Workshop on Small-Holder Poultry Rearing: A Sustainable Livelihood Opportunity for the Rural Poor: A Report

The South Asia Pro Poor Livestock Policy Programme (SAPPLPP), Professional Assistance for Development Action (PRADAN) and the National Small-holder Poultry Development Trust (NSPDT) jointly convened a workshop on 'Small-Holder Poultry Rearing: A Sustainable Livelihood Opportunity for the Rural Poor' in New Delhi on 28 December 2010. A report on the workshop.

BACKGROUND

The workshop was designed with the objective of building awareness about the immense potential of poultry rearing as a viable income earning opportunity for the rural poor, identifying opportunities that the poultry sector presents and planning what needs to be done to enable small-holders to participate in and benefit from an expanding poultry market. Over 80 participants from government programmes and research institutions, NGOs and donor agencies attended the day-long workshop, which was inaugurated by Dr. Amarjeet Singh Nanda, Animal Husbandry Commissioner, Government of India. Dr. Nanda delivered the keynote address.

The poultry sector in India can be broadly categorized into the organized and the unorganized sub-sectors. Small and medium farmers are increasingly under contract farming arrangements with large integrators, primarily for broiler rearing. The needs of both the sub-sectors are very different. There is also an emerging, but marginal sub-sector, moving from the unorganized to the organized. As per the Livestock Census (2007), there are 648 million poultry birds in the country, of which 45 per cent (294 million) comprise birds raised at the household level, under backyard poultry production systems. Approximately 77 per cent of the egg production is from improved poultry and the remaining 23 per cent is from *desi* indigenous birds.

The poultry sector currently provides employment to over three million people in the country, and is one of the fastest growing economic sectors, averaging a growth rate of 10–15 per cent per annum over the last decade. The rapid advancement of the poultry sector has, however, largely bypassed the poor, for whom poultry rearing has been a traditional livelihood activity that contributed significantly to household food and nutrition security. Whereas poultry rearing is recognized as a

key poverty reduction strategy, with a number of schemes on poultry development and promotion, the high growth in the sector is currently confined to the commercial, organized sector. This is largely because of the poor risk-bearing capacity of small-holders, the lack of a coordinated supply of inputs, extension and market services, and limited access to new knowledge and technology by small-holders. To enable small-holders to effectively participate in and benefit from the rapidly expanding poultry sector, a designed approach that is based on the existing knowledge, resources, and access to inputs and markets is required, which helps small-holders to graduate from a nutrition and food security focused intervention to a livelihoods and income earning intervention.

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The key elements of profitable and sustainable poultry rearing models for small-holders was highlighted, commencing with a description of a low input/low output poultry production system that focused on the rearing of *desi* (non-descript) birds. This is an auto-run system that requires no or negligible investment. Birds have dual purpose; they are raised for both the meat and the eggs. Being native to the environment, these birds demonstrate high levels of adaptability.

The rearing of *desi* birds meets critical household food and nutrition security needs and 'emergency' income requirements. Similar to the system of rearing *desi* birds is the rearing of indigenous poultry breeds, a wide variety of which are found in India (for example, the *Kadaknath* of Western Madhya Pradesh and *Aseel* of Andhra Pradesh). Poultry production systems that are based on improved breeds, with relatively higher productivity, require moderate inputs (particularly related to sourcing of birds, feed, health services and access to markets). High input/high output poultry production systems are dependent on strong backward and forward linkages, and necessarily require that aspects related to sourcing of birds, health services, feed and market access are ensured.

The detailed aspects of facilitating a 'level playing field' for small-holders in poultry rearing were stressed. First, the selection of the most appropriate model, based on the resources of the household (including time and knowledge) and access to markets, is important. Second, the need to ensure access to preventive vaccination services is also crucial.

Documentation of good practices from the region, adequately demonstrates a significant reduction in bird mortality following the provision of vaccination services at the 'door-step' of small-holder poultry rearers. The high cost of feed is another major constraint faced by small-holders in up-scaling poultry rearing. Production of maize, a key ingredient in poultry feed, has remained static over most of the last decade, and the high import costs, have led to an increase in poultry feed prices.

There is need for the development of alternative sources of poultry feed, based on

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crops grown locally, as also the diversification of feed sources, based on local practices. There are numerous traditional practices, which could act as an alternative for poultry feed such as rearing termites in earthen vessels as high-protein feed for poultry, adding crushed snail shells to the feed, promoting vermi-compost in mixed farming systems and the feeding of greens, such as onion and garlic leaves.

