OSJI OPEN SCIENCE JOURNAL

SHORT ARTICLE

A Systematic Review of Contract Farming, and its Impact on Broiler Producers in Lebanon

Rodrigue Kozhaya[1]*

[1]Toulouse Business School, France

*Corresponding author: Rodrigue Kozhaya: R.kozhaya@tbs-education.org

OPEN ACCESS

Citation: Kozhaya R. (2020) A Systematic Review of Contract Farming and its Impact on Broiler Producers in Lebanon. Open Science Journal 5(3)

Received: 14th March 2020

Accepted: 9th April 2020

Published: 20th July 2020

Funding: The author(s) received no specific funding for this work

Competing Interests: The author has declared that no competing interests exists.

Abstract:

This thesis has been realized within the agribusiness sector and experiments the Transaction Cost Theory a branch of the New Institutional Economy which explain market failure caused by many factors. Transaction costs are associated with carrying a transaction between buyers and sellers. This study has been conducted between 2014 and 2017; and has collected data from 11 broiler producers in Jezzine, Lebanon, about: production costs, capital investment, revenues, land tenure, access to infrastructure, and information about the contract. The propensity score matching method is used to compare the effect of participating in contract farming and to solve the hypotheses, which say: There is a positive relationship between contract farming and the economic benefits of broiler producers and the development of the broiler sector in Jezzine District. Findings from farmer's interviews indicated that sustainability, guaranteed price, risk reduction, credit facilities and technical aids are the main reasons for signing a contract. In contrast, Farmers have expressed problems concerning the contractors' responsibilities such as delay in payment and delivery. Also, when prices are high, it was argued that farmers were selling the products in the open market.

Keywords: Contract farming, Broiler producers, Economic sustainability.

Introduction

In the Global Value Chain, agriculture must be able to meet the rapidly growing demand for food, and a global strategy is needed to ensure a sustainable food production system, to face the challenge of feeding 9 billion people in 2050, and to ensure that every human being has access to adequate food (Godfray, Beddington, Crute, haddad, Lawrence, Muir & Toulmin, 2010). Agricultural value chains are undergoing rapid transformation changes because of urbanization, industrialization, globalization, and trade liberalization (Reardon & Barrett, 2000; Reardon & Timmer, 2007; Swinnen, 2007; Reardon, Barrett, Berdegue & Swinnen, 2009); also because of capital mobility, income growth, technology, innovation, product differentiation, changes in consumer preferences, diet westernization, shifting consumption toward processed foods, and improved communications which are linking small farmers with consumers worldwide (Pingali, 2007); besides the spreading of supermarkets and fast-food restaurants, and the growing importance of quality standards (Reardon & Berdegue, 2002; Weatherspoon & Reardon, 2003; Shepherd, 2005). Supermarkets procurement system favors centralized purchasing, specialized wholesalers, and certified suppliers (Neven & Reardon, 2004; Berdegue, Balsevish, Flores & Reardon, 2005); these characteristics require more vertical integration, thus favoring the introduction of contract farming (Key & Runsten, 1999; Bijman, 2008). Spurred by those changes, agricultural systems are being forced to adapt and modernize, they have been restructured, becoming increasingly market-oriented and consumer-driven, also new ways of organizing the agri-food sector are being promoted; and different forms of vertical integration are being introduced (Elms & Low, 2013). In these modern systems, the traditional spot market mechanism in which food is produced, without farmers having a clear idea in advance; to whom, when and at what price they are going to sell their crops, is being replaced by alternative forms of vertical integration, strategic alliances, or full ownership, also it has provided the drive for further development and a rapid expansion of contract farming, which has been studied extensively for decades, and has become an essential element of modern agricultural value chains (Shepherd, 2007).

Literature review

Current literature for contract studies mainly focuses on incentives and risk shares. Some authors of case studies of broiler contracts between farmers and processors have argued that risk reduction is a major incentive for contracting and contract-farming reduces transaction costs and can make smallholders overcome existing market imperfections; Contract farming is an institutional solution to the problems of market failure (Grosh, 1994; Key and Runsten, 1999). It is generally considered that contract farming ensures consistent procurement and therefore helps processing companies to optimize their processing capacity and their fixed assets investment with regard to spot markets; discontinuity risks while avoiding integrated production risks (Eaton et Shepherd, 2001; Johnson and Foster, 1994; Knoeber and Thurman, 1995). Contracting is common for industrial crops (e.g. sugarcane, tobacco, tea, broiler, dairy, and horticulture) particularly when destined for high-income consumers willing to pay a premium for quality and food safety (Minot 1986). The origin of the contracting is so different. Development of agriculture from a traditional structure to a market oriented

