

Mass Vaccination Programme: Preventing Deadly Diseases in Small Livestock in Keonjhar

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Establishing sustainable private-public delivery systems for basic vaccination of BYP and small ruminants is bringing about change in Keonjhar, combating deadly diseases that wipe out the stock on a regular basis thereby offering hope to the landless poor

Livestock, especially backyard poultry birds (BYP) and shoats (sheep and goat), has been the most significant contributor to the livelihoods of the poor and marginalized rural families of society, especially women—it not only enhances their food security but also meets most of their cash flow needs, including in emergencies. The poorer the family, the higher is the relevance of small livestock in their life. That is why probably poultry birds are called the poor woman's ATM and goats are called a poor man's cow.

However, livestock suffer immensely due to the absence of proper supporting service systems in the area. The occurrence of destructive diseases such as Newcastle Disease (ND) and fowl-pox in poultry birds, and *Peste Des Petits Ruminants* (PPR), enterotoxaemia and goat-pox in goats has severely affected this sector, causing frequent mass mortality. In spite of this, the poor farmers do not give up and continue to rear poultry and shoats. Most poor families either borrow new stock from relatives and neighbours or take a loan from their SHGs to restart the activity.

Both poultry birds and shoats have a high regeneration potential and, thus, within a small period, a sizeable increase in flock or herd size can be attained. If mortality can be checked and some improved rearing practices ensured, this intervention can bring in a substantial income. In the absence of control over mass mortality, the families lack the confidence to make investments to rear poultry or shoats for business, and thus allow these to grow on their own at a sub-optimal level. This situation calls for a systematic intervention to control the mass mortality of livestock, in order to help poor families make a decent income.

CONTEXT

PRADAN started its intervention in livestock promotion (small ruminants and BYP) in Banspal and Patna blocks of Keonjhar. As seen in Table 1, most of the families in both the blocks have goats and BYP. In Banspal, the forest coverage is very high, that is, the average grazing land available for goats is about 5 to 6 ha per family; each family has an average backyard of about 50 decimals to one acre in both the blocks.

In spite of this huge carrying capacity of the locality and the growing market demand for poultry and goat meat, the potential of this business is not being harnessed. The single most important reason for this under-utilization is the inability to combat deadly diseases, which wipe out the stock on a regular

basis. In most of the villages, Ranikhet Disease (RD) occurs at least twice in a year and kills 60–90 per cent of the poultry whereas fowl-pox occurs at least once a year, affecting 40–70 per cent of the birds. Similarly, PPR in shoats occurs almost every alternate year, resulting in the death of about 60 to 90 per cent of the shoats. Although remedies are available to control the diseases, families seldom access these. Poultry and small ruminant sector can support the poorest section of the society; however, the control of diseases is far beyond the villagers' ability. The current structure of the Animal Resource Department (ARD), with its thin staff presence, is unable to address this huge challenge. The focus of the department is mostly confined to large ruminants (cattle and buffaloes). Private players also do not find this sector lucrative enough to venture into.

Table 1: Socio-Economic Profile of the Project Area

Parameters	Banspal Block	Patna Block
Scheduled Tribe (ST) %	79.3	52.9
Scheduled Caste (SC) %	4.3	8.3
Below Poverty Line (BPL) %	88.4	72.68
Population density per sq km	60	278
Literacy level %	27	64
Terrain	Hilly terrain with high forest cover	Undulating terrain with thin forest cover
Community	Bhuyian, Juang and Gauda	Gond, Mahanta
Average annual income	Rs 22,000	Rs 30,000
Livelihood sources	Forest dependence (selling wood), livestock-rearing, wage labour and agriculture	Agriculture, livestock-rearing and wage labour
Average annual income (BYP and goats)	Rs 4,000	Rs 5,000
Livestock population (average per family)	Poultry: 8–12	Poultry: 10–15
	Goats: 5–7	Goats: 3–5
	Cattle: 2	Cattle: 2

Source: Sample data collection from the operational area and Census 2001.

The team decided to intervene in establishing veterinary services for BYP and small ruminants belonging to poor farmers in the Banspal and Patna blocks. The overall objective of the intervention was to establish sustainable private-public delivery systems for basic vaccinations of BYP and small ruminants.

