

Good Practice Note

Linking Business with Pro-Poor Development



REGION : South Asia
COUNTRY : India
STATE : West Bengal

SOUTH ASIA
Pro Poor Livestock Policy Programme
A joint initiative of NDDB and FAO

GOOD PRACTICE OWNER and GOOD PRACTICE CHAMPIONS

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Linking Business With Pro-Poor Development:

A Backyard Poultry Value Chain Increases Assets, Income and Nutrition

Good Practice Owners	KEGGFARMS PVT LTD
	SOUTH ASIA PRO POOR LIVESTOCK POLICY PROGRAMME
Good Practice Champions	Authors: Mamta Dhawan, Meeta Punjabi, Vinod Ahuja
	Reviewers: A.G. Khan, Chandra Ghalay, Datta Rangnekar, Harun Ur Rashid, M.A. Saleque, Shankar Ghosh, Subhransu Pan, Ugo Pica Ciamarra
	Contributors: Milan Biswas, Shankar Ghosh, Shiv Kumar, Vinod Kapoor
	Content Editors: Lucy Maarse, Shefali Misra, Sheila Koyyana

Photo Credits: SA PPLPP

Publisher: South Asia Pro Poor Livestock Policy Programme, a joint initiative of NDDDB and FAO

Suggested Citation: SA PPLPP (2009) Code: SAGP01, "Linking Business with Pro-Poor Development: A Backyard Poultry Value Chain Increases Assets, Incomes and Nutrition". Good Practice Note, Delhi, India

Design & Layout: Kriti Team, <http://krititeam.blogspot.com>

Printing: Satyam Grafix

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Acknowledgements

This Good practice note is based on the study – *Poultry based Livelihoods of the Rural Poor: Case of Kuroiler in West Bengal* – commissioned by the South Asia Pro-Poor Livestock Policy Program (SA PPLPP), a joint initiative of National Dairy Development Board (NDDB), Anand and Food and Agriculture Organization of the UN, Rome, Italy. We are grateful to the SA PPLPP Management Board for their support.

We would like to thank the Keggfarms management and staff, especially Mr. Milan Biswas, Regional Manager (Eastern Zone) and Mr. Shiv Kumar, for the enthusiasm and seamless cooperation provided throughout. We take this opportunity to express our sincere gratitude to Mr. Vinod Kapur, Chairman, Keggfarms Private Ltd, who was a source of inspiration and energy for the study team.

The fieldwork for the survey was carried out by a team of seven students – Arupananda Maiti, Gopal Patra, Tista Mondal, Nabanita Chattopadhyaya, Bappa Goswami, and Devapriya Har, from the West Bengal University of Animal and Fishery Sciences. In addition, the qualitative survey team was assisted by Sushmita Roy. The team travelled to some of the remotest parts of West Bengal amidst the most inhospitable weather and transport conditions. Despite the difficulties, it goes to their credit that they not only finished the task well in time, but ensured that the data quality was not compromised. The study team wishes to acknowledge their commitment and sincerity and their contribution to the study.

We had the benefit of discussions and guidance from a number of colleagues and professionals. Joachim Otte (Pro-Poor Livestock Policy Initiative, FAO), Anni Mcleod (FAO), Rebecca Kattikaren (Independent Consultant) and Kornel Das (SA PPLPP Associate Professional) provided generous intellectual inputs in design and implementation of the survey and interpretation of the results. We remain obliged to them for their contribution at all stages of the study.

We express our sincere thanks to all the 80 participants of the Workshop on Preliminary findings held in Kolkata in December 2007. We take this opportunity to express special thanks to Dr. SK Bandopadhyaya, Animal Husbandry Commissioner, Government of India; Mr. Dilip Chakraborty, Principal Secretary, Animal Husbandry, Government of West Bengal; Mr. Shankar Ghosh, Senior Advisor, Keggfarms; Dr. Dilip Kumar Das, Director Department of Animal Resources and Development, Government of West Bengal; Dr. S. Pan, West Bengal University of Animal and Fishery Sciences; Dr. Datta Rangnekar, (independent consultant) and Dr Harun Ur Rashid, SA PPLPP Country Team Associate/ Manager of Poultry and Livestock Development, BRAC, Dhaka, Bangladesh for the inputs which helped improve the analysis.

The Good Practice Note and Brief were prepared by Mamta Dhawan, Meeta Punjabi and Shefali Misra. We are grateful to Ugo Pica Ciamarra (FAO), Prof A.G. Khan, Chandra Ghalay, Datta Rangnekar for reviewing the Good practice note and providing invaluable feedback.

Last, but not the least we would like to thank Sheila Koyyana, Programme Manager of SA PPLPP for her unstinting support in administrative matters and for providing editorial inputs at all stages.

I. Introduction

In recent years there has been increasing recognition amongst the development community about the role that backyard poultry production can play in sustaining and enhancing poor peoples' livelihoods. There is also growing evidence to demonstrate the role of rural family poultry in enhancing food and nutritional security of the poorest, reducing their livelihood vulnerability and insecurity, and promoting gender equity (Dolberg, 2004; Ahuja and Sen, 2007; Otte, 2006).