structure is the major challenge for developing, less developed countries and economies in transition. For these countries, it is generally agreed that food processing is a key industry which should receive high priority both at national and international levels. The food-processing industry is important for economic growth and health of people. Development of food industry promotes development in other sectors through forward and backward linkages. Developing countries need to develop their food resources more extensively not only to provide new job opportunities and increase national income via accruing value and exports, but also to supply safe and adequate processed food to consumers. In a globalized world, there is a close relationship between the changes in agricultural and food markets of developed countries and developments in developing and less developed countries through international funds and donors, foreign direct investments and activities of multinational companies. The wave of privatization and liberalization of the developed world have helped in bringing about a new form of vertical coordination between private companies and farmers in countries which are so called countries in transition. Recent developments in peri-urban areas of West Africa such as structural reforms, encouragement of subsistence farming to grow high-value crops, enhancing private sector have created remarkable changes in production and marketing organization using in many cases contract farming. It has been observed that there is an increased importance in close vertical coordination in the countries in transition.

Theoretical foundations

The starting point for this perspective is Coase's in 1937 with a simple question: why do firms exist? (Coase, 1937; Williamson, 1985) Coase's answer is: to minimize the transaction costs of exchange (Coase & Piaget, 1661; Schlag, 1989; Coase, 2012). Thus, if it is cheaper for a firm to produce an input, compared to purchasing it, in an uncertain and unreliable market, then it will integrate backwards to do so (Stuckey & White, 1993).

All markets require some form of vertical coordination between participants, such as farmers, processors, wholesalers, and retailers (Minot, 2011). Often transaction without any contract is called: spot market or open market that involves no written or oral commitments, it provides freedom but uncertainties for buyers and sellers (Rehber, 1998, 2000). In general spot markets show deficiencies; in overcoming problems resulting from imperfect markets, and in transferring information regarding quality, timing and future demand. One way of vertical integration in agriculture is contract farming; it is an intermediate form of industrial organization standing between spot markets and full vertical integration (Kirsten & Sartorius, 2002). It is evolved in order to overcome constraints of market failures, and missing markets: observed in terms of natural vagaries and price fluctuations, to ensure market participation of smallholder and marginal farmers (Barrett, 2008).

Foundation in transaction cost theory

The major theoretical background for contract farming is based on the Transaction Cost Theory, which is a branch of New Institutional Economics, which provides a useful explanation of many problems of market failure and

missing markets caused by asymmetric information and a range of other factors (Kherallah & Kirsten, 2002).

According to the New Institutional Economics, all market transactions between economic actors are hazardous, involve costs, and can entail considerable losses; institutions have been created to reduce the costs of resource allocation and uncertainty level (Williamson, 1979). Transaction costs are defined as the costs associated with carrying out a transaction between buyers and sellers, including: finding a buyer, reaching, negotiating, delivering the commodity, obtaining payment, enforcing agreements as well as the risks associated with the transaction (Coase, 1960; Allen, 1999; MacDonald, Perry, Ahearn, Banker, Chambers, Dimitri & Southard, 2004; Minot, 2011). Because contracting involves costs, it is economically justifiable only: when the buyer is a large firm; when the product is characterized by large quality variations, perishability, technically difficult production, and high value product; when the policy environment is conducive, and the destination market is willing to pay a premium for certain product attributes (Minot, 2007, 2011). Transaction costs in agriculture sector are high in many developing countries; they contribute to market failures and imperfect markets (Pingali, Khwaja & Meijer, 2005). Different governance structures and contracting forms arise and the most suitable depends on the costs and the characteristics of a transaction (Williamson, 1981).

Factors for the emergence of contract farming

We consider many factors for the emergence and evolution of contract farming: bounded rationality, opportunistic behavior, asset specificity, uncertainty, and frequency of transactions; in the absence of these factors, spot market trading is most efficient, and contract farming would not occur since agribusiness firms could buy all their produce from the spot market which would be instantly and perfectly responsive to their demand (Williamson, 1979; Simmons, 2002). However, in reality one or more of these problems may happen which indicates the need for contract farming. Another procurement option for agribusiness firms is to operate their own plantations; yet, with this option they may face other transaction costs such as supervision costs, costs of land and skill acquisition, and crop risk. Therefore, contract farming may occur only if it generates lower transaction costs compared to the other alternatives of market arrangement (Hobbs, 1996; Eaton & Shepherd, 2001; Simmons, 2002). Among the many aspects in current analyses are organizational arrangements like:

Bounded Rationality: Contracted parties suffer from information deficiencies and are unable to process all the information available to them to formulate solution and solve complex problems in a costless and straightforward way (Simmons, Winters & Patrick, 2005; Bijman, 2008);

