Review of Literature
REVIEW OF LITERATURE

The emerging trends in Contract Farming (CF), popularly known as Broiler integration or Vertical integration is hoisting the Poultry industry in terms of exceptionally high growth in production. This has raised the curiosity of policy makers as well as researchers in both developing as well as developed countries.

Considering the objectives of the study in view, relevant past studies were reviewed extensively and the salient findings are summarized under the following sub-headings:

2.1 CF Status

2.2 Prospects And Problems Of CF

2.1 CF Status

Kohls and Wiley (1958) in an important study on aspects of multiple owner integration in broiler industry observed the rapid expanding broiler industry and its peculiar quasi-integration arrangements. Georgia and Mississippi states in the US had recorded rather unique arrangements between producers and feed-dealer financiers, where more than two-thirds of the production was under one or more contractual arrangements by which the feed-dealer guaranteed either some form of fixed return or no loss to the grower.
The study was undertaken in two areas of Indiana State where area A was non-integrated and producers made decisions on important aspects of production and marketing. Although they secured large amounts of credit from various sources, conditional sales contracts were little used.

The broiler industry in area B, on the other hand, was characterized as integrated one. Producers as well as the title to the birds reared were contractually tied to their financiers who were invariably feed-dealers. The authors observed that in both the areas broiler production was relatively a new enterprise. Nearly three-fourths of the growers had started broiler operations since World War II. Integrated area had a larger proportion of relatively new growers (82 per cent) while, 58 per cent in non integrated area had a business experience of less than seven years.

Practically all growers purchased chicks and feed from the same supplier and patronized only one source. In brood-size there was no significant difference between non-integrated and integrated areas with an average brood-size of 8,388. There was no significant difference between the two types with respect to number of cycles (3), feed conversion (3.4), and chick mortality (8.1 per cent). The authors observed that the prices received in integrated area were lower than in the non-integrated area.
The feed cost was $97.46 in non-integrated area and $105.71 in integrated area; a difference of $8.25 per ton. Though difference in the composition of feed was not noticed, more medicine was found in the integrated feed and cost of the feed accounted for nearly two thirds of the cost of production. There was some evidence revealed in the study that growers in integration area were encouraged to remain in debt to the dealers in order to prevent them from migrating to other dealers and form a highly personalized relationship to get a feeling of being looked after well. They concluded that the integrator farmer received less income per bird than his non-integrator counterpart.

Rick (2002) while studying the strategies to manage expensive feed on farm reported that in order to measure broiler performance the returns (profits) ought to be used rather than performance or costs. The author suggested alternative way of measuring profits in terms of margin over total costs. Further, he demonstrated that the length of grow-out period and down time significantly influenced the number of broiler cycles per year. A 38-day cycle length with an 11 day cleanout would lead to an extra crop per year. The alternative to commonly used profitability (per kg body weight) was to calculate unit profitability by using the formula \[\left(\frac{\text{Income from bird-All costs}}{\text{m}^2}\right) / \text{cycle length}\]. He demonstrated the application of this concept in measuring broiler performance. The paper has illustrated the
effect of changes in broilers on-farm performance and the producer strategies to continue to be in profitable business in times of falling feed price ratio.

Costales et al. (2003) observed that contracts somewhat differed across countries and commodities. Forward-price contracts for Indian broilers were more informal than in Philippines, who were in turn more informal than in Brazil. Nevertheless, contracting addressed the same general issues in each country; but is useful for understanding the institutions of the other countries studied. They observed that there were two main types of contracts: fee (or wage) contracts (by animal or by weight) and forward-price contracts (guaranteed or/and with profit-sharing). These contracts were mostly issued by the large multi-national or national integrators; the scale of these contracts was generally around a commercial scale of operations (10,000 birds or more for broilers; 200 heads of fatteners or more for hogs). There were, however, fee contracts that covered as low as 6,000 birds in the Philippines and 4,000 in Southern India. For veterinary services, while qualitative choice models were better suited to the analysis of determinants behind the choices of farmers, the authors concluded that an urgent need existed for empirical research in this area.
Taha (2003) reported that the per capita poultry meat consumption during 1961-2000 in middle-income group countries grew by 635 per cent compared with 370 per cent in high-income countries and 201 per cent in low-income countries. The high share of chicken meat was attributed to its relatively low cost compared to other meat and wider acceptance by consumers without any religious stigma and perceived health benefits.

