

Indigenous Backyard Poultry Promotion: The Keonjhar Experience

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Focusing on making BYP a financially viable enterprise, and through systematic handholding of SHG women, training them and ensuring regular deworming and vaccinations for the birds, the CAHWs have set villagers on the path to progress and prosperity.

In India, almost all rural households keep livestock, and backyard poultry (BYP) rearing is very common. BYP rearing plays a special role in the day-to-day, as well as the ceremonial and ritual lives of rural communities. BYP is a ready source of meat, and rearing is inexpensive, with low external inputs, is easy to manage and requires minimal time input. It helps control pests on farms, and there is no requirement for intensive knowledge to keep poultry in the household. It is also a significant contributor to the income of a household, especially for women, in times of emergencies.

Small livestock is the cheapest source of nutrition for tribal and marginal families; children and women meet their protein requirement mainly from eggs and chicken. Although rural BYP contributes nearly 20–30 per cent to the national egg and chicken production, it is a neglected sector yet. It can be a potent tool for the upliftment of the poorest of the poor.

This article describes the practices of rearing indigenous breeds, or *desi* birds, only. BYP promotion can also be practised with improved breeds such as *Banraja*; the experiences of poultry farmers, however, have been varied. BYP is one of the most important livestock of tribals and other rural communities because of its socio-religious use. Most tribes believe that numerous diseases, either in human beings or in animals or birds, are caused when the supernatural powers are unhappy. Therefore, in all calamities, including the mass mortality of poultry, the sacrifice of animals and chickens is a routine practice and is prevalent even today. Half the birds produced by the family are consumed at the time of festivals or when guests visit. Poultry are also given as gifts in marriages, functions and religious ceremonies by most rural communities, especially the tribals. 'Cock-fighting' (a local game which is played between two *desi* male birds and the owner of the winning cock gets the dead/defeated bird with some rewards, mostly in cash) is a popular sport and birds are reared for it.

Although no definite evidence is available about the origin of the different local breeds, ethnic tribal groups seem to have played a significant role in the development and maintenance of the uniqueness of indigenous breeds nurtured by them for years. The rural communities of Mayurbhanj and Keonjhar area mostly rear the *Hansli* and the *Gujuri* locally. The *Hansli* breed is commonly used for the local cock-fighting game. Markets have a preference for the *desi* eggs and meat of indigenous poultry rather than of farm-bred chicken. Moreover, eggs and meat from local breeds are sold at a premium price, usually double the price of commercial farm-bred poultry products.

Broiler farming needs more initial investment whereas the traditional BYP requires very low investment. Small-holder BYP production, utilizing local breeds is, sooner or later, expected to have serious competition from the commercial poultry sector; if not well planned, the genetic resources of the local poultry may

be lost, as has already happened in many of the developed countries.

Shown below are the various facets of these two poultry production systems presented from a small farmer's and women's points of view.

There is high demand for local eggs and birds. During the festival season, it is even higher. Cocks used for fights are sold at very high prices in the local market. The main interest of BYP farmers is to sell birds for the purpose of meat rather than to sell eggs. So, hatching all the eggs produced, and adopting better rearing practices, to grow and sell more and more birds is the prototype of this potential livelihood.