Opportunistic Behavior: The probability that the other party will engage in opportunistic behavior is hard and costly to predict. Actors seek self-interest without considering the other party; they can deceive, lie, cheat and steal (Bijman, 2008);

Asset Specificity: An investment made by farmer or buyer which is dedicated to a certain transaction has little or no value in alternative use which leads to asset specificity and may result in hold-up problems. Thus, commodities with a higher degree of asset specificity require an involvement in vertical coordination in order to reduce risks, and to protect those assets (Gow & Swinnen, 1998; Martinez, 1999; Bijman, 2008);

Level of Uncertainty: Lack of information about market conditions for farmers, and about the quality of product for buyers is a challenge in carrying out profitable transactions. The main source of uncertainty is incomplete and asymmetric information on current and future conditions (Bijman, 2008; Prowse, 2012);

Frequency of Transactions: A repeated interaction between trading partners to maintain a reputation for fair dealing and to mitigate opportunism, even in the absence of contracts or vertical integration (Klein, 2006).

Hypotheses development

It is clear that there are some controversies and gaps in the existing literature about the impacts of contract farming on broiler producers, certain areas have been widely addressed by researchers, while other areas such as long-term profitability have been less explored. The contract system has advantages and disadvantages, one of the key advantages for producers, is the shift of production and market risk to the integrator. Similarly, contracts that broiler companies have with family farmers have allowed thousands of people to get into farming, diversify and expand their farming operation, and more securely lock in a stable income flow. Thus the hypothesis we have formulated likely mirrors the situation.

- There is a positive relationship between contract farming and the economic benefits of broiler producers and their sustainability.

