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Contract Farming in Practice: An Overview

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ABSTRACT

Impersonal and open-market transactions between actors in traditional agro-food systems based on price signals are replaced by rather controlled impersonal **vertical coordination** such as contract farming, because of the changes in market structure, consumer preferences and attitudes, technological improvements, and food safety issues. Recent sophisticated ideas like environmentally sound, sustainable agriculture, standards and regulations related to environment and health care are among the forces behind the fast growing of contractual relationship. Contract farming displays great variety in practice. The form it takes, attitudes and approaches of the partners are affected mainly by availability of other alternatives and the political, economic, and social structures at the local and national level, along with the specifications of the product. When evaluating contract farming applications and their outcomes in practice, it will be more illustrative to consider contractual arrangements in two main types as **private contract arrangements** and **contract farming schemes.** While the aims and the structure are almost similar, there are some important differences in detail. There are national and regional differences that have to be considered in related analysis and evaluations.

Even though contractual relationship of the advanced agro-food system has many advantages, it also has inherent and implementation problems. The main problem is the weak position of the farmers in the contractual arrangements both in developed and developing world that is called as **bargaining problem**.

Contract farming is not a panacea to solve all related problems of agricultural production and marketing systems. However, this way of coordination could be evaluated as a way of providing easier access production inputs and product market for the small-scale farmers. Contract farming also contributes to the development of a sound **food industry**. It might also be seen as a way toward or as a part of rural development and can be promoted to improve agricultural performance, especially in the Third World Countries. Contractual relationships are not only a distinctive feature of highly industrialized agro-food systems, but also a way of establishing an industrialized and developed structure. But, to obtain the advantages of contract farming, the necessary measures must be taken to trade off those disadvantages, such as the exploitation of small farmers and natural resources by domestic and foreign corporations and multinationals.

Keyword: Food industry, contract farming, vertical coordination, bargaining problem

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This working paper is a consolidated and updated version of the author's publications presented below.

- Vertical Integration in Agriculture and Contract Farming, Working Paper #46, May 1998, A Joint USDA Land Grant University Research Project, Food Marketing Policy Center, University of Connecticut, USA.
- Vertical Coordination in the Agro-Food Industry and Contract Farming: A Comparative Study of Turkey and The USA, Food Marketing Policy Center, Connecticut, USA, Research Report No. 52, February
- Vertical Integration in the Food Industry and Contract Farming: The Case of Turkey, Outlook on Agriculture, Vol.33.No.2. 2004, P. 85-93.
- Contract Farming: Theory and Practice, the ICFA University Press, First Edition, Hyderabad, India, 174 p.
- Vertical Integration in the Food Industry and Contract Farming: The Case of Turkey, (In "Contract Farming - International Experiences edited by S. Mohanty and B.V.S Prasad), ICFAI University Press, pp.139-157
- A Global Overview of Contract Farming, (In "Contract Farming - International Experiences edited by S. Mohanty and B.V.S Prasad), ICFAI University Press, pp.3-39

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1. *INTRODUCTION*

Vertical coordination and contract farming as a widely used way of it have been a major interest to scientists from different disciplines such as economists, anthropologists, political economists, sociologists and even geographers. Contract relationship is not new in agriculture dated back to the last quarter of 19thcentury. Theoretical approaches to contract farming and its implementation world-wide in practice have caused to appear different terms and connotations regarding contract farming in related literature. Contract farming displays great variety in practice. The form it takes, and attitudes and approaches of the partners are affected mainly by availability of other alternatives and the political, economic, and social structures at the local and national level, along with the specifications of the product (Minot 1993). When evaluating contract farming applications and their outcomes in practice, it will be more illustrative to consider contractual arrangements classification as **private contract arrangements** and **contract farming schemes** (Rehber 2007b). There are some important differences in detail. While the aims and the structure of contract farming are almost similar and rather definite in the private contract farming system, the contracting schemes have hybrid structures and multiple objectives (Glover 1987).

In this paper, generally producer/grower terms are used for the farmer and buyer, contractor or integrators terms for the other party of the contracts. Private contract arrangements refer to the contracts between rather commercialized big or in some cases small farmers and the integrators (processors, wholesaler, exporter etc.) while the contracting schemes are mostly concerned with multi parties: governments, farmers, integrators, and development or donor agencies. It can be argued that, contract schemes are organized generally in the developing and less developed countries, while the private ones are formed mainly between individual or a group of farmers and private companies in the developed world. In particular, the nature of the crops and the technology in use for its production are the most crucial determinants of the implementation ways and characteristics of the contract farming in practice. For instance, basic grains that are not perishable and do not require strict quality control or prompt harvesting and processing do not generally require contractual arrangements (Andrews et al. 1994). Some products that require concentrated production and careful scheduling because of their perishability and bulkiness are generally subject to contractual relationships. For the commodities, for which supplies of both inputs and outputs are inelastic and shifting cost is very high such as broiler production, contract farming is rather common. Recent development in quality control approaches and production alternatives have also affected contractual implementations. For example, some practices such as organic farming, demands of non-GMO crops and traceability are the important factors behind not only changing structure but also the increase of implementations of contractual arrangements.

The reasons of the contracting are so different. One of the main initiatives of contract farming for developed countries is the provision of steady and safe flow of the raw material to the marketing or processing industry with certain quality standards. In developed countries, sophisticated market structure, high technology level, farming structure, attitudes of the governments, etc. create a rather suitable environment for private contracting arrangements which depend on the product features. However, in the less developed world, contract farming was initiated by complementing, occasionally competing with and partially replacing plantation and estate agriculture or by organizing the independent farmers and sometimes newly settled families under state or private schemes to produce a variety of products for domestic consumption and especially for export (Watts 1994).

Development of agriculture from a traditional to a market-oriented structure is the major challenge for developing, less developed countries and economies in transition. The main struggle is to decrease the rate of population engaged in agriculture to a certain amount through creating new employment opportunities either in non-agricultural sectors or agriculture-based industries such as food processing. 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 (Kirsten and Sartorius 2002). The wave of privatization and liberalization of developed world have helped in bringing about a new form of vertical coordination between private companies and farmers in the Central and Eastern European and other countries which are so called countries in transition (Swinnen and Maertens 2006). As an outcome, contract farming became an integral part of liberalization and agricultural transformation often bringing together multinational companies and smallholders in developing countries (Simmons et al. 2005).

The content of contracts has varied in practice. But it is not surprising to observe similarities between the general content of contracts in the present globalized world considering the contract production activities of some multinational companies in overall of the world (Carney et al. 1994).

Even though contractual relationship of the advanced agro-food system has many advantages, it also has inherent and implementation problems depending on the structure of contract farming. Therefore, available structure and prevailing economic and market conditions must be considered when evaluating related problems. The main problem is the weak position of the farmers in the contractual arrangements both in developed and developing world. This can be coined as **bargaining problem**. In addition, there is a variety of related problems such as delays in delivery or payment, quality deterioration, etc.

This working paper aims to give an overview about contract farming. After **"Introduction"** a brief information about the concepts of contract farming, legal and structural development in this field in have been presented chapter 2 under the heading "**Contract Production in Agriculture**". It focuses on a comparative evaluation of contract farming implementation in the world generally for the developed and developing countries in different sub-titles in chapter three (**Contract Farming in Practice**). In addition reasons, benefits and problems of contract farming based on the worldwide implementations have been summarized in chapter four (**Prospect and Challenges**) before the **"Conclusion"** (Chapter 5).

2. *CONTRACT PRODUCTION IN AGRICULTURE*

2.1. Contract Farming as a way of Coordination

From the point of view of general system theory, there are three main ways (theories) of coordination as hierarchies (full or ownership integration), markets (open market coordination), and networks (cooperative and corporate coordination) (Veryard 1994). From inter- and intra-firm's point of view, it can be classified into three basic kinds of coordination (Roy 1963). Vertical coordination (integration) occurs when a firm combines activities unlike those it currently performs which are related to them in the sequence of marketing and production activities. **Vertical coordination** is related to a technological rather than an institutional development (Trifon 1959). Such coordination could be illustrated by the meat packer who decides to reach both backward towards the producer and operate his own livestock buying points in the countryside and forward towards the consumer and operate his own meat wholesaling firm (Kilmer 1986). Integration means bringing together two or more parts into one. Vertical integration is best reserved for ownership integration where two or more stages in the process of production and marketing are effectively controlled by a single management.

Horizontal coordination (integration) occurs when a firm gains control over the firms performing similar activities at the same level in the production and marketing sequence. The local dairy cooperatives which are brought under a regional union are one example. Firms

often expand both vertically and horizontally. When both horizontal and vertical operations are tied together, a **circular coordination** occurs. For example, if an organization of dairy farmers is brought under a dairy cooperative, a vertical integration occurs; at the same time if dairy cooperatives are organized under

a regional cooperative union, a horizontal integration occurs. There is another type of organizational expansion which occurs when agencies or activities that do not have any direct relationships between them are brought under a unified management. This is called conglomeration.

Another way to review integration in an industry is by studying the extent of the transfer of decision and the ownership of the firm assets. The coordination that occurs when all the decisions and assets of the firms are taken under a single firm's control is called ownership integration or merger; in contrast, when each firm retains its separate identity but leaves one or more decisions of production and/or marketing to the control of another firm, it is called quasi integration or contract integration.

The terms of vertical coordination, vertical integration and contract production are sometimes used interchangeably (Cramer and Jensen 1988, Paarlberg 1995). Of course, vertical coordination is rather a broad term which encompasses all means of relationship harmonizing vertically interdependent production and marketing activities ranging from spot markets through various types of contracts to complete integration (Frank and Henderson 1992).

