

Good Practice Note

Unpacking the 'Poor Productivity' Myth



REGION : South Asia
COUNTRY : India
STATE : Andhra Pradesh
DISTRICT : Godavari

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

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A **GP Owner** is a person/group of individuals and/or institution that plays a crucial role in the GP. Thus, a GP owner understands all the ins and outs of the GP and is often the initiator of GP.

Others involved in the Practice (not considered GP Owners) may be invited to assist in the filtering and writing process. Such persons, who have insights into what makes the GP pro-poor, are better-positioned to help influence policies. Thus, with their thorough understanding of the GP, they (as an individual or as a team) can function as **GP Champions**.

Unpacking the 'Poor Productivity' Myth:

Women Resurrecting Poultry Based Livelihoods in India

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Acknowledgements

Identification of Good Practices (GPs) goes hand in hand with developing an understanding of pro-poor livestock development, building capacity in documentation and the use of simple tools to sensitize actors, build coalitions and influence policy formulation and implementation.

Through a fairly rigorous and iterative process, the SA PPLPP team developed a set of guidelines¹ for identifying and preparing GP Notes. Step by step, teams in Bhutan, Bangladesh and India made considerable progress in identifying and capturing potential GPs on various themes – 'Smallholder Poultry', 'Small Ruminants' and 'Livestock and Common Property Resources' – related to poor livestock keepers.

Although the work of Anthra in conserving indigenous poultry breeds with active community participation has been presented in international forums, SA PPLPP felt that it needed to be documented as a Good Practice relevant to South Asian countries. SA PPLPP requested Anthra to send in a draft report of their work in this sector which was forwarded by Dr. Sagari Ramdas (Director, Anthra) and S. Ashalata (Research Coordinator, Anthra). The draft GP note was analysed internally by Lucy Maarse and Dr Mamta Dhawan. The practice was found to have been in existence over a long period of time and had sufficient information to qualify as a Good Practice. However, to strengthen the note, the authors were requested to provide more statistical and economic data, case studies showcasing impact on flock size and livelihood, etc. Both authors were inspired and motivated to improve the first draft version and based on the advice and comments received from the coordination team, Dr. Sagari Ramdas sent in a second draft soon thereafter. The second draft was then forwarded for a peer review to Kornel Das, M.A. Saleque, Ravindra Patil and Ugo Pica-Ciamarra. We are indeed grateful to them for providing inputs that have helped in refining the GP Note. The third draft was edited by Dr Mamta Dhawan and Ms. Shefali Misra wherein information sent in by Anthra and collected through internal research was incorporated. Finally, Lucy Maarse (SA PPLPP) prepared the fourth and final draft.

Many persons, therefore, have contributed to this Good Practice Note and each input, howsoever small, greatly strengthened this document. We are grateful to Dr Sagari Ramdas and S. Ashalata for remaining enthusiastically involved all through drafting of the GP Note. Our gratitude also goes to the staff of Anthra, Yakshi and members of Girijana Deepika for their contribution in this Good Practice Note.

¹ Concerned guidelines are available at: <http://saplpp.org/mainpage-information-hub>

I. Introduction

Rearing indigenous backyard poultry is an important occupation in low-income and food-deprived areas. This form of poultry production is based on low-cost technologies and is inherently pro-poor, since it is practiced primarily by poorer groups. The practice generates high quality protein, additional income to small farmers, especially women, in ways that are ecologically sustainable and often have strong religious and socio-cultural value for community life. However, while recent trends in poultry production show remarkable growth in large-scale commercial poultry², backyard poultry is often surrounded with myths like 'poor production potential', 'stagnant' and 'ill-suited' to contribute to livelihood generation. The Indian picture is thus lopsided and, notwithstanding the impressive production results achieved, because of which India is today world's fifth largest egg producer and eighteenth largest producer of broiler, (Mehta R., 2002), it has not significantly contributed towards improving livelihoods of rural poor for whom 'a few indigenous birds' are often the only bankable assets³.

Given these trends, the percentage of native birds in the total poultry population has dropped from 50% about 30 years ago to about 10% now (Rangnekar and Rangnekar, 1999). The main reason why this is so is the pre-supposition that indigenous backyard poultry is not livelihood intensive, whereas numerous pilots and studies have revealed that when intervention mechanisms are streamlined and constraints like high mortality, poor vaccination, feeding, marketing, training, credit and information are removed, the true diversity of backyard poultry is realised and a treasure of genetic potential is unlocked (e.g. resistance to viral diseases, salmonella, internal parasites etc.).

This Good Practice Note presents an argument for promoting indigenous backyard poultry through case review of an *in situ* poultry biodiversity conservation and livelihood generation effort that successfully enabled women poultry rearers to reduce mortality, triple their financial benefits and reclaim their lost poultry heritage. Initially supported by a consortium of NGOs⁴ (Non Government Organisations), this example also presents a sustainable community lead initiative that today functions on its own, under the aegis of a federation entirely run by women.

Box 1: The Truth about Backyard Poultry

There is growing evidence that when efforts are made towards enhancing indigenous poultry, it can contribute to income, employment and rural asset creation. As an example, statistics from the Government of Chhattisgarh reveal a steady rise in *desi* (indigenous) poultry from 34.2 lakh in 2002 to over 40 lakh in 2006 (GoCh 2007). This growth has largely been attributed to targeted efforts undertaken by the Livestock Department and the efforts of the DANIDA supported Bastar Integrated Livestock Development Programme that initiated indigenous poultry development activities in the tribal districts of the State. In addition, studies from Bangladesh's smallholder poultry development interventions reveal that low productivity of indigenous poultry is due to poor management and feeding systems rather than inherent low productivity (Sarkar et al, 2006). Comparative studies also reveal that each system of poultry has relevance in specific situations. As an example, while the Bangladesh poultry model might produce substantially higher returns on investment, it requires several more support components like formation of village groups, credit facility, input supply, breeders and hatcheries to be in place. Thus, in many places, strengthening the traditional scavenging system has its own advantages and relevance as per the resource availability and context.

