

Case Study

Vertical Integration at Suguna Poultry Farms - *A Critical look at Pro Poor Livelihood Issues*



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

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Abstract

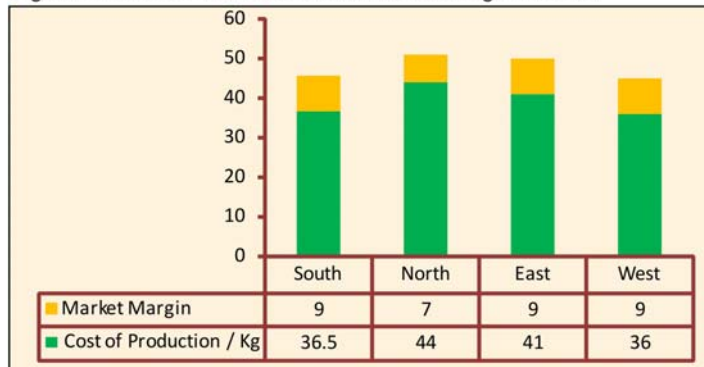
The concept of vertical integration with contract farming as an intermediary chain of governance strategy is a commonly adapted 'mantra' by various integrators in the poultry industry. The system provides for several advantages in terms of efficiency in harnessing sophisticated technologies and achieving economies of scale even in geographically distributed and traditional small scale farming systems (Soundar Rajan, Suguna, poulvet.com 2007). This case study is done in Orissa, the eastern Indian state, to empirically analyse and comprehend the working of this system as practiced by Suguna Poultry Farms Ltd. An effort has been also made to look and analyse the terms of the contract and other features with a view to identify practices that are unique and practiced by the company for promoting poultry among the small holder farmers. The provision for better inputs, finance, assured marketing, etc by Suguna is found to provide a sense of security among the farmers and higher expected returns when compared to independent producers. However, it targets resourceful sections within the small farming communities for obvious reasons, and thus cannot be called poor in the true sense.

1. Introduction

1.1 The Poultry Industry and Contract Farming in India

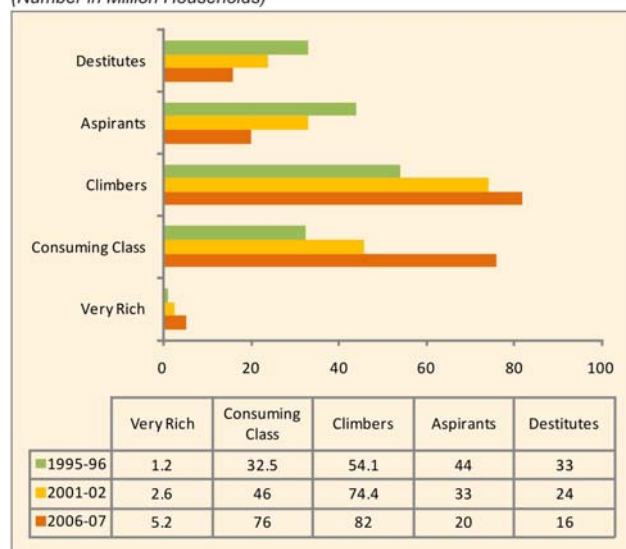
Poultry is one of the fastest growing segments of the agricultural sector in India today. While the production of agricultural crops has been rising at a rate of 1.5-2 % per annum, the production of eggs and broilers has been rising at a rate of 8-10 % per annum (Mehta *et al.*, 2003). The growth of the poultry sector in India has also been marked by an increase in the size of the poultry farm. For example, in earlier years broiler farms used to produce a few hundred birds (200-500 chicks) per cycle on average; whereas now units with less than 5,000 birds are becoming rare, and units with 5,000 to 50,000 birds per week cycle are common (Mehta *et al.*, 2003). India now produces around 34 billion eggs and 0.6 million tones of poultry meat annually. It is now the world's fifth largest egg producer and the nineteenth largest producer of poultry meat (*Vision for Poultry Industry, current scenario future prospects*, www.chinacm.com, June 2005).

Figure 1: Cost of Production versus Market Margins in India



Source: Suguna Reports - May 2008

Figure 2: Growth in Income Groups
(Number in Million Households)



Source: NCAER

1.2 The Growth Catalysts:

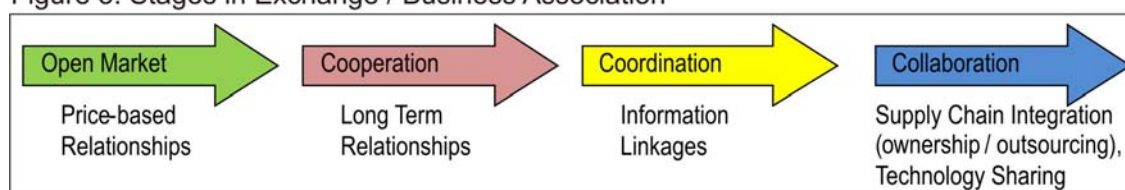
The initial effort by the government to encourage commercial broiler production, coupled with credit support from banks, created a favourable environment thereby contributing to the spurt in the industry. This basal momentum was later catalysed by the “push factors” like adoption of industrial type commercial farming under contract growing system mooted by private sector players. In general, contract farming system was widely accepted and adapted which acted as a major impetus for broiler industry. The trend also gained momentum as a sequel to the diminishing returns from crop based agriculture

(Mehta, et all 2003). The private players in a short span of time expanded their network, improved production efficiency, reduced number of middle-men and forced the wholesalers and retailers to reduce their margins. Thus these players gained control over markets and established their price leaderships. The resultant fall in real prices of the poultry meat made it affordable across different consumer segments and thus the demand “pull” was imminent. Factors like growth in per capita income and urban population also played key role in the present per capita consumption level (GAIN report, USDA, 14/9/2006).