The objectives for the programme to be achieved in the short run (1–2-year period) were:

- Building awareness and developing appreciation on improved livestock rearing practices, including regular vaccination and de-worming
- Establishing a system for the provision of vaccination and medication services on a sustainable basis at the door-step of the farmers by developing entrepreneurs around these services
- Ensuring regular vaccination of poultry and other ruminants belonging to all the farmers in the project area on a regular basis
- Providing approximately Rs 10,000 to 12,000 additional annual financial return to targeted families

Considering the above challenges, PRADAN initiated a pilot project covering about 10,000 families in the Banspal and Patna blocks in April 2011, with the support of GALVmed—a not-for-profit global alliance, which has a focus on ensuring better livestock health and improving the livelihoods of poor livestock keepers. GALVmed provided technical and financial support for the programme from April 2011 to March 2013. This initiative was taken to address various constraints of the livestock

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The pilot project was initially implemented in 53 villages of 10 *gram panchayats* of Banspal block. After an initial positive experience, this project was

expanded to six more villages of the block and to the adjacent Patna block, covering another 58 villages in 9 *gram panchayats*. In total, the pilot project covers 117 villages spread over 21 *gram panchayats* belonging to the two blocks.

MODEL

- Three to five community animal health workers (CAHWs) were selected in each *gram panchayat* by the already existing SHG members of the respective areas so that the CAHWs could provide service to about 200 to 250 farmers residing in two to three villages. In this way, CAHWs would be able to earn about Rs 3,000 per month over 12–15 days.
- CAHWs were prepared through a series of training on administering vaccinations (ND and fowl-pox) and de-worming of BYP, and administering PPR vaccinations and de-worming of goats along with some livestock-related first-aid services in their localities.
- In each village, a village resource person (VRP), usually a woman, was trained to demonstrate good rearing practices and to provide support to CAHWs during the vaccination, de-worming and medication processes.
- The local poultry co-operative stocked all BYP vaccines and worked as a stockist.

Locally identified medicine stores or independent entrepreneurs served as retailers for BYP vaccines at the block level for the CAHWs. These CAHWs worked in close collaboration with the ARD so that they could support each other to make their work more effective.

Building a local cadre to conduct vaccination and de-worming was a key requirement of this project; therefore, all SHG members of the gram panchayat organized meetings, in which two or three CAHWs were selected to look after every gram panchayat

'ASHA *didis*', in health services. Following this event, many SHG leaders and PRI members took the responsibility of organizing village-level meetings to share information about this project.

In addition to this, one or two SHG leaders from each village were selected as VRPs, who assumed the responsibility of mobilizing the community and providing the necessary support to CAHWs during the

IMPLEMENTATION

The intervention in the two blocks was started with an orientation of PRI members and the SHG leaders at the *panchayat* level. Meetings were called at the *panchayat* level, in which SHG members, their family members and PRI members assembled. Awareness was created about the importance of de-worming and vaccination for the health and life of the livestock. Following this village-to-village campaigning, awareness was created through street plays (*pala*) enacted by local groups, through posters and leaflets and through movie-shows in all the villages. This helped in generating the required understanding and appreciation about the importance of vaccination and the de-worming of BYPs and small ruminants. In most cases, the participants appreciated 'the need and importance' of these services.

A point that was raised in the discussion was the need for having an on-time, door-to-door service to the rearers. Building a local cadre to conduct vaccinations and de-worming was a key requirement of this project; therefore, all SHG members of the *gram panchayat* organized meetings, in which two or three CAHWs were selected to look after every *gram panchayat*. A total of 25 CAHWs were selected from the 10 *gram panchayats*. The role of the CAHWs was largely conceived as the role played by the

vaccination and de-worming activity. A total of 97 VRPs were selected from all the 53 project villages in Banspal block and were given an initial training of two days.

