

Improving livelihood security through technological intervention on animal husbandry sector in East Champaran district of Bihar

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Low income is associated with small landholdings. The Northern Bihar in general and East Champaran in particular is characterized by inaccessibility, marginality, fragility, cultural heterogeneity, rich biodiversity, low livestock and crop productivity. The residents of this district are mostly non-vegetarian. Meat of any kind of desi chicks, quail and goat is highly preferable without any religious consideration. Landless women farmers of the district involve a zero to negligible input based livestock and poultry production system but on very small scale. This system aims to get medium output from nearly zero input and mostly depends on the locally available resources. However, there are major constraints like non-availability of good poultry germplasm (breeds of Vanaraja, Grampriya or Kadaknath), lack of scientific knowledge of improved production practices (that led to less growth, prevalent unilateral paralysis of the wing or leg, lameness, unthriftiness, gray eyes, blindness and dysentery) and higher mortality deters the downtrodden farmers in going for commercial poultry farming. Like chicken, ducks are reared by women of Bakhari Nazir village of East Champaran for mainly eggs and meat. They preferred rearing of Japanese quail over Vanaraja chicks due to some mishappening in the past and they have developed superstitions.

Key words: Animal husbandry, Champaran, Vanaraja chicks

IN East Champaran district of Bihar, agriculture and dairying is the major source of livelihood for large number of people. Bihar state has large number of cattle but milk production in Bihar is not commensurate with the number of cattle. Cattle owners face other challenges which make this sector unviable from economic point of view. These challenges are rising input costs, medical costs, infertility problems etc. Veterinary services costs and infertility problems in livestock are major factors responsible for making this sector unviable, when done at small scale. Organizations need to organise animal health camps at community level. Even small interventions like supply of winter season care kit has increased milk yield in all villages.

The backyard poultry intervention

was especially suited to the needs of landless households as it required low level inputs and low skill investment from households. There was strong market logic for the intervention as Bihar was largely dependent on other states for the supply of eggs, poultry and goat meat. Duck raising is a lucrative livestock industry around the globe because of its egg,

meat and feather and Bakhari Nazir village is being encouraged to do so.

Poor and socially disadvantaged households tend to own low quality livestock (goat) rather than cow or buffalo. The reasons for high growth rate in goat farming include low cost and handy technology to the landless labourers, marginal farmers and industrial workers; particularly less



Fig. 1. Rearing of Vanaraja Chicks

volume of feed required than cattle; more resistance to diseases; easily manageable by child or female and easy market accessibility. The success of our intervention is presented below.

Milk enhancement through winter care experimentation kit

Under the Farmer FIRST Project we had given dewormer (Panacur 3.0 vet: 1 tab.), mineral mix (1.0 kg), multivitamin (Calcimust:10 tab.), antistress (Stenot:10 tab.) and energy booster (Transmix:500 ml), for milching animals to 20 dairy farmers of five villages. After its use, there was increase in milk production upto 1-2 kg in indigenous poorly maintained cow (>30 days) and 1.5-2.0 kg in cross breed medium maintained cow and buffalo (>30 days). The farmers rating was 4.5:5 and the cost of kit was ₹ 450/-. Now farmers procure above-mentioned medicine and mineral mixture and they are using it, however only few used to procure it for enhancing milk yield.

Backyard poultry for livelihood improvement

The residents of East Champaran district of Bihar are fond of non-vegetarian food and travellers and locals used to consume mutton, chicken on priority, but due to non-availability of quail and costly meat, people prefer meat of birds (*deshi* bird as they call it) but could not get it. The low technology input birds are mostly dual purpose such as *Grampriya*, *Vanaraja*, *Divyan Red*, *Jharshim*, etc. These birds grow faster than native chicken and also can withstand variable feed qualities and also supplement themselves by scavenging. The female birds can lay 140-170 eggs against the native birds, which normally do not lay more than 60-70 eggs per year.



Fig. 2. Rearing of *Vanaraja* Chicks by farmer

Many farm women do not earn any livelihood except occasional labour work. Under Farmer FIRST Programme, we had given a set of 25 chicks of *Vanaraja* (5 weeks old) with initial feed of 10 kg and other additives, initial medicine etc. The activity aims to provide at least ₹ 12,000 per annum additional incomes from these 25 chicks provided per year and inspiration to enlarge the activity for higher income (Fig. 1 and Fig. 2).

Sri. Arjun Sahni, a farmer of Chintamanpur, Chakia block has reared upto 100 chicks and sold @ ₹ 1000 per bird after 6 month of rearing. Likewise, Sri Sudama Sahani of same village also reared 200 chicks and earned upto ₹ 800-1000 per bird of '*Vanaraja*' breed. Sri.Mandeep Kr Singh of Damodarpur village, Mehsi block has his own poultry farm of white colour birds was also given 25 chicks [of *Vanaraja*] and encouraged by us to rear '*Vanaraja*' birds, now he sold the adult birds for upto ₹ 1200 per bird. Other farmers who have started rearing of *Vanaraj* chicks are Mr Ripuraj Kumar Singh, Sri Krishna Singh, Sri Raghubansh Ram etc. of Damodarpur village. Smt Maltidevi of Bakhari Nazir, Mehsi, East Champaran had been successful

farmer as she save 90% of total chicks [2 week old] upto 6 month and used to sold @ ₹ 1000 per chick. Only this year she faced problems of theft, some chicks devoured by mongoose, dogs and jackal (even reared in low cost night shelter houses) (Table 1).