2. Understanding Contract Farming and Vertical Integration

In practice, agricultural commodities are exchanged through spot markets or open markets where the prices coordinate the exchange process. There are no continual obligations on the participants and it is simple vertical integration. The other extreme of the vertical coordination is the full vertical integration where the firm owns two or more different stages in the value chain and exercises control over decision making on product attributes and the logistics. Contracting is an intermediate mode of coordination, wherein the conditions of exchange like production technology, price discovery, input supplies and risk sharing are specifically set and is binding among transaction partners by some kind of legal enforceable agreements. In short, contract farming refers to a particular form of supply chain governance adopted by firms to secure access to agricultural products, raw materials and supplies meeting desired specified quality, quantity, and location and timing (*Carlos A. da Silva, July 2005*). Thus, the transition from a simple spot markets to such extreme vertical integration has witnessed emergence of various other forms of exchange mechanisms like cooperation and coordination (Figure 3).

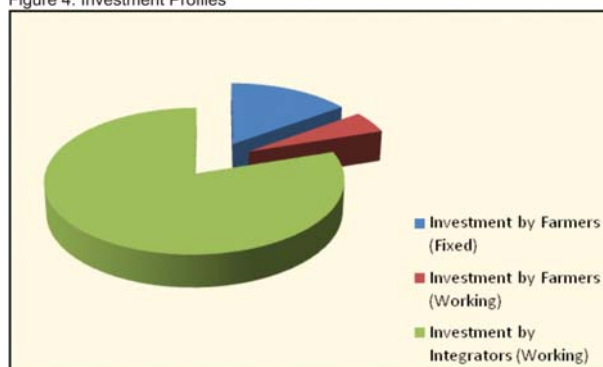
Figure 3: Stages in Exchange / Business Association



2.1 How does Contract Farming & Vertical Integration work in Poultry Production?

A contract farming arrangement in broiler production, referred to as “chick growing agreement” is generally a wage contract between an “integrator”, who supplies the intermediate inputs and procures the output, and a poultry farmer, who provides the primary inputs in the production process. The integrator provides the growing stock (DOCs; fatteners), feed, veterinary supplies and services, and implements the final marketing of the output. The contract farmer typically provides the space and facilities (land and housing), equipment, utilities, labour (family and/or hired) and day-to-day farm management¹. Thus, the major component of working capital is borne by the integrator and he is the absolute owner of movable stocks in the farm. (Figure 4)

Figure 4: Investment Profiles



The farmer receives a guaranteed wage or growing charges for each live bird based on its live weight in a condition that is predetermined and agreed upon through contractual obligation. These are usually specified by the integrator for the purposes of live sale or slaughter. Generally the payments are linked to the performance criteria in terms of efficiency in managing the birds; for example the weight, quantum of feed used to produce

¹ <http://www.fao.org/WAIRDOCS/LEAD/X6170E/x6170e0b.htm>

that weight (Feed Conversion Ratio- FCR), percentage of birds died and others. Additional incentives are given to the farmer for surpassing the performance standards. For farmers who fall below the set standards, corresponding penalty amount per bird is subtracted from the wage bill. Hence the production contracts can be seen as a self regulating system of reward and punishment to ensure cost effective production of broilers for the integrator in accordance with the quality and quantity needed by the markets.

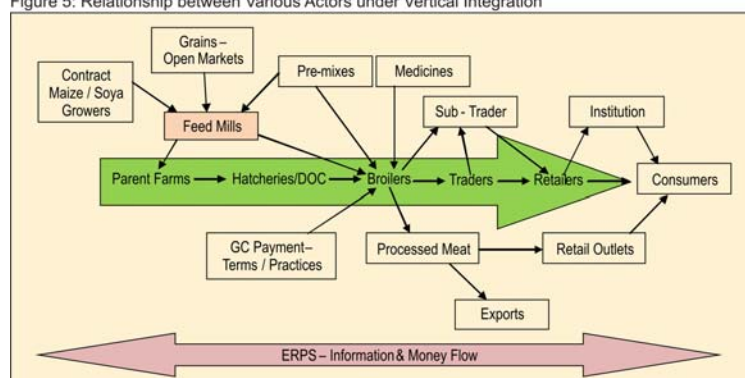
2.2 Rationale behind Vertical Integration: Integrators' view

By the virtue of the nature of the commodity and its time specific production logistics, integrators in poultry tends to directly own several stages in the supply chain to act as “integrators”. These vertically integrated companies have adapted several classical contract arrangements like market specification where the buyer specifies the features of commodities to be produced under the contract. It acts as resource providing agency where the production management contract is also embedded where it assumes direct supervisory and guiding roles at the production site and the coordination mechanism is established at the producer level.

The system of vertical integration / coordination has the following basis:

- 1) Contract farming integrates several stages in the supply chain to ensure synergy in production and distribution of inputs, streamlining marketing channel.
- 2) It also minimises transaction costs through improved synergistic performance.
- 3) The integration model streamlines the supply chain to maximise efficiency and hence lower COP and higher productivity.
- 4) It facilitates centralised decision making in business operations to align value chains to promote its' business interests, but at the same time allows decentralised broiler production operations at farmers' level. These contractual arrangements are intended mainly as a chain governance strategy to control the production operations the way opportunities arises in the market and to satisfy consumer preferences for product characteristics.
- 5) The integration model brings about enhanced competitive advantage for the integrator both in terms of product specification as above, cost advantage and assured supply as per the market requirements.