There needs to be both facilitation and support through the collectivization of small-holders, which will enable economies of scale for accessing inputs and services as well as for accessing markets. A parallel was drawn with the successful Amul model of milk collection and marketing, dependent on small farmers collectively marketing their produce through an institutional system that facilitates access to consumers in markets at considerable distance. The need for extension systems to centre-stage small-holder poultry rearing, as also for the veterinary course curriculum to include small-holder production and rearing systems rather than the current priority of being focused largely on commercial production systems, was stressed on.

Currently, the poultry sector in India is classified neither as an agricultural sector nor as an industrial sector, and an emerging policy issue is the need to recognize small-holder poultry rearers as agriculturists and eligible for sector support and incentives. Information on on-going government schemes for the promotion of small-holder poultry rearing and assistance through both subsidy and interest-free loans for the setting up of mother units were provided.

Information was provided on the establishment of poultry estates, selected on a pilot basis in Sikkim for broiler farming and in Orissa for layer farming, as the Poultry Venture Capital Fund and the work of the Central Poultry Development Organisation focused on the supply of quality chicks and farmers training.

Mention was made of a few state governments (for example, of Orissa) where poultry is already designated as an agriculture sector, and farmers are eligible for sector benefits and subsidy. Concern was expressed that whereas subsidies did exist, these were largely targeted at commercial poultry for export; however, no subsidies or insurance policies are available for small-holders. The lack of insurance schemes that are tailored to the needs and priorities of small-holders was a major limiting factor in up-scaling small-holder poultry rearing. NABARD is the coordinating agency for the subsidy-cum-loan scheme for poultry rearing. It should be approached, to avail the benefits of the scheme.

SECTORAL OVERVIEW

An overview of the poultry sector and a sector SWOT analysis with respect to small-holders was presented. The unique position that poultry occupies in the country's livestock economy, characterized by a co-existence of an intense system (technology, capital, scale) with integrated production and marketing, and a system that is based on traditional knowledge and practices were highlighted. Small scavenging poultry production systems are the most widespread animal production systems in the country.

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Three decades back, 70 per cent of the poultry population comprised *desi*/indigenous birds, accounting for 70 per cent of the egg production. Today, over 80 per cent of the poultry production is under the commercial intensive-managed production system. There is a decline in the share of small-holders in this rapidly advancing sector. However, policy and public institutions have not kept pace with this change. Small-holder poultry production systems can be categorized as (i) traditional *desi*/indigenous; (ii) improved *desi*/ indigenous; (iii) new breeds introduced in the same context; and, (iv) small-scale modern poultry systems.

As one moves across these four categories, there is a reduction in the unit cost of labour and supervision, a higher quality of husbandry and a shorter response time. However, given the importance of aspects such as nutrition and ready cash income, small flock sizes of even 9–10 birds are significant and important for small-holders. Whereas successive rural development and livelihood improvement projects have identified poultry development as a pro-poor intervention, there are few successes, and this is largely on account of the failure of extension initiatives in reaching out and benefiting small-holders. Poverty reduction interventions need to factor in key aspects related to nutrition and food security, and ensure that income gains remain in the hands of women.

The key statistics relate to the poultry sector in India, detailing the significant opportunity presented by the poultry sector in India today. With a population of over one billion, and annual per capita income increases of 5–6 per cent, India is a very large market. In bridging the consumption gap that currently exists between the current production and the recommended norm of the National Institute of Nutrition of 180 eggs and 11 kg of meat per capita each year, there is the potential to create an additional 10 million jobs. As per Government of India estimates, an increase in the per capita consumption of one egg or 50 gm of poultry meat will generate an additional 25,000 jobs. The current level of growth itself creates opportunities for 60,000 jobs in the primary sector. There is renewed focus on addressing nutritional deficiency, and poultry products (eggs and meat) are some of the most economical food options available.

The strengths of the poultry sector in India include some of the best production infrastructure in the world and high levels of productivity, comparable with the best in the world (320 eggs annually, and 1.8 kg broiler growth in six weeks). India is self-sufficient in its genetic stock, and globally ranks second in egg production and fifth in poultry meat production. Almost 75 per cent of the non-vegetarian food consumed in India comes from poultry produce. Poultry production offers the highest return on capital and per unit land, and demonstrates the best biological efficiency in the animal meat category. However, whereas the country has over 39 veterinary colleges, the development of skills and

knowledge has not kept pace with the growth of the industry and there is need for efficiency at all levels of the value chain. This is a major weakness of the sector in India.

