-Champa-495668, Chhattisgarh, India

[3]College of Veterinary Science & Animal Husbandry, OUAT, Bhubaneswar-751003, Odisha, India

E -Mail: patbandhavet@gmail.com (**Corresponding Author*)

Abstract: The present study aimed at assessment of gender role and decision making pattern in traditional rural chicken production in northern Odisha. A total of 120 rural household keeping chickens were interviewed and informations were collected using a structured interview schedule. The study revealed higher ownership of women (71.7%) compared to men (28.3%) in rural chicken production. Women participation in housing management such as let out and shut down of chicken, cleaning, disposal of waste, egg collection, nest preparation and tying or casing chicken were dominated over male (45-100% vs. 2.5-26.7%). Women involved more (62.3-100%) in preparation of finely ground rice, caring of broody and laying hen, caring of young chicks, health management (treatment, isolation and care of sick birds) and marketing of chicken. However, men played major role (70-100%) in shelter construction, caring of fighting cock, medicine purchase, dead bird disposal and dealer contact. Feeding and watering of chicken, predator chasing, protecting crops and thatched roof from chickens are mostly taken care together by women, men and children (92.5-100%). Women dominated on decision making in all aspects of rural chicken production (63-100%). Results of the present study indicated major participation of women in traditional rural chicken production for uplifting their livelihood.

Keywords: Gender; decision making; rural chicken production.

INTRODUCTION

Traditional backyard chicken production has significant contribution to sustainable livelihood of millions of rural people in developing countries like India. In this system, desi chickens are reared under free range, low input and scavenging system with provision of night shelter to protect from predators and thefts (Kryger *et al*., 2010; Rath *et al*., 2015). Desi chickens accounts about 49.5% of total chicken population in India (Vetrivel and Chandrakumarmangalam, 2013), indicates significant contribution to national economy. Desi chicken of about 5-25 numbers are being reared by rural household in Odisha under

*Received Mar 8, 2016 * Published April 2, 2016 * www.ijset.net*

traditional scavenging system which provides food and financial security, and has socio-cultural and socio-religious significance. Common indigenous or desi chicken breeds reared in Odisha are Hansli, Gujuri, Dumasil, Vezaguda, Dhinki, Phulbani and Kalahandi fowls (Mohapatra *et al*., 1999; Sethi, 2007). Desi fowls fetch higher price than intensively reared exotic or synthetic fowls (Rangnekar and Rangnekar, 1999; Sethi, 2007; Kumar *et al*., 2013), even more than 2-3 folds during major social and religious festivals (Kryger *et al*., 2010). Indigenous chickens are not only used as good source of protein (meat or egg) but male cocks are also used for fighting or game purpose which fetch higher price (Rangnekar and Rangnekar, 1999; Sethi, 2007; Kryger *et al*., 2010; Ciamarra and Dhawan, 2010).

Traditional backyard chicken production although plays significant role in rural livelihood, but this sector is not exploited to its maximum production potential. Inaccurate assessment of gender participation in rural chicken production may be one of the major reasons for this failure. Previous studies, in India have been reported significant contribution of women in rural chicken production particularly day to day activities such as housing, feeding, health management etc. (Rangnekar and Rangnekar, 1999; Gueye, 2005; Shetter *et al*., 2005; Kumaresan *et al*., 2008; Kryger *et al*., 2010; Kumar *et al*., 2013). In addition, decisions of women are final in rural chicken production (Shetter *et al*., 2005; Kryger *et al*., 2010; Harilal, 2013; Kumar *et al*., 2013). Thus, involvement of women along with men in any rural poultry development program could improve rural livelihood. Though, studies regarding gender role in backyard rural poultry production have been conducted in some parts of India, the informations are scanty in the state like Odisha particularly northern Odisha where most of the people belongs to tribal communities and socially and economically backward classes. Further, gender role may also vary from place to place depending on social, cultural and religious characteristics of society. With this back drop, present study was conducted to document gender role and their decision making pattern in traditional backyard rural chicken production in northern Odisha.