Figure 5: Relationship between Various Actors under Vertical Integration

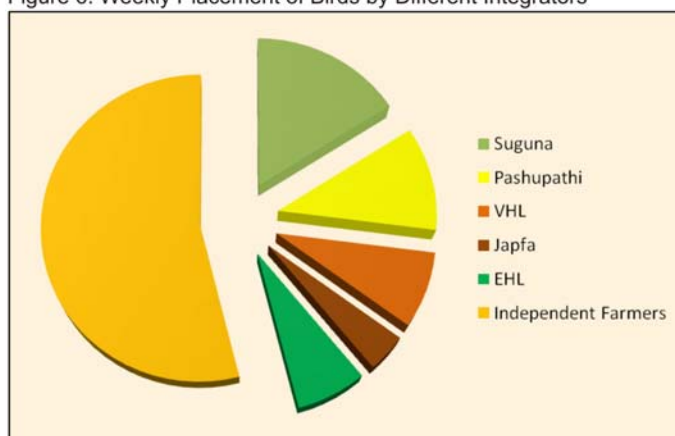


- 6) Reduction of risk both for the contract farmer and integrator. Integrator is ensured of well orchestrated supplies of birds and at the other end the farmer is assured of input supplies and platform for disposal of the produce. Most of the production related risks like endemics, natural calamities like flood, weight gain, etc are also shared to an extent by the integrator.
- 7) Improved traceability and food safety due to well integrated networks and improved customer service.

3. Growth of Poultry Industry in Orissa

Organised interventions in poultry production in the eastern Indian State of Orissa began recently. The State has a high percentage of tribal population and owing to the availability of scavenging materials at their farms / in their backyards, poultry production was mainly a backyard activity. There are many indigenous poultry breeds such as *Kalahandi* – a short bird efficient in escaping predators and high reproductive abilities, *Vezaguda*, a game bird and *Dhinki*. The commercial productions using the improved breeds are concentrated around a few central and eastern regions where the agriculture is well developed and large towns provide market bases for poultry.

Figure 6: Weekly Placement of Birds by Different Integrators



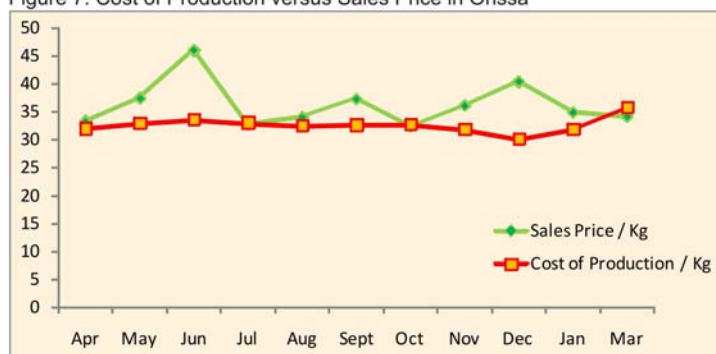
Source: Suguna Report, 2008

With opening up of economy and the introduction of contract farming elsewhere, local private players in the industry, mainly the input providers started reorganising as local integrators. This commercial scale farming under contract arrangements started reshaping the industry profile. The size of the poultry units per household ranged from 500 to 1500 birds as the local small scale integrators faced constraints in the price sensitive market. The total population of the birds was around 1.85 millions when national integrator Suguna started their operations providing impetus for commercial farming activities in potential areas in eastern part of the state like Cuttack, Puri, Khurda, Jagatsinghpur, Berhampur, Bhadrak and Balasore.

Within a span of three years, Suguna established around 700 poultry farm units under contract farming, with capacities ranging from 1,100 to 5,000 (average 2,800) birds. Orissa now places around 900 thousand (9 lakh) chicks every week yielding 80.9 million (809 lakh) kgs of meat every year. The integrators put together account for 50% of the chicks placed in Orissa. Independent performers are confined mostly to the areas not covered by integrators.

Apart from them, there are a few independent farms in the areas, but these producers usually place the birds against market opportunities like festive seasons. The broiler production is now growing at 20% per year over the last 3 years (*Suguna Report, 2008*). Egg production in Orissa is estimated at 1.5 million per day. The turnover from poultry has crossed Rs. 2.6 billion (260 crores). According to an estimate, investment in infrastructure for poultry farming in 2006-07 has gone up to Rs. 139 million (13.9 crores) from Rs. 84.5 million (8.45

Figure 7: Cost of Production versus Sales Price in Orissa



crores) in 2003-04 (*State Dept. of Animal Husbandry, 2006*). Most of this has been done by the private sector.

3.1 Small Farmers and the Context of Vertical Integration in Orissa

Developments in poultry open up lucrative offers for the small holder farmers. They often have some cost advantages in producing poultry when compared to large-scale producers else where in the country. Small farmers have a lower opportunity cost of labour, i.e., the implicit wage rate for family labour is generally below the prevailing wage rate for agricultural labour. The family labour used by small farmers is also more motivated and requires less monitoring than hired labour used by large-scale farms. Hence, small farms are better able to apply careful husbandry and respond to problems in the field.

Small farms usually grow a mix of crops and livestock and the dispersed pattern of production restricts transmission of species specific pests and diseases as compared to large-scale production.

These factors are effectively leveraged by private companies to evolve production strategies under vertical integration. The other factors that influence and compel small producers to opt for production contracts are:

- The lack of technical skills needed to produce poultry on commercial lines using improved techniques.
- Lack of credit or liquidity to purchase specialised inputs or to make investments needed to venture production on their own.

Box 1: A Case Study from Balarampur in Orissa

Abhay Kumar Sethi, aged 35 years is a hard working marginal farmer who owns an acre of marshy land on the banks of Mahanadi river in Balarampur (Salepur area). Abhay has studied till the 7th standard and he lives in a joint family with his younger brother and recalls facing tough times managing family livelihoods. He tried several options to stabilise and expand the family earnings, but as they were limited in the rural context he ventured into poultry farming on the recommendation of his peers, who were involved in the same near Cuttack town. With financial help from a bank in Salepur and the scarce family savings, he set up small scale broiler farm with 1,500 birds two years ago. He invested Rs 15,000 as capital on the farm and started rearing chicks brought from private operators, to earn Rs 5,000 to 7,000 after deducting expenses per batch from the first three batches.