² Poultry has grown at 6% during the 1980s, accelerating to 11% in 1990s and nearly 19% during 1997-2002. About 1.8 million tonnes of poultry were consumed in 2007 and is projected to grow to 2.3 million tonnes by 2010.

³ For classification of poultry production systems see Annexure 1; sector 4A and 4B are the backyard systems and together with sector 3 'small-scale confined', they form the small holder poultry systems / village-based poultry production systems.

⁴ Lead NGO Anthra and its local partners Girijana Deepika and Yakshi worked in East Godavari, Andhra Pradesh from 1996-2008 and provided women's groups (*gottis*), technical and organisational support to meet programme outcomes.

II. Background

The Aseel is a famous indigenous poultry breed of India which has been selectively bred by local communities in East Godavari (Andhra Pradesh), from the original Red Jungle Fowl which is often recognised as the ancestor of many of today's modern domestic poultry breeds (Gopalakrishnan and Lal, 1985). East Godavari is located on the eastern side of the Godavari River and has 57 revenue blocks, of which 11 are *Adivasi*⁵ blocks governed by special laws under the Indian constitution.

Agriculture and livestock (rearing poultry and small animals) coupled with collection and sales of minor forest produce comprise people's livelihoods and survival strategies in this area. The Aseel is reared under backyard poultry management systems here and is a source of

meat, income and is an essential part of the *adivasi* culture. It is also the only resource completely owned and controlled by women, right from bird selection to sale.

The Aseel has a short and broad breast, straight back and a close setting strong tail root. Its outstanding feature is its thick and long neck, long and slender face without feathers, short beak, short and small comb, ear lobes and the absence of wattles. Its legs are long, strong and straight and the bird has an upright and majestic gait. It has been traditionally bred for its meat with the average weight of a 2 year old adult male ranging between 3-4 kg and average weight of a hen between 2-3 kg. With 36-60 eggs laid per year, the Assel is not a prolific layer. The hen matures and begins to lay eggs between 5-6 months of age, and lays 3-4 clutches per year, with each clutch having 10-12 eggs. Women are primarily interested in

Box 2: The Aseel is Integral to Local Traditions

Poultry keeping in the backyard is centuries old. It is inherently a pro-poor occupation and is practiced by the rural poor, especially women. Poultry represents significant capital such as household savings, investment and insurance. In tribal belts, native *desi* chicken are preferred for backyard poultry production and their colour and sex is important for different sacrifices, gifts and cultural traditions. Among tribal communities, poultry is an essential pre-requisite to celebrate important festivals. Birds are sacrificed during sowing and harvest season and are traditionally used in the popular cock fighting sport that peaks in January. During this period, the cost of a male Aseel bird ranges from Rs 1500/- to Rs. 3000/-. The *adivasis* also treat the bird as an asset and feel pride in presenting relatives with chicken meat during feasts. The Aseel also has an indomitable link to women. This positive relationship is captured in village proverbs and, metaphors like:

“Kodi thinnadi, Kodala thinnadi, lekka ki radbu, ekadiki podbu”

(What the chicken eats, or what a daughter-in-law eats should never be counted because they only multiply wealth in your home, which remains with you)

“Kolanu ammina dabbulu, kodaliki eruka”

(Only the daughter-in-law knows the amount earned from the poultry in the house)

“Tholasuri aadapila puttale, tholakari korasene aina veyale, korakotbaku kollu koyale”

(May your first child be a girl, may you sow Korra (millet), as your first crop, and may you offer a poultry bird in thanksgiving to the gods, when you harvest your Korra crop)

⁵ *Ādivāsīs* (Devanagari -Literally: original inhabitants) is an umbrella term for a heterogeneous set of ethnic and tribal groups believed to be the aboriginal population of India and comprise a substantial indigenous minority- Tribal people constitute 8.2% of the nation's total population, over 84 million people according to the 2001 census *Adivasi* societies are particularly present in the Indian states of Orissa Madhya Pradesh, Chattisgarh, Rajasthan, Gujarat, Maharashtra, Andhra Pradesh, Bihar, Jharkhand, West Bengal, Mizoram and other North Eastern states, and the Andaman and Nicobar Islands.

producing live birds, and not eggs. And as studies have indicated, 95%-100% of the total annual eggs laid by a bird are kept to hatch. Of the live birds that hatch and survive, between 60-70% are sold, 15-20% are consumed at home and the remaining 10-15% are kept as breeding stock to increase the flock (Ramdas and Ghotge, 1998). Aseel meat is highly valued by rural and urban dwellers, rich and poor alike, with prices per kg live weight being 50-100% higher than the broiler because of its superior taste and texture. Moreover with demand outstripping supply, indigenous poultry meat is hard to access and is a niche commodity.



III. Key Elements of the Good Practice

3.1 The Origin

In the early 1990s, a combination of factors resulted in the fast decline of the Aseel population in East Godavari mainly due to high production losses and infectious diseases which threatened the Aseel gene pool. Efforts undertaken by local government agencies promoting non-local breeds (such as *Giriraja*) that had high egg producing capacity were found to

Box 3: The Suitability of the Giriraja

During the last decade few chicken varieties like Grampriya, Vanaraja, Giriraja, Nandunum, Hit CARI, Gram Lakshmi etc. have been developed by the Indian Council of Agricultural Research (ICAR) for promotion of backyard poultry in rural areas. Most of them have been derived from exotic birds and they are hatchery dependent systems. These birds are considered by many to have improved growth features in terms of egg and/ or meat production.