Further, the dominant production system is the commercial high input/high output system, dependent on exotic breeds. Traditional household-level poultry rearing has been gradually marginalized. The agriculture or industry status of the poultry sector is not consistent across the country, and some states have resorted to taxing even live meat. There are differential VAT structures for equipment, ingredients, etc. Formal financial systems are not supportive of investments in this sector. Major threats faced by the sector include disease outbreaks leading to culling of large numbers of poultry, the high cost of feed, the withdrawal of protection to domestic poultry markets while continuing with the restrictions on the import of feed ingredients such as corn and soya.

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The 11th Plan document recognized the significant contribution of the poultry sector, with the annual growth rate being 10 per cent, higher than the overall growth target. Much more than the growth rate of agriculture, as also the importance of institutional restructuring, support for public-private partnerships and the setting up of producer collectives (similar to the Amul model in milk production), the corresponding investment in the sector is less than 4 per cent of the total investment in animal husbandry.

There is implicit acknowledgement that the growth of the sector is to be driven by private capital. Against the backdrop of technology, infrastructure and credit constraints, there is increasing marginalization of small-holders, who are currently not a part of the rapid growth and advancement of the sector. A comparative assessment of the poultry sector with other animal husbandry sectors such as dairy and fisheries was also made.

Policy development of the sector is constrained by the lack of data and, in some cases, the availability of distorted data. In detailing consumer preference patterns, the NSS surveys capture data for meat, fish and eggs—poultry meat is not mentioned as a distinct category. The database for feed and feedstuff is lacking, requiring dependence on USDA estimates. Given the lack of data, the real impact of the sector is underestimated.

In highlighting what needs to be done to enable the poor to participate in the growth and expansion of the poultry sector, stress was placed on the need to leverage the current rural-urban divide in consumption patterns. Whereas the average egg consumption in urban India was 100 eggs per capita annually, the corresponding figure for rural India was 15 eggs. Similarly, whereas the per capita consumption of poultry meat in urban areas was 2.1 kg annually, in rural areas, this was 0.15 kg. Since 95 per cent of the poultry meat is sold in wet markets, there are considerable

cost implications of servicing an increasing urban consumption.

Efforts to develop and expand rural markets will facilitate access to the poor. Further, there is need for institutional mechanisms to enable pro-poor vertical integration in the poultry value chain and support for contract/ cooperative farming, to keep pace with the shift in the structure and the operation of the industry. Highlighting that Andhra Pradesh produces a fifth of India's poultry output, the importance of ensuring the supply of adequate skills, extension services and availability of raw materials were emphasized.

It was also highlighted that small-holders can compete with modern commercial poultry because of productivity advantages. There is need, however, to substantially increase public investment, particularly for institutional development, to enable small-holders overcome the high transaction costs they face in securing quality inputs and accessing markets.

The creation of a National Poultry Development Board (on the lines of the National Dairy Development Board and the National Fisheries Development Board) was proposed, to facilitate a structured impetus to the sector, enable public-private partnerships and leverage the inherent strengths and dynamism of the sector. Other critical needs of the sector are the provision of insurance and the need to indigenize feed resources, thereby reducing production costs.

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It was reiterated that there is urgent need for insurance cover for poultry rearing, 'which required the government to develop an insurance product targeted at small-holders. Poultry rearing has high initial capital cost, which is difficult for small-holders to arrange. Whereas subsidy is available, it does not reduce the urgent need for credit for the sector.

THE BACKYARD AND COMMERCIAL MODELS OF POULTRY

The need to differentiate between backyard poultry and rural poultry was mentioned. The backyard poultry model is a zero-input model, with the birds primarily scavenging for food whereas the rural poultry model is similar to intensive commercial poultry rearing, scaled down to the individual household level. Participants also felt that small-holders have to be linked to the rapidly expanding poultry market and should not be confined to backyard poultry production systems. Scaled-down systems of commercial poultry, tailored to

Poultry's Missing Voice

Poultry contributes Rs 35,000 crores more than sugar cane (Rs 25,776 crores) and equivalent to 70 per cent of the contribution of the fisheries sector (Rs 49,891 crores). The absence of strong farmer lobbying makes this a 'silent' sector.

the capacity of individual households would help small-holders link up and benefit from the rapid growth of the sector.

What needs to be done to ensure a 'level playing field' for the poor in the poultry sector was highlighted. Primarily, this is the recognition of the coexistence and growth of both production systems (village-based, small-holder production systems and the scale-intensive commercial systems).