"Managing the farm for skilled labour is one thing and ensuring timely supply of feed and medicines and selling birds is another". He goes on to narrate the difficulties he faced while marketing the birds at Cuttack and Salepur. Traders dictated the prices and trends were highly unpredictable. Prices generally increased during festive seasons and crashed during Shraavan and *rath yatra* periods when people refrained from eating meat. Within a year, he decided to restrict his rearing operations to festive seasons under the 'merciful' agreement with traders. "I have been with Suguna for the last four batches and I am able to get my sleep timely" he explains the reasons. All the supplies were handled by the company, which allowed him to concentrate on their efficient use and get the rewards. Moreover, daily farm visits by company officials to suggest corrective steps if needed gave him a sense of being better trained and well equipped.

He has now expanded his floor space to rear 2,500 birds at a time for this standing batch to comply with the company's advice. He has excelled in performance and has been rewarded with a gold coin by Suguna for being a consistent 'A' grade performer. His growing charges (GC) for the first batch were Rs 5.91 per kilo live weight, FCR at 1.696 and the COP Rs 27.62. His second batch faced problem of floods that inundated the shed, resulting in higher mortalities and therefore managed to obtain Rs 2.83 per kg as GC on live birds. Nonetheless, he feels protected as his returns have almost doubled at Rs 13,000 to 14,000 per batch. Two more family members now work in the farm, confident to see their shed's expansion plans to materialise to 5,000 sq ft with the financial help under arrangement with Suguna. Abhay has motivated 3 of his fellow farmers and has stood as guarantor to the company.

- The incapability to bear the risk associated with producing perishable commodities like poultry; other factors such as greater price fluctuations, risk of spoilage, and shelf life all of which puts the farmer in a weak bargaining position.
- Lack of frequent access to information to farmers about market demand needed to make production decisions.
- Lack of assured access to information about the quality of output from specific smallholder farms, which makes them less willing to purchase from any smallholders at any given price level, compared to buying from a well-identified large-scale provider.

(Points drawn heavily from *FAO Corporate Document Repository: Project on Livestock Industrialisation, Trade and Social-Health-Environment*). All these are correlated to the ground realities in Orissa by the authors.

Given the size of the poultry market in India and its spread and dominance of smallholder farmers, it is imperative for players like Suguna to integrate the entire value chain to reap the economies of scale (the entire value chain is still not integrated, as the birds are sold through trades in the wet market. Only the production is so far integrated). It is estimated that 90% of the poultry in the southern region, 80% in the western region, 70% in the eastern region and 10% in the northern region are under a vertically integrated system operated by 7 major players in the industry (*B. Soundar Rajan, Suguna, 2006*). 80% of the broiler industry is now under this system in India. The end result over the years is reflected in the price competitiveness - our country is next only to Brazil in terms of COP (Cost of Production) and affordability of poultry products (USDA, GAIN).

4. The Study: Issues, Data and Methodology

The study was conducted in the State of Orissa. The primary case example taken for the study was Suguna Poultry Farms. For the study, sixteen farmers under vertical integration by Suguna were selected randomly in consultation with the Suguna staff at various places in the state. Most of these belonged to smallholder agriculture farmers and the average size was 1200 birds. The main methodology used for the whole study was the survey method done by the semi structured questionnaire method, focus group discussions and observation along with dependency on the secondary data obtained from concerned state government departments, Government of Orissa (GOO), Suguna functionaries and Internet.

The main hypothesis behind the study is whether the institutional intervention by Suguna in the form of contracting arrangements at producer level has helped to enhance the livelihoods of smallholder producers. Along with this, it also looked at if this practice has been an effective input delivery mechanism to solve productivity related problems at the farmer's level.

The primary data from farm survey is used for analysis and for cross verification of the studies conducted else where on the issue of contract farming and vertical integration in broiler production. The 4-page farmer questionnaire included questions on household characteristics, assets, crop production and marketing, other sources of income, input costs, credit, contractual details, and perceptions of changes over the years since they ventured in to poultry production as income generation activity. The focal sample included 16 small farm households engaged in broiler production. Of these, 14 were contract farmers and 2 non contract farmers (control group). For the trial run and for internal comparative studies by the researcher, 6 small holder farms from Karnataka state were also done since the area has witnessed wide spread adoption of the contract farming system by various players in the last 10 years. The contract farmers were selected randomly by the survey team from lists provided by Suguna. The non contract farmers were selected

randomly from lists provided by village leaders. The data collection was carried out in June 2008.

Table 1: Total sample size				
Total farms under V.I. by Suguna in Orissa	Average farm size (No of birds/cycle)	Small farms under V.I. selected	Average farm size (No of birds/cycle)	Independent farms studied
700	2,800	14	1,200	2

The analysis focuses on the access to infrastructure by the small holder producers, household characteristics associated with participation in a contract farming scheme and the impact of contract participation on per capita income within the overall agro based income. Comparison of the input usage by contract and non contract producers in every production cycle, net outputs in every cycle by contract and non contract farmers, farmers' contribution on inputs by components and values in every production cycle is done according to the data gathered.

The inferences derived will lead to identifying the following issues for considering while formulating policies.

- a) Model contractual terms for optimising the potential advantages for smallholder involvement under vertical integration
- b) The Role of transaction costs in broiler production and marketing by small holder producers.
- c) Impact of vertical coordination on cost Structures and earning by the contract farmer
- d) Critical factors for successful replication of the practice elsewhere.