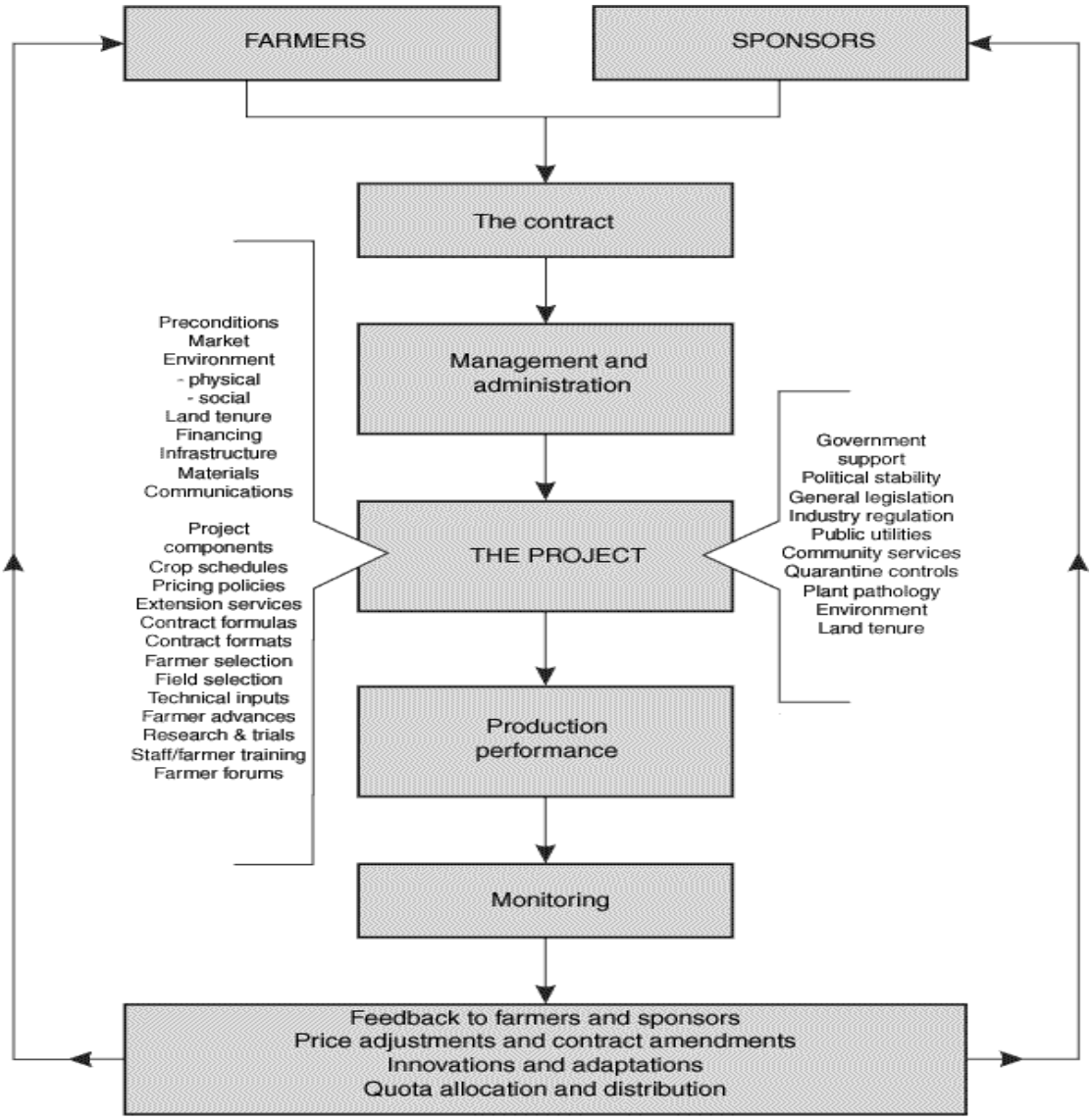

Figure 1: Contract Farming Conceptual Framework
Source: based on Eaton, C.S., 1998b: 274

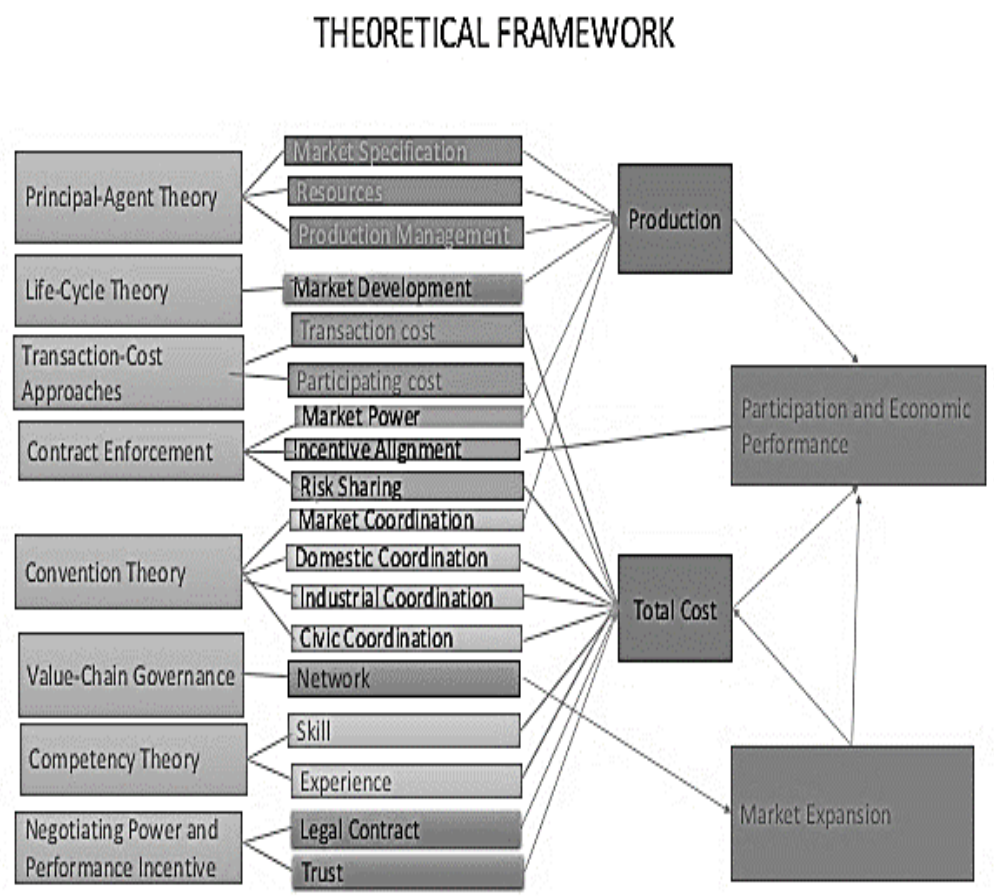

Figure 2: Contract Farming Theoretical Framework; Majid, R., & Hassan, S. (2014). Performance of broiler contract farmers: A case study in Perak, Malaysia. UMK Procedia, 1, 18-25.

Methodology

Agricultural contracting has been identified as urgently needing further research, in order to explore the topic in depth; we compiled a literature review of existing contract farming studies, the methodology that we will use is by observing outcomes across different farmers implementing contract farming in a given time period in different areas. This kind of methodology reflects the majority of the existing literature around contract farming. It is a questionnaire data; the data will allow us to better understand the variations in the industry. In our study, we will complete a comparative analysis between contract and non-contract broiler producers in Jezzine District, Lebanon. We will collect data from a sample of eleven broiler producers from different village based on a questionnaire, the sample of those farmers we choose is based on those 11 respondent criteria:

-Geographical location which is Jezzine District.