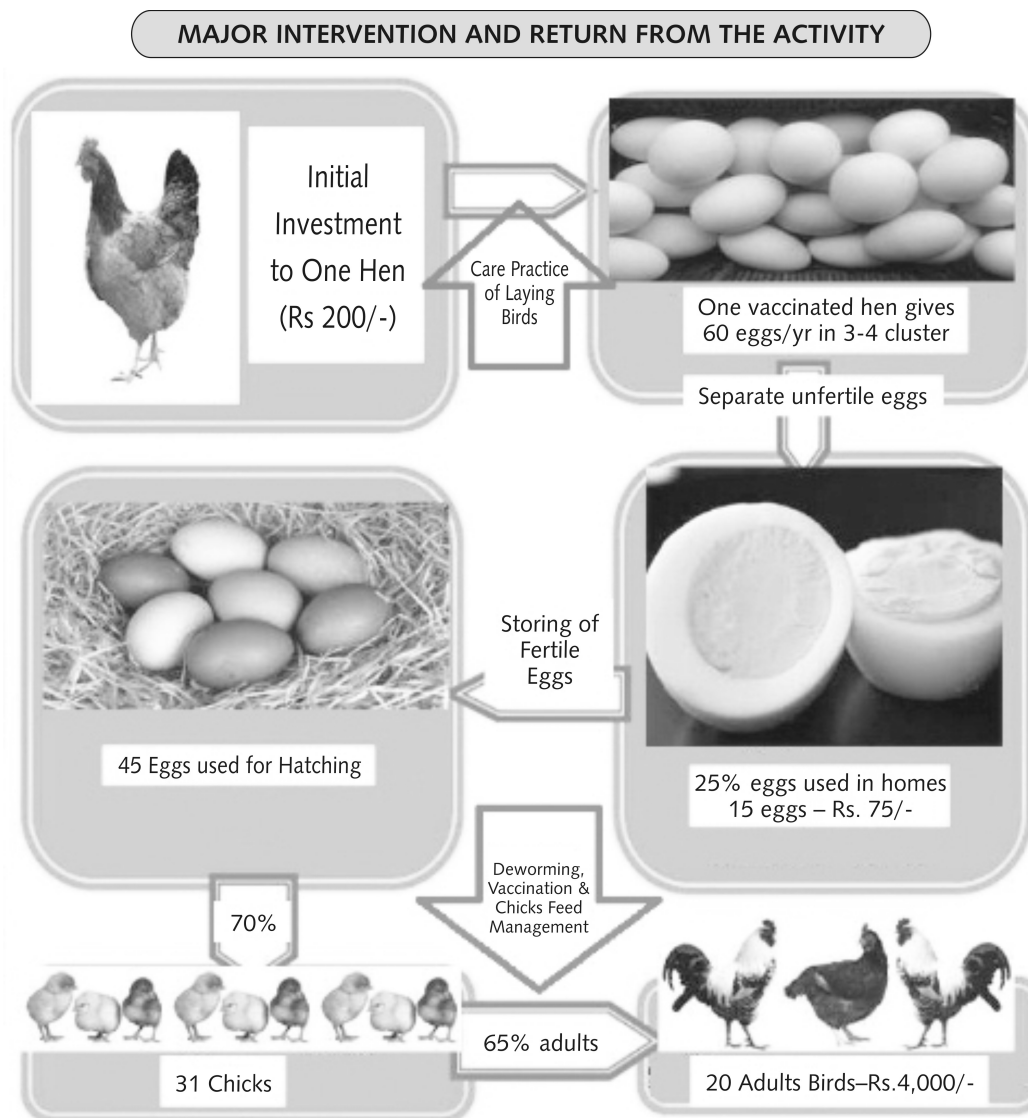
One hen produces 60 eggs per year in 3–4 laying cycles (clutches) per year. The average BYP stock of about 60–70 birds with 5–6 hen units can be easily maintained by an average family, with access to a backyard of about

Table 1: Facets of Backyard and Commercial Poultry Production Systems

Facets of Production System	Backyard Poultry	Commercial Poultry
External input	Low	Fully dependent
Dependency on outside agencies and market	Low	High
Output	Low	High
Investment vs. Return (per unit)	High	Low
Involvement of small farmers and women	High	Low
Market risk	Low	High
Effect on environment and biodiversity	Promoted positively	Negative effect
Importance regarding festival and ritual use in rural areas	High (ritual and consumption)	Medium (consumption)
Consumption of human food and grains	Very low	High
Activity contributing to producer	Social customs, Nutrition and Livelihood	Only Livelihood

Source: <http://www.fao.org/livestock/AGAP/frg/conf96.htm/rangnek2.htm>

Figure 1: Significance of BYP Rearing (Productivity and Economics of the activity)



half an acre. A small flock, managed carefully, brings more benefit than a neglected big flock.

Although there is limited scope to calculate the feed-to-cost (FCR) ratio for BYP because of the scavenging conditions and the naturally available feed, an average indigenous poultry bird gains 1.5 kg of body weight in eight months (maximum), with regular de-

worming. The bird can attain this 1.5 kg body weight within 5–6 months if provided with some supplementary home-made feed. This weight is attained without any additional supplementary feeding in the crop harvesting season because feed will be available naturally at the time of harvesting paddy or vegetables such as cauliflower and cabbage. However, a farmer may need to provide additional feed

if she does not have enough well-protected scavenging area. The probable return from the activity can be calculated after considering

all aspects of the intervention. The activity returns a significant amount to the family as described below.