However, despite these qualities, while their performance under semi-scavenging systems improved productivity, they are poor scavengers, non-broody in nature and not able to cope with predators. In addition, the colours are not liked. As the hens lack broodiness, an assured supply of chicks depends on infrastructure and hatcheries. Thus, Giriraja is not the bird of choice for *adivasi* women because they are often an easy prey to predators, need more feed compared to *desi* birds, and do not satisfy the cultural requirements of tribal people such as sacrifices, gifts, consumption, sport etc.

produce birds that are incompatible with local preferences for meat and indigenous practices such as cock fighting. As a result of these impediments, although a poultry farmer could potentially earn over Rs. 4,000/- per adult hen/year, actual earnings were less than half of this due to losses resulting from egg spoilage/infertile eggs (67%) and chick mortality (37%). Annual poultry mortality was remarkably high at 70-80% due to Ranikhet (New Castle disease), fowl pox and Salmonellosis/ Bacterial white diarrhoea. This scenario had translated into an average annual loss of Rs. 30,000/- to 50,000/- per village. In a livelihood scenario where nearly every *adivasi* was steeped in debt, ranging from Rs. 4,000/- upto Rs. 50,000/-, this loss was recognised as critical.

This loss of biodiversity and income warranted immediate efforts that could reinforce the genetic integrity of Aseel and strengthen local livelihood systems. In 1994, the consortium of NGOs lead by Anthra and supported by Girijana Deepika and Yakshi studied local Aseel production systems in 24 *adivasi* villages, comprising approximately 2000 households of East

Box 4: The Pulls and Pushes of Backyard Poultry

Characteristics of Backyard Poultry:

It ensures significant contribution to family household assets.

- It lays focus on enhancing nutrition and reducing rural poverty by creating an additional income source.
- Has high employment potential relative to investment, if right frame conditions exist.
- Role of womens' participation is relatively higher in backyard poultry compared to other animals.
- Small Scale Rural Producers can be Profit Efficient through this occupation.
- Country birds and their eggs fetch 25–30 % higher price than exotic hybrids.

Five biases limiting potential of Backyard Poultry:

Approach Top Down: Transfer of Technology only to Progressive Farmers.

Species Focus on Large Ruminants only.

Yield Focus on intensive system to maximise yield, neglecting other aspects.

Area Services concentrated in higher potential areas – urban and semi urban.

Gender Extension provided by men to men while women's role in BYP is high.

Source: Dr P. K. Shinde, Livestock and Poultry Sector in Chhattisgarh: Present Status and Approach for the future, Intercooperation

Godavari, and initiated disease prevention and bio-diversity conservation strategies. The programme empowered local women to implement a multi-pronged action plan to prevent losses, increase the Aseel poultry population and lobby with the government for services. As a result of these initiatives, local women have collectively responded through multiple efforts and have resurrected the Aseel population in their area and rebuilt their lost livelihoods.

3.2 The Strategy

The NGO consortium initiated work with a primary intention of strengthening the backyard poultry livelihoods of *adivasi* women through *in-situ* conservation and development of the Aseel poultry breed.

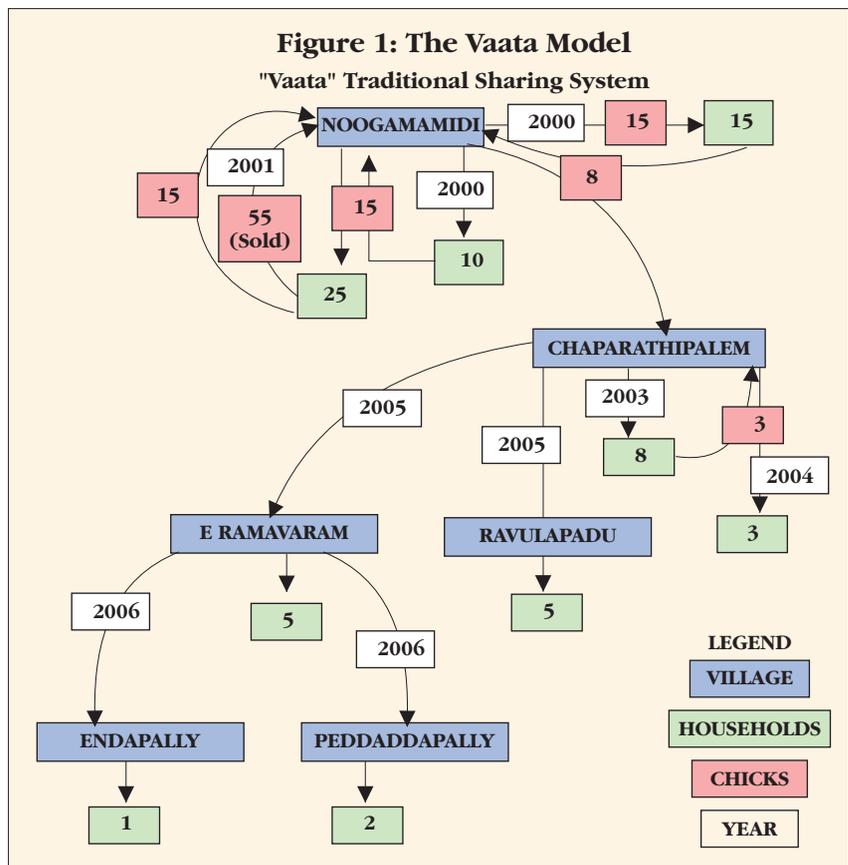
The basic premise of this effort was the belief that sustaining Aseel based livelihoods would not only enhance incomes but also rebuild biological and cultural diversity and sustain valuable indigenous knowledge systems amongst the local community. Activities initiated included:

1. training of village animal health workers (AHWs),
2. introduction of basic healthcare practices such as vaccinations and de-worming,
3. encouraging use of local herbal remedies in prevention and first aid,
4. building women's capacities to effectively manage and feed their poultry,
5. empowering women to access preventive vaccinations from government services,
6. encouraging local poultry asset creation under the traditional *Vaata* system.

The innovation through *Vaata* was based on a traditional system of sharing and building assets popular among *Adivasis* in Andhra Pradesh. Under this, individual women members of *Gottis* (local village women's groups) were given a few Aseel hens and each village some breeding cocks.

Each recipient was asked to return half the subsequent chicks produced by the hens once to the group corpus. The returned chicks were redistributed free or sold and the savings were accumulated within the *Gotti* accounts. This system of rebuilding poultry birds is detailed in Figure 1.

