

## **Poultry Farming in the Coastal Agro Ecosystem of Kerala**

Noble D, Jayan, K.N. Sindhuradan  
and Sathladas R. Central Marine  
Fisheries Research Institute, Cochin - 14

The potential for development of the coastal agro ecosystem through supplementary occupation has not yet been fully realized. The people living the coastal areas are among the poorest in the world. Poor water and soil quality, diseases and social backwardness are the other reasons for unsuccessful development. Though aquaculture has got great scope for generation of wealth and enhanced per capita income, consistent results are not obtained due to fish diseases and inappropriate management at farm level. These problems can be addressed through better management and planning by government in collaboration with the inhabitants of the area for sustainable development of the Coastal Agro Ecosystem. Concurrently with the aquaculture, other livestock and agricultural based vocations need to be promoted and developed to buffer any adverse impacts of aquaculture. For an integrated development of coastal ecosystem, poultry keeping got immense potential and a crucial role to play. The economic viability of poultry mainly depends on the production and productivity of the birds, which in turn depends on the level of adoption of scientific technology. However it seems still there exists a gap

between the available technology and its application by the coastal clientele. Training is considered as an important and critical input in bridging this gap besides making available birds of high production potential. Hence this study was designed with the following specific objectives.

1. To find out the training needs of poultry farmers

2. To arrive at optimal managerial inputs required for sustaining high productivity.

3. To analyse the economic performance of Gramalkshmi birds in comparison to local birds in the coastal agro ecosystem.

#### **The Institution-Village-Linkage-Programme (IVLP)**

Under the aegis of the National Agricultural technology Project for technology Assessment and

Refinement (TAR) in the coastal agro ecosystem of Emakulam, the CMFRI has tested and fine-tuned many agricultural technologies already practised by the farmers of Elamkunnappuzha village of Vypeen in Emakulam district of Kerala. This village in particular was identified because of the typical features of coastal agro ecosystem of Kerala exist there (Sathiadhas, et. al., 2003). Some of the technologies tested successfully can be the role model for implementation to the entire coastal agro ecosystem of kerala.

Farming technologies in agriculture and livestock production can provide back-up support and sustainability to the main vocation of fish farming in this area. Poultry farming is one with great potential. It fits well to the demands of the eco system besides fulfilling the needs of the

people.

### **Methodology**

The present study was conducted in Elamkunnapuzha Village of Vypeen Island in Emakulam district. Respondents were selected using simple random sampling technique. 30 farmers with prior experience in poultry farming were selected. production lacunae were assessed based on the analysis of the casual relationship of the socio-economic and bio-physical features.

The common poultry diseases prevalent in the area, the endo/ectoparasites harbour the birds, the nutritional status, housing, hygiene and sanitary conditions studied by visit to farmers premises, discussion with farmers, local veterinarian and also confirmed by laboratory tests on

clinical samples

Training needs of selected poultry farmers in scientific poultry management were assessed using simple percentage analysis. An interview schedule was prepared for collecting data from the respondents. The schedule was pre-tested and necessary modifications were made and the study undertaken during April 2002 to March 2003.

A new breed of poultry 'Gramalakshmi' evolved by Kerala Agricultural University especially for backyard poultry farming has been introduced in the coastal agro ecosystem. The production parameters and economic indicators studied for further popularisation.

### **Results and Discussion**

#### **Problem-Cause Relationship**

Problem-cause relationship for low production in poultry was identified by analysing the causal relationship of the socio-economic and bio-physical features. Socio-economic problems like low production, lack of knowledge about improved breeds and poor knowledge about scientific management and bio-physical problems like lack of improved breeds, poor management, unscientific feeding and disease occurrence like Ranikhet, Coccidiosis and other enteric infections were identified using Participatory Rural Appraisal tools.

Based on the above analysis, list of training areas were identified and respondent's preference of training areas as per their needs was assessed using simple percentage analysis.

The study revealed that

highest priority had been given to 'Common Diseases and Control' among training needs (100%) (Table-1). This might be due to the fact that in case of poultry the disease spread rapidly and may not get adequate time for treatment. The vulnerability of coastal ecosystem to infectious diseases may be another contributory factor. Hence they prefer that training in this area will be helpful to take preventive measures in time.

The next order of preference was given to 'Feed and Feeding' and 'Water Management' (93.33%). The balanced feed, feeding pattern and the knowledge about the water requirement is very essential in poultry farming. Moreover, the cost of feed in poultry production accounts to more than eighty per cent of the total operational cost. Hence

## 1. Training Needs of Poultry farmers

Training needs of poultry farmers under various areas were assessed and presented in Table - 1.

**Table -1 Training Needs of Poultry farmers**

S.No.	Area of training Needs	Most needed		Some what Needed		Total Need	
		Number	Per cent	Number	Per cent	Number	Per cent
1.	Shelter/Housing requirement	11	36.67	13	43.33	24	80
2.	Selection of site for shed	02	6.67	07	23.33	09	30
3.	Disinfection of site	--	--	03	10	03	10
4.	Hygiene and Sanitation	02	6.67	10	33.33	12	40
5.	Feed and Feeding	18	60	10	33.33	28	93.33
6.	Water Management	18	60	10	33.33	28	93.33
7.	Litter Management	04	13.33	08	26.67	12	40
8.	Brooder Management	06	20	04	13.33	10	33.33
9.	Common Diseases and Control Vaccination	20	66.67	10	33.33	30	100
10.	Ectoparasitic Treatment	15	50	10	33.33	25	83.33
11.	Summer Management	17	56.67	10	33.33	27	90
12.	Egg Collection and Storage	07	23.33	03	10	10	33.33
13.	Culling	08	26.67	10	33.33	18	60
14.	Disposal of Dead Birds	20	66.67	06	20	26	86.67
15.		18	60	08	26.67	26	86.67

*farmers realized that if they learn about compounding balanced feed, the cost of production of feed would be minimized besides ensuring good quality and nutritive value to the feed.*

*The next priority in training*

*was given to the area "Ectoparasitic Treatment". During brooding periods, the ectoparasites multiply first; these not only irritate the bird, but also become a nuisance to other birds in the flock and to the human beings. Hence, they realized the importance of training*

in this aspect to control the prevent disease outbreaks.  
ectoparasitic infestation.