MATERIALS AND METHODS

This study was conducted at eastern plane area of Simlipal Biosphere reserve in Mayurbhanj district, Northern part of Odisha which comes under Eastern plateau and hills agro-climatic region. Mayurbhanj district ranks 1st in terms of size (10,418 km^2 area) and 3rd in terms of population (population size is 2,519,738) of Odisha with sex ratio 1006 females per 1000 males according to 2011 census. About 92.34% people remained in rural areas and most of them are tribal and socially and economically backward classes (Anonymous, 2011). Average

rain fall is about 1600 mm per annum with hot-humid climate (average humidity 76%, ranged from 56 to 88%) and average temperature 27.3 ºC ranged from minimum 4 ºC in December to maximum 47 ºC in May (Mohapatra *et al*., 1999; Sahu and Das, 2012).

We selected 2 blocks (Suliapada and Muruda), 6 villages from each block and 10 respondents from each village, constituted 120 respondents. In those selected villages, about 96.84±0.89% households (ranged between 92 and 100%) kept indigenous chicken on an average 8.83±0.49 adult birds per household (ranged from 5 to 24 numbers). Data pertaining to involvement of gender in different day to day activities of rural chicken production such as housing, feeding, care taking, health management and marketing were collected. Further, decision making pattern of gender in chicken production were also collected. A structured interview schedule was developed to collect informations. The data collected were compiled, presented as frequency and transferred to per cent for easy interpretation.

RESULTS AND DISCUSSION

Gender in ownership and chicken production activities

The present study reports gender involvement and their decision making pattern in traditional rural chicken production. Women involved in different activities of rural chicken production and their decision making pattern was also dominated. Details about gender participation in housing management, feeding management, care taking, health management, marketing and other activities of rural chicken production are depicted in Tables 1-3. Majority of women compared to men (71.7 vs. 28.3%) acted as owner of rural chicken which is similar to Gueye (2005), who reported more than 70% of female as chicken owner in rural areas of sub-Saharan Africa. However, ownership of women reduced with intensification of chicken production and it also varies within and between counties depending on social, cultural and religious activities of a society (Gueye, 2005). Chicken need less investment, and no need of special care due to scavenging nature and hardiness, may be another reason that chicken ownership belong to women domain (Kryger *et al*., 2010). Presence of other livestocks (small and large ruminants generally managed by males) in developing countries also influence chicken ownership (Gueye, 2005).

Activities like housing (let out (84.2%) and shut down (92.5%) of chicken), cleaning of shelter (97.5%), disposal of chicken waste (87.5%), egg collection (100%), nest box preparation (89.2%) and tying/caging of chicken (45%) were mostly carried out by women and similar results are reported by others (Gueye, 2005; Shetter *et al*., 2005; Kumaresan *et al*., 2008; Desta and Wakeyo, 2013). However, men were mostly involved in construction of

chicken shed (97.5%) which is in consonance with previous reports (Gueye, 2005; Kumaresan *et al*., 2008). Cages are prepared from wire mesh or bamboo, and caging of chicken generally occurs to protect from predators (Rangnekar and Rangnekar, 1999).

Though, rural chickens grow under scavenging system, supplementary feeding (kitchen waste, leftover food, grain etc.) regularly or occasionally occurs. Water is offered to birds during summer when surface water points are dried. Previous studies reported higher involvement of women in feeding and watering of rural chicken (Rangnekar and Rangnekar, 1999; Gueye, 2005; Shetter *et al*., 2005; Kumaresan *et al*., 2008; Desta and Wakeyo, 2013), but in our study 92.5% cases women together with men and children carried out such activities. This may be due to unavailability of a particular person (either women or men or children) during feeding and watering hours. Finely grinded rice is entirely prepared by women (100%) for day old chick upto first 7 days for easy consumption. Laying hens require more energy (production state) and broody hens are busy for incubating eggs, in such cases women entirely involved feeding and watering of birds (100%). Special care to young chicks was mostly carried out by women (91.7%), as chicks are more susceptible to predator and attack from other adult chickens. Sixty percent respondents reported fighting of cock and men mostly (91.7%) involved in caring of fighting cock. The cocks used for fighting require special care (feeding, watering and exercise) which are not always possible by women, hence mostly men involved in such activities.

Women participation, in our study was higher in treatment, isolation and care of sick birds (75.8, 71.7 and 73.3%, respectively) which is in agreement with previous reports (Gueye, 2005; Shetter *et al*., 2005). However, Kumaresan *et al*. (2008) and Desta and Wakeyo (2013) reported that health care (treatment and vaccination) of birds were carried out by male in North-Eastern region of India and southern Ethiopia, respectively. Men, in our study were entirely involved in purchase of medicine (100%) might be associated with larger distance of medicine shops/ veterinary health facilities. Women generally hesitate to touch dead birds because of rituals i.e. they have to either change clothes or take bath before entering into kitchen. Hence, in 70% cases men disposed dead birds in the study area.