-The education level varies between one farmer and the other from school to university degree.

-The age of the farmers range from 30 to 65.

An underlying goal of our study is to explore the acknowledged gaps in the existing literature related to Lebanon and in particular for Jezzine District, and

to better understand the full scope of impacts of contract farming on broiler producers.

This dissertation contains the results of a Two-year research. We used a convenience sampling method, quantitative approach using an experimentation by selection of 11 farmers on a convenient sampling method because of limited number of farmers in Jezzine area and because they are dispersed in this geographical location and it is hard to reach them all. A sample of 11 broiler producers was randomly chosen. The aim is to obtain information on production, costs and production efficiency. We did a direct interview using a survey at the farmer level were conducted to understand and to investigate. The entire research was conducted during the period between Sep 2014 and September 2017. Previous research indicated a wide diversity of results, from cases in which farmers have benefited substantially in terms of income and improved farming skills to those in which growers appear to have been severely exploited by firms. The data collected from the questionnaires includes: Growing patterns, capital equipment, basic producer's data, income and changes, changes in growing patterns and labor used, and differences between contract and non-contract farmers. Qualitative and quantitative assessment of the welfare effects of contract farming relied on the analysis of the data collected. To assess the impact of contract farming participation on income, the propensity score matching method was applied. It is a treatment effect correction model used to reduce bias when estimating the effect of treatments. As a non-experimental approach, propensity score matching has been applied in many previous researches about contract farming; because it formulates comparison of treatment groups. In the studies of contract farming there are two other commonly used correction models for cross-sectional data: Instrument Variable Method and Heckman Selection Correction Model. The disadvantages of applying these models to this study are, that first there is no suitable variable associated with contract participation that is independent of income estimation for instrument variable approach; second, the Heckman's correction model assumes strict condition of distribution function of joint error term associated with participation and income equation, which does not fit with our data. Propensity score matching does not require any functional form assumption for matching and thus can obtain more robust estimation than imposing regression model with the risk of inaccurate distributional assumption. Because of these assumptions of our data, propensity score matching was more applicable than any other approach for estimating the impact of contract participation on income. Matching estimation is a widely used method to compare the treatment effect of participating in some programs. Basically, it compares the outcome of the program participants with the outcome of nonparticipants. We first assume that there are two potential outcomes: The outcome of the person participating in the program and the outcome of the person not participating in the program. A person can only either participate or not participate the program, and therefore there will be only one outcome observed.

Results

To analyze the impact of contract farming on the income of broiler producers, primary data was collected using questionnaires in Jezzine District. Farmers were placed into various number of both contract and non-contract broiler producers. The survey was conducted on May 2017. However, the data on production was for all the period of farmer's production. Information collected included welfare characteristics of producers, land, asset endowments, access to infrastructure (roads, electricity, water, and telephone), information on revenue earned, cost incurred in broiler production, transaction costs, information about producer's income and information about the nature of the contract.

Table 1: Data about the surveyed broiler producers in Jezzine district

Name	Location	Years of Experience	Number of Broilers	Land Area M2	Contract Farming
Joe Kozhaya	Wadi laymoun	3	12000	50000	Yes
Elias Al Asmar	Jezzine	7	15000	10000	No
Tony Jadoun	Zhalta	3	2500	8000	No
Chdid Chdid	Snaya	7	6000	6000	No
Simone Chdid	Snaya	7	11000	8000	No
Salim Nassif	Haytoura	5	6000	1000	No
Pierre Antar	Zhalta	1	10000	2000	No
Maroun Bou Rached	Jezzine	1	7000	30000	Yes
Joseph Abou Zeid	Sfaray	4	30000	3500	No
Douale Zaelit	Baba Azour	17	18000	20000	No
Charbel Hneine	Wadi Jezzine	6	10000	2000	No

In the study region, interviews have been carried out with 3 contracted and 8 farmers who do not have contractual relations. Contract farming was widely used in the production of broiler. Two third of the farmers, who were interviewed, indicated that sustainability, guaranteed price, risk reduction, credit facilities and technical aids are the main reasons for signing a contract. Producers generally interpret they are not interested in what is written on the contract. However, half of the producers who replied to questions about contract provisions said they did not read the contract beforehand and merely signed it. Producers who read the contract indicated they could not understand most of the language used. Farmers have expressed some problems concerning the contractors' responsibilities such as delay in payment, delivery, inadequate technical input aids, and information, and that processors would like to spread delivery over a long period. In the study region, 8 farmers, who are not involved in a contractual relationship, were interviewed. Two third of interviewed farmers indicated they were familiar with contract farming and had contracts previously. Farmers will not enter into contract farming unless they believe there will be benefits. The contracts resulted in improved returns to capital. From the average returns of contract and non-

contract farmers the contract enables farmers to generate a positive effect on income for farmers. The main reason for the difference is because of contract growers had lower production and transaction costs. For contact producers, the processor advances most of the inputs. Compared to the non contract producers, the contract grower needs less working capital and therefore incurs lower costs.