Primitive agriculture was a fully integrated system in itself. In subsistence agriculture, vertical integration is nearly complete since most of the production resources and production decisions are in the same hand (Penn 1958). One family could collect seed, sow and reap a crop, rear and fatten an animal, and consume the produce after reserving seed or breeding stock for the following year. The evolution from subsistence farming to the present market-oriented agricultural system has been marked by a gradual disintegration of functions. Specialization and close coordination among those specialized units is one of the distinguishing features of commercialized agriculture.

Nowadays, agriculture as a production industry is closely related to marketing activities which transform, transport and transfer food and fiber to the consumer on one hand, and is served by a large number of industries which are supplying farm inputs on the other hand. Coordination between farms and the other firms in the industry both forward and backward is inevitable now. An agricultural production and marketing system includes different stages or sectors: suppliers of input items, farm operators, processors of farm products, distributors, and final consumers. In the developed and developing countries, the relationships and transactions between these sectors can be realized in different ways (Allen 1972). If we focus on the ways of vertical coordination between farmers and off-farm business, four main forms of vertical coordination are generally recognized in addition to some special or hybrid ways of coordination such as strategic alliances, joint ventures etc. (Berkama and Drabenstott 1995, Rehber 1998).

- Coordination without any contract (market coordination): The prevalent existence of a spot market with open market transactions is known as market coordination. Spot markets or the traditional free marketing system still accounts for the lion's share of the present world marketing system. In this kind of relationship, there is no written or oral agreement between the firm and the farmer for both buying and selling. Here, the farmer buys inputs from a supplier of his choice and sells his products to whoever will pay the best price. This type of vertical relationship provides freedom to farmers, but uncertainties both in buying supplies and selling produce are the main drawbacks. In a competitive open (free) market system, price signals control the market mechanism. The message reflected in price would be passed back to the processor from the final supply points (super markets or groceries) to the farmer and then to the supplier of input items. This system may work very slowly. This traditional form of market organization and price determination will remain as the appropriate means of coordinating the vertical stages in a system under the conditions such as: realization of production by dispersed large number units and closeness of production to the points of final consumption; availability of government or producer organizations' control over prices and sale volumes; acceptance of lesser quality and grading by the purchaser and

the existence of sound and effective extension and advisory services as government functions. For instance, contract farming has rarely existed in grain, oilseed and cotton production, which have been subject to government price and/or income support programs. On the other hand, the historically large number of individual farms has been considered the major reason for the dominance of open markets (Barry et al. 1992). It can be evaluated as a clear evidence that rather a close vertical coordination has been

dominant in the developed countries which have a decrease in farm numbers and growth in size, whereas underdeveloped and developing countries, which have scattered and small farm size structures, still mainly rely on open market transactions. Farmer contracts for delivery of a specific quantity at a specific price, time, and place (ordinary forward and futures contracts) are considered as a part of market coordination (Schrader 1986).

- **Contract farming:** In contractual relationship, generally each farm retains its separate identity but leaves one or more decisions of production and/or marketing and farm assets under the control of another firm. Contract farming will be presented in detail in a special chapter.
- **Vertical integration:** Vertical integration is best reserved for ownership integration where two or more stages in the process of production and marketing are effectively controlled by a single management. A firm can be described as vertically integrated if it encompasses two single-output production processes in which: the entire output of the first process is employed as part or all of the quantity of one intermediate input into a second process or the entire quantity of intermediate input into second stage is obtained from part or all of the output of the first stage. This can be called as **full integration.** This description may include more restrictive criterion where the entire output of upstream process is employed as the intermediate input into the downstream process. It can be redefined as "most of the output of upstream process is employed as most of the input in the downstream process". This case is best described as **partial vertical integration** or **taper integration** (Perry 1989). In other words, "full integration refers to selling all of the outputs, or providing all inputs in-house and taper integration refers to selling some proportion of outputs to out of the firm or buying some inputs from outsiders" (Harrigan 1986).

Vertical integration also means the ownership and complete control over neighboring stages of production or distribution. Grossman and Hart (1986) have argued that vertical integration is the ownership and thus complete control over the assets. However, because of the different nature of the labor input, it is not relevant for vertical integration. The workers could be employees or contractors without altering the degree of vertical integration (Grossman and Hart 1986).

On the other hand, Williamson (1973) stated that vertical integration would encompass the switch from purchasing inputs to producing those inputs by hiring labor. The required capital for production, such as building and equipment, could be owned or leased without altering the degree of vertical integration. Leasing of capital can allow control of production without ownership. Vertical integration is the control over the entire production or distribution process rather than the control over any particular input into that process. Vertical integration may arise in a number of ways. Vertical formation describes vertical integration, which occurs at the time the firm is created. **Vertical expansion** describes vertical integration, which occurs as a result of internal growth of the firm creating its own subsidiaries of the neighboring stages. **Vertical merger** describes vertical integration, which occurs through the acquisition of one firm by the existing firm in a neighboring stage. In this type of coordination in agro-food sector, each individual farm loses its identity and becomes a company-owned farm. The parent company owns or leases the land, buildings and equipment and employs its own employees.

- **Farmer cooperatives:** An agricultural cooperative is an organization usually incorporated, owned, and controlled by agricultural producers, which operates for the mutual benefit of its members as producers or patrons (Rehber 1984). One world-wide way of vertical coordination is, of course, cooperative organization. Especially, input supply, processing and marketing cooperatives are bringing more than two and more stages of production and marketing under the control of one unit. The farmers' participation in the cooperatives would result in easy access to available markets, enhanced net returns and countervailing power when facing anti-competitive market forces (Petraglia and Rogers 1991). By working together in their cooperatives, farmer-members can better control their

destiny (Ling and Liebrant 1995). Cooperatives can offset monopsony power of processors by elevating prices in the market to competitive levels for all farmers (not only for cooperatives members).

Organizing under an agricultural cooperative or producers' group is also considered a type of **ownership integration** by some scientists (Martinez 1996). However, they must be considered as a

different way of vertical coordination than ownership integration because of the different structures and activities of these producers' groups or cooperatives. Even if it is subject to dispute to some extent and needs rather a detailed investigation, some empirical evidence shows that vertical coordination between farmers and their own cooperative processing company has a favorable outcome. It is argued that, vertical coordination through producers' cooperative can increase the financial efficiency. A grower-owned processing cooperative model appeared in the 1970s in the USA sugar industry and some of the sugar industry companies that have turned into grower-owned ones, which formerly were a kind of state enterprise in Turkey, are two successful experiences (Koening 1995, Rehber 2004).

In a cooperative structure, because of the fact that producers, as the supplier of the raw materials, are also the owners of the processing units, one might think that the relationship between the farmers and managers of their processing units would be harmonious. Sometimes the relationship between the cooperatives or groups and their members is more of a constitutive rather than a contractual relationship. It could impose obligations in respect of production methods, product specification, and timing of delivery and so on. In practice, this type of coordination often generates problems and disputes especially when alternative marketing opportunities are available. To avoid such problems in cooperatives, a contractual relationship with member farmers is advisable (Royer 1995). There are also problems related to financing and profit-sharing. However, restructured forms of cooperatives, which are called new generation cooperatives (NGC), have been emerging especially in the USA (Fulton and Sanderson 2002, Hardesty 2004) to solve these problems. This new type of cooperative approach is also termed as one way of networks coordination in agriculture (Menard and Klein 2004). Farmers have also been organized under bargaining cooperatives to have power when setting the terms of contractual relationships.

2.2. Concepts of Contract Farming

These types of vertically coordinated production relations are not new, since contracts were employed by the Japanese colonial state for sugar production in Taiwan in the period after 1885 and by the USA banana companies in central America in the early part of the twentieth century (Watts 1994). In advanced capitalist states, it seems that contract farming was widely used by the vegetable canning industry in North America and by the seed industry in the Western Europe in the 1930s and 1940s. By the late twentieth century, however across much of the Western Europe (Earliest record of forward purchase agreement is dated 1878 (Barker 1972)), North America and Japan, contract farming has become an integral part of food and fiber industry.

Contracts in a general and incomplete sense are found in agriculture everywhere in extremely heterogeneous forms. Simple market specification contracts or future purchase agreements (typically determine price, quantity and time of delivery) are common and contracts which supply labor and machinery have a wide application in agriculture (Wright 1989). Contract farming or contract production, however, must be distinguished from the multiplicity of simple marketing or labor contracts. Specifically contract farming entails relations between growers and private or state enterprises that substitute for spot market transactions between family farms and a processing, export or purchasing unit.

A standard farming contract regulates price, production practices, product quality and credit facilities, etc. in advance. Arriving at a meaningful definition of contract farming is rather difficult. The one classic definition provided by Roy (1963) refers to a contractual arrangement between farmers and other firms, whether oral or written, specifying one or more condition of production and/or marketing of an agricultural product. Roy's definition is perhaps too broad, since it would include forward contract in which only price and volume are set. Forward contract could be sold and bought are not our interest here. In the definition above as excluding marketing arrangement such as forward contracts, two conditions must be added. First those contracts should be non-transferable and second that the terms

“and/or” should be replaced by “and”, that means contract must specify one or more conditions of production and marketing (Glover 1984). It is called vertical restrictions by some scientists. A non-integrated firm may write long-term, binding contracts with the firms with

which it deals, in which it specifies price and other terms. Such contractual restraints are called vertical restrictions (Carlton and Perloff 1990).

However, world-wide applications in practice have caused different terms and connotations regarding contract farming to appear in related literature (Glover 1992). Several types of contracts are distinguished according to the number of decisions influenced, sharing of the risks and specifying contract terms. From the production decisions or management point of view, two types of contracts are determined:

- **Limited management contracts:** In this type, the farmer signs a contract to get some production inputs. There is not any real guarantee for the price. The farmer's responsibility is limited only for the production inputs which he has obtained under agreement.
- **Full management contracts:** In this case, the farmer and the integrator firm have a contract based on a certain amount of production. In this type of contract the farmer has to follow some provisions specified in the agreement. By this way, the producer provides a certain market for his product and insures himself against risks.

