

# Good Practices 12: December 2015



## BOOST IN EGG PRODUCTION AND FAMILY INCOME THROUGH CLIMATE RESILIENT PRACTICES IN BACKYARD POULTRY REARING



*Upgrading Backyard poultry involves modifications at several levels, namely cage, breed, feed and vaccination. Understanding these interconnections and supporting adaption of good practices at different levels are important in promoting new technologies, argues Dr. S. Ravi and Dr. P. Muralidharan.*

### CONTEXT

Backyard poultry rearing is a common practice among farm women of Kerala. Muttar village in Kuttanad region of Kerala is no exception to this. This village in Alappuzha district of Kerala lies up to 2 m below Mean Sea Level (MSL) and is often susceptible to submergence during the south-west monsoon period (June–Sept). Though the earnings from the backyard poultry units are negligible owing to the conventional practices followed, farm women continue it as an occupation. But during the past 10-15 years, change in climate, disease outbreaks, and losses by predators added further woes, forcing a decline in this activity. To address these problems, improved and climate resilient practices like modified cages, use of automatic vaccinator, improved breed of poultry, and azolla as feed supplement were introduced through technology demonstrations in this village. These interventions were introduced by ICAR-KVK-Alappuzha which is hosted by the ICAR-Central Plantation Crops Research Institute (CPCRI) as part of NICRA (National Initiative on Climate Resilient Agriculture) project from 2012 to 2014.

### GOOD PRACTICES

#### Training on scientific backyard poultry

To begin with, about eighty farm women, who are already engaged in backyard poultry keeping in conventional cage system in this water logging affected village, were selected. The project team gave wide publicity to this training through its field staff and also taking the help of panchayath members. Following this, one day training on scientific backyard poultry rearing was conducted in three batches using NICRA (project fund). In these trainings, in addition to the general management practices, the advantages of slatted floor cages to overcome floods were also discussed.



Training on backyard poultry organized by the KVK

## Development of new cages to deal with climatic risks

As a follow-up, a modified poultry cage was designed by the KVK. This modified cage in 120 cm x 90 cm x 75 cm size using wire mesh on all the sides, wooden planks at the bottom and tin sheet as roofing material was fabricated in an engineering workshop. This cage was fixed on GI pipes at a height of 120 cm to withstand flood. Each cage could accommodate twenty to twenty-five birds. Thirty such cages were fabricated and demonstrated during the first two years (2012-13 and 2013-14).



**Traditional cages susceptible to flooding**

**Modified cage survives flooding**

The partner farmers realized that with this intervention the birds could overcome the flood and disease outbreak. The mortality was reduced (53 to 13%) due to adequate aeration and the loss through predators was also prevented. Since the bottom of this cage is fixed with wooden planks and spread with saw dust, poultry manure could be effectively utilized for homestead farming. Realizing the advantages of this cage, more farmers came forward to adopt this technology. Hence in the action plan for the year 2014-15, a provision was made to establish forty such units in their homesteads with 50% contribution.

## Addressing the skill gap in vaccination

Regular vaccination at desired intervals for the poultry had been a problem for the women farmers as it required the service of skilled persons. Realizing this, the use of automatic vaccinator was introduced through method demonstrations. Forty-eight farmers and farm women attended these programmes. Vaccination schedule and the use of automatic vaccinator were demonstrated in the programmes. In the normal cases, vaccination is done with ordinary syringes for which skill is needed. But by using the automatic vaccinator, the required quantity of medicine could be adjusted in the syringe for each shot. This did



**Use of automatic vaccinator**

not warrant any skill and farm women could use this without any difficulties. Now there are 12 women farmers regularly using this for own purposes as well as providing service to others.

### Introducing better breeds



**Gramapriya breed of poultry**

of 4.0 and 2.9 kg, respectively with a meat yield of 72.5% and average liveability of 85 % at 72 weeks of age.

### Promoting new feed that could be produced locally

The abundance of water bodies in this village was exploited for the cultivation of Azolla. The farmer women were given training on Azolla cultivation in ponds or small pits in homesteads. Two such training programmes for 44 farmers were conducted. Seed culture was provided and the KVK facilitated the establishment of as many as 26 production units. Azolla could be harvested after 7 days @ 500-750 g/pit/day and supplemented with feed in daily ration. 10-15% feed could be replaced with azolla as it contains all the essential nutrients. Egg yolk colour and egg weight improved after feeding with azolla and the eggs fetched a better price of Rs.6/- each.



**Azolla cultivation**

### IMPACT

All these interventions created an encouraging revival of the backyard system of poultry rearing in the village. A survey in 20 units revealed that the average number of bird stock per unit increased from 9 to 22 and the mortality rate reduced to 13% from 53 %, over a three year period (Table 1). The average annual egg production increased by 231% (from 810 to 2684/unit) resulting in an increase of net return

from Rs. 432 to Rs. 3682/- per household. Thus these interventions resulted in almost self-sufficiency of egg production in Muttar village and a decent income to the families with minimum investments and efforts.

**Table 1. Impact of climate resilient interventions on profitability of backyard poultry rearing in Muttar village of Kuttanad, Kerala (Average of 20 units)**

Sl.No	Parameter	Improvement	
		2011-12	2014-15
1	No of birds	9	22
2	Mortality due to flood/disease outbreak (%)	53	13
3	Egg production (per year)	810	2684
4	Sale of spent chicken (kg) per year (in addition to own use)	5	15
5	Gross annual cost (Rs.)	4151	12266
6	Gross annual return (Rs.)	4588	15978
7	Net annual return (Rs.)	432	3682
8	B:C Ratio	1.1	1.3

## LESSONS

Introduction of one technology in complex systems such as agriculture often necessitate changes in several other dimensions. This case clearly illustrates this interconnectedness among the various dimensions of technical and institutional change in agriculture. It also highlights the fact that the role of extension is much wider and goes beyond training farmers or disseminating information on new technologies. The role of extension is actually about upgradation of production systems, anticipating new demands, addressing these and providing hand-holding support to farmers.

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