Table 2: Result indicated by farmers and score matched on propensity method

	Broiler producers											
Hypothesis	Contracted Producers			Non-Contracted Producers								Variables
	1	2	3	4	5	6	7	8	9	10	11	
H1a: Income of farmers	1	1	0	1	1	1	1	0	0	0	0	
	1	0	1	0	0	1	1	1	1	0	0	Technical Support
H1b: Poultry industry in Jezzine	0	1	1	0	0	0	0	1	1	1	1	
	1	0	0	1	1	1	0	0	0	1	0	Delay in payment

In contrast, the frequent failure of contract farming was also an important finding in the study. Disputes related to price and methods of payment were primary reasons for not continuing with contracts. As observed in broiler production, these dissatisfactions along with the availability of other marketing alternatives have caused an attitude against contract farming. However, even the contracted farmers had a tendency for using other alternatives to decrease market risk. Processors prepare contracts which mean that they determine the conditions of the contracts. However, most of the interviewed farmers have agreed that all contract provisions could not be realized. When the spot market prices are higher than the prices placed in contract, it was argued that farmers were selling the products in open market, which have been produced under contract. Factors influencing farmers' participation in contract farming, among all are: Distance to the main road, education, size of farm significantly influenced the probability of participation in broiler contract farming. Results also indicated that distance to the main road negatively influenced farmers' participation. This implies that the further away the farm is from the main road, the less likely the farmer will participate in contract production. This finding is perhaps due to the fact that the contracting firm prefers to work with farmers who are near the main roads due to ease of reaching such farms. The level of education of the farmer, however, has a negative effect on the farmer's likelihood to participate in contract farming. Results show that an increase in years of education will reduce the likelihood to participate in contract farming, other things. This is probably due to the fact that more educated farmers are more likely to seek information on other marketing channels in the region including hotels and rural assemblers. Education level has a positive significant effect on contract farming, which means the operator with higher education level is more likely to use contract farming. Farm size has a positive significant effect on contract farming, which means if the size of the farm is larger; it is more likely to use contract farming. Hence, it can be

assumed that the contract provides more precise and experienced extension service or technical advice than the non-contracted farmers. It also highlights that government can play a crucial role in linking broiler producer to market, particularly in developing countries.

Discussion

The above discussion reveals that because of poor performances of institutions, broiler industry is facing major crisis such as, decelerating growth, increasing numbers of farmer suicides, and widening disparities in farm incomes. Suicide is confined to certain regions and certain group of farmers who produce for market. To overcome these problems successive central and various state governments have been undertaking an array of policy measures. Among those measures, promotion of private sector participation in contract farming is an important one. In response to this contract farming has emerged as a new institutional arrangement encompassing broiler industry to bring down the market uncertainties and complexity of the problem. On the other hand, spot market cannot fulfill the firm's demand. By entering into contract, farmers can access the better quality of inputs and extension services along with credit from sponsors. Contract farming stimulates technology and skill transfer and supports to farmers in meeting of international standard. Contract farming boosts farm income by opening up opportunities and employing resources in an efficient manner.

It is clear from that contract farming is not suited to all commodities or economic conditions. Studies emphasize that the appropriateness of contract farming as a rural development strategy can change between a district and another, a governorate and another, a country and another. In Lebanon competitive markets, income diversification and booming imports opportunities have rendered contract farming sometimes ineffective and largely unnecessary. In some regions in Lebanon, the second generation of broiler producers have little interest in continuing to produce broiler in small or large scale, instead they prefer and can frequently obtain urban or city employment in manufacturing, services or other sectors.

Conclusion

Through this research and the analysis of the existing literature, several important insights have been made clear. Contract farming is largely successful in improving farmer economic welfare. From a developmental perspective, this bears important implications because policymakers can be reasonably assured that investment of resources into developing contract farming is a fruitful policy venture. This dissertation shows that there is increase in income in contract production; it revealed that contract farming leads to greater production compared to non-contract farming. This indicates that the provision of extension service or technical advice by an enterprise might improve the production since enterprise has more experience in broiler production than farmers. We found that education positively effect on contract participation. The result revealed that farmers producing under a contract had significantly higher incomes than non-contract households, and producers transfer most of their production risk to

processors. Entering a contract farming arrangement means gaining access to credit, inputs, and technical assistance. Throughout this study, we find that public enterprises play a crucial role in promoting contract farming development in Lebanon, particularly in an economy ridden with market failures and imperfections. Further institutional improvements are necessary to facilitate efficient resource allocation for further development of the Lebanese broiler sector. Along with institutional improvements such as pricing, contract enforcement, and providing more information on contract farming to small-scale broiler growers.