World Poultry (2004) inferred that broiler industry in Philippines was dominated by a few vertically integrated companies. These integrators were involved in both production and marketing of broiler chickens. Together they accounted for about 80 per cent of broiler supply in the country. The broiler industry was at par with the world’s best practices in terms of livability, but was slightly below the par in terms of Feed Conversion Ratio (FCR). According to industry sources, the integrators had attained 70 per cent of the international efficiency standards. Since a large proportion of the broilers were sold through wet markets the broiler industry was not benefited much through the economy of scale that existed in production system but not translated to meeting by way of lower prices.

Begum (2005a) evaluated the comparative per bird profitability of vertically integrated contract and independent poultry farming.
systems in Bangladesh. A sample size of 50 farms was randomly chosen out of 560 contract-growing farmers. The farmers were categorized according to their poultry farm sizes as Small farmers (average flock size of 1200 birds), Medium farmers (average flock size ranging from 1201 up to 2000 birds), and Large farmers (average flock size of more than 2001 birds). Thus a total of 18 small, 25 medium and 7 large farms were selected. The per bird net return of the CF was more than 1.7 times that of the independent farm. Rate of return also indicated that the contract farm was more profitable than the independent farm. The higher productivity of CF system may be due to transfer of know how from integrators to growers. The profitability of CF for a vertically integrated firm depended, to a large extent, on the firm’s pre-fixed contract price and its contract enforcement costs.

Begum (2005b) studied the various components of fixed and variable costs in relation to broiler profitability. Under variable costs, feeds, day-old chicks and medicine/vaccines were the major expenditures, accounting for 56, 28 and 4 per cent, respectively. Variable costs were the major costs (96-98%) of the total cost. The total value of fixed costs per bird was Tk 1.01 while variable costs was Tk 52.93. The total costs per farm for contract growing amounted to Tk 53.94 resulting in a net return of Tk 17.18 per bird. For the independent grower, 98 per cent of total cash returns came
from the sale of broilers. On a per bird basis, the total fixed cost of the independent grower was Tk 2.83 while it was Tk 69.52 for variable costs. In the study period average price received by the independent farmer was 63 Tk per kg. The independent grower incurred Tk 72.35 total cost per bird and obtained a net farm return of Tk 10.04. By utilizing the maximum rearing capacity per batch would have resulted in an average of 8239 birds per year, whereas independent farmers actually reared only 5037 birds.

Goodwin et al. (2005) studied 16 poultry production complexes, comprised of 150 to 200 family farms each, in Arkansas, Missouri, and Oklahoma states. The data on costs and returns were obtained for these complexes for three different periods, viz., 1979, 1989, and 1999. The housing and equipment costs per square foot had increased from $3.40 in 1979 to $6.25 in 1999. Contract payments to contract growers in the 16 complexes had increased from $0.0320/lb in 1979 to an average of $0.0465/lb in 1999. The gross revenue per square foot figures in real terms (adjusted for inflation over the period) and expressed in 1999-dollar equivalents were $1.69 in 1979 and $1.62 in 1999. Normally, birds weighing 5.03lb were grown with an average density of 0.765 ft²/bird (4 flocks at 0.75 ft²/bird and 2 summer flocks at 0.8 ft²/bird). The broiler contract production with and without family labor was profitable as revealed by the net cash flow. Regarding efficiency, the net farm
income ratio was calculated as net farm income before income taxes divided by gross revenue. Net farm income ratios for the 2 scenarios were 0.07 and 0.16, 0.23 and 0.34, and 0.32 and 0.44 in years 1, 11, and 21. Based upon past performance, the existence of green contracts assuring purchase of broilers by the contract integrator and the collateral provided by land and associated assets, most lending institutions view contract broiler production loans favorably as a good investment opportunity for their particular institution.

Prabhu et al. (2005) studied the broad changes taking place in agri-food systems worldwide. The paper examined the comparative profitability of poultry production in vertically integrated contract and independent farming systems in Bangladesh. With effective management, vertically integrated CF system was a means to develop markets and to bring about the transfer of technical skill in a way of increasing productivity that was profitable for both integrators and farmers. The primary data were collected from 50 sample farms of Aftab Bahumukhi Farm Ltd (ABFL) Kishorganj, the pioneer vertically integrated farm, and 25 independent sample farms from Gajipur. Although the independent farmer was able to take advantage of the increase in the price of broilers in the market resulting in a higher price per bird as compared with the contract farmers, the latter were still better off in their net return or profit.
Guo et al (2007) reported that CF in China had grown rapidly over the last 10 years. They examined the evolution of CF, and explored the incentives to engage in CF, preferred contract farms and contract performance from the perspective of both Chinese farmers and contracting firms. Firm and household perceptions of contracting were assessed using data obtained from village- and firm-level surveys. Farmers identify price stability and market access as the key advantages to contracts, while firms considered improved product quality as the primary incentive to use contracts.