Kohls and Uhl (1985) have classified contracts into three broad categories:

- **Market specification contracts:** They simply specify some of the product quality measures which will be acceptable to the integrator and also some regulations are placed on the price and the method of payment. Contracts are generally signed during the plantation time. They specify how much the integrator will buy and at what price. Little or none of the farmer's management decisions are transferred. From the producer's viewpoint, they guarantee a buyer if the specifications are met.
- **Resource providing contracts:** In this type, the integrators provide production resources with certain conditions, managerial help and supervision. Product prices are usually based upon the spot markets and income guarantees to the producers are minimal.
- **Management and income guaranteeing contracts:** These types of contracts often include the production and marketing stipulations of the former two types. In addition, market and price risks are transferred from farmers to integrators in this type. On the other hand, the integrator takes a substantial part of the managerial responsibility of the farmers. However, some contracts combine elements of all two or three types in practice. For example, the contract may specify the production methods and the terms of sale, as well as providing inputs (Martinez 2002, Minot and Sawyer 2016).

Contract farming has been promoted in recent three decades as an institutional innovation to improve agricultural performance in less developed countries, and also countries in transition sometimes as a key element of rural development and/or settlement projects (Ghee and Dorall 1992, Baumann 2000, USAID 2005). Local governments, private local firms, multinational companies, some international aid and lending agencies, like the US Agency for International Development, The World Bank, Asian Development Bank, and Commonwealth Development Corporation have been involved in these contract farming schemes (Glover 1994, Silva 2005).

Hence, for the practical purposes contract farming applications can be classified into two broad categories as **private contract** arrangements (which have been classified and explained above) and **contract farming schemes**. Contract farming schemes are classified as follows.

- **Outgrower scheme**: Generally connotes a government scheme. In this system, the government usually has a public enterprise purchasing produce from farmers on its own or as a part of joint venture with a private firm. This term is frequently used in Africa and Asia.
- **Nucleus-Outgrower scheme**: It is a variation of the outgrower scheme in which there is a project authority which has or administers a plantation adjacent the processing plant. This plant supplements its own plantation production by contracting in different proportions. And the term satellite farming is also used referring to any of the variations of the schemes mentioned above. On the other hand, the term multipartite arrangement is used to emphasize the scheme in which several actors such as private firms, government and foreign aid

agencies are involved.

Same implementations were analyzed into five models in one of the FAO studies as follows (Eaton and Shepherd 2001):

- **The centralized model**: This is almost similar to a private scheme mostly used in Africa. Schemes like these are often called “outgrower” schemes. Government involvement is limited.
- **The nucleus estate model:** It is a variation of the previous model in that the central firm has also its own farm beside the contractee farmers.
- **The multipartite model:** In this system, the Government or an NGO actively participates in the model along with a private firm.
- **The informal model:** It includes simple and informal contracts between individual or small companies.
- **The intermediary model:** In this model, there are intermediaries between farmer and industry units like collectors or farmers’ committees.

One variety of the contract implementations is called as **cross-border contract farming** arrangement. The case of Laos can be considered as an example. Small-scale farmers of the Lao People’s Democratic Republic have been using their own land and labor to supply cabbage, maize, or sugarcane to buyers from the People’s Republic of China (PRC) and Thailand under the contractual relationship (Manorom et.al. 2011).

Another contract classification identified by Williamson (1979) is based on transaction economies. He determined uncertainty, frequency, and degree of idiosyncrasy of investment as the important characteristics of the transaction. He described three types of contracting regarding those characteristics of the transaction excluding uncertainty. These are, classical (market governance), neoclassical (trilateral governance) and relational contracting (bilateral and unified governance) (Williamson 1979).

- **Classical Contract**: Any system of contract law has the purpose of facilitating exchange. What is distinctive about classical contract law is that it attempts to do this by enhancing discreteness and intensifying "presentation" where presentation has reference to efforts to "make or render present in place or time; to cause to be perceived or realized at present. **Classical contract law endeavors to implement discreteness and presentation in several ways. For one thing, the identity of the parties to a transaction is treated as irrelevant. In this respect it corresponds exactly with the "ideal" market transaction in economics**. The nature of the agreement is carefully delimited, and the more formal features govern when formal (for example, written) and informal (for example, oral) terms are contested. In classical contract remedies are narrowly prescribed such that, should the initial presentation fail to materialize because of nonperformance, the consequences are relatively predictable from the beginning and are not open-ended. Additionally, third-party participation is discouraged. The emphasis, thus, is on legal rules, formal documents, and self-liquidating transactions (Williamson 1979).
- **Neoclassical Contract:** Every transaction does not fit comfortably into the classical contracting scheme. In particular, long-term contracts executed under conditions of uncertainty are ones for which complete presentation is apt to be prohibitively costly if not impossible. Problems of several kinds arise. First, not all future contingencies for which adaptations are required can be anticipated at the outset. Second, the appropriate adaptations will not be evident for many contingencies until the circumstances materialize. Third, except as changes in states of the world are unambiguous, hard contracting between autonomous parties may well give rise to veridical disputes when state-contingent claims are made. In a world where (at least some) parties are inclined to be opportunistic, whose representations are to be believed? Faced with the prospective breakdown of classical contracting in these circumstances, three alternatives are available. One would be to forgo such transactions altogether. A second would be to remove these transactions from the market and organize them internally instead. Adaptive, sequential decision making would then be implemented under common ownership and with the assistance of hierarchical incentive and control systems. Third, a different contracting relation which preserves trading but provides for additional governance structure might be devised. **This last is that Macneil**

refers to as neoclassical contracting (Macneil 1985). As Macneil observes, "Two common characteristics of long-term contracts are the existence of gaps in their planning and the presence of a range of processes and techniques used by contract

planners to create flexibility in lieu of either leaving gaps or trying to plan rigidly." Third-party assistance in resolving disputes and evaluating performance often has advantages over litigation in serving these functions of flexibility and gap filling (Williamson 1979).

- **Relational Contracting:** The pressures to sustain ongoing relations "have led to the spin-off of many subject areas from the classical and later the neoclassical, contract law system, e.g., much of corporate law and collective bargaining." Thus, progressively increasing the "duration and complexity" of contract has resulted in the displacement of even neoclassical adjustment processes by adjustment processes of a more thoroughly **transaction-specific, ongoing-administrative kind**. The fiction of discreteness is fully displaced as the relation takes on the properties of "a mini society with a vast array of norms beyond those centered on the exchange and its immediate processes." By contrast with the neoclassical system, where the reference point for effecting adaptations remains the original agreement, the reference point under a truly relational approach is the "entire relation as it has developed . . . [through] time. This may or may not include an 'original agreement'; and if it does, may or may not result in great deference being given it. (Williamson 1979)."

2.3. Legal Foundations of Production Contracts

In some countries contract production relationship are based on historical experiences and there are not special legislations. When the disputes are carried to the court, some other basic legislation such as civic code, contract law or law of obligations has been considered. In some countries, ad hoc legislation has been enacted which creates a special legal contract type and applies specifically designed provisions to certain aspects of the relationship. Although different in scope, such legislations generally create minimum requirements regarding contract form and content, essentially to ensure that producers are fully informed of their future obligations, and establish dispute resolution mechanisms intended to provide adequate enforcement of contracts.

Recently there are remarkable attempts to harmonize legal basis of the contract production by The International Institute for the Unification of Private Law (UNIDROIT)[3] under the Principles of International Commercial Contracts (PICC) (Anonymous 2015). The first edition of the PICC was published in 1994. **Applying to every kind of international commercial contract, the PICC may come into play with respect to agricultural contracting in several ways including, by influencing domestic laws, by application as general principles of international law, or if expressly chosen to govern a specific contract**.

Food and Agriculture Organization **(FAO)** and the International Fund for Agricultural Development **(IFAD)** are specifically engaged in supporting and to strengthen and improve relationships between farmers and the market on a sustainable way. Along with other activities FAO devotes considerable resources to contract farming by implementing national or regional development programmers, issuing publications and running a **Contract-Farming Resource Centre** on the FAO Internet website which gives access to bibliographical references, contract templates and general legal documents[4]. IFAD has the mission of mobilizing and deploying resources to alleviate rural poverty; in this context, promoting the inclusion of smallholder farmers in agricultural value chains and access to markets is one of the priority objectives to **which contract farming can contribute significantly.** It is also particularly worthwhile mentioning the current preparation of

[3] UNIDROIT is an independent intergovernmental Organization with its seat in Rome which is set up in 1926 as an auxiliary organ of the League of Nations. The Institute was, following the demise of the League, re-established in 1940 on the basis of a multilateral agreement. Its purpose is to study needs and methods for modernizing, harmonizing and co-coordinating private and in particular commercial law as between States and groups of States and to formulate uniform law instruments, principles and rules to achieve those objectives. Membership of UNIDROIT is restricted to States acceding to the UNIDROIT Statute. UNIDROIT's **63 member States** are drawn from the five continents and represent a variety of different legal, economic and political systems as well as different cultural backgrounds. Its technical approach and its working methods underscore the neutrality and universality of its work which is carried out by high-level experts in the various

fields chosen from among its 63 member States and from non-member States as well as representatives from the relevant professional communities (http://www.unidroit.org).

[4] http://www.fao.org/ag/ags/contract-farming/index-cf/en/

Principles for Responsible Agricultural Investment ("RAI Principles") within the Committee on World Food Security, in which context **contract farming is bound to attract significant attention.**

Based on consultations with FAO and IFAD, and building upon the contributions made at a colloquium organized by UNIDROIT in Rome in November 2011, UNIDROIT Governing Council agreed that UNIDROIT could usefully contribute its contract law expertise to the development of contract farming by preparing a legal guide on contract farming operations in a meeting held in 2012. The proposed guide would offer a thorough analysis of substantive law issues in different kinds of arrangements or for a particular type of contract to be precisely defined. It would identify problem areas and possible solutions in light of current trade usages and legislation. It could serve as a "good practice" reference by providing guidance for parties engaged in contract farming operations during the negotiation and drafting of contracts, thus helping to build trust between the parties and support mutually beneficial relationships. It could also provide information for law makers and public authorities dealing at a public policy level with contract farming, in particular in the context of law reform. In addition, the prepared guide could provide an additional tool available to international organizations and bilateral cooperation agencies as well as nongovernmental organizations engaged in strategies and programs in support of contract farming in developing countries.