About 95% respondents reported selling of chicken which was mostly carried out by women (62.3%) but dealers were contacted by men (74.6%). Contrary to our result, equal participation of women and men in chicken selling has been reported previously (Shetter *et al*., 2005; Kumaresan *et al*., 2008). Moreover, others reported higher involvement of men (sometimes with boys) in selling of live birds in Africa (Gueye, 2005; Desta and Wakeyo,

2013). Gender participation in marketing mainly depends on market distance in Africa; due to larger distance, men and boys involved more in selling of chicken (Gueye, 2005). In addition to marketing distance, socio-economic class also influence gender involvement in marketing. Rangnekar and Rangnekar (1999) reported more involvement of women irrespective of socio-economic class where selling occurred from the household. However, when selling occurred at distance places like weekly market, the women of lower socio-economic strata but men of higher socio-economic strata involved more (Rangnekar and Rangnekar, 1999). In our study, chicken selling occurred at home and dealers were contacted before selling might be associated with higher participation of women.

Predators (mongoose, kites, crows, snakes, jungle cats, dogs etc) are major constrains in rural chicken production in the study area, and all family members (women, men and children) together chased them (100%). Family members together also keep chicken away from crop field (97.5%) during initial period of sowing and again at the time of ripening/harvesting, otherwise chicken may cause huge crop loss. Similarly, chicken search feed on thatched roof (paddy straw commonly used as roofing material) and destroy roof, so chicken are always kept away from thatched roof which was entirely carried out together by all members (100%).

Gender in decision making

The gender role in decision making pattern in rural chicken production is presented in Table 4. Women took major (91.7%) decision in home consumption of chicken and egg which is in agreement with Thakur *et al*. (2012) and Harilal (2013), who reported that women mostly took decision about home consumption of eggs/ chicken. Similar to Thakur *et al*. (2012) and Kumar *et al*. (2013), we observed higher decision making of women in selling of chicken (63%) but our results are contrary to Harilal (2013). Marketing pattern or social, cultural and religious realities of the society may influence decision making pattern. Women also took decision for fixing chicken price and dealer but jointly took decision whether to sell birds or not (Shetter *et al*., 2005). In our study, income generated from poultry was mostly controlled by women (74.1%), which is in agreement with Thakur *et al*. (2012) in Himachal Pradesh and Kumar *et al*. (2013) in Kerala. Lower involvement of men in decision making might be attributed to less investment and earnings from rural chicken. Women also dominated in decision making regarding gift of chicken to friends (88.3%) when there is surplus of chicken. For increasing flock strength, women mostly took decision regarding keeping young/ adult chicken (80%) and older hens (76.7%) or purchase of chicken from market

(80%). Shetter *et al*. (2005) reported that both women and men together took decision on numbers of bird to be reared. In the study area, chicken sacrifice to Goddess was ritual customs, about 95% respondents reported ritual sacrifice of chicken and decision was mostly taken by women (74.6%). They pray before Goddess for betterment (i.e., health, education, economic aspects etc.) of families and sacrifice particular colour chicken either before or after achieving goals. Ritual sacrifice of chicken has been reported by Conroy *et al*. (2005) in rural India and about 10% of village chickens are used for this.

In the study area, women mostly (91.7%) decided to keep elongated and pointed eggs for hatching to get male chicks. In a similar line, Mohapatra *et al*. (1999) and Sethi (2007) reported that people in Odisha have belief that elongated eggs produce male chicks whereas round eggs produce female. About 2-3 eggs laid during later part of a clutch are not generally kept for incubation. Depending on season the number of eggs kept for incubation varies; in summer, eggs are mostly spoiled due to high temperature and predator problem high during rainy, so less number of eggs (7-10 eggs) were kept for hatching. Moreover, some hens are more broody and better mothering ability; in such case even upto 15 eggs were kept during adverse season and decision was mostly taken by women. Egg shells and litter used during hatching are thrown to a particular place (crossing of roads), with the belief that God/Goddess will protect chicks from predators and mostly decided by women (94.2%). Women entirely took decision to prepare finely grounded rice for chicks (100%). Decision regarding health management (treatment and medicine purchase) was taken by women in most cases (75%). But, Shetter *et al*. (2005) reported that decision on health aspects was taken jointly by women and men.