Table 1: Economics of BYP for a Family

Assumption considered		Investment required	In Rupees
No. of hens	5	Shed (minimum 50–100 sq ft): Lump sum	2,000
No. of clutches per year, per hen	3	Feeder and drinkers (local made): Lump sum	200
No. of eggs per clutch	12	Expenditure (yearly)	
Chicks hatched per clutch	10	Vaccination and de-worming of 90 birds (Rate Rs 7 per year)	630
No. of chicks surviving up to the sellable stage per clutch	6	Feed (paddy, broken rice, husk)— Under scavenging conditions (Rate: Rs 10)	1,200
Price per bird (6–8 months) 1.5 kg	250	Nutritious feed provided under scavenging conditions (Rate: Rs 13)	374
Feed (paddy, broken rice, husk) provided for 8 months (daily)	0.5 kg per day	Medicines: Lump sum	200
Nutritious feed provided for 8 months (daily)	120 gm per day	Total expenditure	4,604
Return per clutch	1500	Net Income	17,896
Return per hen per year	4500		
Total Return from 5 hens per year	22500		

Table 2: Profile of Patna Block

ST & SC %	61
Literacy %	64
Population density	278
Terrain	Undulating terrain with thin forest cover
Poverty incidence	Moderate: 7% BPL
Number of SHG	530
Major community	Gond (ST), Mahanta (OBC), Bathuli (ST)
Livelihood Source	Agriculture, Livestock, Wage

PRADAN'S EXPERIENCE OF BYP

PRADAN has been operational in Patna block of Keonjhar district since 2001 and has been working in nine *gram panchayats*. Livestock is the second most important source of livelihood for the poor farmers of the area, after agriculture. Almost all the families in the area traditionally rear small animals such as goats, sheep and poultry in their backyard. Although rearing of BYP is very common in the households, the activity is not looked upon as income-generating because of the frequent mass mortality of the birds. Diseases such as the Newcastle Disease (ND) and fowl-pox in BYP, and PPR (Peste des petits ruminants), enterotoxaemia and goat-pox in goats are widespread in the area. This also comes in the way of the community maintaining a reasonable herd-size, so that the activity may be seen as viable.

In 2011, the PRADAN team in Banspal block of Keonjhar initiated a project on developing a self-sustaining system, to provide affordable and effective vaccinations, de-worming and basic health care services to BYPs and small ruminants, with support from GALVmed (a global organization working on deadly diseases in different countries). After seeing the positive results in Banspal, it was decided to expand the programme to Patna block. Because of the presence of the forest, the community in Banspal rears more goats and less BYP (due to the high incidence of predation of birds). In Patna block, the community rears mostly BYP because of the presence of larger homestead land and less incidence of predation. There are also fewer goats because there is less forest coverage and less grazing land. An integrated programme was designed for Patna block,

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taking into consideration the community's willingness and capability. The objectives of the programme are:

- (a) To support a large number of small and landless farmers, who had been mobilized into SHGs for many years, in enhancing their household income
- (b) To have a viable livelihood option for women, without affecting their current livelihood engagements
- (c) To control deadly diseases such as RD (Ranikhet Disease) and PPR in the area, the presence of which is hampering the establishment of livestock-based livelihood
- (d) To establish self-sustaining localized livestock-related service systems, through grooming and establishing Community Animal Health Workers (CAHWs).

Though the intervention was for both—BYP and small ruminants such as goats—the focus was more on BYP because the area had a larger scope for BYP than goats. Moreover, the intervention for BYP caters, more or less, to the need to support goat-rearing simultaneously.

INTERVENTIONS IN BYP

Creating Awareness

An exposure visit was organized for the members of Baitarani Mahila Sangha (BMS) Federation, a Federation of the SHG members in Patna block, to Banspal, for a better understanding of the mass vaccination programme and its implications on BYP. BMS members were very excited to see the programme and learn that because of the vaccination, the mortality of the birds has been controlled; the women are managing to keep

a big flock size and are earning good profit from the activity. The members were keen to initiate such a programme in their own area as well. In Patna block, the BYP programme was initially introduced in nine *gram panchayats*, covering 49 villages.

The women were made aware of the importance of vaccination and de-worming, using various Information Education Communication (IEC) tools such as street theatre, wall painting, leaflets, posters and screening of videos. The traditional street theatre is embedded in tribal culture and has religious overtones in the area. The use of theatre to spread awareness has been successful and has helped the community to appreciate the importance of vaccination and de-worming; and it has become interested in the programme.

SHG members then identified local youth from their village, based on their reading and writing skills, their availability in the village, and their interest and attitude. These local youth were trained as Community Animal Health Workers (CAHWs). BMS finally selected 40 CAHWs from those recommended by the SHG, using an ability test, followed by an interview. The CAHWs were then trained in two batches, with the support of GALVmed.