2.2 Prospects And Problems Of CF

Kohls and Wiley (1958) in a study on aspects of multiple owner integration in the broiler industry summarized that, in exchange for a guaranteed return, the grower lost his managerial freedom. With the loss of this freedom, the grower loses the incentive to improve his practices and his product.

John (1986) observed that CF was promoted by agribusiness as a more efficient method of crop and livestock production. It was a general observation that contracts diminished control by farmers over their operation and increased their exposure to risk. Further, as the conventional models accounting for the spread of contracting emphasized only on technological factors (e.g., economies of scale, crop perishability, technological complementarities between different
stages of production) were misleading and inadequate; an alternative model for "subcontracting" organization of production for large agribusiness corporations was suggested. A close examination of the spread of contracts revealed that most agribusinesses had pulled back from integration in favor of contracting out and that contracting spread wherever (1) processors were few in relation to producers, (2) producers were specialized, (3) auction and local terminals had declined in number, (4) there was a surplus of farm operations and credit was tight, (5) farmer’s were poorly organized and (6) government supports were weak. The author predicted that the trend toward contracting would continue so long as agribusiness concentration continues, government supports deteriorate, and farms become more specialized.

Nadeem (1995) studied the economics of broilers in Bangalore urban district. The sample was post-stratified into 4 groups based on flock size, viz., with more than 10,000 (Group I), 5,001 – 10,000 (Group II), 2001-5000 (Group III) and up to 2,000 (Group IV). The cost of production per kilo varied between Rs.24.36 (Group I), to Rs.27.71 (Group-IV). There was inverse relationship between batch size and production cost per kilo. Feed cost accounted for around 60 per cent while chick cost was around 24-26 per cent of total production cost. Feed cost had inverse relation with flock size due to better bargaining power of large farmers. Around 92 per cent of the
produce passed through wholesalers. The author reported that the traders practiced fraudulent practices in weighing of birds and farmers received payments after 8-10 days of marketing. Only 3.5 per cent of broiler producers had their own retail market outlets. Producers share in consumer rupee was around 75 per cent. The traders followed profit maximization mark-up wherein, during the low prices they charged a higher margin than those of high price situation.

Vukina and Foster (1996) analyzed existing broiler production contracts, with an attempt to establish the degree of efficiency gains possible from contract alteration. With the use of settlement cost and farm level data, an assessment was made of optimal grower input decisions given contract specifications. Using this analytical framework, alternative contract designs were simulated by searching over possible contract parameter values. The foci of the analysis were three contract parameters: base payment, bonus factor and the utilities cost allocation factor. In the first two cases, the simulation generated ambiguous results. In the third case, results seemed to indicate that switching part of the electricity cost from the grower’s cost into the settlement cost would result in a mutual welfare gain.

Mills (1998) drew evidences from five country case-studies of contractual arrangements, in India (Bombay), Papua New Guinea,
South Africa, Thailand and Zimbabwe. A variety of evidence, including information on the relative cost and quality of contracted-out directly provided services in the case of South Africa, Thailand, and India, was used to explore whether or not contracting-out to the private sector represented a preferable means of service provision. This analysis, together with information on the capacity of the agency letting the contract, and on the wider environment including the level of development of the private sector, was used to identify which aspects of the contracting process and the context in which it took place were important in influencing whether or not contracting with the private sector was a desirable means of service provision.

Fesperman et al. (1999) observed that in an attempt to find a way to help farmers regain control of their farms, many non-profit organizations were working to push legislation that would reform the way contracts were made. The farmers preferred better lines of communication with the company to know exactly when chicks would be dropped off and picked up to avoid death of chicks. Farmers wanted clear policies and how the company wanted their chickens to be raised. They expected a healthier relationship between the grower and company.