As a result, the Government of India and a number of State governments have become sensitive to the potential offered by backyard poultry and have begun to promote this sector through various schemes. Market oriented backyard poultry enterprises are being recognised as a stepping stone for poorest households to take the first step out of the vicious circle of poverty and deprivation. However, over the last two decades, whilst there has been much success in commercial poultry production and the industry has grown by leaps and bounds, backyard poultry has neither received much attention by researchers or commercial interests nor has the public sector made any significant breakthrough despite multitude efforts to breed and distribute birds suitable to scavenging conditions.

The State of West Bengal which has 32% of its population living below poverty line and 72% people living in rural areas¹ is a case in point. Here, a four district study² commissioned by the South Asia Pro-Poor Livestock Policy Program (SA PPLPP) – a Joint Programme me of the National Dairy Development Board and Food and Agriculture Organisation of the UN, Rome, Italy – revealed livelihood insecurities that adversely affected income patterns and food security amongst a large number of poor families. People were found relying on a basket of options including agriculture, livestock, horticulture and wage labour for survival.

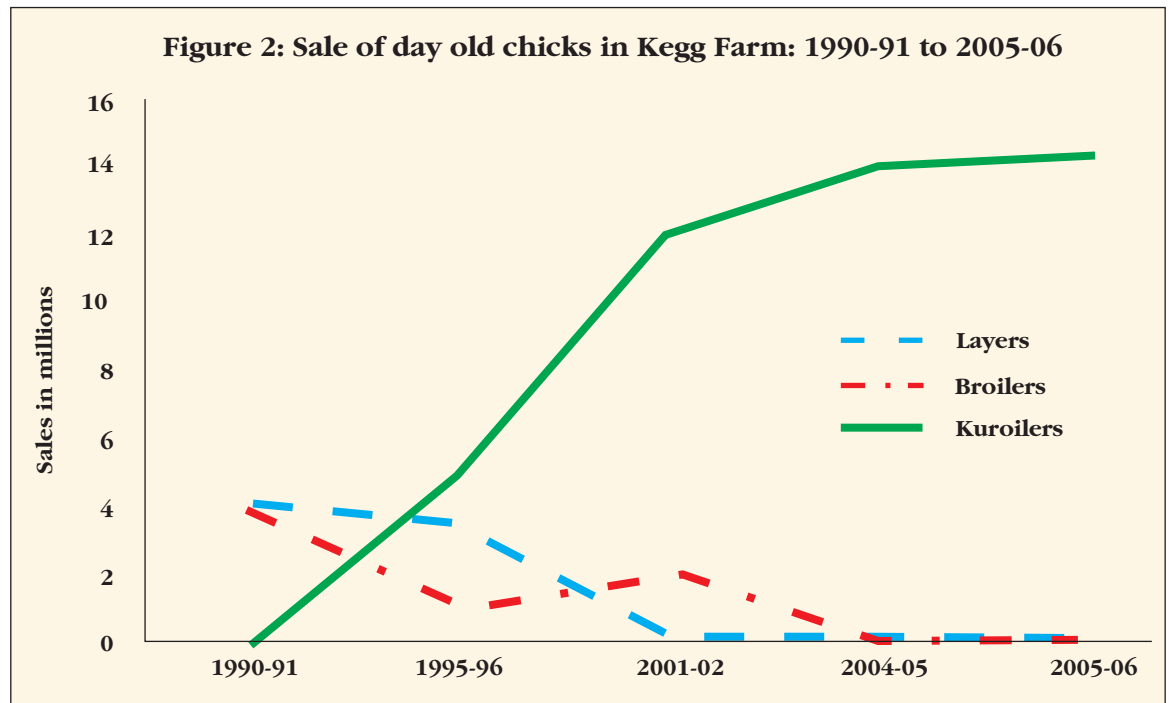
These livelihood uncertainties had only multiplied through the years with intensification of labour migration to urban hubs and new categories of daily wage labourers being rendered jobless annually during monsoon months. As a result, nearly 85% of the poorest and 16% of the better-off did not have sufficient access to food all year. Further, given the depth of family insecurities, a number of poor households had begun to send their male children to



¹ Planning Commission 2000

² Districts under study were Jalpaiguri, South 24 Parganas, Midnapore and Murshidabad

apprenticeships in Kolkata and expressed discontent with the job worthiness of formal education.



In such situations a village hardy bird (Kuroiler)³ served as an invaluable asset, easy to monetise and an available source of food that helped families tide over their vulnerabilities. Further, the impact of rearing these birds was apparent not only at household levels, but throughout a robust rural value chain that provided mainstay employment for Mother Unit keepers, local *pberiwalas*⁴ as well as the poultry rearers. This good practice showcases how an innovative private-community partnership transformed the livelihoods of highly vulnerable families in far flung regions of West Bengal. It is based on the success of a rural poultry value chain that delivers 3 week old chicks to the doorstep of women rearers. As a result of this, ‘small poultry assets’, which were otherwise deemed as ‘unproductive’, have transformed into profits, nutrition, food security and empowerment for ultra poor poultry rearers.

³ SA PPLPP does not endorse particular commercial products and the note is presented for the sole objective of sharing a Good Practice and is for information only.