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A. SELECT GOOD PRACTICES ON SMALL-HOLDER POULTRY REARING

Bastar Integrated Livestock Development Programme

Poultry rearing in Bastar is characterized as a low-input/low-output production system, primarily carried out by women. Birds raised largely comprise the *desi* and the Aseel, which is culturally of great significance in the region because of the traditional practice of cock fighting. Disease, predation and theft result in high losses among young flock. On account of the remoteness of the area, access to extension health services, inputs and markets are low.

The Bastar Integrated Livestock Development Programme (BILDP) focused on interventions to reduce and mitigate disease loss among the existing poultry flock reared by tribal communities. Rather than introducing a new breed or upgrading the existing breed, programme interventions recognized the positive traits of *desi* poultry birds and efforts were made to secure this critical asset through the provision of health services at the 'door-step' of poultry rearers.

BILDP focused on the creation of a cadre of village facilitators, trained and equipped to carry out regular vaccination, under the guidance and direction of the Animal Husbandry Department. To facilitate and ensure the quality of vaccines, the project strengthened the vaccine cold chain up to the village. A package of practices, building on the traditional knowledge base and practices of the community, was documented and disseminated. This included a range of ethno-veterinary practices based on locally available herbs, low-cost technologies and improved husbandry practices. Key innovations documented and scaled up by the programme included the rearing of white ants as protein supplement; the use of bamboo for housing and low-cost waterers, which led to significant reduction in worm infestation; egg candling to identify fertilized eggs; and vaccination drives such as Pulse Ranikhet.

An evaluation study in 2006 detailed the major impact of the programme, including an increase in income from household-level poultry rearing, averaging Rs 300 a month, a three- to four-fold increase in poultry numbers and the income earned by the trained cadre of village facilitators, which ranged from Rs 500 to Rs 1,500 per month.

B. NATIONAL SMALL-HOLDER POULTRY DEVELOPMENT TRUST IN JHARKHAND AND CHHATTISGARH

The National Small-Holder Poultry Development Trust (NSPDT) has promoted small-holder commercial poultry farming with resource-poor communities in Madhya

Pradesh, Jharkhand and Chhattisgarh.

Interventions have successfully linked small-holder poultry rearers to the expanding market for poultry meat through an institutional model that ensures access to inputs, health services and market opportunities. The key elements of the institutional model include 'right-sizing' the unit in terms of risk, return and investment for the farmer, adapting the best technology for high performance, and having faith in the abilities of the poor. Women members of tribal and dalit households are the key target community. Participating households are organized into collectives and systems are ensured throughout the value chain, to enable competitive production and efficiencies of scale comparable with the best industry standards.

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Participating households have reported a 75 per cent increase in annual income, with resultant investments in land, children's education and health. There is significant reduction in distress migration. Poultry rearing has also contributed to farm-based livelihoods by creating an income buffer, as also providing manure through poultry litter. Each of the 18 cooperatives has created 15–20 sustainable job opportunities for rural youth as technical supervisors and cooperative staff.

Small-holder poultry rearers raise an average of 400–700 birds. The unit cost per household is in the range of Rs 52,500 (Rs 30,000 for capital assets, Rs 15,000 for working capital, Rs 2,000 for capacity building and Rs 5,500 for institutional infrastructure and external support).

The household is the first level of the institutional structure. Income earned is in the range of Rs 75–100 per day. With an average of 200 days of work per year, this ensures an annual income of Rs 15,000 to Rs 20,000. Around 300–400 producers organize into a cooperative, which is the second level of the institutional chain. The cooperative maintains accounts and is responsible for ensuring supply of inputs and market linkages. Supervisors are appointed by the cooperative to support clusters of 30–40 producers. The average turnover for the producer cooperatives ranges from Rs 4 to 5 crores.

Based on the experience of NSPDT, how small-holder poultry rearing is competitive was detailed, primarily on account of the use of household labour as compared to employed/hired labour in large-scale commercial enterprises. Decentralized smaller units demonstrate better production efficiency, and when the opportunity cost of labour is low and access to inputs are assured, the poultry rearing enterprise is scale-neutral. The institutional model developed by PRADAN detailed the role of each stakeholder in the value chain.

RLN's interventions have focused on reducing mortality through the provision of vaccination services, increasing hatchability and reducing egg spoilage, intensifying feed availability and feed supplementation, and developing market networks.