Carole (2001) inferred that virtually all poultry raised in the US was done so by family farmers under contract with corporate
agribusiness in a system known as vertical integration. Contract production was preferred by agribusiness giants as it reduced their capital cost to get the product to table. This financial venture had become so profitable that the top five broiler companies now process more than 226 million pounds of poultry meat per week. The author quoted a similar study by the NCPGA showed that these companies enjoyed a 20 to 30 per cent return on their investment while the most contract poultry farmers earned only 1 to 3 per cent return despite the fact that the growers investment was over 50 per cent of the entire capital needed. Yet another study quoted by the same author pertaining to Louisiana Tech University and the NCGI revealed that over 71.6 per cent of the nation’s poultry farmers earned a below poverty level income from their poultry operations and by USDA standards were qualified for food stamps if they weren’t too proud to ask. The vertically integrated system evolved over 40 years and agribusiness giants viewed the poultry industry as a model for efficient and profitable food production. This system was rapidly adopted in other areas of food production system. Accordingly, over 500 family farms were lost per day due to industrialization of agriculture and this trend would also continue and at a more rapid pace.

The Farmers' Legal Action Group, Inc. (2001) assessed the impact of integrator practices on contract poultry growers and
inferred that changes in contract terms had happened only due to market forces. It was either due to increased bargaining power on the part of growers which forced the companies to offer better terms, legal action by courts, legislation or regulation standards for using contracts, or self-interest of companies to offer better contracts. Under CF, poultry farmers were left with no option to make the market work for them, high demand did not benefit them and they could not sell birds weighing less than 1.8 kg at the market price. On the contrary, the farmers had to pay a penalty for the bird's low FCR as well as high mortality rate. The only benefit they enjoyed was the assurance that the birds would be bought back by the company, without fail. But with the companies’ reneging in Alibag, that assurance had also been lost.

Further, it was reported that the prevailing model of CF system was biased and favored large companies. But according to them, CF was the only way ahead for the poultry business in India, others differed and said that individual farmers couldn't stand up against these large integrators, since they didn't have anything except sheds. Hence, it was time that the contract model got reframed keeping the farmer’s interest in view.

Jenner (2002) reported that contract broiler grower’s pay was unrelated to competitive market prices for a long time in the US.
Broiler companies set their own price to be paid to growers. It was a fixed rate unrelated to the retail price of chicken. The greater problem was that grower’s pay was not based on factors that growers could control. Although growers and packers of beef and pork benefited from production contract relationships, it was not so in the case of contract broiler growers. Broiler grower contract settlement pay did not change with the market price for broiler meat. There was no farm-to-retail price spread. The USDA constructs a farm value of broiler production by subtracting the estimated costs to the companies for production and processing from the wholesale prices. The price USDA reported for 2000 for the farm value of production of broilers was $0.336 per pound. Broiler companies set a different price that they paid to contract growers, such as $0.045 per pound as a line item cost of their production budget. Broiler companies kept their total cost of production low by making adjustments across all the costs of production (genetics, feed, transportation, labor, and the settlements to contract growers). There was no market incentive to raise the base contract settlement price that contract growers were paid. Further, companies imposed competition on contract growers by constructing a performance rank within the flocks that were processed each week. Companies viewed the ranking as a measure of grower performance. Growers viewed the ranking as arbitrary and confusing. The settlement pay for broiler growers within a group is
shifted away from the lowest ranking growers to the highest-ranking growers. Expected revenue from growers ranking poorly (on right) was subtracted and used as ‘incentive pay’ to growers ranking better. Thus half the growers received an amount greater than average pay while the other half received below average pay. It was observed that 80 percent of the growers were able to turn less than 2 pounds of feed into each pound of chicken produced. This was good for the companies and good for the growers. This was not the only factor used to distribute the settlement pay incentives. The companies used other measures to impose a distribution that defined the rank. Although weight gain-per-bird factor gave advantage to the heavier, faster growing birds, the best growers could not overcome company influences like genetics, chick quality, same-sex flocks, age of birds and different feed rations. The companies developed settlement rank to allocate the incentives across the fixed, average pay a company would pay a grower. It did not help the majority of growers with the efficient work they were doing. So growers got docked in pay for management choices made by the companies. The author concluded that production contracts could benefit growers and companies if the incentives benefit both parties. Efficient incentives could be direct (such as a share of company success) or indirect (those dovetail into upstream successes). Spot prices were not necessary for producers to be paid fairly, but for contract production to become equitable,
compensation had to be based on the specific efficiency achieved by growers based on factors they could truly control.
Robert (2002) examined trends in benefits to consumers, integrator returns, and profitability for contract poultry producers in the US. The retail price had declined substantially which reflected increased efficiency in broiler production and processing along with generally lower real feed prices. The Alabama Farm Business Analysis records for contract poultry producers provided cost and return figures based on actual farmer records analyzed with appropriate accounting practices. The inflation-adjusted returns above operating costs averaged for six-year period was $67,465 per year standardized to four poultry sheds. Returns above operative costs were not indicative of profitability, because they did not include charge for family labor or economic depreciation. After accounting for economic depreciation and a very modest charge for family labor ($6.50/hour with no benefits) and a modest return on equity (9%), the farm business records showed that contract production resulted in a loss to management and risk bearing of $7,006 for four poultry sheds. The author observed that records from other impartial sources of information on profitability of contract poultry production in other states also showed decreased profitability to the point where many contract producers had a poverty level of income. Only about one penny per pound more was needed for contract producers to
earn a decent return. Farm business records showed that contract producers who once had acceptable income from their poultry operations had put up a few hundred thousand dollars of equity, and borrowed several hundred thousand more to hire themselves at minimum wage with no benefits and no real rate of return on their equity; on the other hand, integrators continued to earn 10-25% rates of return on equity.