⁴ Mobile vendors who sell these chicks door-to-door in villages

II. Background

This good practice worked through the transformation of a typical poultry company (Keggfarms) involved in broiler and layer production, shifting focus to become social entrepreneurs and initiating poultry breeding efforts suitable for rural areas. Keggfarms was established in Gurgaon in 1967. Initially the company was following the standard model of poultry breeding, importing the grandparent stock, multiplying them and selling the offsprings. In 1991, when a highly protected economic environment was thrown open to domestic and international players, the company faced three choices – one, scale-up the operations and compete with the multinationals with much deeper pockets two, join hands with them, and three, somehow differentiate the product where the company could have sustained demand for the foreseeable future. At that time, the company management thought of rural poultry. This led to development of the Kuroiler – a dual purpose hardy bird with high productivity and desirable features of indigenous birds. As a result of this innovation, Keggfarms is the only company in India involved in commercial backyard poultry production.

The village hardy bird produced by Keggfarms is a dual purpose bird with significantly higher productivity traits than indigenous birds while retaining many of their desirable features, such as multiple feather colours for camouflage, agility to escape from predators and resistance to diseases. Reared under scavenging / semi-scavenging conditions, they begin laying eggs at six months of age and lay approx 150 to 200 eggs in one egg-laying cycle as compared to 40 to 50 eggs laid by local *Desi* birds. In the first year of introducing the bird, the company sold more than a million chicks. Another critical element of this practice was the investment made by the company in developing a rural network that sustained a poultry value chain.

To examine the impact of this initiative on poor peoples' livelihoods, SA PPLPP initiated a field study in West Bengal in September 2007⁵. Nearly 250 households and about 100 other agents involved in delivery of the bird were interviewed as part of this study. The study was conducted in four districts of West Bengal – South 24 Paraganas, E. Midnapur, Murshidabad, and Jalpaiguri. The research methodology combined traditional survey based techniques with qualitative tools such as intensive personal interviews, focus group discussions, and a unique participatory research tool — the 'nine square mandala'. Finally, a detailed analysis of the rural value chain was conducted to understand how the initiative operates with financial sustainability at every level in the chain. This GP note draws on the findings of this detailed study.

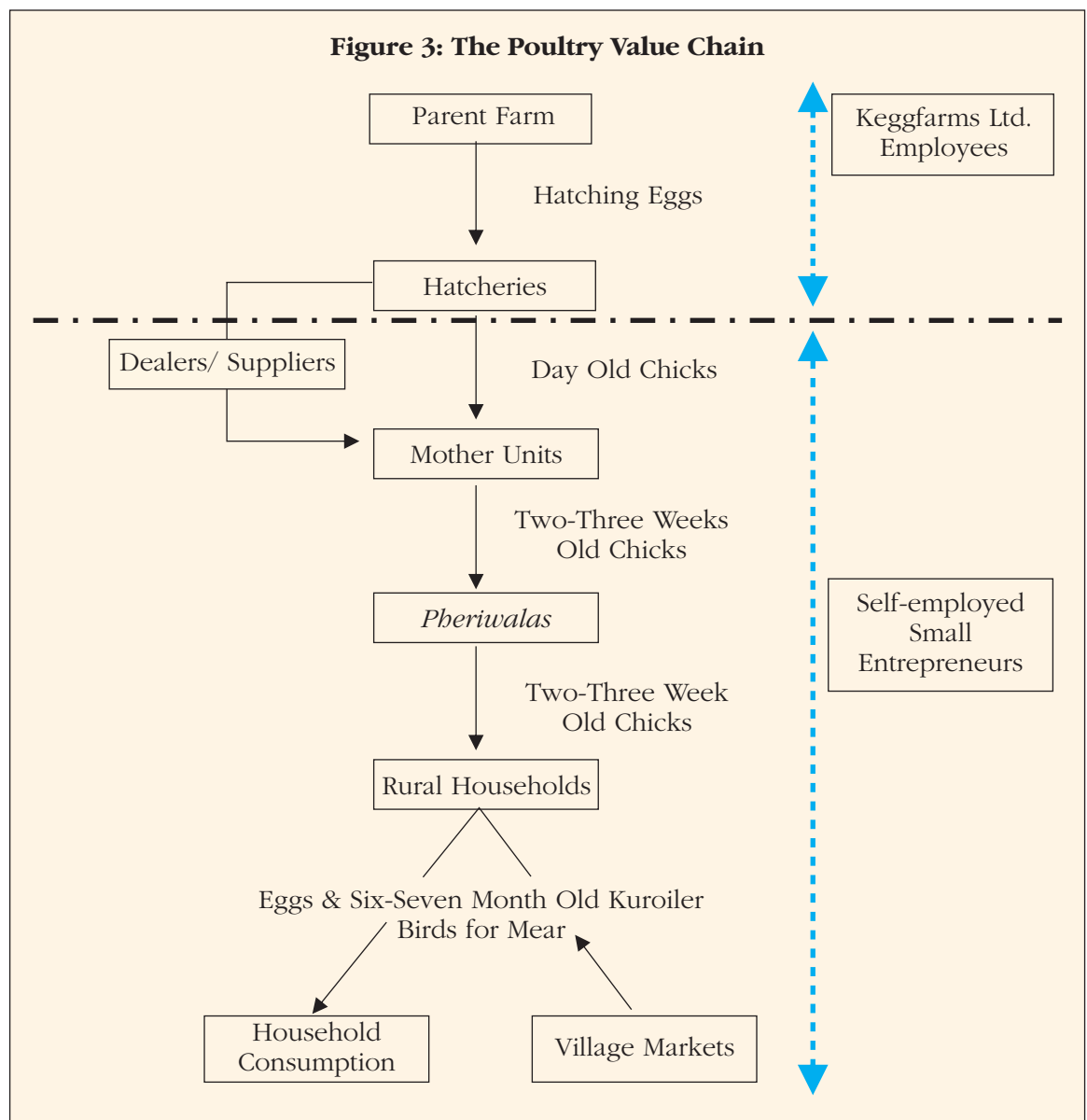
⁵ Detailed findings of this study are presented in the report titled, 'Poultry Based Livelihoods of Rural Poor: Case of Kuroiler in West Bengal', SA PPLPP (2008)