As per this model, in 1999, 10 women from village Noogamamidi, were each given two Aseel hens and the group corpus was given two Aseel cocks. In 2000, they collectively returned 25 chicks aged five months to the women's *gotti*, which were re-distributed to other women within the village who did not possess poultry. In 2001, beneficiaries returned 55 chicks to the village group and since there were no further takers within the village, the *gotti* decided to



sell the birds, for which they received Rs.2,899.00 (\$75). In 2003, women returned eight birds which were passed on to eight women in a new village, Chaparathipalem. In 2005, 10 new recipients from two new villages received birds from Chaparathipalem. In 2006, three women from another two village received birds. Thus over the past eight years, the offspring of the original germ plasm spread to 74 women in 6 villages.

This activity was purely funded by women themselves with Rs. 60,000/- of group savings serving as the initial investment for purchasing birds. Money was also earmarked for provision of a poultry medical kit for each village. These costs were fully recovered by the end of the first year itself. Given the success of the initiative, women started a village revolving fund wherein each member contributed Rs. 3-5/- per month for medicines and vaccinations. To support this initiative, the NGO consortium trained 71 animal health workers between 1992 and 2004, of which 60% were women. These workers were imparted 40 days training that covered all aspects of animal health with special emphasis on poultry care and management, including identification and prevention of production losses, poultry nutrition, housing, vaccination, herbal medicines for disease control and first aid. Promotion of ethno-veterinary medicine was incorporated in the curriculum as was simple homeopathic and allopathic care, including vaccination. Apart from providing health services to rearers, the AHWs also disseminated information pertaining to poultry care and management, including identification and prevention of production losses, poultry nutrition, housing etc.

Furthermore, workshops were held by the NGO consortium to capacitate Women's *Gottis* on issues like group management procedures, building immunity and reducing susceptibility to various poultry diseases. The women were also trained to use simple herbal remedies and were also provided information on seasonal de-worming and vaccination on a routine basis.

Efforts to improve the nutritional base of poultry were introduced to reduce feed costs. While earlier poultry scavenging had been supplemented through byproducts of food crops where millet and paddy served as a feed base for poultry; massive shifts to commercial crops such as cotton and tobacco had resulted in a lower nutritional plane for the birds. As a result of this, in 1998, the average cultivable area under food crops was less than 25%. With no byproducts available, women were having to purchase broken rice and fed their birds the bare minimum thereby compromising their health in the bargain. The NGO consortium worked with local *gottis* to rebuild crop diversity (millets, pulses and oil seeds) that could contribute to both food security for humans and left adequate crop-byproducts such as fodder for ruminants and feed for poultry.

Finally, overcoming the greatest challenge of obtaining sufficient quantities of vaccines prior to the outbreak season was one of the most difficult tasks faced by the *Gotti* women. In the beginning of the intervention vaccines and medicines had to be purchased from the funds generated by *Gottis* through contribution of members. As the *Gottis* grew in numbers and strength, they lobbied with the Animal Husbandry Department and succeeded in accessing free vaccinations for New Castle Disease/ Ranikhet (NCD). As a result, since 2001, women have been consistently getting their birds immunised against NCD with vaccines supplied by the government often at no cost.

3.3 Structure and Actors involved

The fundamental premise of the work undertaken by the NGO consortium was to enhance the competence and capabilities of multiple stakeholders at the local level. To this end, while the NGO consortium proposed a new direction and developed more precise competencies in poultry and group management, the local stakeholders, namely the *Gottis* and the AHWs, held together a robust system of follow-up, evaluation and analysis and brought in ownership and sustainability to the initiative. Initial work was collectively undertaken by four organisations namely *Adivasi* women's *gottis*, Girijana Deepika – an *Adivasi* Peoples Organisation, Anthra and Yakshi (both NGO's). Other stakeholders included, local veterinary doctors and members of the government lead Integrated Tribal Development Agency.

Anthra provided the overall planning and technical support and was closely associated with the programme from 1996 to

2003. It mounted various participatory studies, assisted in designing interventions and provided veterinary and ethno-veterinary technical support. Yakshi played a pivotal role in capacity and leadership development amongst the local community and provided specific support to the *gottis* on usage of applied participatory approaches such as Regenerated Freirean Literacy (REFLECT) to encourage critical analysis, debate and action amongst the village community. Girijana Deepika, the local *Adivasi* Peoples Organisation with strong roots in East Godavari functioned as an umbrella advocating for *Adivasi* rights and control over resources and was instrumental in encouraging women to form an apex federation and lobby with the government for veterinary services.

The women's *gottis* worked as the focal point of all interventions. In 2002, the NGO encouraged the groups to re-organise themselves into a federation which is today called the *Tholakari Adivasi Mahala Vedika*, with a membership of 1800 women spread across 80 villages. It functions as a platform where *adivasi* women work on their concerns, rights, and livelihood issues.

3.4 Outcomes

The intervention has resulted in considerable reduction in poultry morbidity and mortality (Table 1) and has remarkably increased the income potential from rearing Aseel (Table 2).