In accordance with the Governing Council's decision, a working group that is composed of experts representing different jurisdictions and legal backgrounds has been set up to ensure the preparation of a high quality and balanced instrument, relying also upon the active cooperation of partner multilateral organizations and including an appropriate representation of producer and buyer interests. The planned group has been organized and held its first meeting in 2013.

The Convention on the International Sale of Goods (CISG) plays an important role in the globalization of contract and trade law. 85 states have adopted the CISG in 2016. It is important to state that CISG and PICC as two international documents could be directly applied only in certain cases. The CISG will apply only when parties to a sales contract are both based in CISG member countries or the rules of private international law lead to the application of the law of a CISG member. The PICC could apply to not just sales contracts, but will only directly apply if expressly chosen by the parties. However, both documents have exerted influence on the content of national laws and on the content of private contracts themselves.

In addition to these two documents at the international level, international organizations may also provide international guidance focused on contract farming. FAO is one such international organization that serves an important role by providing guidance on contract farming practices through advice for integrating good practices for responsible contract farming operations.

The involvements of the states in the process as a third party or a part of production contract schemes have been become more common especially in the developing countries. Under the industrialization and globalization, even international efforts have been observed to harmonize implementations and basic features of the contracts farming practices through improvements of legal and practical issues related to this field as summarized below.

Contracts used in agricultural production are simply agreements between two or more partners are involved. Then, first of all there must be some basic legal fundamentals for the design of such agreements. As indicated by FAO, to be valid and enforceable, all contracts, including farming contracts, should comply with **five necessary legal elements** (FAO 2012).

- Farmers and contractors must have a common understanding in the formation of the contract in the sense that they agree to the same matter and in the same sense. This must be based on an offer to contract from a party (i.e. the buyer) and the acceptance of the other (i.e. the farmer).

- Farmer and contractor consent must be free, i.e. it should not be obtained by coercion, under influence, fraud or mistake.
- In addition, farmer and contractor should have the capacity to contract for a valid farming contract, i.e. the ability, recognized by law, to assume obligations and enter into contracts (for example people who are mentally incapacitated do not usually have the capacity to form contracts).

- Such agreement should be made for a legal good or service which constitutes the obligation of farmer and buyer, such as the sale of a designated crop by the farmer and the payment of money by the buyer.
- The last requirement for the creation of a valid farming contract is that the detail of the farmer and the contractor's duties and responsibilities including the price and the method of payment (cause of the contract) has to be explained in detail.

On the other hand some general principles of contract law applicable to contract farming have been declared by FAO that, all contracts, including farming contracts should respect the following general principles of contract law to be valid and enforceable[5];

- The freedom to contract: In contract farming the freedom to contract is the liberty of farmer and contractor to enter into contract and to determine its contents without any external interference. The freedom to contract gives farmers and buyers the right to decide freely to whom they will offer their goods and by whom they wish to be supplied. Parties may also provide in the contract clauses that prevent one party or both from entering into a similar contract with a third party.
- Good faith: Farmers and buyers should act in accordance with good faith, which is the good, honest intention to behave with fairness, without causing damage to each other. They should act in accordance with good faith not only during performance but also during the negotiation of the contract. The opposite of good faith is misbehavior (bad faith) like fraud, which arises when one party has misled the other party as to the terms of the proposed agreement. Besides, bad faith also occurs when a party has been forced to conclude the contract by means of threat of harm, e.g. threats against a person, a property or also threats affecting reputation and economic interests. Moreover, misbehavior arises in the case of mistake, i.e. when a party has an incorrect understanding of facts which are crucial for its consent to conclude the contract (such as the identity of the commodity) and the other party, being aware of such misunderstanding, takes advantage of it, leading his or her contract counterpart into error. Finally, a bad faith conduct occurs when a party is in economic distress or had urgent needs and the other party having this information may use such this situation in favor of own interest.
- Force majeure and hardship: An exceptional situation that arises because of the unforeseeable events beyond the control of farmer and contractor is called force majeure. Force majeure situations may arise, inter alia, from war, strikes, civil unrest, insect plagues and disease epidemics or natural disasters such as drought, floods, hail, storms etc. in agriculture. Both farmer and contractor shall be considered exempted from liability for failure of their contractual duties and shall not be considered as breached of the contract because of this unforeseeable and exceptional situation.

Hardship is another exceptional situation beyond the control of farmers and contractors, which may arise after the conclusion of the contract, when the duty of the performing party. Such a situation may be due, for instance, to a substantial increase in the cost for the farmer of performing its obligation, because of a dramatic rise in the price of the raw materials necessary for the production of the goods. Drastic change in market conditions, such as the effect of a dramatic increase in inflation on a contractually agreed price can be given as another example. In such cases, the farmer or the contractor should be entitled to request the contracting partner to enter into renegotiation of the original terms of the contract, with the view to adapting them to the changed circumstances. In the circumstance of force majeure failures in meeting the contract conditions is excused and the farming contract is frustrated, whilst in case of hardship, the terms of the contract may be renegotiated so as to allow the contract to be kept alive although on revised terms.

- Performance: Farmers and buyers are bound to fulfill commitments according to the stipulated terms. The performance of a farming contract is the execution of its terms, by which farmers and buyers are automatically discharged of their contractual obligations. However, when a

[5] http://www.fao.org

farming contract is silent on the matter and circumstances do not indicate where performance should take place, farmer and buyer should refer to the general rule of contract law according to which the debtor is to perform its obligations at its own place of business whilst monetary obligations are to be performed at the creditor's place of business. Also, with a view to determine when a contractual obligation is to be performed, normally a farming contract fixes a precise time for performance and in such case a party has to fulfill its obligations at that time. If the contract does not specify a precise moment for performing, performance should be due within a reasonable time. The non-fulfillment of a contract. It includes complete failure to perform, as well as defective and late performance in cases where time of performance is considered essential. Sometimes parties may include in the contract the so called exemption clauses, i.e. terms which directly limit or exclude the nonperforming party from liability in the event of failure. Exemption clauses are normally suggested by the strongest party (such as the buyer) who in this process may take advantage of the weaker bargaining power of the other party (e.g. the farmer).

In application of the right of freedom of contract, exemption clauses are in principle valid. However, a party may not invoke in a contract such clauses if it would be grossly unfair to do so. This may be the case where the term is inherently unfair and its application would lead to an evident imbalance between the performances of the parties. Accordingly, where a buyer establishes an unfair exemption clause, such clause will not be valid and the farmer may obtain full compensation for the failure of the buyer.

- Damages: Any failure of contract farming obligations gives the aggrieved party the right to compensation for damages, except some special cases (for instance in case of force majeure or hardship). The non-performing party shall be liable to indemnify the aggrieved party in respect not only of the loss which it has suffered, but also of any gain of which it has been deprived as a consequence of the non-performance. In addition, it shall also be liable to compensate the non- pecuniary harm. This may be pain and suffering, loss of certain amenities of life, aesthetic prejudice, etc. as well as harm resulting from attacks on honor or reputation. The parties may provide in the contract a so-called penalty clause, i.e. a term that establishes to pay a specified penalty sum to the aggrieved party in case of non-performance. Where non-performance is in part due to the conduct of the aggrieved party, the right to damages is limited to the extent that the aggrieved party has in part contributed to the harm. It would indeed be unjust for such a party to obtain full compensation for harm for which it has itself been partly responsible. The contribution of the aggrieved party to the harm may consist either in its own conduct, which may take the form of an act (e.g. the buyer gave to the farmer a mistaken address for the delivery of the goods) or an omission (the buyer failed to give to the farmer all the necessary instructions for the crop).

2.4. Contract Structure and Standards for a Fair Contract

In practice, there are important differences between private contract arrangement and contract farming schemes. However, from the contents of the contract point of view, they may be considered similar since a private contract is simply a part of contracting schemes. A fair contract should contain reciprocal obligations with a balance between the rewards and the risks accruing to each party. Any agricultural production contract is a very complex document that defines an economic relationship that is supposed to be equally beneficial to both parties. The way the contract parties approach drafting their agreement impacts the effectiveness of their contractual relationship.

Generally, the contractor firm is the party that prepares the contract document, which is usually offered to agricultural producers on "take it or leave" basis. That is why, one of the reasons of which contract drafting is usually considered one-sided (Bolotova 2007). They make decisions on the agricultural inputs to be used and the production practices to be implemented. The contractors are assumed to act in contract drafting that it is too costly for them to get involved in renegotiation of the contract provisions with each individual farmer.

In addition, having the heterogeneous contract provisions for the same type of contract with different farmers can considerably increase the contractor's costs. On the hand the contractor firms usually do not have any serious competition in the area, while agricultural producers do not have many choices.

Consequently, this approach to draft a contract is usually considered to be beneficial to the company rather than to the agricultural producers. Drafting an efficient and successful contract requires a lot of knowledge and expertise in the areas of economics, business, law, and industry structure. In the majority of cases, the companies use a standards or routine contents (Goodhue and Hoffman 2006).

However, if a suitable standardized contract is not revised and is not adapted to a particular situation (i.e. product and geographic market), it is likely to result in major disagreements and opportunistic behavior of the contract parties later (Bolotova 2007). One of the related observations is that in many cases agricultural contracts suffer from a lack of clarity and the presence of ambiguous clauses (Miller 2003). In many cases, the contracts are composed by people without any formal legal training. The contract clauses contradict to each other. This gives an impression that the terms and conditions of several contracts are put together in the same contract without being revised.