III. Key Elements of the Good Practice

3.1 The Strategy, Structure and Actors involved

The most critical aspect of this practice was the investment made by the company in developing a rural network that sustained a poultry value chain. Today, this is the modus through which birds reach door-steps of rural households in even the most remote areas. The value chain is sustained through market engagements between dealers, Mother Unit owners *pberiwalas*, and rural households. There is a strong linkage between these agents to ensure smooth flow of operations and it has taken considerable efforts to develop a network at the ground level.

A detailed description of the delivery chain evolved by the company including the agents involved and the functions they perform is presented below:



Hatchery/ Company: Keggfarms is involved in research on village hardy birds to develop species with desired traits. Production of day old chicks (DOC) and ensuring supply of DOC to dealers are the key functions of the company hatchery that is based in Kolkata.

Field Representative: The field representative, an employee of Keggfarms, develops and sustains the market for Village Hardy Bird at the field level. He identifies, monitors and coaches the suppliers/ dealers, while also overseeing the entire chain and provides advice and assistance as per demand and need. He is fully responsible for coordinating the timely delivery of day-old-chicks.

The supplier/ dealer: This person is involved in identifying potential mother unit (MU) owners to take up chick rearing and coach the existing MU owners to produce quality chicks (2-4 weeks old). He/ she also manages demand and supply at the MU level; keeping track of the demand and ensuring supply of DOCs via the Keggfarms' field representatives and where relevant, communicates availability of ready chicks to the *pberiwalas*. Finally, if there are issues with health and mortality of chicks at the farmer level, the *pberiwala* relies on the supplier/ dealer to obtain technical advice. The supplier/ dealer works in close contact with relevant field representatives.

Box 1: Dealers provide basic extension support

Chhabi Poria of District Midnapur had problems initially when she lost birds to outbreak of diseases. The dealer advised her regarding the advantages of de-worming and multi-vitamins and she took up their advice diligently. These preventive measures taken by her have borne fruit and she has not lost a single bird in the past year. She wants to increase flock size but non-availability of land comes in her way.



Mother Unit: The Mother Units purchase DOC from the dealer/ supplier and rear them for an initial period of two weeks. In some areas, the MU retained the chicks for upto 4 weeks and herein quality brooding management ensures that healthy chicks reach the households. If improper care of chicks is taken during the transportation and upon their arrival, many may die on the very first day. Heavy losses are also due to inadequate water availability, cold brooding areas, poor ventilation. The proper management of space, water, feed, light and litter is, therefore, crucial. In principle, F1 and LaSota vaccinations⁶ are provided respectively on day 6-7 and in the 3rd week to these chicks.

Pberiwalas: *Pberiwalas* purchase the chicks (10 days onwards) from the Mother Units and sell them to the farmer households. The *Pberiwala* is the sole agent in the chain interacting directly with the farmer households and addresses any complaints/problems with health of the birds, mortality etc. S/he provides inputs to rearers based on dialogue with the dealer for technical backstopping or seeks guidance from medical store owners. A *pberiwala* is free to purchase chicks from any mother unit and is not assigned one particular MU owner.

Box 2: Women adopting Pberiwala Roles

Maya Poria of District Midnapur is self dependent, confident and a risk taker. She is the major decision maker in the family and the household runs on the income she makes through the small mother unit and the *pberiwala* work that she does. She is the only woman *pberiwala* in the village and is proud of that fact.



Farmer Households: Amongst the livelihood options available to poor women in the rural areas of West Bengal, 'Village Hardy Bird' seems to have found a convenient niche for itself. Women rear these birds given that they are a low input high output option that is manageable

⁶ When done F1 and LaSota vaccines are applied to prevent Ranikhet disease.

within their household milieu. In most households, all the labour involved in feeding and caring for the livestock and poultry is provided by the women. Female farmers purchase birds from the *pberiwalas* and rear them for home consumption of eggs and meat or for sale to local farmers and in the local market. Often, more than one *pberiwala* operates in an area especially in locations where density of poultry keeping households is high and the Kuroiler is popular.

The company supplies its 'day old chicks' to 1,500 mother units across the State where it operates directly or through self employed dealers/ suppliers, carefully selected by the Keggfarms field representatives. Annexure 1 provides a detailed account of the economic analysis of the Mother Units and *pberiwalas*. At the mother unit level, the scale of operations ranges from 500 to 3500 birds across districts. The age of selling, ranges from 15 to 30 days. The price received for the birds increases with age, but the cost of feeding the birds also increases accordingly. The net returns per month in these regions ranges from around 1700 to 5800 per month. Based on rough estimates, it seems that 1500 is the optimum scale of operations. Also, mother units earn the highest when selling at 3 weeks. *Pberiwalas*, who travel to villages, sell chicks at a price of about Rs. 20/- (USD 0.5) per chick and women rearers normally buy two to ten chicks at a time.