Vishal (2003) reported that the CF provided the latest technology, farm inputs and extension services, which benefited the contract farmers. However contract farmer faced problems such as poor technical assistance, delayed payments and manipulation of the conditions of the contract by the company. Most of poultry meat in India is marketed in the form of live birds termed as “Wet market”. The cost of moving live birds, shrinkage and mortality limits inter-regional movements. The presence of poultry integrators in a region has a significant impact on the returns received by poultry producers and the consumers’ prices. For example, retail prices and producer retail margins were found to be significantly higher in the Northern region, where poultry integration is least prevalent. Producer price formation for poultry varied from region to region. In South India, integrators play a large role in setting daily price, while in West, Mumbai, the wholesale prices had dominion in price fixation. In North India, producer prices were set based on Daily auctions at the
daily Ghazipur market near Delhi. In East India, the integrators provided for the equipment, labour, management and variable inputs with the exception of water and electricity. Integrators rent only poultry sheds from the local farmers or landlords for which Rs. 3/kg of live weight gained, which is much higher compared to South and West India. In South India where contract growing is well established, integrators claim that there is a high degree of loyalty and little switching by contract growers. Although farmers have an incentive to renego on their contracts when prices rise above rate of return provided by the integrator, the integrators were also effective in keeping the market prices and margins low.

Chang (2005) reported that the growth rate for poultry meat during the past 4 decades (1961-2001) averaged about 5 per cent compared to 2 per cent for beef and 3 per cent for pork. Although demand for poultry meat was strong relative to demand for other meats in the developed countries during the 1990's, in recent years the rapid global gains in poultry meat consumption occurred in the developing countries. The share of poultry meat consumption in total meat intake in the developing countries was about five per cent lower than developed countries. The expansion in poultry consumption was more rapid in Asia (China, India, and Thailand) and Latin America (Brazil and Argentina) with per capita consumption in these two regions nearly doubling between 1990-2000. The structure of the
world broiler market was affected basically by three factors namely, resource endowments, consumer preference and government policy. Availability of cheap feeds was one of the most important factors for industry development. In addition, access to advanced technology was also necessary for achieving high growth rate. The broiler industries in major exporting countries were characterized by large scale production and high level of vertical integration. Under these systems, production costs were lowered due to lower average fixed costs and incremental returns were achieved from further processing and value addition.

Ramaswamy *et al* (2005) reported that the profitability per unit of output (excluding family labor) did not differ significantly between small size and large size farms. In other words, profitability was not significantly affected by scale of operations. Factors affecting profitability were price of DOCs, wage rate, feed cost, broiler prices and FCR. Among these, FCR and wage rate were significantly affecting profitability. However, small farmers were relatively inefficient mainly due to high transaction costs and pollution abatement costs associated with policy induced distortion. Further, the differences in the amount of implicit policy subsidies received by farms across regions / states also affected relative profit efficiency of small and large producers. Large farms in Andhra Pradesh were more inefficient compared to their smaller counterparts in Haryana.
Andhra Pradesh levied 4 per cent processing tax on poultry products in addition to the usual sales tax on poultry feed, while, Haryana state levied no such taxes. The profitability of contract farms in general was lower than independent farms. The comparative efficiency of small and large broiler farms was estimated with the help of a profit transfer function. The differential parameters of sample farm were explained in terms of differences in transaction costs and pollution abatement costs. Profitability negatively correlated to the price of chicks, the price of labor (wage rate) and the price of feeds and positively related to the price of broilers. All the coefficients were statistically significant and FCR was found to be significantly different.