Another important issue to consider is whether to have an oral or a written contract. A definite advantage of using a written contract is that it allows for specifying clauses that induce a certain type of behavior of the economic agents resulting in the most efficient performance. In addition, if there are disagreements, the presence of a written contract saves the time and costs of solving this disagreement. A proper approach to drafting a contract increases the probability of success.

It is very important that a production contract be in writing and that all provisions of the agreement be included in the contract. "Handshake Agreements" have worked for decades, but they are very difficult to defend in litigation or legal proceedings. If any items related to the products being produced are omitted, it is preferable to add these provisions prior to signing the contract rather than after the contract is enacted. It is extremely important that a producer, or someone designated by the producer, read the contract carefully before signing it (Fore and Thiesse 2000). Make sure that all contract language and provisions are clearly understood. If not, request clarification or adjustments before signing the contract. Be aware of vague or ambiguous language that is included that may not clearly define a grower's responsibility and liability in a contract. When in doubt on contract language, it may be best to consult an Attorney. It may be less costly to use an advisor like an attorney as a "preventive measure" before signing a contract (Fore and Thiesse 2000).

A production contract should at least contain the provisions presented below

- **Definition of the parties:** A written contract agreement definitely has a title. After having a title, some standard information is given about the parties' involved (Rehber 2007). In private contracts, in the majority of cases; agricultural production contracts define agricultural producers as independent contractors. There are two important issues relating to the legal status of agricultural producers. The first issue is whether agricultural producers are the contractor's employees (agents) or are the independent producer. On the other hand information about the contractors has been presented. They can be a private company or a public enterprise. In contract schemes, indeed, there are more than two parties such as development agencies, private companies, credit organization etc. Legal or private names, statues, addresses and legal persons who represent them if they have are the main data.
- **Product and its quality and quality features:** Any contract has to define an agricultural commodity produced or marketed under the contract. More specifically, the contract has to describe the expected quality and the quantity to be delivered. Furthermore, the contract parties can specify additional requirements to the quality to induce a certain type of behavior that would result in producing a product with the desired characteristics. In addition, the contract has to determine the quantity to be supplied. Alternatively, a procedure of determination of the amount of the product supplied can be outlined (Bolotova 2007). An important issue relating to the crop production contracts is to determine the way of the quantity supplied. The first approach is to specify the quantity as an area planted. The

second approach is to specify the quantity (in bushels or tons) that is not associated with the planted area. The former contract is less risky for the grower, as if something happens to the crop yield, the grower is not responsible for the losses as in the case of the quantity

in bushels contract. The acreage contract provision shifts some of the risks from the grower to the buyer. That means that processors should bear the yield risk if it is signed on acreage basis, farmers should bear the yield risk when the contract is signed tonnage basis.

- The responsibilities of the parties: Many contracts within agriculture are between large companies and much smaller, independent producers. This situation usually results in unequal bargaining power between the parties. In many cases the producer is offered a set contract with no opportunity to change any of the provisions of the contract. Most of these contracts are a "take it or leave it" type of contract. Many contracts include confidentiality clauses that prohibit agricultural producers from discussing the contracts with any other person. Related this issue, some countries such as USA have passed regulation that prohibits a confidentiality clause in production contracts (Miller 2003).

Many of the contracts presented to producers are often long and complex, often with contradictory clauses. It appears that many of the contracts were not written by attorneys, but by others within the organization with little or no legal training. The clauses seem to be pulled from various other contracts that have been used. These results in clauses that in one instance claim that the producer owns the crop while another clause of the same contract state that the company always owns the crop. Technical terms are often used without a definition of the term being supplied. Many times different terms are used to mean, or intended to mean, the same thing within a contract. Lack of clarity can be especially troublesome when it relates to determining the price that the producer will be paid or who actually owns the crop being grown (Miller 2003). One of the troubling aspects of many agricultural production agreements is the apparent attempt by the offered of the arrangement to shift risks and liability to the producer in amounts and types beyond which any party to the transaction should ordinarily anticipate or accept. For example, in the USA this can manifest itself in such areas as requiring unattainable non-genetically modified organism (non-GMO) levels in grain, making the producer liable for any and all damages associated with commingling of non-GMO and Genetically Modified Organism (GMO) grain, requiring different testing procedures at different stages of the handling process, being able to terminate contracts virtually at will, requiring the producer to be in compliance with state statutes in states far from the production area, and giving undue access to the producers fields and buildings (Miller 2003).

As mentioned earlier, production practices are usually specified in a way that induces a desired behavior of agricultural producers. In the case of agricultural production contracts, the decision- making process of agricultural producers is restricted relative to agricultural marketing contracts. Nevertheless, agricultural producers involved in the production contracts have some independence in making certain decisions. The contracts have to be very specific about the decisions that agricultural producers are allowed to make. When a contract is being executed, agricultural producers have to be very careful in their decision-making, and have to follow a procedure established by the contracts. Any producer's initiative that is not assigned to him by the contract might result in unforeseen costs for him (Bolotova 2007).

Inputs will be used, their qualities, ways of practice are very important clauses of the production contracts as well as production practices used. Therefore, the following aspects of contract conditions should be clarified in any production contract. The first aspect is who makes the decision which kind of an agricultural input to use. The second aspect is who pays for the agricultural input. The third aspect is who delivers this input and makes the decisions relating to its storage (if necessary). Finally, the input delivery schedule should be developed (if necessary). This list of questions has to be clarified in the case of each agricultural input (seeds, chemicals, fertilizer, etc.). According to certain types of contracts, contractor companies mandate using only certain agricultural inputs (i.e. identity-preserved grain contracts). In these situations, the processor either supplies the key agricultural input or requires the grower to buy this particular input. In both cases, the processor supervises the

production process and consults the producer on the proper use of the agricultural inputs (Bolotova 2007). Recently it has become common in agricultural production contracts to assign liability for environmental concerns. Especially in the animal production waste management is the main concern. The producer may or may not own the animals involved, but in almost every

production contract the producer owns and is responsible for the waste produced by the animals (Miller 2003).

- **Indicate the manners of delivery or collection:** The contract has to specify the following issues relating to product delivery. First of all it is indicated that who delivers the product in terms of the physical delivery. The secondly who bears delivery expenses. Third aspect is the exact description of the delivery location. Finally, the delivery schedule should be reported. If there is a need to store a commodity before the delivery, the contract should mention the party who is responsible for arranging the storage and the party who bears the storage expenses. Delivery provisions of the agricultural contracts often have very ambiguous clauses. For example, often a provision relating to the delivery point (location) mentions that the product should be delivered to the buyer location, without specifying this particular location (Miller 2003). The lack of clarity in this situation might considerably reduce the profit of a producer, if he is responsible for the delivery.
- **Determine the price:** Price determination or/and other considerations that affect paid price, manner and timing of payment such the variations in quality, quantity or manner of delivery etc. are the more important part of a production contract. Price is frequently left variable in contracts. Fixed or negotiated prices are frequently used in one to three year contracts. If the majority of transactions in a commodity are priced through such negotiations, the fixed price becomes the market price. Sometimes contract prices are established by a scale or formula that relates the contract price to various economic indicators (Buccola and French 1981). The method the contract uses to set the price is very important. Some contracts are very straightforward while others, either intentionally or unintentionally are very complex (Miller 2003).

Any contract has to clearly state the price (compensation) or the procedure to be used to determine it. The choice of a method to be employed to determine the price (compensation) depends on a number of factors. First of all, it depends on the agricultural commodity supplied under the contract. Agricultural markets have different characteristics which impact the production and marketing practices. Consequently, they influence the type of contractual relationships, and the way the price (compensation) is determined. Secondly, the price (compensation) mechanism depends on whether a particular contract is a marketing contract or a production contract. In general, production contracts determine the compensation based on either the grower performance and/or product characteristics affected by the production practices. By doing this, the contracts induce a certain type of behavior that results in producing a commodity with the desired characteristics. A few examples of the price mechanisms used by different industries are discussed in the chapter 3.

Contract duration and termination: Any contract has to clearly define its duration. The duration of the contract and the way in which it may be terminated and/or renewed have to be indicated. In addition, the procedure of the contract renewal has to be specified. The contract duration usually depends on the agricultural commodity. The results of one of the surveys of agricultural producers involved in the production contracts suggest that often contract parties do not specify contract duration at all.

Termination of a farming contract takes place when farmer and buyer are released from their contractual obligations. A farming contract may be terminated by performance of farmer and buyer's obligations. Discharge of the contract in this way takes place when performance of the contract is complete and exact, with reference to the terms of the contract. In addition, termination may occur in case of force majeure and hardship, where farmer and buyer may be excused from their obligations to perform as a result of exceptional and unforeseen events arising after the contract has been entered.

Finally, termination may arise in case of breach of contract. Breach of contract takes place when a party does not perform its obligations or where its performance is defective or late. The aggrieved party may terminate the contract only if the non-performance of the other

party is material and not merely of minor importance and it must give notice of termination to the other party within a reasonable time.

- Dispute Resolution: A standard contract has to be indicated a mediation or conciliation procedure or otherwise how disputes are to be resolved. There exist a number of options, from

arbitration and mediation to a court case. Any dispute resolution involves additional costs. In solving the dispute, the less expensive approach in terms of both money and time is to rely on a third party (arbitration or mediation). The most expensive in terms of money and time is to pursue a case in the court.

In the case of arbitration, the contract parties agree that the decision of an arbitrator is the final decision. It cannot be the focus of a court dispute. In the case of mediation, the decision can be pursued in the court. A trade association is an example of a third-party in the case of arbitration or mediation (Rehber 1998, Bolotova 2007). It has become popular with producers to seek justice through other means than the court system. Many producers are not comfortable with attorneys and they usually balk at the fees associated with a lawsuit. In their quest to find an alternative to lawsuits many producers have turned to various types of dispute resolution.