5. Findings

Going by the definition of small farmers in Orissa context, nearly 30% of the producers are under this category. We have tried to analyse why more and more small / marginal farmers are getting in to the contract arrangements with Suguna and the relative advantage they derive over other integrators. Some of these are given below:-

- a) **Branch average as bench mark:** The productivity indicators in poultry differ from farm to farm due to presence of numerous variables within the factors of production. Though integrators always try to minimise these variations by means of standardised package of practices, there are certain elements like actual managerial abilities of the producer, care and concern, honesty, errors across supply chain, etc that are difficult to administer. In case if such quality control failures occur in the input supplies for any reason, it is obvious that the producer would bear the brunt. However, if such failures happen, it impacts several farms and hence poor average performance of the branch office in that area in terms of FCR and COP. The branch COP is computed based on the total cost of feed and other inputs averaged out for the total bird weight obtained for that cycle. This automatically shields the performance indicator falling against the producer for determining incentive levels and the wage bills. This practice of comparing with the mean averages is *unique* for Suguna.

Empirical evidence suggests that internalisation of technology for commercial scale broiler husbandry by new poultry farmers having limited schooling (average schooling is less than matriculation) is not found to be correlated with farming efficiency. Similar conclusion is corroborated from the study conducted by Bharat Ramaswamy, et al, 2006. New poultry farmers are found to pick up essentials within first two cycles by practicing what the peer poultry farmers advice and the timely on-the-farm instructions provided by Suguna staff.

- b) **The minimum support growing charges:** The poultry farmers are categorised as A, B, C, D, E and F grades based on their FCR/COP in comparison to branch average. The farms with COP below the branch average are provided additional incentives at 40% of the savings to the company and at the same time the farms with COP higher than branch averages are penalised at the same rate. In any case leading to the poor performance, the farmers are assured of minimum growing charges @ Rs 2.00 per Kg live weight.
- c) **On-farm counselling and the Scope for improvement:** These E and F grade farms are monitored intensively to bail them out. The growers are given 3 chances to improve upon before the ERP² system database automatically terminates the contract. It is observed that at least 20-25% of the farms in Orissa fall in this category for various reasons including the tendency to misuse feed supplied by the company. On the contrary, there are 'A' grade category farmers who have received gold coins for being in this grade for 3 consecutive cycles as incentive apart from higher wage rates- as high as Rs 5.90 per kg live weight! Thus there is well placed system to measure efficiency of

² ERP: Enterprise Resource Planning

growers and reward them accordingly. Since all the necessary inputs are provided at the growers' farm gate, company expects the application of mind, honesty and hard work from the growers.

Some of the critical differences among integrators while formulating the terms concerning growing charges on various parameters is given below.

Table 2				
Integrator	Standard GC/Kg	Basis for COP	FCR basis	Sale price of broilers
Suguna	Rs. 2.60	Branch average for the period considering actual input costs based on the transfer price within the value chains. Incentives and penalties @ 40% of the savings / additional spending. Minimum GC at Rs 2/ Kg assured. Additional incentive of 10 paise for those achieving A and B grades consistently for past 3 batches.	FCR is part of the COP calculation. Desired average is 1.84	No relation to GC
Japfa	Rs. 2.50	If COP is more than the level pre determined from time to time, GC payable @Re1 per Kg. Incentives @ 40% of the savings added to the standard charges.	If FCR is >2, GC payable is Re 1 per Kg.	No relation to GC
Pashupati	Rs. 2.60		If FCR is >2, GC payable is Re 1 -1.50 per Kg depending on causative factors	Incentives are added if the sale price for broiler exceeds Rs 35 per Kg.

It may be observed that integrators compete mainly based on various factors determining growing charges. While the charges for standard FCR 2.0 are similar, the incentive and disincentives are different. An example considering hypothetical instance of GCs for a contract farmer under different integrators is given below. Average declared COP and sale price are assumed at Rs 35 and Rs 37 respectively. Average COP for Suguna branch is assumed at Rs 35 only even though it is higher owing to predominance of D, E and F category farms in Orissa.

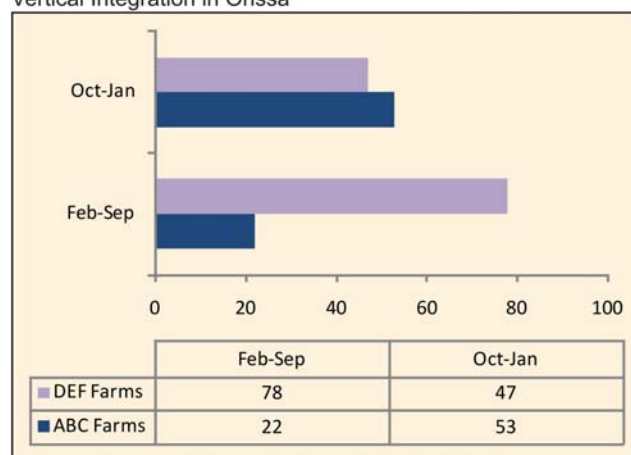
Table 3: Comparative price fixation between integrators			
Farm Performance	Suguna	Japfa	Pashupati
COP Rs 35, SP Rs 37	2.60	2.50	2.60
COP Rs 36, SP Rs 38	2.20	1.00	1.50
COP Rs 34, SP Rs 36	3.00	2.90	3.00
COP Rs 37, SP Rs 37	2.00	1.00	1-1.50

- d) **Compensation for seasonal variations in performance:** Performance variations due to climatic fluctuations are relatively high in Orissa. Farms falling under A, B and C categories are more in proportion during the period from November to January when the climate is cold and the feed conversion efficiency is high. The average COP is also on lower side. Peak summer causes stress and hence decreased feed efficiency during April to July when more number of farms tend to be in D, E and F categories. Higher mortalities on account of chronic respiratory problems due to high humidity and temperature in east Orissa also contributes for subnormal performance. Hence the incentives and penalties due to uncontrollable factors like climatic vagaries get evened out over a period of one year. However, one needs to exercise enough cautions while

concluding the causes for poor performance for deciding on the continuance of contracts. Suguna exercises discretions to discontinue only those poor performing farms during peak production seasons.