To initiate the programme, all the selected CAHWs and village-level SHG leaders were trained in motivational as well as the basic technical aspects in different phases. The selection of the entrepreneur (vaccine and medicine retailer) was also done to establish a cold chain system and medical services.

The mass vaccination and de-worming programme was supported by GALVmed for one year. Almost 3,000 families were covered

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in the first phase of de-worming and vaccination. Two monthly meetings are conducted by BMS, to monitor the work of the CAHWs, the delivery system, the training of the SHG members, the monthly planning and a review of the progress.

Regular meetings are held, and members discuss various issues regarding the vaccination

and de-worming schedule, and work of the CAHWs. Other than periodic vaccination and de-worming, trainings are given regularly to SHG members by CAHWs on improved practices such as chick or kid management, supplementary feed, hatching practices and shelter, to enhance the activity.

The community is mainly rearing poultry, goat, sheep and duck in the area, depending on the family context such as the availability of natural feed or fodder in the village, availability of labour in the family as well as the community context. Rearing any single species of livestock such as goats or BYP may exclude some poor families from engaging in livestock-based livelihoods as a poverty reduction programme.

The interventions started with a vaccination and de-worming service of all small ruminants and birds. The vaccination service had earlier become erratic because the mortality of animals due to deadly diseases was in decline in some areas. People have, once again, realized the importance of regular vaccinations after the recent disease outbreaks. Gradually, the team also initiated a first-aid service and improved medical services, to establish the activity.

Developing Sustainable Service Delivery System

The objective of the system was to establish the vaccination and medical services in a

sustainable manner at the doorstep of the farmer, through an entrepreneurship approach. As poultry vaccination and deworming are usually done in the evenings after the birds come home, there is need for a community link worker in the village. In the livestock service programme, the CAHWs have been groomed as entrepreneurs and are getting paid for their services from the community. Each CAHW caters to 200 to 250 families.

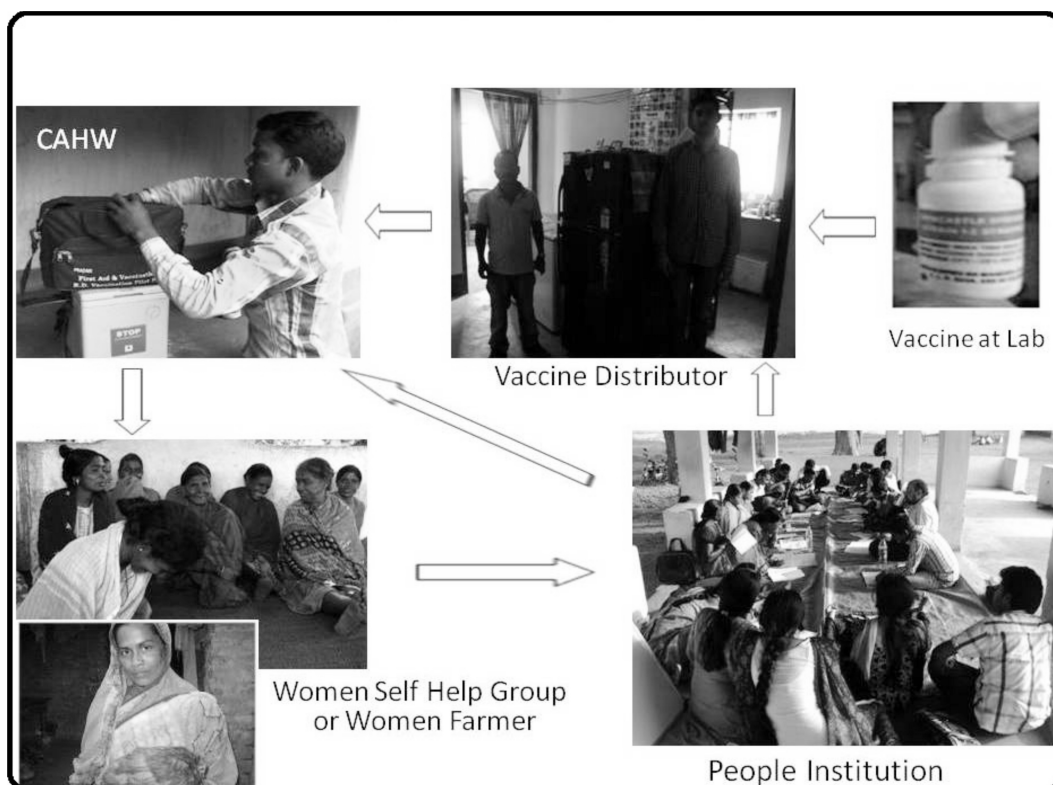
The trained CAHWs have been provided with some input support such as the thermo-flux vaccine carrier and a kit bag with instruments to maintain a cold chain and provide services in the area. To ensure mass vaccination,