A basic problem in many agricultural contracts is the disparity in bargaining power between the two parties to the contract. If a contract or legislation requires arbitration or mediation, the party with the stronger bargaining power usually starts with the stronger position. The reason for this is simple. Usually the one with the stronger bargaining power generally has the most resources. As a result, it is much easier for them to go into mediation or arbitration and to prolong such cases (Miller 2003). If a company is looking to get out of a contract with a producer and mediation or arbitration is required, it would mean little to a company to throw the contract into the process. Even if they know they have little chance of winning. There are no disadvantages for them to go to dispute resolution. They not only gain time, which will more than likely be in their favor, but they may get something out of the process. There must be some clauses to clarify the ways of dispute solution. Some producer groups are totally against arbitration procedure as a dispute solution and require a clear prohibition of binding arbitration clauses.

It is important that, in the dispute settlement clause, parties provide for the place to settle their dispute as well as the language to be used in the agreed proceedings. Finally, the law applicable to the contract envisaged by the parties may give some responses such as what to do in case of contingency, breach of contract or new elements that obstacle or modify the conditions on which a contract was conclude (FAO 2012, Anonymous 2015).

- **Assignment of the contract:** Contract must be signed by both parties and sometimes must be authorized by a body that both parties agreed on. It is a fact that, each agricultural production contract will be unique, depending on product concern, the nature of the relationship between the parties, the terms of the contract and the bargaining position of the parties.

After reviewing legal and practical bases of a production contract **some practical issues which have to be considered involving in such a relationship are listed below** mainly from the producers point of views based on the explanations above and some sources such as; (Competitive and Fair Agricultural Markets Act of 2006 (p.2307), Rehber 2007, Miller 2003, Hamilton 1994, Anonymous
1995).

- **Investigate and learn the basic information about the person or company that you having a contract:** There is no reason to assume the contract being offered is fair or that your interests are protected. Production contracts are not arm's length business transactions and must be considered in this light. Hence, you have to basic information about the other party although you may trust the person or/and the company you are dealing with. This rule is especially important because you will usually be offered written contracts on a take-it-or-leave-it basis and given no real opportunity to negotiate the terms. Recognize that you most likely will be bound by the terms of the contract-that you are not likely to be able to get out of the contract if you later find out you do not like it.
- **Having information about the financial structure and performance:** This knowledge is essential to ensure that you will be paid for what you deliver. This is especially important

when the contract calls for the passage of legal title upon delivery or when there is a delay in the payment. In these cases, you become the other party's creditor, and in most situations your claim is unsecured other than by the contractual promise to pay. Before signing a contract, ask yourself what will happen if the buyer goes out of business or doesn't pay.

- **Proposed contracts are always subject to negotiation:** While most production contracts will be printed on typed forms offered on a take-it-or leave-it basis, you do have the freedom to negotiate. A term that is in writing can still be changed if both parties agree to do so. Of course, your ability to obtain more favorable terms will depend on your market power to negotiate with the company and whether other growers are willing to sign the contract. Try to get everything in writing either before or after the contract is signed. If the terms are not in writing and signed by the company, they probably are not considered part of the contract.
- **Do not rely on oral communications made by the company**, either before the contract is signed or during performance. If what is being said is important to the relationship, be sure it is put in writing, signed by both parties and incorporated as an amendment to the contract. If you cannot get it in writing, be sure to keep copies of any documents, such as letters, payment sheets and checks that you can use to show what was agreed.
- **A certain time length (like three days) has to be given to the producer to change his/her mind and cancel the agreement without penalty after signing the contract.** Any confidential provision must also be prohibited.
- **Unfair trade practices have to be banned:** To avoid hold-up problem, contractor has to be forced to pay some amount to meet producers damages (because of the high idiosyncrasy of investment) when he/she terminates contract one sided without any breach of contract by farmer.
- **If contract is used as collateral by both parties, the right of each side must be underlined:** Farmers need to have a right for the payment for their products from the integrators through claiming a lien. The lien secures the amount to be paid for the product by the processor to the grower or producer.
- **Carefully consider possible benefits of the contract with any possible increases in price:** Try to fill the contract, even if market price is higher than the contract price on the date of delivery. The buyer may be able to not only sue for the amount of the contract, but also for the difference the buyer has to pay to cover the contract, which may be much higher than the current market price. The buyer may also be able to recover attorney's fees.
- **Read and understand the contract before signing it:** Contract terms play a fundamental role in determining the rights and duties of the parties. Generally contracts are designed by the contractor firms. The firms must present contract to the producer with honest and accurate information. Contract must be easy to read and understand. Mostly education level of farmers is not so high enough to understand complex formulas and some other quality measures. That is why simplicity of writing is important; otherwise necessary explanation has to be provided to the farmers before signing. Farmers have to try to renegotiate any terms that they think that those are unfavorable to them. If the terms of a contract are unclear, they keep on asking questions until they understand it. They always should consider having their attorney to review the contract and seek legal advice. If there are any changes in the agreement, make sure they are in writing and separately signed by the company representative. The fact that you believe the contract was amended doesn't mean it was. Most contracts specifically provide that the only thing enforceable is what is in writing.
- **Keep good records of your performance:** It is always a good idea to keep good records when legal issues are involved. This is especially true in the performance of production contracts. Keeping records related to all communication and contact with the contractor would be so useful. Besides, having samples of what was produced and the results of independent quality tests, such as on the germination of seeds and some other quality factors. These records are not only be used for planning future activities but also necessary in the case of dispute and conflict with the contract terms.
- **Being in contact with the other party:** Contract should be in balance to determine the responsibilities of parties involved about production and marketing practices. Therefore, being in efficient coordination in realizing these practices is very important. Communication between both sides is very important in resolving uncertainty and in preventing

misunderstandings. Being in contact with the other side about your performance, questions or concerns helps to build a smooth, productive relationship.

3. *CONTRACT FARMING IN PRACTICE*

There are not available worldwide comprehensive data about contract farming. Recently, a remarkable study was organized by OECD in cooperation with IFAP (International Federation of Agricultural Producers-presently World Farmers Organization (WFO)) based on a survey with a 79 farmers' organizations. But only 14 responses were received. The reason of low response rate is a fact that many producer associations do not have data on the use of contracts readily. However, it is possible to observe a certain difference in contract use between OECD and non-OECD respondents. For example, Brazil and South Africa associations indicated that use of milk contracts does not exceeds 10% and 20% respectively while OECD countries typically responded that a majority of milk production is governed by contracts (Vavra 2009).

The responses to the second part of the questionnaire indicated that the main contract clauses are used across commodities in a similar way. The use of confidentiality clauses was indicated only in one case for wheat and maize, so that these clauses do not seem to be an important feature of contracts used by members of the surveyed producer associations. Exclusivity clauses, disabling an open market alternative, were featured more often than confidentiality clauses. Traceability was an important clause mainly for fruits and livestock products but less so for crops. Most often cited price mechanisms were fixed-quantity-and-price, and price formula based on quality and product attributes, while a fixed-price-only formula (without a quantity specification) was cited only once (for crops). A price formula based on the spot market was used mainly for arable crops, while formula based on production performance was used at least once for all products with the exception of beef and dairy. None of the respondents indicated that contracts specifically included value for a service provided by a farmer. A majority of respondents indicated that a typical period for a contract was less than 12 months and contracts were re-negotiated each season. None of the respondent indicated the use of automatically renewed contracts (Vavra 2009).

The survey results indicated that dairy production contracts are in use in a vast majority of the countries that responded. In some countries, the cooperative way of organizing the sector, with specific statutes, replaces dairy contracts. Production contracts are used by a wide majority of producers (>60% of producers) in the countries that responded and producers' experience of them is generally good. In a few countries, contracts can even be oral (e.g. Austria, France). Existing dairy contracts are mostly governed by the general commercial or civil law of each country. In a few exceptional cases, a special government decision prescribes operators the terms of a typical milk sales/purchase contract (e.g. Lithuania). A dairy contract typically contains the following information: the parties agreeing to the contract, the price and payment terms, the volume purchased, the term of the contract and notice of termination, the delivery terms and sampling modalities, requirements concerning milk quality and composition, hygiene requirements, liabilities, premium and fines. However, a majority of contracts are not harmonized at national or even organization level. A "one-size-fits-all" approach may not be acceptable and workable in practice. On the other hand, a complete lack of harmonization (a minimum common ground for contracts) might run the risk of distorting competition. There are still big differences among European countries in the way in which the content of a dairy contract is approached. On one hand there is a minimalist approach targeting mainly volume and price and leaving room for operators to add other terms; on the other, a detailed approach seeks to focus on each and every part of a contract (Vavra 2009).

OECD has also collected data at national level via, Ministries of Agriculture. Only 9 questionnaires were replied. The result shows that data on contract use at a national level is available in Finland, Japan and the United States. Both surveys made it clear that collecting data on the use of contracts in agriculture is a complex undertaking (Vavra 2009).

The United States also indicated a presence of sector specific specialized surveys, together with Germany and Slovakia. The data clearly illustrate the wide differences that exist

among countries and commodities in the extent and evolution of contracting in the agro-food sector. For example, in Japan nearly half of all poultry farms and about one quarter of hogs' farms use contracts. In the same country, the percentage of livestock farms under contracts has decreased from 2000 to 2005, while the percentage of farms producing fruits and vegetables under contract nearly doubled. One of

the most important findings of this survey is that **the respondents to the survey indicated the need for farmers to organize themselves within a certain product group to provide contract guidance but also to better meet buyer's demands and improve bargaining position.** The importance of bargaining power was reiterated also in COPA-COGECA survey which underlined the value of collective negotiations and contract harmonization (Vavra 2009).