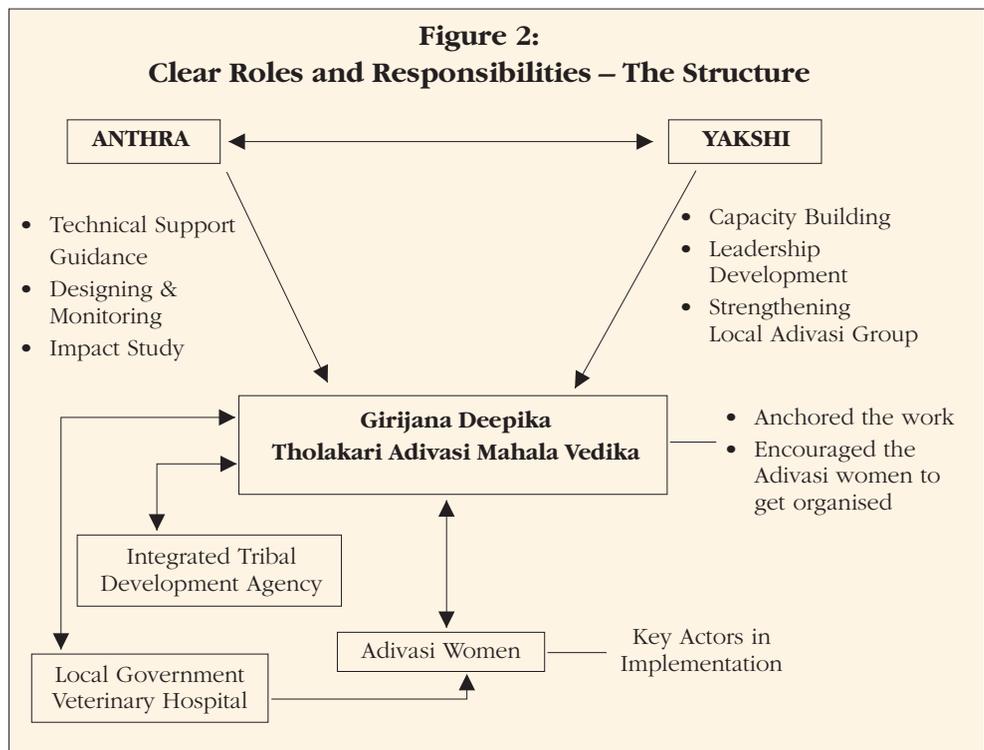


Table 1: Comparative Crude Mortality Rates in Poultry Population in year 1996, 1999 and 2008 respectively

Details	Pre intervention		Post Intervention		Survey-sample-	
	1996-1997		1999		2008	
Year						
Village (No.)	24		13		3	
Poultry Population (No.)	7,725		5,021		1,246	
Causes	Mortality		Mortality		Mortality	
	No.	%	No.	%	No.	%
Ranikhet	2,241	41.4	29	9.8	17	5.5
Bacterial White Diarrhoea	3,071	56.8	62	20.9	100	32.2
Fowl Pox	72	1.3	167	56.4	146	46.9
Others	24	0.4	1	0.3	7	2.3
Non Specific Diarrhoea	0	0.0	28	9.5	0	0.0
Predators	0	0.0	9	3.0	41	13.2
Total	5,408	100.0	296	100.0	311	100.0
Crude mortality rate	70.01	5.90	24.96			

Table 2: Economics of Aseel Backyard-Poultry Production System

Variable	-1 Aseel hen-	Potential income	Actual Income ¹ 1998	Actual income ² 2008
No of clutches /year		3	3	3
No of eggs/clutch		12	12	15
Total no of eggs /year		36	36	45
Egg spoilage/breakage		2	4 eggs*3clutch= 12	2 eggs*3clutches= 6
Chicks born		34	24	39
Chick mortality		2	7	7
Total loss		4/36 (11%)	19/36 (53%)	13/45 (28%)
Chicks survived		32	17	32
Value of offspring-1/2 hens and 1/2 cockerels				
Cockerels @ Rs 200/bird (1998) and Rs 250/bird (2008)		16* Rs 200 =3,200	8* Rs 200 = 1,600	9* Rs 250 = Rs 2,250
Hens @ Rs 100/ bird (1998) and 140/bird (2008)		16* Rs 100 =1,600	9* Rs 100 = 900	9* Rs 140 = Rs 1,260
Vaata - Traditional Sharing system:				
Offered for Sharing				4
Received back & sold				15 birds sold @ Rs 2300
Total income		Rs 4,800	Rs 2,500	Rs 5,810
Expenditure:				
Feed		Rs 700	Rs 700	Rs 60 ³
Health care expenses (vaccinations etc)		Rs 36	Nil	Nil ⁴
Net income:		Rs 4,064	Rs 1,800	Rs 5,750 10 chicks from 3 rd clutch
¹ Based on the Participatory rural surveys in villages before intervention ² Figures are indicative based on randomly selected household from a sample survey in Jan 2008 ³ Broken rice, ganti, taudu, bran fed from their own produce for 8-9 months in a year ⁴ Vaccinations sourced from Animal Health Department and use of ethno veterinary medicine locally available				

Mortality rates have fallen from the baseline survey levels of **70%** in 1996 to **25%** in 2008, dipping to as low as **6%** in 1999. Sample surveys conducted in January 2008, revealed a three fold increase in poultry income compared to surveys conducted in 1998. Given these developments, the average poultry unit/ household has also increased from 7.5/hh in 1996 to 11.23/hh in 2008.

The *Gotti's* success in accessing free vaccinations for NCD from the Animal Husbandry Department had a remarkable impact on controlling diseases. For instance, in 2007, women were able to mobilise NCD vaccinations and launched an intensive vaccination drive lead by AHW's reaching out to 12,000 birds across 45 villages. As a result of these efforts, there has not been a single NCD outbreak in the past 6 years with the exception of 2008 wherein some villages reported outbreaks largely because the government could not supply NCD vaccinations on time.

Table 3: Proportionate Morbidity/ Mortality rates of disease conditions between 2007- 08

<i>Average poultry population - based on 3 sample villages</i>		1246		
Causes	Crude morbidity %		Crude mortality %	
	39.00		24.96	
	%	No.	%	No.
Bacterial White Diarrhoea	17.9	87	5.5	17
Ranikhet (NCD)	36.6	178	32.2	100
Fowl pox	31.1	151	46.9	146
Others (cold, cough etc)	8.2	40	2.3	7
Predators	6.2	30	13.2	41
Total	100.0	486	100.0	311

It is evident that NCD and Fowl pox continue to be the major cause of both morbidity (37%-NCD; 31%-FP) and mortality (32% - NCD; 47% FP). While this continues to be lower than the original baseline study of 1996, which reported an overall crude mortality rate of 70%, it is higher than the crude mortality rate of 6% reported in the year 1999.

Reduction in mortality was also made possible by employing strategic prevention strategies that included improving the availability of village health care services by training village animal health workers and building women's capacities to effectively manage and feed their poultry. Many women now report usage of traditional herbal remedies which they learnt at trainings carried out by *Gotti* trainers and AHWs.