Dealers are given technical training on poultry management at the onset, but there is currently no system in place to upgrade these trainings. The Mother Units and *pberiwalas* have no training in poultry management and depend on the dealers for knowledge and information. Thus, dealers are the key agents providing technical back-stopping as and when required. Despite the low level of technical input in the chain, the strong linkages between agents enables a flow of information about health issues from the farmers to *pberiwalas* to dealers. The dealers can then also take this information back to the company as feedback regarding issues on the ground.

The Mother Unit purchases birds on cash as well as credit from the dealers. However, the Mother Unit mostly gives the birds to *pberiwalas* on credit and payments are made after 2-3 days. The investment for constructing each shed at Mother Unit level is approximately Rs. 26,000 and there are currently no provisions for linking credit at Mother Unit level. Also, a large part of running the Mother Unit entails purchase of chicks and feed and there is no formal provision to support working capital at Mother Unit level either. At household level, women buy Kuroiler chicks from *pberiwalas* mostly on cash payment. Women are able to enter this field by investing savings made out of housekeeping money. Sometimes credit is extended by the *pberiwalas* depending on their interest in getting the prospective customer to try out the product. At the household level, construction of a small shed for the poultry does not need much investment as the rearers are able to build a small shed using locally available resources.

Both mother unit owners and *pberiwalas* make an average profit of Rs. 3/- per bird. The *pberiwalas* sell approximately 1000 to 2000 birds per month with monthly net margins ranging from Rs. 3000/- to Rs. 6000/- across four districts. These margins in the case net income per bird are the highest in the case of Murshidabad. This is probably because the age at which birds are sold is high – 36 days as compared with around 2 weeks in other regions. Household rearers find easy selling opportunities within their village and local markets.

All the actors within the value chain are rural entrepreneurs and have gained meaningful employment through the poultry business. For example, 60% of the *pberiwalas* are landless and were earlier unemployed or daily wage earners. Today over 75% of them rely solely on chick bird distribution for income. Further, approximately half the poultry households belong

to the landless category for whom short intervals between poultry investment and earnings makes backyard poultry an attractive and low risk option. At the household level, poultry rearers are largely house-bound women with an average flock size of 4-10 birds. Although supply is dependent on Keggfarms, other aspects like poultry extension and management are largely self-driven and sustained by different stakeholders within the value chain.

3.2 Outcomes

- Contribution to Household Income:** The impact of semi scavenging rearing has increased average net income per household (in four districts) by Rs. 2280/- , a 290% rate of return on investment with the poorest having highest net profit margins. Accounting for home consumption of poultry meat and eggs, net income per annum per household ranges from Rs. 3500/- in South 24 Paraganas and E. Medinipur to Rs.1100/- per year in Murshidabad and Jalpaiguri districts. Higher net income in the first two districts was attributed to the fact that the Value Chain was relatively well established in these districts, while the bird had been introduced relatively recently in the other two districts. The profit margin ratios (profits as percent of gross value of production) were however within comparable range across districts, which again emphasises that the higher net earnings in the earlier districts is because of higher scale of birds at the household level. Further, rearing this hardy bird encouraged women rearers to become more market oriented and entrepreneurial in their attitude. Women used the increase in income from rearing these hardy birds to pay for children's educational expenditures, medical emergencies, overcoming food shortages etc. Annexure 2 and 3 present the details of household level economics for Kuroiler compared to *Desi* birds in the four study districts.
- Nutrition:** Rearing these village hardy birds has enhanced food security and household nutrition. A 10% increase in meat consumption amongst the poorest, rising to 40% within different poultry keeper categories and home consumption of 60% of produced eggs within all income groups was assessed. Kuroiler are reared for eggs or for meat purpose depending on individual household's orientation and market conditions. Women responsible for caring of birds and collecting/ selling ensure that eggs and to some extent meat became an integral part of their family's diet. Home consumption of poultry products was found to be affected by various factors like economic status of the family, food habits, access to market, draught etc. Preferential food allocation was found to be common wherein a household, male members and children were offered food first while women ate at the end.
- Food Security:** Backyard poultry is kept by marginal farmers, landless or schedule castes/ backward castes. Most of these people work as daily wage labour on agricultural land or construction sites and are rendered jobless during monsoon months and face food insecurity. Rearing the hardy bird serves as an asset to be en-cashed and food to tide over these critical months.
- Gender Empowerment:** The initiative had a remarkable impact on women's livelihoods with explicit relations found

Box 3: Birds Building Children's Health

For Shiuli Dasgupta Kuroiler mean more eggs for her toddler son and income for herself. She rears Kuroiler to obtain eggs and sells the hen once the egg-laying cycle is over. She sells the surplus eggs and money is utilised in buying milk and biscuits for her son. At times she buys cosmetics (*bindi*, bangles) for herself. When Kuroiler is sold, rations for home are bought. The amount received on sale of few eggs **may be small but it does wonders for Shiuli.**

"If my son wants biscuits or a toy in the market and I can buy him that, then I'm a happy woman. Money for this comes from sale of Kuroiler eggs to neighbours".