C. THE BANGLADESH MODEL

The BRAC model of poultry rearing from Bangladesh is a unique public-private partnership initiative. The model comprises seven enterprises—poultry vaccinators, chick rearers, key rearers, feed sellers, egg collectors, model breeders and mini hatcheries. Each enterprise is targeted at economically disadvantaged women. Access to key inputs such as credit, information, skills, appropriate technology and market access is ensured.

Poultry vaccinators are identified from among the community, based on criteria developed by BRAC. These include married, widowed or destitute women, who are permanent residents of the village, with a high level of social acceptability and motivation to work for the community. An initial five-day training is provided, which includes extensive field training sessions on vaccination, de-worming and minor first-aid. Refresher training is convened every month. BRAC provides the vaccination kits and equipment whereas the vaccines are supplied by the district animal husbandry office twice a month. Poultry vaccinators charge a small fee, ranging from BDT 0.50 to BDT 1 for vaccinating each bird. Often payment is in kind. One poultry vaccinator is appointed for approximately 1,500–2,000 birds, and there are currently over 19,000 poultry vaccinators across the country. The bird flu outbreak in 2007 and 2008 resulted in the culling of a large number of birds,

BRAC has, in particular, focused on the promotion of bio-security measures at the level of households rearing small poultry flock. BRAC's small-holder poultry rearing model has increased the income for households at each level of the enterprise. Monthly income increases, ranging from 50 to 60 per cent, have been recorded, in addition to an improvement in household nutrition levels, resulting from the increased availability of eggs and poultry meat. The mini-hatchery technique was developed by BRAC. The technology builds on local knowledge, in which heated rice husk is used as artificial incubation to hatch both chicken and duck eggs.

D. KEGGFARMS: SUPPLY CHAIN FOR THE PROMOTION OF THE KUROILER

With the objective of reaching out to rural communities and facilitating an improvement in rural livelihoods, Keggfarms developed a dual-purpose village hardy bird, combining the adaptability of the *desi* poultry bird with the improved productivity of exotic birds. The Kuroiler, as the Keggfarms developed poultry breed is called, has an annual egg production of 150, as compared to 40 by the *desi* bird. Further, the average body weight of the male bird is 3.5 kg as compared to 1 kg for the *desi* poultry breed. The supply chain promoted by Keggfarms, to facilitate the supply of day-old chicks (DOCs) in rural areas, comprises mother units, the owners of which are trained and equipped to raise DOCs until they are three weeks old, including providing critical

vaccinations. These 'started' birds are then purchased by village vendors, who supply these birds to the poultry rearing households.

Through voluntary inter-dependence, each stake-holder sustains a system that benefits all stakeholders in the supply chain. When the presentations of select good practices from within the South Asian region concluded, the Ford Foundation-supported Rain fed Livestock Network (RLN) presented the emerging results of its work on the piloting of backyard poultry rearing interventions across 13 locations in the country. Backyard poultry comprises 52 per cent of the total poultry population, contributing 21 per cent to the country's egg production and 8.47 per cent of poultry meat production. The distinct features of backyard poultry are presented as follows.

Improved breeds, combining the characteristics of desi*/indigenous poultry breeds with exotic breeds have had limited success on account of the high feed costs, which make the production system unviable.*

RLN's piloting of backyard poultry rearing has been undertaken through partner NGOs across six states of the country (Rajasthan, Gujarat, Maharashtra, Andhra Pradesh, Karnataka and Orissa), working with 2,603 households. Interventions commenced with a detailed baseline, mapping key village data, existing numbers of birds and productivity parameters. Key findings from the baseline survey in programme villages indicate that hens comprise 26.3 per cent of the total poultry population, cocks comprise 17 per cent and chicks 56.6 per cent. The average number of hens raised per household is 3.5. The average egg production per clutch is 15, averaging 46 eggs per hen each year. The percentage of egg hatchability is 68 per cent. Mortality in chicks is high and recorded at 54 per cent, largely on account of predation (32.7 per cent) and diseases (21.3 per cent). The contribution of backyard poultry rearing to household income ranges from 2.4 to 7.8 percent. RLNs interventions have focused on reducing mortality through the provision of vaccination services, increasing hatchability and reducing egg spoilage, intensifying feed availability and feed supplementation, and developing market networks.