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maintaining a cold chain is a pre-requisite to run the service sustainably. An entrepreneur system has been established in the area to provide medicine and vaccines to the CAHWs on a regular basis. A PRADAN promoted local broiler co-operative acts as a vaccine retailer. The local medicine

store or veterinary store can also act as an independent entrepreneur. The selection of the retailer is very crucial for a regular supply of medicines and vaccines. The retailer also provides a report on the selling of the vaccine and medicine on a regular basis. The report helps in tracking the progress of the mass programme and to cross-check it with the data provided by the CAHWs.

Figure 2: Service Delivery System



CAHWs purchase all the vaccines and medicines from identified medicine shops in their vicinity. Villagers with BYP and goats avail of their services, on payment basis. These services are made available at a reasonable price at the villagers' doorsteps, and are easily accessible and affordable by all the families of the village, including the poorest section. A regular meeting of all the CAHWs takes place at the central level, supervised by BMS, to facilitate work, track the progress vis-à-vis the plan, address concerns and monitor the efficiency of CAHWs.

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- ♦ Technical training on de-worming, vaccination and medication practices of livestock (birds and shoat)
- ♦ Training on improved practices regarding nutrition, chicks or kid management, hatching practice, bio-security measures, night shelters, etc.
- ♦ Training on community services and entrepreneurship regarding the importance of cold chains, the role of an entrepreneur, communica-

tion skills to deal with the community, the importance of a leadership role, etc.

TRAINING CAHWS AND BYP REARERS

GALVmed has played a major role in grooming CAHWs and providing them with technical guidance. Various technical trainings have been conducted for CAHWs, with the support of the Veterinary Assistant Surgeon as Consultant from GALVmed. Moreover, CAHWs have been groomed as a unique exercise by following these steps:

- ♦ Orientation-cum-vision building of selected CAHWs

- ♦ Training of Trainers to provide training to women farmers at the village level

The three-year experience of this group is described in Table 3.

Intensive capacity building of the rearers (mostly women SHG members) was incorporated in the existing strategy. CAHWs provide regular training to SHG members on rearing and management practices. Regular meetings are organized at the SHG level by

Table 3: Analysis of the Three-Year Engagement of CAHWs

Analysis of Engagement of 40 Selected CAHWs for Three Years	2012-13	2013-14	2014-15
Average monthly income (Rs)	1526	1428	2042
Range of income (Rs)	504-4000	295-3800	315-5472
Income from vaccination	56%	48%	49%
Income from de-worming	42%	35%	33%
Income from medication	1%	17%	18%
CAHW dropouts (of the 40)	5	3	2

CAHWs for women rearers, who help in peer learning, in demanding and realizing regular services, in ensuring payment to CAHWs, in providing first-aid services, improved rearing practices of livestock, etc.

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made aware of the schedule; the rearer pays Rs 1 per bird, per service to the CAHW. Two common vaccines—LaSota and R2B—are being used in our context. Because the ND vaccine is live and freeze-dried, it must be kept at a temperature between 0° and + 80° C, even

CONTROLLING MORTALITY

The commonly occurring diseases in the area are Newcastle Disease (ND), also known as Ranikhet disease, fowl pox, lice and worm infestation.

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To control the mortality, a vaccination calendar has been drawn up and the rearers have been

while carrying the vaccine from one place to another. LaSota is an eye drop whereas R2B is an injection. Eye-drop administration provides the best protection because the vaccine passes to the Harderian gland, just behind the eye. (The Harderian gland is one of the key organs in the development of the immune response in chickens).

De-worming and vaccination are the major stepping stones for those who want to take this livelihood up on a large scale.