between poultry rearing and women's intra-household expenditure allocation, decision making and entrepreneurial capacities. Since rural women took care of the birds, they also retained the earnings from poultry keeping. Thus, rearing the village hardy bird was an enabling factor in empowering women. This varied from woman to woman based on her 'inner realities' i.e. her ability and capabilities to take a diverse set of decisions related to Kuroiler rearing. Across the board, women rearers got to deal with different people while purchasing and marketing table birds or eggs. By meeting different people, these women came out of their isolation and slowly gained confidence. Over a period of time entrepreneur skills improved and they were able to take decisions on their own. Women contributing to household income through Kuroiler keeping managed to create a space for themselves within their household. In a number of places women were seen to have formed

**Box 4: Kuroiler Nabi to Jeevan Nabi:
(No Kuroiler – No life)**

For Anjali Maiti, Kuroiler rearing contributes to almost 50% of her income. She is the sole bread winner of three member family. All she has is a small kutchha one room hut that she shares with her family and 50 Kuroiler! She earns her livelihood by rearing Kuroiler, goat, working as a part time cook and by weaving fishing nets.



informal groups to meet and discuss poultry issues resulting in knowledge sharing and gaining strength from group participation. Some women even gave up rolling *beedi* (local cigarettes) in favour of Kuroiler keeping, as *beedi* rolling was injurious and labour intensive. This small step of exercising 'choice' is in itself a sign of empowerment.

- **Poultry serving as a stepping stone towards breaking the poverty trap:** Rearing the hardy bird was seen as a viable option to earn an income by old-women, widows, woman-headed households, schedule-castes and landless people. Since investment is considerably low, practically everyone could invest in the activity.
- **Social aspects:** Although income in monetary terms from backyard poultry farming was not so high, rearers continue to keep it. Other functions like security, status, and asset were valued as much as the economic returns. Expenses of gifting clothes, sweets etc to visiting son-in-laws were catered for by selling a Kuroiler bird. Many festivals were celebrated through money obtained from Kuroiler sale. It also provided a social status to the poor and landless. A big bird was considered a matter of pride.
- **Alternative to Utilisation of Forest Resources:** Women who used to harvest forest produce and got income through its sale are today organised into SHGs and are inducted into Kuroiler keeping by the Forest Department. This has resulted in prevention of depletion of forest wealth and provision of steady source of supplementary income for the women.
- **Medical Emergencies:** Crisis in the form of medical emergencies were weathered through the sale of Kuroiler. Most of the villagers preferred private practitioners for health related issues and their fees as well as the cost of medicines were taken care of by the sale of Kuroiler.
- **Knowledge transfer:** The role played by the value chain in transfer of knowledge needs due acknowledgement. The dealer, supplier, mother unit owners and *pberiwalas*, all encouraged women to take up Kuroiler keeping by providing chicks, mash, medicines and sometimes credit at their doorsteps. *Pberiwalas* served as the crucial link between Kuroiler keepers and the mother units.

IV. Discussion on Sustainability and Key Elements of Success

This practice showcases how the private sector can create a viable business model, build rural market acumen and doorstep delivery mechanisms in a sustainable manner by anticipating on the traditional knowhow of women rearing backyard poultry. Some of the key elements that contributed to its success and sustainability are as below:

● Applying the Right Technology

The fact that a private company decided to adopt the role of a social entrepreneur and shift its work from commercial poultry production to rural poultry was a major turning point. Having decided to venture into rural markets, the next step was to have a product that would sell itself in Indian villages. With relatively well developed in-house breeding capacities, the company studied poultry production practices in villages and developed a bird that would be significantly more productive in rural sanitary conditions and husbandry practices. Thus, the company decided to breed a dual purpose bird which would be as hardy as a local village bird but would still produce many more eggs and grow faster than *desi* birds. In addition, it ensured that the bird retained its colour, agility and a disease resistance abilities.

● Innovation in Distribution Channel

The biggest innovation that contributed to sustainability was the delivery chain developed by the company. The most credible aspect of this operation is that this chain supports a commodity serving the poorest in a financially sustainable manner without the support of any external agency. The scale of operations is large and requires effective coordination between all stakeholders to ensure continuous chick supply all year round. The key to its viability is of course the inter-dependence of agents within the chain. Each link depends on the other and it is in the interest of all to ensure the viability of others in the chain.

● Adopting the Pro-Poor Approach

In the situation of West Bengal where backyard poultry is a critical livestock asset, the village hardy bird serves as a valuable addition to the existing livestock assets. The pro-poor aspect of this chain is evident in the growing number of rural households it reaches out to in this State. These are some of the poorest households in the remotest areas of India. Livelihood options in these areas are very limited. In these circumstances, Kuroiler keeping is one of the few livelihood options which has a significant impact on nutrition and also played a critical role in food security and income enhancement. Finally, the impact of the birds is found not only at the household level, but throughout the entire poultry value chain.

V. Lessons Learnt and Recommendations

The Kuroiler model is an innovative model of rural poultry. Learning lessons from this model will be useful to develop successful projects for rural backyard poultry.