Orientation events were organized for CAHWs and VRPs separately. The events helped participants develop a better understanding about the potential returns from BYP and goat-rearing. It helped them to take ownership of the project and gain clarity about their role. A series of technical trainings were conducted for CAHWs by the GALVmed consultant and the local veterinary assistant surgeon, regarding the administration of de-wormers and vaccines such as Lasota, R2B, fowl-pox for poultry, and PPR and goat-pox for goats; improved rearing practices (proper housing, nutrition, sanitation, etc.), cold chain and identification and control of important diseases. Issues such as communication skills to deal with clients were also discussed. In the technical training programmes, theoretical and practical aspects were covered so that the participants felt confident to go to the field. These included a three-day training in poultry de-worming and vaccination, a one-day training on management practices, a one-day training on goat de-worming and vaccination, and a one-day training on cold chain.

A motivation event was also organized with the help of external resource persons; the objective was to train the participants for their future work, including interacting with the community, communicating with people, leadership roles, etc. To facilitate the work and enhance efficiency, regular meetings at the *gram panchayat* level as well as at the project level were organized, wherein detailed plans were made, progress vis-à-vis the plan was tracked, problems and concerns were raised, and actions steps were planned to address concerns.

Simultaneously, 22 leaders were selected by SHG members from their respective areas to act as members of the co-operative body conceived for the project. Three meetings

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were organized of these leaders, to generate a common understanding of the need of the co-operative body and to develop a strategy for its sustenance.

The community responded well to the drive to vaccinate its birds and goats. Within a period of two to three months of the vaccination process, outbreaks of PPR were completely controlled in the vaccinated goats whereas the goats in the same hamlets that were not vaccinated died. A similar observation was made about ND outbreaks among flocks. Once the community observed the visible gain in weight after the administration of the de-wormers, they as well as the CAHWs, steadily gained confidence on the efficacy of the vaccination and de-worming process.

Rasmita Naik Extends Herself as CAHW

Rasmita Naik, a housewife, used to do her household chores and sometimes opt for wage work in her own or nearby villages to help run her family. She was selected by her SHG to work as a VRP for her village during the initial period of the GALVmed pilot project. After the CAHW of her area dropped out of the project, she was chosen as CAHW by SHG members.

Her husband used to work as a wage labourer in the nearby mines. Due to his ill-health and the closure of the mine, however, there was no income for the household. It was difficult for Rasmita to run her family during this period. After her selection and subsequent training as CAHW, she started carrying out vaccination and de-worming in her operational area, and gradually learned all the skills and gained the confidence of the community. She now earns Rs 2,500 to 3,000 per month and manages her family solely on the income generated from this work. She can afford clothes for her children; provide for private tuitions for her daughter, which in turn has enabled the daughter to get a scholarship in Class V. She has also managed to pay for the repairs of her house this year.

She is proud that she provides the finances to run her family and is respected by the community. Even her parents are proud of their daughter and the work she does. Her husband, who does not keep too well, supports her in managing the household work and in taking care of their children. He accompanies her when she needs to go to distant places for vaccination, etc.

EXPANSION

Because of the success of the project, it was expanded to two more *panchayats* in Banspal block and to nine *panchayats* in Patna block.

The Patna block had a strong SHG Federation and was very active in generating awareness among the community members about the concepts of vaccination and de-worming and their benefits. They were brought to the Banspal area for an exposure visit, to understand the advantages of mass vaccination conducted by CAHWs and the benefits accrued by the farmers.

After their exposure visit, the women members were eager to kick-start a similar programme in their area and conducted village-level, concept-seeding meetings, in which they selected new CAHWs, giving priority to women. In all, they selected 44 CAHWs (17 women) to cover 58 villages. These new CAHWs were taken to Banspal, and each of them stayed with an experienced CAHW for two days to understand their role. This exposure and orientation programme was very effective. The CAHWs in Patna block were trained as entrepreneurs from the very beginning. The area is more socio-economically sound and the importance of vaccination in large animals was largely known; hence, service charge collection from the community was mandatory from the very beginning. The CAHWs underwent intense training and were provided with vaccination kits.

MAJOR CHALLENGES

Amid these positive outcomes, some challenges too came up that needed to be addressed.

- **Drop-out of CAHWs in the initial period:** Ten CAHWs dropped out of the initial pool of 24. The relatively educated youth left when they found opportunities

to earn more. Some others dropped out at a later stage when they found it difficult to collect the service charge and to face the community, post the bird-flu period.