This study examined and evaluated the impact of contract farming on the economic sustainability of smallholders in broiler production in Jezzine District, Lebanon. Comparison was made between two groups of farmers namely independent farmers and contracted farmers. A sample of 11 farmers were selected and interviewed using questionnaires and the data is analyzed. Results of impact assessment show that participating in contract farming has a positive and significant effect on the economic welfare of broiler producers and can reduce rural poverty as some policies which will make it easier for farmers to participate in contract farming should be pursued. Contract farming has been proposed as an avenue for private sector to take over the roles previously served by the government in the provision of information, inputs or credit for farmers in developing countries.

After literature review, the paper set up the overall hypothesis that assumes a positive relationship between contract farming and economic benefits and sustainability of small-scale farmers. This study applied deeply case study approach with one case investigated in Jezzine District - Lebanon. By analyzing and discussing the results following the methodology used it is concluded that the hypothesis is supported by several factors.

The experience of broiler production is increasing, and it has contrasted with products imported from developed countries through global meat trade. Broiler producers face constraints that limit their potential to increase productivity and income. Access to credit is limited by the high interest rates demanded. There are also a number of disadvantages and threats, such as the limits to the inclusivity of contract farming schemes, which is often restricted to the top tier of smallholder producers; nonetheless, it is possible that the farmers can lock into a situation of increasing debt because they cannot move out from contract easily after entering into it. Usually, firm supplies inputs and sometimes machinery to growers in advance and takes it back payment through the deduction from crop income. This induces farmers to keep contracting with the firm year after year just to pay off these loans. The development of these phenomena are often generate problems for farmers who have limited business experience. Contracting has certain harmful consequences, as well it creates tension between contracting parties; often unequal relations between larger integrators and farmers, farmers bearing high risks, and contract terms for farmers declining over time in the process of 'agribusiness normalization'. The firms also tend to practice "agribusiness normalization" over time which means that they reduce the prices and other benefits offered to the growers with which they commence operations, when the procurement base is created and there are enough farmers to procure from.

References:

Allen, D., & Lueck, D. (1992). Contract choice in modern agriculture: cash rent versus crop share. The Journal of Law & Economics, 35(2), 397-426.

Begum, I. A., Alam, M. J., Rahman, S., & Van Huylenbroeck, G. (2013). An assessment of the contract farming system in improving market access for smallholder poultry farmers in Bangladesh. Contract farming for inclusive market access, 39-56.

Bellemare, M. F. (2012). As you sow, so shall you reap: The welfare impacts of contract farming? World Development, 40(7), 1418-1434.

Bijman, J. (2008). Contract farming in developing countries. An overview of the literature, Wageningen University, Department of Business Administration (Working Paper).

Boehlje, M. (1999). Structural changes in the agricultural industries: How do we measure, analyze and understand them? American Journal of Agricultural Economics, 81(5), 1028-1041.

Burch, D., Lawrence, G., Green, G. P., Ichijo, K., Nonaka, I., Pimentel, M., & Carneiro, M. J. (2007). World Development Report 2008: agriculture for development (No. E14 231). The World Bank.

Clapp, R. A. (1994). The moral economy of the contract. Living under contract: Contract farming and Agrarian transformation in sub-Saharan Africa, 78-96.

Coase, R., & Piaget, J. THE PROBLEM OF TRANSACTION COSTS. SOUTHERN CALIFORNIA LAW REVIEW, 62, 1661.

Collier, P., & Dercon, S. (2014). African Agriculture in 50Years: Smallholders in a Rapidly Changing World? World development, 63, 92-101.

Da Silva, C. A., & Ranking, M. (2013). Contract farming for inclusive market access. Food and Agriculture Organization of the United Nations (FAO).

Delgado, C. (1999). Sources of growth in smallholder agriculture in sub-Saharan Africa: the role of vertical integration of smallholders with processors and marketers of high value-added items. Agrekon, 38, 165-189.

Eaton, C., & Shepherd, A. (2001). Contract farming: partnerships for growth (No. 145). Food & Agriculture Org.

Glover, D., & Kusterer, K. (1990). Small farmers, big business: contract farming and rural development. Macmillan Press Ltd.

Godfray, H. C. J., Beddington, J. R., Crute, I. R., Haddad, L., Lawrence, D., Muir, J. F., ... & Toulmin, C. (2010). Food security: the challenge of feeding 9 billion people. Science, 327(5967), 812-818.