Anon, (2006) reported of sham practices in broiler contract production. At times, companies supplied chicks weighing only 25-30 g. though the ideal weight is 40 g. The companies didn’t even specify the minimum protein and energy level in the feed supplied. All these affected the final FCR but farmers could do little about it, as the contract had not specified standards for the quality of chicks and feeds supplied by the companies. What farmers got at the end of the contract was Rs.2.80 per kg of the bird, says, a contract poultry farmer in Alibag. Of the Rs.5,000 payment per batch of 1,000 birds, almost Rs.3,000 went into paying the electricity bill, buying paddy
waste and as labor cost. The net income in 35 days of rearing was Rs.2,000. Thus, the farmers were reduced to a serfdom situation.

Bora et al. (2006) conducted a study on CF of marine products in East and West Godavari districts of Andhra Pradesh. The marine producers in contractual arrangements had better access to financial infrastructure, whereas the non-contract farmers had better access to telephone and postal facilities. The study revealed that the non-contract farmer incurred 57 per cent higher cost than contract farmers. The net profit realised was 49 per cent higher in contract compared to non-contract farming.

Deepika (2006), indicated that corporate intervention in agriculture through CF was an essential link between the corporate business and the farmer. Strategic partnership of the company, introduction of modern technology which was suitable to the location, timely provision of inputs and extension services, regular and timely payments to the contracted farmers led to the success of contracts by the companies.

Effiong and Onyenweaku (2006) estimated the profit efficiency and its determinants in independent broiler production in Akwa Ibom State of Nigeria using the stochastic frontier profit function approach to analyze profit efficiency results for broiler production as well as the factors influencing efficiency levels. The analysis of data
revealed that labor cost (wage rate), price of feeds/feed supplements, price of drugs/medication, capital inputs and farm size were the major factors determining profit level. Furthermore, level of education, farming experience, extension contact and gender variables were shown as major factors influencing their efficiency levels.

Joshi et al. (2006) conducted a study on contract products namely milk from Nestle India Limited, milk and milk products from Mother Dairy Fruits and Vegetables Limited and Broilers from Venkateshwara Hatcheries Limited. The results indicated that there was around 100, 77 and 13 per cent more income realised from contract than non-contract production in milk, vegetables and broilers respectively. The results of the study revealed that in the case of milk, transaction cost accounted to about 1 per cent to the total cost for contract farmers while it was 16 per cent for non-contract farmers. The transaction cost was about 13 times more in non-contract than contract farmers. In the case of vegetables, transaction cost constituted about 2 per cent of the total cost for contract farmers while it was 21 per cent for non-contract farmers. The transaction cost was about 11 times more in non-contract than contract farmers. In the case of broilers, transaction cost share was about 4 per cent of the total cost for contract farmers while it was 0.3
per cent for non-contract farmers. The transaction cost was about 1.3 times more in non-contract than contract farms.

Morrison et al. (2006) reported that in relatively unregulated environments of the global economic periphery CF had led to highly regressive socioeconomic outcomes however, CF was not inherently regressive for the small farm sector. In the state of Sarawak, Malaysia, CF was used as part of an affirmative action program that trained indigenous smallholders in commercial poultry production. The state-administered contract scheme in the shorter and medium term, as the paper showed, the small-scale public contract scheme, which itself operated within the protected domestic poultry sector in Sarawak, was more likely to support disadvantaged Bumiputra minorities than produce a pool of competitive entrepreneurs.

Nadeem et al. (2006) observed that CF in poultry emerged in India as a response to market imperfections resulting from structural changes in the broiler industry as it moved toward the type of vertical integration seen worldwide with a firm controlling its inputs in production. Increasingly, smallholders were moving away from independent poultry farming to CF with larger firms. The study investigated the resulting production arrangements for poultry products in India and how these affect profitability. The study found that CF’s major benefits come from reduction in transaction costs
and assurance of regular income for broiler farmers. Results showed that independent broiler farmers obtained higher profit per unit of output than contract farms, but contract farmers had lower transaction costs and were insulated from market fluctuations as they were paid growing fees based on performance and not on market prices.