Similarly, after making visit to project village (Ujhilpur, Damodarpur-Rangrej Chhapra, Bakhri Nazir of Mehsi Block), it was found that there was high demand for meat and egg of Japanese quail (*Coturnix japonica*) during winter season. But most of the landless farmers did not prefer to rear Japanese quail due to high mortality (severe cold in winter and ill built and unhygienic shelter which hamper overall productivity of birds). Therefore, low cost 3 storied bamboo shelter (with dimension of 90 cm × 60 cm × 120 cm: length: width: height) with partition at 40 cm was prepared by beneficiaries. It was externally covered by wired mesh. The capacity of the shelter was for > 40-45 nos of 2 week old quail, which was also suited for 40 adult quail of 4-5 week age.

Due to this intervention, (earlier they were using shelter made up of brick and mud, such type of shelter was ill ventilated, difficult to clean the

Table 1. Economy of rearing of *Vanaraja* Chicks and Japanese quail

No. of village and farm families	No. of Japanese quail/chicks demonstrated	Production and selling of birds	Return in ₹	No. of farm families which started rearing as backyard poultry farming
35 for quail of 4 Villages	700 (+ 1000 quail bird has been purchased by beneficiaries)	After 8 weeks, 200 quail have been sold by the farmers	₹ 60 per quail of 2 month old	15
40 for chicks of 4 Villages	800 chicks have been distributed + 400 chicks are purchased by beneficiaries	After 8 weeks, 400 adult chicks have been sold by the farmers	₹ 800-1000 per chicks of 7-8 month 7-8 month old	15



Fig. 3. Rearing of black Bengal goat; Organization of animal health camp; Duckery started by women

inner part (litters) resulting into high humidity and moisture content within the shelter which hamper the growth and had high mortality percentage). 20 farmers got interest and started rearing of Japanese quail. Initially, we had demonstrated Japanese quail (4 week old) to 5 youths and 15 women of 3 villages after providing 3 days training on backyard poultry management at ICAR-RCER, Patna.

Duckery for landless women farmer

We had demonstrated 120 ducks of two breed (*Khaki* Campbell and Indian Runner) to 10 residents of Bakhari Nazir, Mehshi, East Champaran. Farm women are asking for *titar* (Swamp Francolin) and *Hans* (Swan, an aquatic bird) as they are interested to rear the same. The villagers felt that the ducks are only kept enclosed at night and during the day they are free to roam outside in search of feed. However, they are brought inside at night by putting some extra feed in the shelter. The ducks only require night shelter and nests for laying eggs. Ducks will stay around the place, provided you treat them well. An advantage of this system is that the ducks go to the feed and harvest it themselves. This way, nutrients, that the farmer cannot reach otherwise become available. Due to these advantages, 25 more farmers have now requested to get young ducks for rearing (mainly for egg production). Due to predators like mongoose, dogs and jackal, some women are scared to raise duckery (Fig. 3).

Goatry and replacement of goat breed by Black Bengal

Being the 5th largest goat population state, Bihar contributes about 7.63% of India's total goat

population. The state is also a habitat of 42.6% people below poverty line and hence there is a tremendous scope of goat farming to meet up the large gap between demand and supply of meat.

East Champaran district of Bihar is famous for champaran meat, *handi* meat (meat prepared in earthen pot on fire), *seek* (roasted pieces of goat meat) and *tass* (piece fried with oil on iron plate heated on fire), there was huge scope of rearing of goat in the area. Local farmers, landless farm women used to rear only local breed who showed less productivity (2 kids per birth, and growth was also very slow). One day training on improved practices of Goatry was provided to landless women of Chintamanpur village, Chakia block for demonstration purposes. Four she-goat and one buck were also given to 5 youths of Damodarpur Village, Mehshi, East Champaran and one each in Chintamanpur, and Bakhari Nazir village for breed improvement. The goat farmers also took part in 'National Seminar on Current Scenario and future strategies for augmenting productivity of small ruminants' organised at Bihar Animal Science University, Patna.

Benefit of organising animal health camp

During organization of animal health camp, we found that East Champaran district has more number of buffalo than cattle; infertility, repeated breeding and amoebic dysentery among buffalo. The weakness and low milk yield in animals were prevalent due to improper feeding and management. Conception rate was found to be low due to local AI (Artificial Insemination) workers doing the AI without checking the development status of ovary. Other

common diseases observed by veterinary expert were digestive problems (low appetite), respiratory and seasonal problems etc.

SUMMARY

Ducks are more prolific and produce about 20 eggs more than backyard chicken. Weight of the duck egg is 10-15 gram more than chicken egg which also attracts duckery over backyard poultry. The backyard poultry intervention was especially suited to the needs of landless households as it required low level inputs and low-skill investment from households. Goat is reared mostly for meat production. High goat population in this region is due to availability of quality fodder and grazing land. Bihar is inhabited by Bengal breed of goat, which needs to be conserved and selection should be practiced for improvement, only few of this breed is being reared by women farmer. Inbreeding needs to be checked among local breeds. Stall-feeding should be encouraged due to shrinkage of pastureland. Goats are often blamed for destroying natural resources which could be changed by adopting managerial practices. Promotion of dairy for generation of additional income of rural households and enhancement in the milk production by providing better health management and veterinary services is possible after successful animal health camp. We can reduce infertility of the livestock and spread awareness among cattle owners about the best practices of cattle rearing.

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