CONCLUSION

Results of this study indicated that women participation dominated over male in all most all activities partening to traditional rural chicken production. However, men dominated in shelter construction, care of fighting cock, medicine purchase, disposal of dead birds and dealer contact. Activities like feeding and watering chicken, predator chasing, protecting crops and thatched roof were mostly carried out together by women, men and children. Women dominated in decision making regarding all aspects of traditional rural chicken production.

ACKNOWLEDGEMENT

Authors are thankful to the respondents who shared valuable information during the study. Authors are also highly thankful to parents of first author for their support during

development of interview schedule. The Director of Research & Dean PG studies, Junagadh Agricultural University is highly acknowledged for providing research facilities.

REFERENCES

[1] Anonymous. (2011). District census handbook-Mayurbhanj, Odisha, Census of India. *Series 22.* Retrieved October 6, 2015, from http://www.censusindia.gov.in

[2] Ciamarra, U.P. and Dhawan, M. (2010). Small scale poultry farming and poverty reduction in South Asia: From good practices to good policies in Bangladesh, Bhutan and India. *South-Asia Pro-Poor Livestock Policy Programme (SA-PPLPP), New Delhi*. pp. 1-46.

[3] Conroy, C., Sparks, N., Chandrasekaran, D., Sharma, A., Shindley, D., Singh, L.R., Natarajan, A. and Anitha, K. (2005). Improving backyard poultry-keeping: A case study from India. *Agricultural Research and Extension Network.* Paper 146. Retrieved October 12, 2015, from http://www. odi.org.uk/agren/papers/ agrenpaper_146.pdf

[4] Desta, T.T. and Wakeyo, O. (2013). Village chickens management in Wolaita zone of southern Ethiopia. *Trop. Anim. Health Prod.,* **45**: 387-396.

[5] Gueye, E.F. (2005). Gender aspects in family poultry management systems in developing countries. *World's Poult. Sci. J.,* **61**: 39-46.

[6] Harilal, R. (2013). Livelihood security of rural households through backyard poultry (BYP) rearing in Andhra Pradesh. *Res. Direct.*, **1**(4): 1-5.

[7] Kryger, K.N., Thomsen, K.A., Whyte, M.A. and Dissing, M. (2010). Small holder poultry production-livelihoods, food security and sociocultural significance. *FAO smallholder poultry production, Rome.* Paper no. 4. pp. 1-67.

[8] Kumar, P.G., Churchil, R.R., Jalaludeen, A., Narayanankutty, K., Joseph, L., Kannan, A. and Anitha, P. (2013). A survey on village chicken production in Kerala state of India. *World's Poult. Sci. J.*, **69**: 917-930.

[9] Kumaresan, A., Bujarbaruah, K.M., Pathak, K.A., Chhetri, B., Ahmed, S.K. and Haunshi, S. (2008). Analysis of a village chicken production system and performance of improved dual purpose chickens under a subtropical hill agro-ecosystem in India. *Trop. Anim. Health Prod.*, **40**: 395-402.

[10] Mohapatra, S.C., Mishra, S.C. and Korel, D. (1999). Indigenous poultry genetic resources of Orissa. Retrieved September 10, 2015, from http:// intercooperation.org.in

[11] Rangnekar, D.V. and Rangnekar, S. (1999). Traditional poultry production systems and the role of women in parts of western India. *Second FAO Electronic Conference on Tropical Feeds - Livestock Feed Resources within Integrated Farming Systems*. pp. 373-376

[12] Rath, P.K., Mandal, K.D. and Panda, P. (2015). Backyard poultry farming in India: A call for skill upliftment. *Res. J. Recent Sci.*, **4**: 1-5.

[13] Sahu, H.K. and Das, S.K. (2012). Human-elephant conflict in Mayurbhanj elephant reserve Orissa, India. *Gajah*, **36**: 17-20.

[14] Sethi, B. (2007). Backyard Poultry in Orissa. *Orissa Review*. Retrieved September 1, 2015, from http://orissagov.nic.in/e-magazine/Orissareview/jan-2007/engpdf/48-52.pdf

[15] Shetter, S.S., Badiger, C. and Mulla, J. (2005). Role of rural women in poultry enterprise. *Karnataka J. Agric. Sci.*, **18**: 1052-1057.