Despite the lack of data at national levels, however, fortunately there are considerable amount of studies on national level even if most of them are product specific. In this chapter, a summary about the world-wide implementations of contract farming has been presented in two main subheadings for developed and developing countries. Comprehensiveness of the presentation about countries depends on the availability of the data and information. Thus, while developing countries have been evaluated continental basis and chapter of the developed world includes rather detailed explanation about union (European Union) and national levels (USA and Turkey) depending on the data and information available at sector levels.

3.1. Contract Farming in Developed World

The use of production contracts has been increasing in the developed world. For example, contracts governed 39 % of the total value of agricultural production in the USA in 2007 up from 12 percent in 1969 (MacDonald and Korb 2011). In the European Union (EU), the production aid system has been encouraging contract farming. In the other countries, for example, increased level of imported vegetables has become a considerable political issue in Japan. Contract growing has replaced use of wholesale markets for increasing share of domestic produce, and government has recently announced new support measures for domestic contract growers (Ito and Dyck 2002). In the improved feed sector, the spread of contract farming has accelerated a narrowing of the genetic base of Western agriculture, which has accompanied the development and widespread use of new crop varieties (Burch and Rickson 1990). In addition, bio-technology companies are using vertical coordination by responding to special markets and involvement in contract farming (Shimoda 1994).

3.1.1. Contract Farming in the EU

There is not much detail information about contract farming in the EU as explained before. Contract relationships in sugar beet processing and dairy sector have been analyzed after a general brief of contractual practices under this heading.

There are an EU wide Common Agricultural Policy (CAP) and regulated markets. This structure, of course has a considerable role in the development of contract farming union-wide. For instance, one of the observed changes in the Spanish food industry after joining the EU is the increase of the contractual arrangements. However, in Spain the number of the farmers involved in contract farming reached 77000 in 1988 while it was only 28000 in 1986 (Erkan et al. 1993).

Despite those union wide policies there are differences among countries from contract farming practices view point. When the contribution of vertical integration and contract farming to the **German** agriculture was analyzed, it was concluded that these approaches can result in substantial advantages for cooperating farmers but do not automatically improve the competitive position of the parties involved (Zurek 1993). In Germany, vertical integration through contract production is already common in the dairy, poultry and sugar sectors accounting for around 38% of agricultural production. Outside these sectors, however, only about 6% of output is produced under contract. This type of integration benefits both sides and is likely to continue (Grosskopf 1994).

Contracts have played an important role in **Denmark** as in the other Scandinavian countries. Modern forms of contract farming in dairy have been around in Europe since the 19th century, as the traditional Danish dairy cooperatives themselves were a form of contract

farming (Delgado et al. 2003). A study carried in Denmark proposes ten main rules for a fair contract under three aspects as coordination, motivation and the transaction costs based on the Danish experience along with related theories (Bogetoft and Olesen 2002).

Norway is an interesting example shows an increasing importance of contractual arrangement in agriculture. It is well known that agriculture sale cooperatives have important shares in processing

and marketing of agricultural products as other Scandinavian countries (Rehber 1984). Before 1990's, contract farming did not use as a governance structure with a few examples in vegetable and meat sector. This situation is probably due to the government's supports and strong agricultural cooperatives to regulate markets (Borgen and Hegrenes 2005). After 1990's some state owned monopolies were privatized into public limited companies in many sectors. State was never directly involved production and marketing activities of agriculture as in the other sectors in Norway. Agricultural markets have become less regulated while concentration has been increased in the retail sector. Four food chains already had almost 99% of the market. In this structure market power shifted to some extent from processors to retailers. And retailers have tended to contact directly producers through contracting. Besides, changing in consumers preferences and increased interest food safety and traceability have affected to use contract more common (Hegrenes and Borgen 2005). Food safety issues and traceability systems become a part of production contracts. It is also argued that, production contracts along with sales contracts will become more common in Norwegian agriculture in near future. Even some agricultural cooperatives will use production contracts (Hegrenes and Borgen 2005).

A study based on the data of the Agricultural Census of **Italy** shows that contract arrangements are closely associated with farming in entire regions and reflect the state and conditions of agricultural development in each of them. This suggests that contract farming is a continually evolving process and also determines that agricultural development is linked to overall development (Pecci and Lipparini 1993).

In **France, Germany, Italy** and **Spain** standard poultry meat production is mainly organized through integrators. This process was started in the 1970s in Brittany as part of a push from feed compounders to integrate forwards whereas in the 1980s and 1990s integration reflected more of a backward push from slaughterhouses. The share of the four largest companies in the output of the sector had reached 57% by the year 2000. Integrators own their processing plant and often also the hatchery and the feed mill. Broiler farmers remain the owners of production buildings, but most technical choices (from one day chicks to feed suppliers, or even the type of buildings) are made by the integrator, who also plan chick placements in coordination with the slaughterhouses and market needs. Producers are often organized in production organizations (producers groups, mainly cooperatives), which negotiate the terms of the contracts with the industry. This is the situation in, for example, France and Germany. In France, most contracts afford some guaranteed margins for producers (Caspari et al. 2010).

In some EU countries, for example, the **Netherlands, Belgium and Poland**, the production of poultry meat is not integrated. This means that each link of the production chain is independent of the others. Slaughterhouses, hatcheries and feed mills are separate independent companies and broiler farmers operate independently. Farmers buy the day old chicks from a hatchery and the feed from a feed mill. The birds are grown and sold to a slaughterhouse. This is done based on a long-term agreement for the supply of chickens. In the integrated system the broiler farmer has a contract with an integrator who delivers the day old chicks and feed and collects the grown birds for slaughter. The consequence of the non integrated system is that farmers are more directly confronted with the fluctuations in the markets for feed and broilers (Caspari et al. 2010).

In **Finland**, 80-90% of hogs and dairy farms respectively use contracts and this share has been rising. A much lower share was reported for wheat although this also has risen. On the other, hand the percentage of beef farms using contracts seems to have diminished considerably in the last 5-10 years.

In many agricultural markets, bargaining associations or bargaining cooperatives are frequently formed by farmers and processors to coordinate their production as will be discussed more detailed in next chapter. For example, Bijman and Hendrikse (2003) observed an increasing number of bargaining associations in the Dutch fruit and vegetable

Industry (Bijman and Hendrikse 2003). Duvaleix et al. (2003) and Garnier (2000) reported bargaining cooperatives in the French dairy and vegetable markets, respectively. As both farmers and processors benefit from agricultural policies, the change in policies may affect the way that they organize their negotiation (in other words, the

bargaining structure) and hence influence their coordination of production. Therefore, the question of how the policy reform can change the bargaining structure needs specific investigation (Caspari et al. 2010).

Vertical integration was widespread in state-controlled food supply chains formerly state controlled states in Central Europe and countries in transition. It was most common in the collectivist systems where production at various stages and the exchange of inputs and outputs along the chain was coordinated and determined by the central command system. The agricultural supply system was fully integrated and completely state-controlled (Rozelle and Swinnen 2004). Production, processing, marketing, the provision of inputs and credit, retailing, etc were all directed by the central planning authorities. Although there were some variations in countries in the extent and scope of control, this was the basic system extending from Central Europe to the Soviet Union.

This system of state intervention and control and, with it, the vertical coordination has undergone tremendous changes in the 1980s and the 1990s as a global process of liberalization induced dramatic changes in many of these regions. In the transition world, the liberalization of prices, trade and exchanges, the privatization of the state enterprises etc. removed much of the state control over the commodity chains as well as the vertical coordination in the chains. Similar processes of privatization and liberalization of domestic and international commodity and financial markets reduced the control of the state and vertical coordination in many developing and emerging economies (Maertens and Swinnen 2006).

Food and agricultural commodity supply chains in developing and transition countries have undergone tremendous changes in the past decades. An important part of these changes is the decline of state controlled vertical coordination in commodity chains in the 1980s and 1990s and the emergence and spread of private sector driven vertical coordination in more recent years. The importance of private VC is increasing in developing and transition countries. At the end of the 1990s, in the Czech Republic, Slovakia and Hungary, 80% of the corporate farms, who dominated farm production in these countries, sold crops on contract, and 60-85% sold animal products on contract; numbers which are considerably higher than the shares of farms in the US and the EU. A survey of agri-food processors in five CIS countries (Armenia, Georgia, Moldova, Ukraine and Russia) found that food companies which used contracts with suppliers grew from slightly more than one- third in 1997 to almost three-quarters by 2003 (Swinnen and Maertens 2006). Some studies show that the dominant motivation for farms to involve contracting in Central Europe was guaranteed access to markets (52% of the farms listed this as their primary motive) and to a lesser extent guaranteed prices (21%).

After this short introduction information about sugar beet and milk processing industry in the EU have been summarized rather detailed below.

3.1.1.1. Sugar Beet Processing

The EU is the world's leading producer of beet sugar, with around 50% of the total. However, beet sugar represents only 20% of the world's sugar production; the other 80% is produced from sugar cane. Most of the EU's sugar beet is grown in the northern half of Europe, where the climate is more suited to growing beet. The most competitive producing areas are in northern France, Germany, the United Kingdom and Poland[6]. A European framework for the sugar sector regulates prices, quality and quota since 1968. Quotas are attributed to the processing units and not to the producers. 95% of the production is marketed at the internal European market. Contract relationship is common in this sector. For example, a long history of contracts within the Belgian sugar sector has been observed. Contracts need constant modification according to changing situations. Contracts are just a tool to articulate inter-professional sugar agreement at the local level. In spite of the large number of farmers' organizations, Belgian sugar beet producers are organized in one

national organization which negotiates on their behalf with the processors. Processors are also organized in one national union. Farmers have a committee in every processing unit. They can

[6] http://ec.europa.eu/agriculture/sugar/

monitor the quality of deliveries and counter expertise in case of doubt. The framework was changed in 2006, which induces uncertainty in the sector. Based on the European sugar framework, national representatives of producers (CCB) and processors (SUBEL) negotiate inter-professional agreements, which are binding for all actors. CCB has been implicated in Belgian politics for more than 60 years. CCB improved quality control and generated its funds by charging a supply levy (Claes 2004). Belgian experience highlighted the importance of a strong farmers' association which negotiates on behalf of the farmers. It also demonstrated the facilitating role played by the institutional framework (the European sugar framework) under which inter-professional agreements are concluded at national level. These agreements facilitate the final contractual arrangement at local level between farmers and millers. Contracts are a response to the prevailing environment requiring constant modification according to the dynamics of the environment. Quality control and the ability to counter expertise in case of doubt are essential in defending farmers' rights (Claes 2004). The sugar quota goes hand in hand with the minimum price for beet under quota. The minimum price for beet under quota redresses the balance in negotiations between beet-growers and manufacturers, especially given that farmers cannot choose their factory as they need to deliver their beet, which is perishable and for which there is no other market, to the nearest factory as quickly as possible.