- ***A Strong Delivery Chain:*** A key learning is the structure of the value chain that supports Kuroiler and this is what sets it apart from other models. It is not the bird, but the system that backs the bird that is the discriminating feature of these operations. Close coordination of the chain for flow of goods, services, and information and economic interdependence of agents in the chain contribute significantly towards its effective functioning.
- ***Profit beneficial for all:*** The profit motive is generally associated with exploitation but here it became the binding factor that assured sustainability of the Kuroiler model deriving from the inter dependence of all stakeholders.
- ***Need for Greater Technical Cooperation:*** It has been reported that if several birds were dying in a region, the *Pheriwala* who serviced the area would stop going there. This can be a big hindrance in developing faith and building new areas for business. Stronger technical support to the value chain might help address these issues. Finding networks, alliances and partners to upgrading the technical skills of the agents within the value chain will be very beneficial as the information will flow well to the farmer level.
- ***Role of the Government Agencies:*** The relevant arm of the Government needs to be far more active and pro-active in disease control and surveillance and provision of extension information. In the information collected in the survey, none of the poultry rearers received poultry related extension information through the Governmental or Non-Governmental channel. Most households developed the know-how through experience and by consulting each other⁷. The poultry keepers were not at all aware of the danger of Bird Flu and all mortality was often mistaken with New Castle disease until the outbreak was confirmed by the government.
- ***Poverty is not just about Income:*** A key learning from this practice is in widening the common understanding of poverty. Here for rearers, poverty reduction was not merely an increase in income, but also the availability of an invaluable nutritional source which built household capabilities. The good practice showcased the subjectivity of asset development wherein the poorest found it prestigious to meet social obligations through poultry, with case studies revealing psychological faith in poultry to save families in times of medical emergencies or fees payments; thereby establishing symbiotic links between poultry rearing and enhanced quality of life of poorest.
- ***Working within Rearers Resource Base:*** Rearers valued the Kuroiler business because of low rearing costs and the fact that the enterprise fitted well within their limited resource base, social hierarchies, anxieties and gender based household dynamics. These elements are critical for the sustainability of any initiative.
- ***Public-Private Cooperation:*** There are significant spaces and avenues for private companies and government to work together cooperatively and collaboratively so as to combine their strengths for further enhancement of poultry based livelihoods. The Kuroiler model showcases the openness and scope for such an initiative and role sharing especially in areas concerning research and development and building sustainable delivery channels.

⁷ Formally a few writeups on poultry rearing have been produced by the Keggfarm manager and were translated in Bangla. A few individuals in the Kuroiler chain established a relation with the government veterinarian but it remains exceptional.

VI. Scope for Replication

In 2005-06, Keggfarms sold around 14 million birds to 800,000 farmers. So far the Kuroiler has reached households in West Bengal, Uttar Pradesh, Jharkhand, Chhattisgarh, Bihar, Uttaranchal, Orissa, Chhattisgarh, Assam and Manipur and has increased rearers' incomes by Rs 300/- crore every year for the last five years (Keggfarms, 2007).

This model is worthy of replication because it showcases how the private sector can re-adapt their business and bring in expertise to build rural livelihood enterprises. However, for this practice to be effectively up-scaled a few learning's from West Bengal need to be incorporated. Despite the fact that the State possesses a high concentration of 576 birds per sq. kilometre and as high as 85 % of them are indigenous⁸, there is still little convergence with government machinery for provision of public goods such as disease prevention, MIS, bio-security and extension services. Chick mortality is as high as 20% in some districts and despite national schemes there is little provision for linking credit at Mother Unit level. Given that growing market demands are likely to lead to increase in household flock sizes and intensification of management practices, there is a need to improve these inter-linkages and reduce rearers' risks.

Finally, it needs to be understood that 'profit' is not a bad word and if spread equitably, it can result in interdependent 'profit motives' helping all stakeholders, like in this value chain. Thus, further attempts towards strengthening livelihoods will benefit from developing an appreciation of the critical role played by having a 'market orientation' based on innovative partnerships involving the private sector, community and civil society alike.

⁸ Anonymous (2006).
Seventeenth All India
Livestock Census.
Animal Resources
Development
Department,
Government of West
Bengal.

Annexure 1: Economic Analysis of Mother Unit and *Pheriwalas*

Economic Analysis at Mother Unit Level

	South 24 Parganas	Murshidabad	East Midnapore	Jalpaiguri
Chicks bought	1509.80	529.60	3444.30	1482.70
Chicks sold	1458.00	496.50	3321.70	1356.00
Purchase Price (Rs.)	10.30	11.30	9.70	10.70
Sale Price (Rs.)	17.30	35.90	14.60	27.90
Mortality Rate (%)	5.70	5.40	3.60	6.40
Gross Margin (Rs.)	9653.00	10717.00	11999.00	21501.00
Gross Margin/bird (Rs.)	6.60	21.60	3.60	15.90
Cost (Rs.)	6472.90	8092.80	10330.00	15679.00
Net income per month (Rs.)	3180.00	2624.00	1669.00	5822.00
Net income/bird (Rs.)	2.20	5.30	0.50	4.30
Age at sale (days)	17.50	30.80	15.30	22.70

Economic Analysis of the *Pheriwalas* Level

	South 24 Parganas	Murshidabad	East Midnapore	Jalpaiguri
Scale	1,026.00	1,156.00	2,005.00	1,518.00
Purchase Price	16.07	36.09	13.80	28.40
Selling Price	19.00	46.09	15.75	34.10
GM	2,000.00	10,438.00	2,187.00	6,304.00
Gross Margin per bird	2.00	9.00	11.00	4.20
Expenses	511.00	1,127.00	1,024.00	820.00
Net margin	1,487.00	9,311.00	1,162.00	5,484.00
Net margin/bird	1.40	5.00	0.60	3.60