[16] Thakur, D., Sharma, A.K., Ravikumar, R.K. and Katoch, S. (2012). Status of backyard poultry farming in Himalayan regions of India. *Indian J. Poult. Sci.*, **47**: 102-105.

[17] Vetrivel, S.C. and Chandrakumarmangalam, S. (2013). The role of poultry industry in Indian economy. *Brazilian J. Poult. Sci.*, **15**: 287-294.

Tables:

Table 1: Housing management in village chicken production (n=120)

Parameters	Women (%)	Men (%)	Women and Men (%)
Let out chicken	101 (84.2)	7 (5.8)	12 (10)
Shut down chicken	111 (92.5)	3 (2.5)	6 (5)
Cleaning shelter	117 (97.5)	3 (2.5)	0 (0)
Disposal of unhatched eggs/ egg shells/ litters	105 (87.5)	9 (7.5)	6 (5)
Collect egg	120 (100)	0 (0)	0 (0)
Shelter preparation	3 (2.5)	117 (97.5)	0 (0)
Nest box preparation	107 (89.2)	9 (7.5)	4 (3.3)
Tying/ casing chicken	54 (45)	32 (26.7)	34 (28.3)

Values without parenthesis indicates frequency

Table 2: Feeding management and care taking in village chicken production (n=120)

Parameters	Women (%)	Men (%)	Women and Men (%)	Women, Men and Children (%)
Feeding chicken	9 (7.5)	0 (0)	0 (0)	111 (92.5)
Watering chicken	6 (5.0)	3 (2.5)	0 (0)	111 (92.5)
Prepare finely ground rice	120 (100)	0 (0)	0 (0)	0 (0)
Care of laying hen	120 (100)	0 (0)	0 (0)	0 (0)
Care of broody hen	120 (100)	0 (0)	0 (0)	0 (0)
Care of young chick	110 (91.7)	0 (0)	10 (8.3)	0 (0)
Care of fighting cock* (n=72)	6 (8.3)	66 (91.7)	0 (0)	0 (0)

* All respondents not involved; values without parenthesis indicates frequency

Table 3: Health management and miscellaneous activities in village chicken production (n=120)

Parameters	Women (%)	Men (%)	Women and Men (%)	Women, Men and Children (%)
Treatment of sick birds	91 (75.8)	19 (15.8)	10 (8.3)	0 (0)
Isolate diseased birds	86 (71.7)	25 (20.8)	9 (7.5)	0 (0)
Care of sick birds	88 (73.3)	10 (8.3)	10 (8.3)	12 (10)
Medicine purchase	0 (0)	120 (100)	0 (0)	0 (0)
Disposal of dead birds	15 (12.5)	84 (70)	21 (17.5)	0 (0)
Sell chicken* (n=114)	71 (62.3)	43 (37.7)	0 (0)	0 (0)
Dealer contact* (n=114)	29 (25.4)	85 (74.6)	0 (0)	0 (0)
Predator chasing	0 (0)	0 (0)	0 (0)	120 (100)
Keep chicken away from crops	3 (2.5)	0 (0)	0 (0)	117 (97.5)
Keep chicken away from thatched roof	0 (0)	0 (0)	0 (0)	120 (100)

* All respondents not involved; values without parenthesis indicates frequency

Table 4: Decision making pattern (%) in village chicken production (n=120)

Parameters	Women (%)	Men (%)
Home consumption of chicken	110 (91.7)	10 (8.3)
Home consumption of egg	110 (91.7)	10 (8.3)
Selling chicken* (n=114)	68 (63)	40 (37)
Disposal of income* (n=114)	80 (74.1)	28 (25.9)
Gift of chicken to friends	106 (88.3)	14 (11.7)
Keeping young/ adult chicken for multiplication	96 (80)	24 (20)
Keeping older hen for multiplication	92 (76.7)	28 (23.3)
Purchase of chicken for multiplication	96 (80)	24 (20)
Ritual sacrifices* (n=114)	85 (74.6)	29 (25.4)
Types/ size of eggs used for incubation	110 (91.7)	10 (8.3)
Number of eggs for incubation	110 (91.7)	10 (8.3)
Throwing egg shell/litters to particular place	113 (94.2)	7 (5.8)
Prepare finely ground rice for chicks	120 (100)	0 (0)
Treatment/ purchase of medicines	90 (75)	30 (25)

* all respondents not involved; values without parenthesis indicates frequency