Lastly, the poultry *Vaata* system initiated by 196 women belonging to 20 villages in 1999 has spread to over 67 villages in 2008 and greatly contributes to re-building the Aseel population in the area.

Nearly 100% of women who own land are now feeding their birds with byproducts of millets and

Box 7: Most Widely Practiced Herbal Remedies

- i) Feeding birds with garlic (*Allium sativum*) pods in winter months and onion (*Allium cepa*) during the summer
- ii) Adding turmeric (*Curcuma longa*) or potassium permanganate in drinking water every day
- iii) Feeding birds every week with alternating herbal medicines such as leaves of Bhui-Neem (*Andrographis paniculata*), leaves of hedge-cotton (*Pergularia daemia*), Curry leaves (*Murraya Koenigii*) and Bitter Gourd / Karela (*Momordica charantia*) leaves.
- iv) Treating bacterial white diarrhoea with powdered bark of Aradu/Maharukh (*Ailanthus excelsa*)

pulses cultivated on their own fields. A recent agriculture survey carried out in April 2007 across 68 villages revealed that 1032 farmers had cultivated food crops in 3096 acres, which covered 60% of the total cultivable land. Over 20 different food crops comprising cereals (finger millet, Italian millet little millet, pearl millet, sorghum, fox-tail millet, kodo millet, corn, dryland rice), pulses (green gram, red gram, black gram, horse gram, bengal gram), oilseeds (sesame niger) and legumes are now being cultivated here. This development is in stark comparison to 1998 at which time the average coverage of food crops was less than 25%. Backyard poultry are now fed broken/ waste grains and bran of pearl millet and other cereal mixed with wastage, thereby making feed costs negligible. Women have reported that whereas earlier they had to purchase feed for 8-10 months/ year, today they are able to feed their birds from their own produce for almost 11 months/ year.

Another significant change is that women now sell their birds at an older age (10.1 months) as compared to 3-4 months earlier because of increased availability of feed at the household level. These positive developments have not only enhanced incomes but have built

Box 8: The story of Gonela

Gonela Venkatalaxmi lives in village E. Ramavaram in Gangavaram Mandal of East Godavari District in Andhra Pradesh. She is 25 years old and lives with her father and brother's family. Her father owns 2 acres of land. She has been involved with backyard poultry rearing since her childhood when she lived with her grandmother. She recollects that a large number of birds used to die every year due to a contagious disease locally called "Pacchaparudu" which is Ranikhet or New Castle Disease.

She joined the village *gotti* (indigenous system of community interaction / a traditional forum where people meet to discuss local problems) and underwent training on good management practices, better feeding methods and also learnt the necessity to vaccinate the birds against fowl pox and Ranikhet.

Gonela took two hens from the *gotti* in the year 2005. Her entire flock had died in the previous year due to an outbreak of Ranikhet in her village. Thereafter, her family had to purchase chicken from the market whenever they needed a bird for consumption or for festivals. When she started rearing poultry again in year 2005 she was aware of the importance of vaccinations that she had learnt as part of her training. In addition to her flock, she got all the birds in the village vaccinated. She also started using herbal preparations as preventive measures to build the immunity of the birds. She has been feeding jowar and bajra cultivated by the family in their own land except for 3-4 months in summer when the grain gets exhausted. During these months she feeds the birds on bran purchased from the market. It costs Gonela Rs. 10/- per month to purchase the feed for the birds. She proudly shares that the mortality of the birds has reduced because of good management practices.

Though she started with rearing two hens, presently she rears an average of 60 birds per year. Each hen is giving eggs in three clutches at the rate of 15 eggs/ clutch, all of which are used for hatching. From the 15 eggs she gets 13 chicks of which an average of 10 chicks survive from each clutch.

Venkatalaxmi's family consumes 20 birds in a year. She shares that "when we convert this consumption into cash it equals to approximately Rs. 3,500/- a year". She also earns an income of around Rs. 3,500/- from the sale of 20 birds in a year. A cock fetches between Rs. 200/- to Rs. 300/- depending on the age and a hen fetches Rs. 80/- Rs. 100/-. She has also returned 5 birds back to the *gotti* within a year and has also given two birds on *vaata* (sharing system) to her neighbour.

At any time of the year she has altogether 20 birds of different ages. Now her family need not purchase birds from outside for their own consumption or for various festivals linked to their crops. Since birds are available at home, she is able to sell these whenever she is in need of money for health expenses or for purchasing groceries from the market. She feels very secure that she has a bank in her house in the form of birds that can be converted into cash whenever need arises. She also feels that the nutrition of the family is much better now. Earlier when she had to buy from the market and did not have enough cash they would not eat chicken meat for months together. Now they eat chicken meat at least once a month and sometimes even more.

household nutritional security through greater availability of animal protein. The intervention has also remarkably enhanced women's skills and capacities and allows them to perform greater decision-making and leadership roles today. Women refrain from increasing the flock size too much since it would involve more work looking after them. Moreover, the birds are today a 'bankable' source of cash and helps in reducing indebtedness.

In 2002, the NGO Anthra, that had provided animal husbandry and ethno-veterinary support to the programme, stopped direct involvement and encouraged the groups to develop village based implementation strategies themselves. By January 2008, the *Gottis* organised themselves into the federation called *Tholakari Adivasi Mabila Vedika* which now supervises operational aspects of *Vaata*, manages AHWs, advocates directly for NCD vaccinations and functions as a focal point for interactions with the NGO consortium.

3.5 Discussion on Sustainability

This good practice effectively showcases that indigenous breeds do play a critical role in building livelihoods and fitfully highlights the need to acknowledge the efforts of tribal people in preserving their valuable genetic resources. It is sustainable because it clearly showcases a community led model that brought in livelihood security through Aseel preservation. It also showcases that despite livestock care being perceived as a male occupation, women (the primary owners of the Aseel asset) not only took informed, technically sound decisions throughout the programme process, but are today empowered enough to manage *in-situ* conservation efforts with minimal external support. Their ability in being able to take informed decisions is visible in the increased consumption of birds at home as also the ability to market their birds at a later age. Women have also been hugely successful in rebuilding their diverse food-farming production systems, incorporating herbal remedies in disease control and in management of the *Vaata*.