The farmers also expressed the need for training in favour of "Culling" and "Disposal of Dead Birds" (86.67%). Many times dead birds are thrown out in the canal system and open water bodies, become potential threat of infection in the neighbourhood. The high water table of the area also pose as a problem to dig pit and dispose off the dead birds. Unproductive and unhealthy birds in the flock, which are of no use to farmers, also compete for feed with other birds, hence bring severe economic loss and also cause outbreak of diseases, made them feel the need for training about 'Culling and "Disposal of Dead Birds". The training would help them to have proper understanding about disposal, to

Leastl preferred areas for training were "Disinfections of site" and "Selection of Site and Shed". In the selected village it was observed that backyard system of poultry farming is most prevalent. This might be because of the dominance of small farmers with small areas in the village, hence they can hardly make a choice of site and try to do farming in the space available. Moreover they found no relevance between the site selection and the productivity of birds. Other training needs like record keeping utilization of poultry manure, selection of hatching eggs, collection and storage of eggs got only less than 10% importance in the training needs probably due to the peculiar socio-economic conditions, existing in this eco

system.

## **2. Management and Health Cover Requirements**

Potential or high productivity can be realized only if the environment is congenial. The environmental conditions prevailing in the coastal agro ecosystem is not conducive to sustain high productivity. Making use of the technological advances in nutritional, parasitic and disease components of the environment, it is worth attempting to introduce birds of high genetic potential to capitalize these changes. An assessment has been made to ascertain the existing status of poultry health in the coastal ecosystem to identify the critical inputs urgently needed in this regard. One revelation was the inter relationship among nutritional deficiency-intestinal-ectoparasites

components. More than 70% of the country birds suffer from nutritional deficiencies, have intestinal and ectoparasites in them. The intestinal parasites are mostly round worms of ascaris species. Very effective broad-spectrum antinematodal drugs are available. Periodic deworming can not only control the intestinal worms but also keep a check on the external parasites and in turn improve the general condition of the bird. Occurrence of Coccidiosis and other enteric diseases are only seasonal and sporadic in nature and can be effectively controlled by proper watering, sanitation and if required by medication.

Regular supplementation of vitamins and minerals appears to be essential for sustaining high productivity. Ranikhet disease is the only disease that plays havoc

periodically which can be controlled by timely vaccination (Table - 2).

**Table - Status of poultry health**

Sl. No.	Problems	% Affected
1	Intestinal parasites	70
2.	Ectoparasites	72
3	Coccidiosis/enteritis	60
4	Infectious diseases	13
5	Mineral/Vitamin deficiency	59
6	Nutritional deficiency	70
7	Debility, weakness, paralysis	10

introduced and their performances were assessed in comparison to the local variety. Gramalkshmi (Austra-White) is a reliable bird for backyard keeping. The new breed was found to be better productive than the local country birds. Table - 3 shows the comparative result of the treatment and the farmer's practice.

### **3. Performance of Gramalakshmi birds under backyard keeping in the coastal agro ecosystem**

To overcome the above problems and meet the needs of the farmers the IVLP team in the selected village targeting the selected 30 farmers implemented the intervention namely "Assessment of the performance of the Gramalakshmi breed of poultry in comparison to the country bird". An improved variety bird, Gramalakshmi, was

Farmers favoured the better egg yielding ability of Gramalakshmi birds. The weight of the hybrid bird is comparatively higher and their feed consumption is also relatively higher. The birds are amenable to be kept inside cages or backyard rearing, which makes them more suitable for homestead farming (Table - 4).

### **Conclusion**

**Poultry farming has to be popularised in the coastal**



**Table - 3 Comparative performance of the Treatment and the Farmer's practice**

Biometric Observation		
Parameters	Farmer's Practice	Treatment
Weight of Egg (g)	32	40
Colour of Egg	White	Cream
Average number of eggs/10 birds/day	3	5
Weight of bird (kg)	1.5	2
Days without production	High	Low
Economic Indicators		
Operational cost (Rs/day)	4	5.34
Yield (Number of eggs/10 birds/day)	3	5
Gross returns (Rs/10 birds/day)	6.42	11.3
Net Returns (Rs/10 birds/day)	2.42	5.96
B-C Ratio	0.61:1	1.12:1

**Table - 4 Matrix Ranking (10 Point Scale)**

Sl. No.	Items	Farmers practice	Treatment
1	Egg yield	06	08
2	Weight of the bird	05	07
3	Feed consumption	06	08
4	Resistance to diseases	07	08
5	Suitability to homestead raring	06	08
6	Broodiness	07	05

*ecosystem. The farmers need to be trained in scientific farming practices. Most of the lacunae in production system can be corrected by suitable remedial measures and high productivity*

*can be sustained in 'not so favourable' environmental conditions. 'Gramalakshmi breed of poultry appears to be a promising bird for coastal ecosystem of kerala.*

**Reference**

Sathiadhas, R., Sheela Immanuell, A. Laxminarayana, L. Krishnan, D. Noble, K.N. Jayan, Sindhu Sadanandan (2003). Institution Village Linkage Programme: Coastal Agro Ecosystem and Interventions. 79p. Central Marine Fisheries Research Institute, Cochin - 14