Table 4: Vaccination Schedule

Type of Regular Services	Promote For	Age Considered	Method	Doses	Periodicity	Vaccine/Medicine Tentative Rate (Rs)	Payment Per Bird
LaSota	RD vaccine	21-day-old chicks	Eye drop	1 drop/ bird	3 months	25 per 100 dose	Rs 1
R2B	RD vaccine	3-month bird or 200 gm body wt.	Injection	0.5 ml/ bird	6 months	30 per 100 dose	Rs 1
Albendazole/ Felmedazole	De worming	15-day-old chicks	Through mouth	1–5 drop depending upon the size (no. of months)	3-4 months	250 per Lit.	Rs 1
Fowl pox	Fowl pox vaccine	3-month bird or 200 gm body wt.	Injection	0.2 ml/ bird	1 Year	42 per 200 dose	Rs 1

Figure 3: Vaccination and De-worming Calendar

Month --->												
	January	February	March	April	May	June	July	August	September	October	November	December
Chicks	De-worming & Lasota			De-worming & Lasota			De-worming & Lasota		Fowl-pox (more than 2 month)	De-worming & Lasota		
Bird	De-worming & R2B			De-worming			De-worming & R2B		Fowl-pox	De-worming		
Goat	De-worming & Pox		ET		De-worming	PPR			De-worming		ET	

IMPROVING REARING AND MANAGEMENT PRACTICES

Although there was need to focus on mortality checks through regular vaccination and de-worming, the intervention needed to be more holistic in nature. Training on aspects such as nutrition, housing, breed improvement and a curative disease control mechanism would ensure substantial income to families. A Training of Trainers (ToT) was conducted for selected CAHWs on rearing practices, using pictorial material on local hatching and brooding processes, preparation of feed, chick management, low-cost housing with local material, benefits of using feeders and drinkers, how to protect chicks from predators, identifying epidemic diseases through symptoms, recognizing the carrier of widespread viral diseases such as RD, control mechanisms of these diseases, the treatment of lice, utilizing the service calendar, the economics of BYP and goat-rearing, etc.

These CAHW-cum-trainers were engaged to provide rearing and management training to SHG members. An SHG-led services system (wherein an SHG as a whole demands regular vaccination and de-worming services from CAHWs and make their payment collectively) was found to be more sustainable than generating demand, ensuring payment and maintaining a long-term association with the CAHWs.

Shelter: Night shelters are required to protect birds from predators, and to protect chicks in the rainy season. Usually, poor farmers do not provide any separate shelter for the birds, which are housed in their homes. Chicks are usually kept under a basket, and the bigger birds cuddle up in one corner of the room during the night. Sometimes, the night shelter of the birds is made up of locally available material. A shelter is crucial to protect the birds from wild and stray animals.

Hatching Practice: The selection of the breed of a laying bird is also important, for improving egg production. A good shelter helps in safeguarding eggs and in monitoring the hatching process. It becomes easier to record the performance of individual hens because each hen lays her eggs in a separate nest regularly, and to get information on egg production, laying capacity and hatching performance of each hen. Those hens with a higher egg production and hatchability

can then be selected to reproduce the next generation of birds.

Feed: Recycled household and farm wastes, and naturally occurring resources comprise the feed of BYP. Grain and grain by-products such as broken rice, bran, cabbage leaves, maize, millet, drumstick leaves, leafy vegetables, termites, azola, etc., are usually used as supplement feed for the birds, except during crop harvesting time. Table 5 shows how nutritious feed can be prepared.

Table 5: Preparation of Nutritious Feed for BYP

No.	Particulars	Quantity	Rate (Rs)	Process of Preparation	Use	Benefit
1	Rice husk dust	500 gm	0.5	Mix all material and keep in dry place	Add required water before use. Use feeder to reduce loss	The feed can be used for 10 days for 50 bird stock size (under scavenging conditions)
2	Broken/Reject rice	500 gm	8			
3	Dry fish dust	150 gm	4			
4	Cake dust (Sunflower/ Mustard/ Niger)	50 gm	2			
5	Mineral mixture	1 teaspoon	1			
6	Salt	2 teaspoon	0.5			
TOTAL		1.2 kg feed	16	Feed Rate: Rs 13 per kg		

Jayamani Munda is a 35-year-old woman. She is a member of the Maa Kichakeswari SHG. She lives in Bardangua village, of Chemana *gram panchayat*, Patna block, with her husband Arjun Charan Munda and their three children. Arjun is ill and not in any state to support his family. Her son and elder daughter are studying in classes VI and II, and the younger daughter is only one-and-a-half years old. The family owns 50 decimals of land on which they grow paddy. The family has only a two-month food sufficiency, and is completely dependent on rice from the Public Distribution System (PDS).

Until a year ago, to make ends meet, Jayamani would work as wage labour and support the family. Jayamani took up the BYP activity in 2014 after seeing the economic impact that it had on the other families in the neighbourhood. At present, she has 45 birds including five hens as the mother stock. She happily says that she earned Rs 15,000 from BYP in one year and still had 20 birds for home consumption. She sold her birds in the local market for Rs 230–240 per kg. She never imagined earlier that BYP could be a sustainable livelihood for her family. She found BYP to be a less labour-intensive and a low investment activity.