Annexure 2: Economics of Poultry Keeping – Kuroilers

Description	East Midnapur	South 24 Parganas	Murshidabad	Jalpaiguri
Revenue				
Kuroilers sold during the past 12 months (Kg)	59.90	41.50	7.50	19.20
Kuroilers consumed during the past 12 months (Kg)	10.50	19.20	8.70	5.90
Average weight	2.50	2.40	2.80	2.80
Price per Kg	55.20	65.90	60.80	60.90
Value of Kuroilers sold	3304.30	2734.60	452.00	1170.30
Value of Kuroilers consumed	590.80	1202.60	335.00	345.00
Egg production during the past 12 months	677.00	699.00	372.00	322.00
Eggs sold during the past 12 months	356.00	255.00	96.00	130.00
Eggs consumption during the past 12 months	321.00	444.00	276.00	192.00
Average price of eggs	2.25	2.30	2.95	2.40
Value of eggs sold	748.80	573.40	279.00	311.00
Value of eggs consumed	712.00	993.00	781.00	461.00
Total cash revenue per household per year	4053.00	3308.10	731.00	1482.00
Total value of production per household per year	5355.80	5503.80	2062.30	2294.10
Total value of production per chick bought	121.20	155.00	116.50	128.80
Cost				
Chicks bought during the past 12 months	44.20	35.50	17.70	17.80
Mortality rate (percent)	18.40	16.80	21.10	22.20
Cost of chicks	701.10	662.70	617.20	611.40
Feed cost	1461.20	984.40	258.60	278.90
Medicines and vaccination cost	204.80	173.50	76.00	65.70
Total cost	2367.10	1820.70	951.80	956.00
Average investment in poultry sheds and equipment	1009.00	671.00	813.00	728.00
Average net income per household per year	2988.70	3683.20	1110.40	1338.10
Average net income per chick bought	67.60	103.70	62.70	75.50
Net profit margin ratio (percent)	55.00	66.00	53.00	58.00
Rate of return on investment (percent)	296.00	548.00	136.00	183.00

Annexure 3: Economics of Poultry Keeping – Indigenous (*Desi*) Birds

Description	East Midnapore/ South 24 Parganas	Murshidabad	Jalpaiguri
Revenue			
Desi birds sold during the past 12 months	6.90	4.40	10.10
Desi birds consumed during the past 12 months	7.90	7.30	3.80
Average weight	1.00	0.60	1.00
Price per Kg	55.00	60.00	61.00
Value of Desi birds sold	379.50	158.40	616.10
Value of Desi birds consumed	434.50	262.80	231.80
Value of egg production during the past 12 months	405.20	509.90	531.50
Total value of production per household per year	1219.20	930.00	1379.40
Total value of production per bird	82.40	79.50	99.20
Cost			
Feed cost	203.50	25.40	107.40
Medicines and vaccination cost	87.00	69.30	71.60
Other costs	101.40	99.10	72.10
Total cost	391.90	198.70	251.10
Average investment in poultry sheds and equipment	401.00	354.00	482.00
Net Revenue/profit per household per year	827.30	636.60	1128.30
Net revenue per bird	38.90	54.40	74.30
Net profit margin ratio (percent)	67.00	68.00	81.00
Rate of return on investment (percent)	206.00	179.00	234.00

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KeggFarms works with a motto of “Engineering Rural Prosperity” and is a private company adopting the role of a social enterprise. It is one of the oldest poultry breeding organizations of India established in 1967. Since 1990 the Company has dedicated its activities to the development of rural specific poultry stocks branded 'Kuroiler' and is the first commercial entity in India to focus exclusively on the development, production and supply of scientifically developed poultry stocks for production in village households. Keggfarms, through a unique and innovative supply chain, reaches out to around one million disadvantaged rural households specially women all over the country.

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Regional Office:

NDDB House (6th Floor) PB 4906, Safdarjang Enclave
New Delhi - 110029, INDIA
Tel: +91 (0) 11 2619 7851 / 7649 • Fax: +91 (0) 11 2618 9122
E-mail: sapplpp@sapplpp.org
Website: www.sapplpp.org

Partnering Institutions

BRAC
BRAC Centre
75 Mohakhali, Dhaka 1212
BANGLADESH
Tel: +880 2 8824180-7 Extn: 2311
Fax: +880 2 8823542, 8826448
E-mail: saleque@sapplpp.org
saleque.ma@brac.net

Department of Livestock
Ministry of Agriculture
Thimpu
BHUTAN
Tel: +975 (0) 2 351102
Fax: +975 (0) 2 322094, 351222
E-mail: tshering@sapplpp.org
naip@druknet.bt

BAIF Development Research
Foundation
Dr. Manibhai Desai Nagar, NH 4
Warje, Pune 411058, INDIA
Tel: +91 (0) 20 25231661
Fax: +91 (0) 20 25231662
E-mail: sepawar@sapplpp.org
sepawar@baif.org.in

For copies of this publication, kindly contact the Regional Office or the Partnering Institutions