Similarly during the floods, the batch length may get extended to 60 days and in such cases, may be once a year, farmer might have to be content with the minimum wage and spend extra labour and power, water, etc without getting proportionate returns since the COP would be naturally high and the company would be incurring additional losses. The company may try to adjust the feed composition to avoid further losses to it. Alternatively, the company may try to manipulate the contractual terms by lifting birds at early stages based on market demands at times causing losses to growers. Thus by all means these practices amount to protecting company's interests at the cost of the farmers.

Figure 8: Seasonal Trends in Broiler Farm Performance Under Vertical Integration in Orissa



The essence is that, even though the farmer is assured of minimum support growing charges, at the times of natural calamities, he is made to share the burden by foregoing normal rates and returns on his additional resources and efforts.

- e) **Issues limiting inclusion of poor farmers:** This market oriented commercial process has grown beyond proportion threatening the survival of traditional and pro poor back yard poultry rearing system. This practice is a classic case where production system, left on its' own, has moved to farmers who can access required resources. The requirement for a security instrument like cheque leaf or the bank guarantee can be another limiting practice preventing the participation of poor farmers. The second factor in case of Suguna, unlike others, it is tripartite agreement which in itself can be limiting under certain circumstances. There is a third party in the contract apart from the integrator and the farmer. The person who introduces the farmer to company is designated as Guarantor and is a co obligator in the agreement. The agreement explicitly holds the guarantor on par with the principal debtor for all the amounts due to company from contract farmer. This guarantor in that area acts as peer leader and his main role is to see that the contract farmers follow the guidelines given by the company. Thus, one can enter the contracts only if acceptable to guarantor farmer in that area. The possible social dynamics within the communities can hinder the rival families opting for contract growing.

The other issues perceived as lacunae are the undisclosed quality of inputs and impact on chick growers. Suguna provides chicks and other inputs to contract farmer from time to time to get the desired growth rates. The contract explicitly establishes ownership rights to Suguna over these raw materials by invoking its' right to take possession of them in the event of any discrepancies on the part of the farmer. Since these are provided without any cost, for the purpose of growing integrator's chicks, it

is obvious that the supplies belong to integrator. The fact that the supplies do not disclose the quality parameters of these inputs has a bearing on the body weight of the birds. Though by and large the farmers are satisfied with the quality of inputs supplied, there are instances of variations and the farmers will have no choices but to accept them and bear the brunt. There are possibilities that a company can manipulate the input quality to alter the growth and time periods to suit market needs there by decreasing production efficiency at farmer level affecting his predicted returns. This could be done just to shift repressive market pressures from firm to farmers. These practices can go unnoticed at farm level.

Some may argue that the contracts limit entrepreneurial skills of growers as he can not exercise option to place birds for direct market sales simultaneously. Obviously since the birds belong to integrator and the producer is supposed to grow them, the design of the system itself does not permit him to market others' birds.

Box 2: Contract farming ensures risk sharing in Broiler rearing: A good livelihood option for small farmers

Ashok Shamal, Satyabhamapur has been engaged in broiler rearing for the past 3 years. He has 3 acres of irrigated land where he has attempted to grow several agricultural crops. Three years ago, he was a successful sugarcane cultivator getting around Rs 98,000 per year. Trouble began when the cane factory did not perform well and expected benefits were not passed on to farmers. He, therefore, switched to multi-cropping system with paddy, green gram and black gram. With the onset of contract farming and assured market for birds, he also opted for poultry to augment his income to support his family's increasing needs. The total investment on the shed was Rs. 120 thousand for 2200 sq. ft of floor space, under tie-up arrangements with Suguna and a local bank. He employed a labourer to look after the farm and devoted most of his times with the crops. *"For the first 2 years the returns were satisfactory and I got GC of Rs 2.80 per kilo on an average that would amount to Rs 8000 as net savings on every batch, but",* continues Ashok *"things have now changed due to the quality of chicks and feed. Their growth went from 100 grams per day to barely 80 grams. Moreover, feed does not reach the farms at the appropriate time. The company tries to supply the unutilised feed from nearby farms which is hard to accept since I have to bear the transport cost as it is billed along with feed. My receipts this time are reduced by 25%. The supply of medicines is also not proper and payments for the last batch are still pending. The company claims 'computer updating' as the reason for this. I have had a bitter experience with the sugar factory and I am now worried for this. I am closely observing my farm and the results for this batch. I am afraid to complain to the company management as they may cancel my farm for poor performance during the last 3 batches."* In spite of these factors, he still feels that contract farming in broilers is a good option for small farmers, as the integrator is responsible for the working capital and the risks are shared by both. Despite competition amongst them, he wishes to continue relations with Suguna. On consultation over the phone by the case writer 15 days later, he said his COP for the latest batch was Rs 30, well below the company and he is getting better GC this time.

Thus, the concept of vertical integration at best can provide the structural solutions for livelihood interventions with market based approaches by ensuring well orchestrated supply chain integration.