Also, because Jayamani has small children, she finds BYP a very good intervention. It is not very time-consuming and she cares for BYP along with her other work. She now brims with confidence that she can earn a good income from rearing BYP. She is also very proud that she did not have a single mortality because she followed the vaccination and de-worming process regularly, as advised.

She now knows that regular vaccination and de-worming of birds is the backbone of the new activity she has found. Before this intervention, she had never sold her *desi* bird in the local market. She sells her birds when they each weigh a kilogramme. She found that selling them at this stage is more economical and manageable than waiting for the birds to gain more weight.

After ten months of the intervention, she made an effort to improve the rearing practices of BYP. CAHW, Pradumna Maharana, helped her to learn how to prepare feed for BYP. Learning this was particularly helpful for her because the family did not have sufficient grain or husk to feed the birds. Jayamani has also started using a feeder and drinker, on the advice of the CAHW. The de-worming and the nutritious feed helped the birds attain a body weight of 1 kg within four to five months. Now Jayamani is looking to increasing her stock

She receives support from her family members for this activity. Jayamani shares that the money that she earns from this activity is used for emergencies and medical purposes. Jayamani has a vision to provide education for her children as per their wish. Not only that, she wants to purchase gold for her two daughters and plans to marry them into good families. She proudly says that BYP can play a major role in helping her fulfil her vision within a few years.

CHALLENGES

♦ Dropout of CAHWs in the initial period.

Once the vaccines were administered, the occurrence of disease dropped and people did not feel the need for vaccination. This led to a drop in the demand for vaccinations. CAHWs, on the other hand, needed a certain scale of operations for financial viability; this was difficult to ensure initially when the utility and the efficacy of the services needed to be established. Moreover, the payment system had not been put in place and CAHWs were unable to get their payments on time. The outbreak of bird-flu within the first year, created much confusion. Some thought that the vaccination was not helpful; some suspected that it might have been caused by the vaccination! Moreover,

some CAHWs lost the enthusiasm to engage as entrepreneurs or collect service charges from farmers of their own village. Zero cost or subsidised vaccinations also did not help establish a sustainable service system. These are some of the reasons resulting in the initial CAHW dropouts.

♦ Lack of cooperation and collaboration between CAHWs and Animal Resource Department (ARD).

The local ARD staff felt threatened that they would lose their base or acceptance and business because of these CAHWs. The government does not have the personnel to provide services at the doorstep. Once the community became aware, it began to demand that the government also maintain a cold chain. CAHWs also found it difficult to collect a service charge because the government

usually subsidised the vaccines whereas CAHWs could not offer any subsidy in the initial period. Large-sized vaccine packs in case of fowl-pox and goat PPR caused huge losses for all CAHWs.

- ♦ **Poor electricity supply.** It is difficult to establish a supply chain activity in a low population density area with poor electricity supply.
- ♦ **Maintaining a cold chain during the summer season especially in remote areas.** The vaccine calendar has to be designed in the context of the area and needs to address the challenge.
- ♦ **Predatory animals.** Predatory animals such as dogs, wild cats and other wild animals are a problem in most of the villages situated either near or within the forest area. Fencing at the homesteads may be helpful to protect the birds from predators.
- ♦ **Low confidence of families.** People lacked belief in the importance of this programme in the initial period, especially in bird-flu affected areas. There was no mechanism or medicines to control bird-flu. Although the birds were given the RD vaccine, people responded sluggishly in the bird-flu affected areas due to their lack of awareness.

IMPACT

From among the villages where the intervention was introduced, eight sample villages and 1,115 families were studied for impact assessment. A control village in the same area (where no such livestock vaccination and de-worming programme had been initiated or carried out ever) was also selected to compare

Overall, the communities have appreciated greatly the services of the vaccination and de-worming of livestock

the impact of our intervention. The first year intervention helped the community increase their stocks substantially. In the second year, the community sold their product on a large scale.

Data was collected from 79 families through random sampling in March 2015 (the third year). The activity is increasing and proving to be a viable livelihood option across the area.

Table 6 shows the impact of the activity in the treated villages as compared to the control village in the first year. Table 7 shows the income enhancement in the second and third years through random sampling in the area.

The impact of de-worming is clearly observed within one month, in case of BYP, and within three to four months, in case of goats, in terms of growth and lustre. RD in poultry birds and PPR in goats is largely under control in the treated villages. This preventive intervention of vaccination was an entwined experience.