The *Vaata* system has gone far beyond sharing of chicks and has developed into a comprehensive effort that includes distribution of chicks, collecting chicks back from beneficiaries, identifying new beneficiaries, and mobilising vaccinations from State Animal Husbandry Department and disseminating information to women. However, in some villages, experiences from the *Vaata* system were unsatisfactory due to interest groups and poor leadership thereby stressing the importance of working on participatory frames to ensure sustainability in community mobilisation. One of the biggest strengths of the programme has been in the engagement and empowerment of local groups in follow-up, evaluation and analysis of programme frames with experiences revealing clear advantages in holding together a locally managed system which allowed space for greater participation and ownership. As a result, current follow-up procedures are led by the Women's Federation themselves and are backstopped at strategic intervals by the NGO consortium wherever required. However, despite programme success, women continue to struggle for timely access to vaccinations to save their precious birds against NCD and fight the fear of mortality and morbidity every year. Preventive vaccinations against fowl pox were even more difficult to obtain.

The main problem associated with accessing vaccinations is their insufficient production and availability with the local government veterinary department. Another grave concern of indigenous women in recent years has been the possible disastrous consequences of a **bird-flu epidemic** and the fear that the administration would unfairly target backyard poultry and destroy the very birds that have been so painstakingly resurrected.

IV. Lessons Learnt and Key Elements for Success

The efficacy of having a local animal health worker (AHW) addressing simple requirements like vaccination, lobbying and extension was aptly proved here. This not only reduced mortality remarkably from 70-25 %, but also built service sustainability by linking the AHW functions with ongoing group activities. Conservation and development of indigenous breeds when turned into benefit and profit can transform into an important livelihood activity for people. *In-situ* conservation was made a reality here through an iterative partnership between external actors and the women stakeholders themselves.

1. The impact of this intervention reveals the matrix of direct as well as indirect gains to an initiative. While the direct gains included a remarkable increase in income, enhanced consumption of poultry meat, an overall positive shift in diet (by reverting back to food crops), the indirect gains included the empowerment, enhanced knowledge and decision making, voice, self organisation and lobbying abilities of *adivasi* women.
2. Use of herbal medicines for prevention and cure reduced health costs to a minimal. Simple problems like white diarrhoea and worm infestations were addressed through these remedies. Moreover women learnt to use a range of herbal medicines as a preventive measure. The model was found suitable for backyard poultry since it is cheap, effective and within reach (women grow/collect the herbs themselves).
3. The importance and value of traditional credit systems (in kind) through *Vaata* proved hugely successful in restoring poultry population in the area. In a scenario where 'access to credit for all' is still a eutopic dream, anticipating on local systems can help develop a practical model. This concept of '*passing on the gift*' is one such successful approach.
4. This case proves that conventional cost – benefit analysis, wherein all the variables are often not calculated, easily results in wrong assumptions, and subsequently introduction of Poultry Schemes not suitable for the people they are meant for. In the case of introduction of highly subsidised Giriraja, the fact that the system was dependent on hatcheries and the birds lacked broodiness or cultural relevance was a decisive factor in lack of absorption of the scheme.
5. A small entry point viz. 'Aseel conservation' led to a wide range of impacts and influenced the entire farming system in the project area. The traditional *Vaata* led to enhanced knowledge of management practices amongst women and served as a base for setting up the women's Federation. Capacity development and use of REFLECT empowered women to work as pressure groups and brought them success in lobbying for vaccines from the government. The lack of poultry feed also helped analyse the shifts in cropping systems and reverted cropping patterns back to a more varied diet and enhanced crop byproduct availability for both poultry and small ruminants.
6. The case proved that it is inappropriate to compare the impacts of strengthening backyard poultry system utilising local breeds with a high input, high output, small scale poultry system based on hybrid birds and purchase of compound feed. This case reveals that the risks, potential and expectations of both livelihood systems are totally different. Capitalising on indigenous genetic potential, the next generation of competitiveness could possibly lie in building organic markets and production systems.

7. However, despite positive market and policy frame conditions like the Brundtland report (1987) that draw attention to mounting loss of biodiversity; national responses to animal biodiversity loss continue to flag issues such as indiscriminate breeding and lack of farmer's awareness as impediments to productivity even in the context of proven worthiness of indigenous assets in the case of Aseel.
8. Prevention and control of Bird Flu is becoming an important national and international issue. However, any initiative in this direction needs to involve the primary stakeholders through joint planning to create a level playing field. These stakeholders need to be viewed as a part of the solution and thus part of planning the Bird Flu mitigating/response strategies.

V. Scope for Replication

Observing the impact of this effort in East Godavari, *adivasi* women from 6 other districts in Andhra Pradesh, (Vizianagaram, Visakhapatnam, Srikakulam, West Godavari, Khammam and Adilabad) have approached Anthra for training and since 2006 have been adopting similar conservation strategies. Similar approaches have been successfully applied by *Dalit* women in East Chittoor to conserve the Kalahasti breed of indigenous poultry.

This good practice is indeed worthy of replication because it shows the success of a community led effort that enhanced women's livelihoods, provided economic returns as well as facilitated local mobilisation around Aseel conservation. It also highlights that people aptly know the value and potential of their genetic resources. However, for effective replication, there are still some pre-conditions/ issues that need to be addressed. Firstly, the government needs to deliver its mandate of ensuring timely quality vaccines to avoid the risk of poultry mortality and morbidity. Secondly, there needs to be openness towards absorbing the scope and potential of local Animal Health Workers who can function as decentralised service delivery agents. However, despite proven success of the importance of such agents in East Godavari as well as elsewhere in Bangladesh, a clear legal and referral framework does not exist that will allow for promotion of this cadre of para-professionals – AHW. Thirdly, in an era where growth needs to be subsumed in equity, the new language of livestock productivity needs to adhere to the National Farmers' Policy frame conditions of being pro-poor, pro-farmer and pro-livelihoods. A first step in this regard is to expand the vision of income based development to a livelihood orientation which incorporates elements of sustainable natural resource management, asset and capabilities development. Lastly, this case breaks the myth that '*desi* is not productive' and highlights the strong need to place the *desi* back on the poultry agenda keeping niche markets, agro climatic and cultural realities in view.