Goldsmith, A. (1985). The private sector and rural development: Can agribusiness help the small farmer? World Development, 13(10-11), 1125-1138.

Goodman, D., & Watts, M. (1994). Reconfiguring the rural or fording the divide? Capitalist restructuring and the global agro - food system. The Journal of Peasant Studies, 22(1), 1-49.

Grosh, B. (1994). Contract farming in Africa: an application of the new institutional economics. Journal of African Economies, 3(2), 231-261.

Hamra, C. F. (2010). An Assessment of the Potential Profitability of Poultry Farms: A Broiler Farm Feasibility Case Study (Doctoral dissertation, The University of Tennessee at Martin).

Hazell, P. B. (2005). Is there a future for small farms? Agricultural Economics, 32(s1), 93-101.

Key, N., & McBride, W. (2003). Production contracts and productivity in the US hog sector. American Journal of Agricultural Economics, 85(1), 121-133.

Key, N., & Runsten, D. (1999). Contract farming, smallholders, and rural development in Latin America: the organization of agro-processing firms and the scale of outgrower production. World development, 27(2), 381-401.

Kirsten, J., & Sartorius, K. (2002). Linking agribusiness and small-scale farmers in developing countries: is there a new role for contract farming? Development Southern Africa, 19(4), 503-529.

Knoeber, C. R., & Thurman, W. N. (1995). "Don't Count Your Chicken...": Risk and Risk Shifting in the Broiler Industry. American Journal of Agricultural Economics, 77(3), 486-496.

Little, P. D. (1994). Living under contract: contract farming and agrarian transformation in sub-Saharan Africa. Univ of Wisconsin Press.

Martinez, S. W. (1999). Vertical coordination in the pork and broiler industries: Implications for pork and chicken products (No. 34031). United States Department of Agriculture, Economic Research Service.

Minot, N. (1986). Contract farming and its effect on small farmers in less developed countries (No. 54740). Michigan State University, Department of Agricultural, Food, and Resource Economics.

Miyata, S., Minot, N., & Hu, D. (2009). Impact of contract farming on income: linking small farmers, packers, and supermarkets in China. World Development, 37(11), 1781-1790.

Prowse, M. (2012). Contract farming in developing countries: a review. Agence Française de Développement À Savoir.

Ramaswami, B., Singh Birthal, P., & Joshi, P. K. (2009). Grower heterogeneity and the gains from contract farming: the case of Indian poultry. Indian Growth and Development Review, 2(1), 56-74.

Reardon, T., Barrett, C. B., Berdegué, J. A., & Swinnen, J. F. (2009). Agrifood industry transformation and small farmers in developing countries. World development, 37(11), 1717-1727.

Reardon, T., Timmer, C. P., Barrett, C. B., & Berdegué, J. (2003). The rise of supermarkets in Africa, Asia, and Latin America. American journal of agricultural economics, 85(5), 1140-1146.

Rehber, E. (2007). Contract farming: Theory and practice. ICFAI Books.

Roy, E. P. (1963). Contract farming, USA. Contract farming, USA.

Runsten, D., & Key, N. (1996). Contract farming in developing countries: Theoretical aspects and analysis of some Mexican cases. Report prepared for the United Nations Economic Commission for Latin America and the Caribbean, Santiago, Chile.

Shepherd, A. (2005). The implications of supermarket development for horticultural farmers and traditional marketing systems in Asia. Rome, FAO.

Simmons, P., Winters, P., & Patrick, I. (2005). An analysis of contract farming in East Java, Bali, and Lombok, Indonesia. Agricultural Economics, 33(s3), 513-525.

Singh, S. (2002). Contracting out solutions: Political economy of contract farming in the Indian Punjab. World Development, 30(9), 1621-1638.

Stiglitz, J. E. (2004). Capital-market liberalization, globalization, and the IMF. Oxford Review of Economic Policy, 20(1), 57-71.

Swinnen, J. F. (Ed.). (2007). Global supply chains, standards and the poor: how the globalization of food systems and standards affects rural development and poverty. Cabi.

Warning, M., & Key, N. (2002). The social performance and distributional consequences of contract farming: An equilibrium analysis of the Arachide de Bouche program in Senegal. World Development, 30(2), 255-263.

Weatherspoon, D. D., & Reardon, T. (2003). The rise of supermarkets in Africa: implications for agrifood systems and the rural poor. Development Policy Review, 21(3), 333-355.

Williamson, O. E. (1979). Transaction-cost economics: the governance of contractual relations. The journal of law & economics, 22(2), 233-261.

Will, M. (2013). Contract Farming Handbook. A Practical Guide for Linking Small-Scale Producers and Buyers through Business Model Innovation, GIZ, Federal Ministry for Economic Cooperation and Development.