Activities related to the provision of vaccination and health services include development and dissemination of a vaccination calendar, in collaboration with the animal husbandry department, training village-level poultry vaccinators and ensuring access to equipment such as ice-boxes, syringes and needles. Interventions to reduce chick mortality and predation comprise support for improved night shelters and the setting up of chick rearing centres (CRCs), where 10-day-old chicks are reared in an intensive system, ensuring feed and vaccination services. Fifty per cent of the chicks reared at the CRCs are returned to the participating households, and 50 per cent are retained by the owner of the CRC as his/her profit. Similar to interventions under BILDP, egg candling to segregate fertilized eggs has been promoted, and improved husbandry practices such as feeding white ants, production and feeding of azolla, and integrating cereals and millets as supplementary feed have also been promoted

The initial learning from the pilot interventions demonstrates that the

establishment of CRCs has increased the number of clutches per year by breaking the broodiness of the hens. The number of clutches has increased to 6/7 from the initial 3/4. Intensive rearing in the CRCs has improved the weight of chicks and has reduced mortality. CRCs must, however operate continuously because chicks are available at different times throughout the year. Emerging policy issues from the initial piloting by RLN include recognition of backyard poultry production systems as a viable income opportunity for the poor, with a clear budget allocation.

The importance of electricity for small-holder poultry rearing, and specifically for brooding and hatching was highlighted, as was the need to develop alternatives such as solar heating and lighting in view of the limited availability of electricity in rural areas.

This production system must be distinguished from other small-holder poultry production systems. Up-scaling backyard poultry rearing should follow an area-based approach to facilitate economies of scale. Poultry vaccinators/animal health workers should be accountable/anchored within the *panchayat* system. To ensure delivery of vaccine services, storage facilities should be made available at the block/*mandal* level. Further, vaccines should be marketed in smaller quantities, and research on development of thermo-stable vaccines particularly for diseases such as Newcastle should be intensified.

POULTRY SECTOR GROWTH PROJECTIONS

NSPDT aims at becoming one of the top 10 broiler producers in India over the next five years, registering a five-fold growth rate. It further aims at generating over Rs 20 crores of income in the hands of the poor, expanding to new areas in Assam, West Bengal and Bihar, strengthening and further building the institutional infrastructure.

The priority need to conserve backyard poultry production systems that thrive on a scavenging base was highlighted, as also the qualities of broodiness and disease resistance found in backyard poultry production systems. Improved breeds, combining the characteristics of *desi*/indigenous poultry breeds with exotic breeds have had limited success on account of the high feed costs, which make the production system unviable. Research has largely focused on commercial poultry production and development of improved breeds with higher productivity. The key attributes of *desi*/indigenous breeds such as broodiness and disease resistance are gradually dying out, and there is an urgent need to preserve these.

Other specific comments related to the need for inclusion of poultry rearing under the DFID-funded Poorest Area Civil Society Programme (PACS) in the Bundelkhand

NSPDT Vision for Community Poultry

By 2020, fifty thousand farmers will produce 200 million live birds annually valued at Rs 15 billion (Rs 1,500 crores) generating Rs 1 billion (Rs 100 crores) in the hands of the farmers and Rs 200 million (Rs 20 crores) additional income in the hands of community workers, support and professional staff. These 50,000 farmers are organized in 100 primary producer organizations, making it the largest family poultry initiative in the world and among the top five broiler producers in India with the gross turnover, including that of its associates, being Rs 2,000 crores.

region of Madhya Pradesh, where animal husbandry is a key intervention. However, poultry rearing, which is a relevant intervention for the area, is currently not part of the programme. The high investment and capacity building required for the setting up of viable community institutions, including human resource costs, were mentioned. These costs, which are related to the identification and placement of committed and qualified staff at the grass roots, are often not factored into programmes and budgets, and are often the reason for the failure of many well-thought-through schemes for poverty reduction and livelihoods enhancement.

POLICY OVERVIEW

Various interventions of the central government initiated over the 10th and 11th Five Year Plans focused on the development of rural poultry rearing. These included the distribution of subsidized maize to the sector and a temporary ban on maize export to control prices.

With the objective of increasing the export of poultry products, cold storage facilities, pressured air cargo capacity, etc., are being strengthened. The Prevention and Control of Infectious and Contagious Diseases in Animals Act, enacted in 2009, further strengthens reporting and surveillance. Other initiatives include the setting up of a National Poultry and Meat Processing Board and a Food Safety and Standards Authority, to ensure quality control of veterinary and biological products; the National Institute of Animal Health has been set up and it is proposed to set up a National Bio-security Network. Building community awareness and facilitating access to services at the grass roots is another priority; over 11,000 community workers have been provided training in artificial insemination.