Women CAHWs were found to be better workers when the potential business volume was in their own village; it was difficult for them to visit other villages in the evening hours for vaccination and de-worming services.

- **Low income realization by CAHWs:** A major challenge was the low income of the CAHWs because of high predation and extreme cold, which affected the chicks; the remoteness and relatively small size of villages coupled with low paying capacity because of abject poverty. Further, the relatively large size of vaccine packs, for example, the goat PPR vaccine (100 doses) was loss-incurring due to under-utilization of the vaccine.
- **Co-operation of ARD:** Although the ARD was sensitized to the project from its inception, livestock inspectors (LIs) of the area perceived the presence of CAHWs as a threat to their business. Earlier, LIs administered the vaccination without maintaining a cold chain. As awareness developed about the importance of a cold chain in the project, it affected the acceptance of LIs in the area. A series of events were organized to allow interaction between CAHWs and the ARD department staff to understand and appreciate each other's efforts and to develop a collaborative spirit.
- **Establishing a supply line:** The existing broiler poultry co-operative of PRADAN serves as the vaccine supplier at the Patna block level. However, the most difficult

challenge was to establish the bottom rung of the supply line in Banspal block. The few existing human medicine shops in this remote area did not find the supplying of vaccine a profitable business because of the operating costs of running deep-freezers, taking care of the medicines during power failures, the maintenance efforts, etc., seemed to outweigh the income realization at the current business volume. Small-sized freezers have been installed so as to reduce maintenance and power consumption to make it more economical. At present, entrepreneurs looking after the SHG Federation accounts are serving as the vaccine supply point.

- **Cold chain maintenance:** Another challenge is to maintain the cold chain when reaching remote villages especially during the summer season. This often resulted in losses to CAHWs. To address this problem, the vaccination calendar was designed in such a way that the vaccination was done before summer began so that the issue of cold chain maintenance in the height of summer does not come up.

LESSONS LEARNT

- The inclusion of all households in this project has helped in creating mass mobilization.
- Technical training programmes by the GALVmed Consultant, emphasizing the practical aspects of poultry health and husbandry practices, helped in building confidence among CAHWs.
- Looking at the context of this area (terrain, population density, literacy rate, etc.) and then selecting a critical number of CAHWs

was helpful in reaching all the households although the income per CAHW is only supplementary because it is not a full-time occupation.

- Monthly *gram panchayat*-level meetings of all CAHWs and VRPs were effective for the timely implementation of this programme.
- Selecting women VRPs at the hamlet level helped in organizing events and supporting CAHWs during vaccination and de-worming operations while generating awareness in the community.
- Vaccinations for poultry and small ruminants, provided as a package instead of focusing only on the ND, helped address major livestock-related problems, and farmers' confidence in the project and in CAHWs increased.
- Flexibility in financial re-allocation was very helpful for timely incorporation of learning and for bringing necessary changes in the programme.
- Involving SHGs in the selection of CAHWs and, subsequently, in the mobilization of farmers was very effective.
- Farmers need to pay for services from the start. This was a lesson that was incorporated when expanding to other areas.
- The use of street plays as a tool for mass awareness was very useful.

SPILLOVERS

- **By area:** After the success of the intervention in the *gram panchayats*, the program was, within a year, expanded to two more *gram panchayats* of Banspal block and nine *gram panchayats* of

Patna block (from April 2012). Moreover, CAHWs extended their services to nearby villages and *gram panchayats*, as well as to villages where their relatives reside.

- **By species:** Besides goat de-worming and PPR vaccination, sheep were also included in the programme. Post first-aid training, some CAHWs gave first-aid treatment to large ruminants as well. Ducks too were vaccinated against ND by CAHWs.
- **By diseases:** Besides PPR vaccination and de-worming in goats, goat-pox and Enterotoxemia (ET) vaccination was also carried out because there was an epidemic in the area. Now, in some villages, people are demanding Foot and Mouth Disease (FMD) vaccination for large ruminants. For birds, besides ND vaccination and de-worming for poultry, vaccination against fowl-pox for all the birds was also done.