- f) **Independent farming – problems and prospects:** Comparative study was made between the economics and the working of similar capacity independent farms and the farms under integration in the same location (Annexure 1). Two independent farms and 16 farms under integration were considered. Data for three cycles were obtained for comparison. Within the limited extent of available data, techno economic parameters and the farmers' experience suggest that the farms under vertical integration are more efficient in terms of profit earning than the independent farms that are

actually making losses. Evidently, this is not always the case because otherwise we would not have any independent growers. It can be seen that the sale prices hardly supports the COP of independent farms except 3 times in a year during festive seasons when prices break Rs 40 barrier. Independent growers plan in such a way to 'make hay while sun shines' during these surges in the markets.

The study was undertaken in 2008, the year in which the feed rates were much higher than usual, and the price of birds were also fluctuating because of bird flu scare in some parts of the country. It is evident that in general, the independent poultry farmers face the market risk. When the market is good, they can play the market and gain high profits at the same time during adverse conditions they can incur huge losses depending on the market situation of the inputs with main inputs being cost of DOC and feed. Large independent growers have the capacity to absorb the losses from market shocks, but small players are unable to face the losses and have to shut down. The integrators are protected from these shocks due to market fluctuations because the integrating company provides the chicks as well as the feed and is also responsible for the sale of birds.

Table 4: Comparative Analysis of Economics of Rearing Less than 2,000 Birds With & Without Integration					
	FCR	Avg Wt	Prod Cost/Kg	Net Returns/Kg	Net returns/ Yr (000's)
Average Suguna Grower	2.06	2.19	34.59	1.83	42.46
Independent Grower	2.00	2.10	40.68	1.82	20.34

6. The Practice

The working of the system, termed by and large a success, has many inbuilt mechanisms to drive it forward. From the integrators' point of view, the contracting as an intermediate mode of coordination and delivery mechanism under vertical integration forms the core practice that binds the producers to the system for gainful enterprise within the value chain. **Thus, vertical integration, the contractual obligations and the enabling practices within these terms govern the contracts forms which forms the crux of the practices followed by Suguna.**

6.1 The innovative element

An enabling aspect within this arrangement is the practice of progressive restrictions placed on the minimum farm size. This enables small farmer gain the rearing skills and scale to optimum sized farm for reaping economies of scale within his resource limits in successive phases. This can be viewed as an encouragement to small farmers.

Similarly, there are embedded provisions that can be termed as pro small farmer, in that, one can withdraw from contractual obligations after 42 days i.e end of growing period, if they find it unviable. Indeed there are dropouts to the tune of 10% for various reasons, but majority continue farming relationships with the firm. This indicates that the terms of contract are flexible and encourage more and more novices and resource poor to venture confidently. As discussed earlier, the sharing of risk by the firm and provision of 100% working capital, equipments on interest free instalments by the firm are attractive for the small farmers to venture in to contracts.

Box 3: Uncertainties in the poultry sector remain irrespective of contract or individual farming

Devendra Kumar Shamal of Satyabhamapura is a smallholder farmer rearing 1100 to 1200 broilers. This was his 8th batch in succession. Earlier he was with Suguna for about 5 batches and later discontinued to start as an independent. He says the main reason for his choice for poultry were the lucrative offers by the company and his perception of them being hassle free. He got optimum returns for the first 2 batches that later started to diminish. In spite of the company's instructions and daily monitoring visits by the field staff, he was a poor performer for the next 3 batches and was denied fresh placements by the company. The records indicated that his COP stood at Rs 3 and more above the average along with high consumption of inputs and higher bird mortality which were the main reasons for the dismal results.

The experience as an independent producer is different. "As an independent player one has to be alert about the seasonal fluctuations in the sale prices and place chicks accordingly. As the integrators do not sell quality feed to an outsider, we have to approach and plead for quality inputs from these companies who charge Rs. 1 per kilo more. Similarly some insist that we also purchase chicks from them at higher prices. Every one tries to exploit. I found that EHL supplies quality chicks and hence chose Vencobb this time. I have also changed the feed to a new brand and the results are being followed. I have a choice of medicines to buy and even if things cost more, I manage to make profits on par with the contract farmer. The last batch of birds consumed 46 quintals of feed and weighed 23 quintals. They fetched Rs 45 a kilo, adding my returns to Rs 13,000 and net savings at Rs 8000" explains Devendra Kumar. He has managed 3 batches during the past 10 months.

He is uncomfortable with the uncertainties he faces in the farming process. "There is no option as we fear that other companies may try to take undue advantage of the situation. We hope for better space as these companies haven't been here for long. We have accepted the challenge" he says looking at the field official.

The firm has even moved forward to offer bank linkages for investments on shed to eligible farmer under a tripartite agreement as a package to promote contracts. **Thus the**

innovative element in the practice is its' flexibility to encourage small producers to venture broiler production which makes it workable.

6.2 Pro Poor Issues

Within these practices, vertically integrated business operations have traces of being a pro poor mechanism. The vertical integration intends to streamline supply mechanisms. It enhances productivity and reduces risks irrespective of rich or poor. But certain practices by the integrators, like insisting for land ownership as prerequisite, availability of infrastructures for housing and managing birds for entering in to contracts do not encourage and prohibits participation of poor farmers, especially the landless labourers. While there are several enabling aspects within contract terms, some terms discourage formation of cooperatives and other forms of associations contravene the concept of collective efforts in pooling resources for collective borrowings to meet investment needs of the poor.

6.3 Can this practice be modified to make it “inclusive” and pro poor?

The development riddle: Is it “Inclusive growth”?