A National Livestock Policy is in the pipeline; it proposes an integrated approach for the development of the livestock sector. Some of the major gaps in the sector are:

1. Absence of a realistic database of numbers and productivity
2. Inadequate availability of improved bird stock (low input technology breeds)
3. Lack of an effective doorstep health service delivery system
4. Absence of corpus/institutional financing for technology upgradation
5. Absence of a framework for implementing standards in the sector
6. Lack of risk mitigation measures for epidemics and pandemics
7. Inadequate HRD for specialized poultry operations
8. Lack of incentives for exports
9. Lack of recognition of poultry as an agriculture sub-sector in many states.

There is urgent need for systems to constantly monitor and ensure health coverage to the backyard poultry sector; create and update the database of the poultry sector regularly, using GIS tools, with particular focus on the vulnerable unorganized sector and live bird markets; develop participatory epidemiological tools and focus on technology upgradation for small units, to enable them cope better with the impending requirements of bio-security, food safety regulations and mitigation of environmental damage.

Other priority initiatives required urgently include collaboration and partnership by state governments with NGOs and other institutions to upscale government

programmes and increase outreach, training and human resource development at different levels, and an urgent need to document progress and field practices (including traditional practices such as the use of rice husk to promote hatchability), to facilitate knowledge sharing. Following the completion of presentations, participants were invited to share their views on policy recommendations to strengthen small-holder poultry rearing and upscale this activity as a viable livelihood opportunity for the rural poor. The recommendations, once compiled, will form the basis of policy dialogue initiatives of SAPPLPP, PRADAN and NSPDT for greater recognition and support for small-holder poultry rearing as a viable income opportunity for rural communities.

The Central Poultry Development Organisation is working on schemes to develop and conserve germ-plasma focused on rural poultry. Priority activities are training and capacity building of farmers; NGOs and state government representatives present at the workshop were requested to widely disseminate this information and enable farmers avail the training provided. The need to distinguish between commercial and backyard/small-holder poultry rearing was highlighted. For small-holder poultry, rearing an area-based approach that would facilitate collectivization and access to inputs, services and markets was stressed.

In view of the high potential of poultry rearing as an income earning opportunity for the rural poor, the need for increasing investment for this sector in rain-fed regions of the country was mentioned. The importance of electricity for small-holder poultry rearing, and specifically for brooding and hatching was highlighted, as was the need to develop alternatives such as solar heating and lighting in view of the limited availability of electricity in rural areas.

The budget of the Animal Husbandry Department was Rs 800 crores in the 10th Five Year Plan. For the 12th Five Year Plan, it was increased to Rs 1,200 crores; additionally, a fund request of Rs 3,350 crores is being developed. A major hurdle in utilizing the allocated funds was the absence of requisitions from the state governments, which often did not account for even 10 per cent of the total budget. In such a scenario, targeting and ensuring benefits for small-holders is a challenge.

EMERGING POLICY RECOMMENDATIONS

First and foremost is the recognition of the huge potential of poultry rearing to household food and nutrition security as also a significant poverty reduction/income earning opportunity for the poor.

1. *Improvements in existing programmes and schemes*

Prioritize the creation of a 'decentralized' grass-roots vaccination and health delivery system.

- Identify, train, recognize and support poultry vaccinators linked to and working under the direction of the Animal Husbandry Department.
- The Animal Husbandry Department can facilitate access to key vaccines, and ensure cold chain maintenance facilities up to the point of vaccination.
- Services of poultry vaccinators to be on a cost basis. Good practices documented by SA PPLPP demonstrate that small-holders are willing to pay for preventive health services for their

livestock, provided these services are available on a regular and sustained basis.