IMPACT

The outcomes expected from this intervention were largely realized in the area. Of the 12,000 household (HHs) that were contacted, 9,000 kept livestock; of these, 7,587 HHs have received vaccination services. ND in poultry and PPR in goats have been completely controlled in the villages covered by the project. The impact of de-worming of poultry and goats is clearly visible in the area, in terms of their growth and lustre, indicating the good health of the birds and goats.

Farmers have expressed huge appreciation for the vaccination and de-worming of livestock. A community that had lost confidence in vaccinations because these were not effective earlier, due to the cold chain maintenance issue, has regained its trust and realized the importance of maintaining the cold chain. The overall mortality of small livestock population (poultry and goats) has reduced significantly and this has helped restore the confidence of the poor farmers in taking up poultry and goat-keeping as reliable and significant livelihood opportunities.

Although the project closed in March 2013, the mass vaccination programme is going on in Keonjhar operational area. CAHWs also provide treatment to BYPs and goats in their respective areas, and organize regular health camps for animals. The service being available at the doorstep of the farmers at a reasonable price, it is accessible to all the farmers, including the poorest section.

At present, CAHWs trained through this project provide all the vaccination and de-worming services within a very short time span (two to three months). These CAHWs are independent entrepreneurs and earn about Rs 2,000 to Rs 3,000 by working about 10–15 days in a month.

Table 2: Analysis and Interpretation of Key Data Gathered during the Project

Livestock Population Per HH	Goat			Poultry				
	Adults	Kids	Total	Cocks	Hens	Growers	Chicks	Total
Average 2012	7.68	4.168	11.85	2.85	3.36	5.48	12.11	23.81
Average 2011	5.59	3.42	9.01	1.25	2.23	1.88	5.92	11.28

Malati Munda: An Inspiration

Malati, of Putugaon village, is a member of the Gajalaxmi SHG; she stays alone, looking after her home, agriculture and livestock whereas her husband works as a security guard in Keonjhar and stays there with their grown-up son and daughter.

Malati had 42 poultry and 6 goats (four male and two female) when the mass vaccination programme started in the village last year. Although she always kept a good stock, often the RD outbreak used to wipe out her stock as it did for the other villagers. Earlier, she used to medicate her goats through the local LI, and was not aware of the vaccination and the de-worming possibilities for her BYP and goats. When the villagers selected Kirttan Patra to receive training as CAHW through the GALVmed project and he extended his service to the community, Malati was the first to avail of this facility.

She regularly vaccinates and de-worms her BYP and goats, and has noticed a visible change in their growth and also realized that the stock completely survived the next outbreak. Currently, she has 48 poultry birds and six goats.

In the period of nine months (March–November 2012), she sold her poultry in two phases, earning Rs 8,500 in total. She also consumed 20 poultry birds. She has retained all her six goats and plans to sell five of them during the Raja festival in June. She is expecting more than Rs 15,000 from that sale. In future, she wants to increase her poultry and goat population so that she can earn Rs 20,000 to Rs 25,000.

The revenue from her livestock is intended to pay for her daughter Pranati Munda's higher education and marriage. Her daughter is a graduate and wants to do B.Ed. this year. Malati is an inspiration for the members of 11 SHGs in Putugaon village, who discuss the benefits of this programme in various forums, including the SHG, the Village-level Cluster, Federation and the *gram panchayat*.

The various aspects of sustainability of the intervention such as demand continuity, affordability by the community, timely availability of quality vaccines, financial sustainability of CAHWs and the establishment of the cold chain are found to be largely addressed.

WAY AHEAD

To ensure substantial income to the farmers, along with focusing on checking losses arising out of mortality due to preventable diseases, the team is also intervening in a more holistic nature, which includes the following aspects:

- Service system establishment for preventive, as well as curative, disease control such as vaccination, de-worming, first-aid and medication for important prevailing diseases in the area, under the supervision of a competent authority.
- Breed improvement
- Housing and nutrition improvement

Until livestock is promoted as a large-scale income generation intervention, any poverty reduction strategy may potentially fail to achieve its goal.