Overall, the communities have appreciated greatly the services of the vaccination and de-worming of livestock. However, some families have been voicing their concern about the mortality of their birds due to various reasons such as RD and bird-flu.

The impact of the drive—to motivate communities and create awareness about the importance of vaccination as a preventive measure—was also partial. Some families stopped vaccinating their birds because RD was controlled after the first round of vaccinations. The outbreak of disease in vaccinated birds stopped completely whereas the un-vaccinated birds of the same hamlet died. The biases of the community needs to be addressed, and more time and effort is required to establish a sustainable service system.

Table 6: Impact Assessment of Control and Treated Villages

Impact Assessment: April 2012 to April 2013						
Intervention in Patna Block (First Year)	Control Village (One village: 98 Families)			Treated Village (8 Villages: 1,115 Families)		
Average figures (Per HH)	Before	After	Growth	Before	After	Growth
Poultry population	4.55	4.46	-2%	9.56	22.41	134%
Chicks per hen	2.94	2.86	-3%	3.5	4.9	40%
Poultry bird mortality (%)	110			40		
Goat population	1.63	2.11	29%	2.94	5	70%
Kids per doe	0.81	0.69	-15%	0.73	1.09	49%
Goat mortality (%)	20.6			6.3		

Table 7: Impact Assessment of 79 sample families

Impact Assessment: April 2013 to March 2015 79 Sample Families in Patna Block					
Average Figures (Per Household)	April 2013	April 2014	April 2015	Growth (Year 2)	Growth (Year 3)
Bird (Big) population	10.8	12.3	14.1	12%	13%
Chicks population	12.5	17.6	22.2	29%	21%
No. of birds sold in the year	NA	11.7	14.5	NA	19%
No. of birds consumed in the year	NA	15.9	16.6	NA	4%
Net amount (consumed + sold)	NA	7,019.63	10,188.61	NA	31%
Growth of production in the last 2 years					65%

CONCLUSIONS OF THE IMPACT ASSESSMENT STUDY:

- ♦ The outbreak of RD has been completely controlled in vaccinated birds whereas non-vaccinated birds in the same hamlet died.
- ♦ More than 2,000 families are now confident of generating an income of about Rs 20,000 from BYP activity in the area. In combination with their income from goat-rearing, the villagers hope to enhance their income to about Rs 30,000 per annum.
- ♦ CAHWs earn Rs 2,000 to 3,000 as entrepreneurs by working about 12–15 days per month, covering 180 to 220 families in 1–3 villages. BYP activity helps them meet the immediate needs of their family as does the goat-rearing activity.
- ♦ In a homestead farm-based system, where the vegetable and horticulture farms are adjacent to the home, BYP is very acceptable as part of the farming system.

CONCLUSION

For many livelihood-promoting agencies, the challenge has been to identify, design and promote livelihoods or strengthen interventions that would support the poorest of the poor of any community. This intervention of establishing a sustainable service system for vaccination, de-worming and basic rearing and health-care of the livestock, especially for BYPs and goats, is probably better positioned to address this challenge. A large number of the poorer households in the project villages, including the women and the destitute, have participated and benefitted significantly from this activity.

The following are the unique features of this intervention that position it as being really suitable for these vulnerable households. Aspects such as:

- ♦ Low or minimal investment requirement
- ♦ Low gestation period
- ♦ Continuous income flow
- ♦ Low level of risk
- ♦ Scope to initiate the activity at a varied scale that can gradually be scaled up
- ♦ Low dependency on external linkages
- ♦ High market demand
- ♦ Less time and energy consuming
- ♦ Minimal entry or exit barrier
- ♦ Low skill or competency requirement
- ♦ Socially acceptable in most areas
- ♦ High liquidity of produce such as birds and goats
- ♦ High significance for ritual and social needs
- ♦ Easy to establish the support system, etc.

The uniqueness of this programme makes it better suited to most of the rural families, including the poorest section.

This is also more suitable for women because it is socially accepted that livestock-rearing is usually considered an activity of women. They have a better say in production and sale and have better access to income from its sale. Further, this activity can be done by large number of families in a village, helping establish a business model for service providers like CAHWs.

The activity does not require large grant support or long-term hand-holding from any external agencies. Establishing a supporting service system helps many poor families to take up BYP or goat-rearing on a business scale. These special features of the intervention position it as the most effective intervention, to strengthen the livelihoods of the poor rural community.