Annexure I: Classification of poultry production systems

For analytical purposes, FAO and OIE have identified four main production poultry systems^{6 7} (sectors) of which sector 3, 'Small-scale Commercial Production System' and sector 4, 'The Village or Backyard System' are typical representing smallholder poultry production. Although for typical family poultry the classification of Bessie (1987)⁸ might be more appropriate, it is observed that the FAO & OIE classification is widely adopted, including in South Asia.

Sector 3 is a commercial but small-scale poultry production system that may produce meat or eggs or both. The birds are purchased from breeding companies. The products are sold commercially. The farms keep their birds indoors continuously. Bangladesh classifies units keeping less than 500 birds in this category.

The backyard system (Sector 4) is the most widespread in South Asia and undertaken by millions of households. Many of the households belong to the poorest in the country, while it is mainly women and children, who are responsible for the daily care and they are normally the owners and decision-makers. The birds kept in this system can be viewed as part of the prevailing farming system; mixing of species and age categories is common. Sector 4 can be further 'broken' into 2 sub-sectors namely 4-A and 4-B.

Sector 4-A is characterised by a very basic system with scavenging indigenous poultry, no cross breeds, rather meat production than egg production and part of a mixed farming system. It is often referred to as traditional backyard poultry system.

Sector 4-B, is characterised by the use of improved breeds, slightly improved management and input of additional services such as vaccinations and other investments.

⁶ FAO: Food and Agriculture Organisation of the United Nations
<http://www.fao.org/ag/aainfo/home/en/index.htm>
<http://www.fao.org/ag/aainfo/programmes/en/pplpi/home.html;>
OIE: World Organisation for Animal Health (www.oie.int). Reference: Permin et al., 2007.

⁷ Sector 1.: Industrial Integrated System
Sector 2.: Commercial Production System
Sector 3.: Small-scale Commercial Production System
Sector 4: The Village or Backyard System

⁸ Bessie (1987) classification follows the following four broad production systems:

- *Free-range extension*: birds are not confined, scavenge for food over a wide area,
- *Backyard extensive*: poultry housed at night; free range during the day. Usually fed a little grain in the morning and evening to supplement scavenging.
- *Semi-intensive*: these are a combination of extensive and intensive systems where birds are confined to a certain area with access to shelter. Feed and water are available in the shelter/house to avoid wastage by rain, wind and wild animals.
- *Intensive*: these systems are used by medium to large-scale commercial enterprises, and are also used at the household level. Birds are fully confined either in houses or cages; deep litter system, slatted floor system, battery cage system.

The following overview summarises the key characteristics of Sector 3, 4-A and 4-B.

Overview 1: Village-based poultry production systems		
Sector 4A: Traditional free-range (1-10 birds) Low input/low output	Sector 4B: Improved free-range (5 – 50 birds) Low input/medium output	Sector 3: Small-scale confined (50 – 200 birds) High input/high output
<ul style="list-style-type: none"> • Majority of rural families • Owned mostly by women • Home consumption • Small cash income • Social & cultural importance (gifts, religious) • Indigenous breeds • High mortality • No feeding (scavenging) • No vaccination • No medication • No housing • Egg production: 30-50 eggs/y/hen • Long broody periods • Growth rate = 5-10 g/day 	<ul style="list-style-type: none"> • Moderate number of rural families • Owned by women & family • Home consumption and sale on local markets • Family income • Social importance • Micro-credit • Indigenous/ improved breeds • Moderate mortality • Local feeds (semi-scavenging) • Newcastle Disease vaccination • Little medication/local remedies • Simple housing • Egg production: 50-150 eggs/y/hen • Short broody periods • Growth rate = 10-20 g/day 	<ul style="list-style-type: none"> • Few rural families • Businessmen, women • Business income • Little social importance • Credit based on assets • Hybrids (broilers or layers) • Low mortality • Balanced feeds • Several vaccination schemes • Full medication • Houses with cages or deep litter • Egg production: 250-300 eggs/y/hen • No broodiness • Growth rate = 50-55 g/day

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ANTHRA is a resource group that was started by a team of women veterinary scientists to address the myriad constraints that faced rural livestock rearers. It is registered as a trust with an all-women governing board. The initial aim of the organisation was to search for alternative systems for delivering livestock health and management practices to poor people, especially women in rural areas. Today, Anthra is a resource centre offering training, research and advocacy initiatives in the areas of livestock, biodiversity and people's livelihood.

Anthra aims to work for sustainable livestock production within the larger framework of building people's food sovereignty and livelihood security. The focus is on farming and production systems, crops and fodder varieties, livestock and plant genetic resources, medicinal plants and health care traditions, and land and water use. Anthra works mainly with marginalised communities – dalits, adivasis, pastoralists, landless groups, small and marginal farmers, and, especially women from these communities. Presently, Anthra works with such communities in the states of Andhra Pradesh, Maharashtra, Chhattisgarh and Karnataka. Anthra has two operating offices, in Hyderabad and Pune.

For more information on Anthra, kindly visit their website at <http://www.anthra.org>

About this Good Practice

1800 women of East Godavari, Andhra Pradesh spell out the new principles for in-situ indigenous poultry development! This initiative led to a remarkable reduction in mortality, tripled financial benefits from poultry rearing, worked as a trigger to diversify agriculture practices and allowed women to reclaim their lost poultry heritage.

This note captures the women's journey from marginalisation to empowerment and answers two key questions...

How can indigenous backyard poultry contribute to livelihood Development?

&

Are these initiatives sustainable?

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