- Regular refresher training to be provided to the poultry vaccinators.
- Identify, document and promote of ethno-veterinary and improved management practices, that build on local knowledge and tradition. These practices are often low-cost, use equipment and material that are readily available in rural households, and can lead to reduced mortality and improved health and productivity. Some of these practices have been documented and can be accessed from the SA PPLPP website (www.sapplpp.org).
- Promote the packaging of vaccines in smaller doses.
- Build first on poultry assets that the community has or is familiar with.
- *Desi*/indigenous breeds function well on a scavenging base, adapt to the local environment and should be the starting point for any small-holder poultry initiative.
- Improvements in management and rearing practices can significantly reduce mortality and improve the productivity of *desi*/indigenous breeds, directly contributing to household food and nutrition needs, as also small but sustained income improvements. Focusing on poultry resources that the community has and reducing mortality through a network of trained village facilitators working under the guidance and direction of the Animal Husbandry Department has been effectively demonstrated by the BILDP, Government of Chattisgarh.
- Small-holders willing to expand poultry rearing interventions and take this up as a full-time activity can be supported to 'graduate' to small-holder poultry production models that use improved breeds.
- Recognize various small-holder poultry models, and enable those poultry rearers who are willing, and have the required time and resources to invest, to graduate from food security/household nutrition-focused poultry models to semi-commercial/commercial poultry models. Different small-holder poultry production models could be: (i) low input/low output (primarily the rearing of *desi*/indigenous breeds under backyard production systems); (ii) moderate inputs/moderate outputs (rearing of improved breeds)—dependence on strong linkages, health services and market access; (iii) high input/high output (small-scale intensive systems)—need for strong institutional systems, high level of dependency on linkages (health services, feed and market access need to be ensured).
- Promote insurance for as low as 10–50 bird holdings.
- Promote and upscale the use of poultry litter for bio-gas generation. Use of poultry litter for biogas generation can potentially reduce the health hazards of disposal of poultry litter. For commercial farms, use of poultry litter for biogas should be made mandatory.
- Develop norms for ensuring bio-security and cleanliness, particularly around commercial farms.

2. *Recognize the commercial poultry model as a viable model for income-generation for small-holders in rural areas and provide a facilitating policy and programme environment.*

- Support collectivization of small-holders

to achieve economies of scale and market access (for example, cooperatives, producer companies, other aggregations).

- Support the establishment of robust and sustainable institutional models through these collectives (by governmental or non-governmental promoting agencies) that ensure the supply of critical inputs (DOCs, veterinary support, including vaccination, feed mix and feed, production supervision and monitoring,); facilitate and enable market linkages; and absorb price risks.
- Recognize need for human resources and capital infusion into these collectives and provide appropriate provisions in programming.
- Design and promote a bankable scheme for small-holder poultry rearers (techno-managerial model for small-holders).

3. *Veterinary education and research priorities.*

- The small-holder poultry sector has been adversely affected by human resources/skills gap. The veterinary course curriculum should include small-holder production and rearing systems rather than the current priority, which is focused largely on large ruminants and commercial production systems. The graduate veterinary course curriculum should have electives with specialized courses on poultry production that students can opt for.
- As has been demonstrated by a research study by the School of Extension and Development Studies, Indira Gandhi National Open University, the number of graduate veterinary doctors is much lower than what the sector requires (as per the study, whereas India needs 72,000 graduate veterinary doctors, the current availability is 43,000. However, there is a surplus availability of post-graduate doctors. The study also highlighted the need to set up polytechnics for veterinary education based on the requirement of technicians at the grass-root level).
- In view of the growth of the poultry sector, the establishment of veterinary ITIs (as has been done in Andhra Pradesh) should be considered. This would increase the number of veterinary technicians at the grass-roots.
- Research priorities should focus on the emerging needs of the sector, for example, the development of thermo-stable vaccines and area-specific feed formulations based on locally grown crops.
- The government should play a more pro-active role in promoting/making available technology to improve the availability of laying stock. Currently, most research programmes in this area are led and implemented by the private sector.
- There is need to bring more rigour and content in the data, to capture the potential and the current strength of the poultry sector. NSSO should separately detail consumption of poultry meat and obtain information on numbers of poultry rearers, and not only list those engaged in this activity for more than 180 days.

4. *Conservation of indigenous poultry Breeds.*

- In collaboration with NGOs and other relevant institutes, NBAGR should undertake a mapping of the status and numbers of indigenous poultry breeds

across the country. Schemes should be designed to promote the rearing of indigenous breeds relevant for different regions.

- Farmers rearing indigenous poultry breeds should be recognized and supported by way of access to health and vaccination services, feed and market support. Conservation of indigenous poultry breeds should be viewed as a public good and supported.
- Marketing networks to promote indigenous poultry products (eggs and meat) should be developed to enable urban consumers to access these products.

5. *In the budget proposal for the 12th Five Year Plan, to be submitted by the Department of Animal Husbandry, ensure a specific allocation for small-holder poultry rearing.*
6. *The poultry sub-sector should be classified as an agriculture sector, eligible for appropriate benefits and taxation structures. Linked with this is the recognition of poultry cooperatives on par with agriculture, dairy and fisheries cooperatives and, therefore, eligible for reduced taxation norms.*