“Growth for growth’s sake is the ideology of the cancer cell”. Few things grow as relentlessly as that does, with such fatal results. As the cancer of neo-liberalism claims an ever higher toll, its greatest theologians now include standard disclaimers in their chant. Growth has to be “inclusive” and “sustainable” (P. Sainath, 2007).

a. Ensuring the reach:

The contract farming is a model practiced by private corporations to scale up the market driven advances in technology through decentralised production process. The economies of scale garnered offers them the competitive advantage in terms of logistics, cost and time. Obviously the priority is for those farmers who can afford investments on sheds, etc to a minimum operational level. That is a bias against the resource poor. With the changing markets, technical and social opportunities, the concept per se cannot be viewed in that sense although in the practice –

- * There are ways to integrate these resource poor with the larger market. Interventions encouraging more number of smaller size farms / backyard pen stocks, as low as 200-300 birds- clustered in an area can be an alternative. As pointed out elsewhere in the discussions that the break even volume is around 200 birds for the producer. Small broiler units can be housed and managed successfully in the conventional low cost housing in the back yards. An investment of Rs 15000 advanced through the existing self help groups (SHGs) should not be the bottle neck in implementing group rearing activities. SHGs themselves can take up the role of a contract farmer provided suitable modifications are negotiated as the contractual terms are flexible to suit the contextual needs.
- * The other alternative is that the State can subsidise the differential transaction costs on integrating such farms belonging to target groups, so that the benefits of the present market trends can be passed on to them also.

b. Designing alternate development models:

The target groups can be organised under various cooperative laws to form business collectives. It is true that the existing other forms of institutions hardly have any say and are asserting only notional stay in the fray. But there efficient forms like new generation cooperatives to take care of the deficiencies in traditional forms. These can address access to market, capital and the knowledge to in a better way for these groups. This is already being attempted by NGOs like PRADAN. The infrastructure and the scale of operations required could pose bottleneck. The broiler growing is an enterprise requiring skills and is more prone for performance variations due to factors that may not be within the control of the producer. The risk bearing mechanisms have to be worked out if the integration system is to be implemented outside the corporate ambit. There are advantages in such alternative forms of business in terms of inclusion and equity. The design requirements to ensure success and sustenance of such models for efficiency and effectiveness need a different perspective.

7. Lessons Drawn

1. The present system of contract farming under vertical integration has enabled the broiler industry achieve the new heights across the barriers of investment and technology by minimising the transaction costs within value chains. Chicken meat is made available at affordable prices to price sensitive consumers.
2. The present practices in vertical integration are inaccessible to poor people and hence not seen as a panacea for poverty alleviation action plans. There are larger issues of sustainability of promoting monocultures at the cost of livestock diversity for livelihood support. However, the concept of contract farming *per se* has built in potentials for application in livestock based livelihoods by integration of the target groups to market economy.
3. Suitable governance mechanisms for public monitoring are required to be instituted by the state to prevent sharp practices by the companies and to restrict exploitation tendencies.

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Glossary

1. **Cost Of Production:** Calculated by adding all the recurring costs incurred on rearing broilers from day one till they are sold + the depreciation on the assets held by the farmer + administrative overheads by the integrator. Typically the integrators do not account the investment costs by the farmers.
2. **Growing Charges:** Wage rates paid by the integrators to chick growers based on several performance criteria.
3. **Transaction Costs:** In economics and related disciplines, it is a cost incurred in making an economic exchange. For example, most people when buying or selling a stock must pay a commission to their broker; that commission is a transaction cost of doing the stock deal. Or consider buying a banana from a store; to purchase the banana, your costs will be not only the price of the banana itself, but also the energy and effort it requires to find out which of the various banana products you prefer, where to get them and at what price, the cost of travelling from your house to the store and back, the time waiting in line, and the effort of the paying itself; the costs above and beyond the cost of the banana are the transaction costs (*wikipedia*).
4. **Feed Conversion Ratio:** It is the quantity of feed consumed for gain in every kilo of body weight. $FCR = \text{Qty of feed in Kgs} / \text{body weight in Kgs}$
5. **Chick Growing Agreement:** It is the contract agreement reached between the integrator and the chick grower for growing chicks provided by integrator at the growers' premises under set norms and conditions.
6. **Contract agreement:** Agreement between seller and buyer that allows exchange of information and resources to match supply and demand.
7. **Vertical Integration:** Ownership of two or more stages in supply chain.

Annexure 1

Comparative Economics of Independent & Contract Chick Growers

Farm Under Integration			Independent Farm		
Farm Size	2,000		Farm Size	2,000	
Mortality %	7		Mortality %	7	
Number of Birds Sold	1,860		Number of Birds Sold	1,860	
Cycles in Year	6		Cycles in Year	6	
Average GC/Kg	3		Sale price/Kg	40	
Integrator	Per Annum	Per Bird	Local Vendors	Per Annum	Per Bird
Chicks	144,000.00	12.00	Chicks	168,000.00	14.00
Feed	582,000.00	48.50	Feed	648,000.00	54.00
Medicines	12,000.00	1.00	Medicines	24,000.00	2.00
Overheads	18,000.00	1.50	Overheads	0.00	0.00
Total	756,000.00	63.00	Total	840,000.00	70.00
Farmer			Farmer		
Shed and Equipment	150,000.00		Shed and Equipment	150,000.00	
15% Depreciation	22,500.00	1.88	15% Depreciation	22,500.00	1.88
Litter/annum	4,500.00	0.38	Litter/annum	4500.00	0.38
Electricity	2,400.00	0.20	Electricity	2,400.00	0.20
Labour	12,000.00	1.00	Labour	12,000.00	1.00
Total	41,400.00	3.46	Total	41,400.00	3.46
Gross receipts for Farmer			Gross receipts for Farmer		
Growing Charges	62273.00	5.58	Sale of birds	830304.00	74.40
Gunny Bags	800.00	0.07	Gunny bags	800.00	0.08
Manure	3,600.00	0.30	Manure	3,600.00	0.30
Total	66673.00	5.95	Total	834704.00	74.77
Income	25273	2.26	Income	-41744	-3.74

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