Producer organizations are a prerequisite for the negotiation of inter-branch agreements. The proposed abolition of the sugar quota and thus the minimum price for beet under quota and the introduction of the requirement for written contracts run entirely contrary to the aim of strengthening the position of farmers in the food chain.

The existing contract practices in the sector are satisfactory. It is therefore vital that inter -branch agreements, pre-sowing supply contracts and all minimum conditions for the purchase of beet laid down in EU legislation, especially Article 16 and Annex II of Regulation (EC) 952/2006. Furthermore, the sugar quota and the minimum price for beet under quota give farmers a predictable and stable income. Finally, in order to ensure a transparent market, all the measures featured in Articles 13, 14 and 15 of Regulation (EC) no. 952/2006 regarding the creation of average prices, information on prices and the compulsory release of price data, which would be abandoned as a result of the Commission's proposal to abolish the sugar quota, must be maintained[7].

In its legislative proposals for the CAP post 2013, the European Commission has proposed abolishing certain measures that are fundamental to the EU sugar regime on 30th September 2015, such as sugar/isoglucose quotas, the minimum price for beet under quota, export refunds and **legislative provisions establishing terms for supply contracts and conditions for the purchase of beet in Regulation (EC) no. 952/2006.** The European Commission has not proposed any concrete measures regarding producer organizations and inter-branch organizations or inter-branch agreements in the sugar sector **except for compulsory written contracts between beet growers and manufacturers.** Nonetheless, it has proposed maintaining the reference price for sugar and eligibility of sugar for private storage aid and measures against market disturbance beyond 30th September 2015. The proposals for the abolition of quotas and the minimum price for beet under quota are totally unacceptable for Copa-Cogeca[8].

3.1.1.2. Dairy Industry

Above mentioned OCDE survey results indicated that dairy production contracts are in use in a vast majority of the countries that responded. In some countries, the cooperative way of organizing the sector, with specific statutes, replaces dairy contracts. There is a remarkable change in the dairy sector of EU (27). The European Milk Board (EMB) is an umbrella organization of producer organizations in Europe. The Board has 19 members from 14 European countries including the non- member state Switzerland and the prospective member state Croatia, representing about 100,000 milk producers. EMB stands for

forward-looking, sustainable milk production in every region of

[7] The Common Agricultural Policy post 2013, The sugar sector, The reaction of EU farmers and agro-cooperatives to the legislative proposals for the EU sugar sector after 2015

[8] http://www.copa-cogeca.be/img/user/file/SUCRE2012/version%20E.pdf

Europe that enables farmers to earn a decent living from their labor. The basic prerequisite for this is a milk price that covers the average milk production costs[9]. The European Milk Board lobbies for milk producers in Europe. EMB's history goes back to the year 2002 where the CAP reforms at this time – the so-called "Luxembourg Reform" – have left dairy farmers in a weakened position. The foundation of the EMB can be understood in this context. Already before, in 1999, there have been informal contacts between producer organizations from Italy, the Netherlands, Belgium or Denmark. Some rather informal meetings of representatives were organized at Amsterdam airport and Hamburg airport in 2004. In 2006, these networking efforts culminated in the formal foundation of the EMB which maintains an office in Germany. The EMB is an effort to organize national associations of dairy farmers on a European level. In the future, EMB might support national bargaining associations in their bundling efforts, also by conducting lobbying activities on a subordinate level. EMB today organizes meetings of all members twice a year and the board of directors meets about ten times a year. In elections of the board, each membership organization has one vote. The board of directors consists of seven members and there has to be at least one member from each out of four regions. Fees are collected from the membership organizations. Contrary to the primarily economic objectives of the producer organizations, the aims of the EMB are largely political. Public relations, informing the public on the situation of dairy farmers and influencing positively the public opinion regarding dairy farmers, are an additional objective. The main objective of the EMB, however, is to influence policies in the interest of dairy farmers with the final target to reach higher milk prices on the producer level. The EMB provides market information and price comparisons and wants to establish a cost monitoring body on the European level, which shall serve as a reference for adjusting production quantities to achieve a cost-covering price.

As an umbrella organization, largely engaged in lobbying, the EMB is not itself positioned in the food chain or in direct engagement with downstream firms. EMB tries to understand the position of each player and is willing to engage in an open dialogue with dairies and retailers on all issues. In the view of the EMB, simply blaming dairies or retailers for their behavior will not advance the interests of farmers and communication is seen as essential for any improvement. Critical points are the many mergers and acquisitions in the dairy sector with ever more powerful players emerging. Some mergers have also resulted in new governance structures and disempowerment of farmers. Contrary to the arguments presented by managers, the formation of joint stock companies owned by cooperatives, have not only been founded to attract outside capital but can be understood as a way to disempowered farmers. Also volume premiums as paid by many large cooperative dairies are seen as an issue which has created much conflict.

The EMB itself is not much influenced by national regulations. It welcomes all national policies which allow the bundling of large amounts of milk. The common practice of exclusive delivery of all produce to one dairy company and the practice of contract durations over sometimes several years – especially in the case of cooperatives – are seen as a hindering factor for arriving at a "fair" bargaining position for farmers.

A new program so-called "Milk Package" was designed with a view to the longer-term future of the dairy sector following the end of the quota system in 2015. It has been fully applicable since 3 October 2012. The package provides for written contracts between milk producers and processors and for the possibility to negotiate contract terms collectively via producer organizations. It also sets out new specific EU rules for inter-branch organizations, allowing actors in the dairy supply chain to dialogue and carry out certain activities. The measures established by the Milk Package will apply until mid-2020. Milk Package sets some new rules as following[10];

- Member States have the possibility to make written contracts between farmers and processors compulsory and to oblige milk purchasers to offer minimum contract durations to farmers. The contracts should be made in advance of delivery and contain specific

elements such as the price, volume, duration, details concerning payment, collection and rules for force majeure. All

[9] http://www.europeanmilkboard.org/emb.html
[10] http://ec.europa.eu/agriculture/milk/milk-package/index_en.htm

these elements should be freely negotiated between the parties and farmers may refuse an offer of minimum duration in a contract. Deliveries by a farmer-member to its cooperative are exempted from this contract obligation if the statutes or rules of the cooperative contain provisions that have similar effects as the prescribed contract.

- Farmers can join together in producer organizations (PO) that can negotiate contracts terms collectively, including the price of raw milk. The volume of milk that a PO can negotiate is limited to 3.5% of the EU production and to 33% of the national production of the Member States involved. For Member States with a production of less than 500 000 tones, the limit is set at 45% of national production instead of 33%. This measure is designed to reinforce the bargaining power of milk producers. The limits allow negotiations between POs of approximately the same size as a major dairy processor while maintaining effective competition on the dairy market.
- Member States are allowed, under certain conditions, to apply rules to regulate the supply of PDO/PGI cheeses upon request of a producer organization (PO), an inter-branch organization (IBO) or a PDO/PGI group. This measure is aimed at ensuring the value added and quality of cheeses with a protected designation of origin (PDO) or protected geographical indications (PGI), which are particularly important for vulnerable rural regions.
- Specific EU rules for inter-branch organizations in the milk sector allow actors in the dairy supply chain to dialogue and to carry out a number of activities. These joint activities concern, among others, promotion, research, innovation and quality improvement, for a better knowledge and transparency of production and the market.
- Finally, so that developments of the market can be closely followed after the milk quota regime expires; timely information on delivered volumes of milk will be provided.

It is argued that the new Dairy Package created a need to an additional layer of regulation for **producers who are already have contracts with collectors and processors**. It is also indicated that it will provide a net of protection and improve the bargaining power of producers (O'Donovan 2012). The regulation will introduce standard-form contracts which is presently clearly disadvantageous for producer as being extremely short (O'Donovan 2012). This first insight into the future of dairy contracts in Europe will allow the COPA-COGECA Working Party on Milk to launch a further internal debate on possible ways how contracts might evolve all things being equal in the future. Based on the outcome of this debate, the group will continue to develop a common strategy for the future of the EU dairy sector. **This strategy could be based on the premise that with the phasing-out of milk quotas, new commercial ways will need to be found by the sector to plan milk volume** (Vavra 2009).

On the European level the EMB is criticizing the recent developments of the CAP, which historically have been the main reason for its foundation. **A cost-based pricing by limiting supply on the European level is seen as essential. The system should have the objective to achieve a fair split of the profit margin for milk between farmers, dairies, and retailers. The current situation is perceived as highly unfair, because dairies and retailers operate at profits, whereas farmers operate at loss.** In this regard, the "Canadian Model" is seen as a good way to support dairy farmers. EMB reports that in Canada the **"Canadian Dairy Commission" in many instances acts as an intermediary between dairy companies and farmers.** Implemented instruments – among others – include price support for some products, bundling of all milk, and the smoothening of seasonal and other fluctuations. At the same time "The Canadian Milk Supply Management Committee" serves as a roundtable and communication platform for the whole industry, including farmers, dairies and consumers.

As a counter example to the Canadian experience, the developments in Switzerland are cited. According to the EMB, the political laissez-faire attitude in Switzerland has resulted in a situation where "dairies are the policy makers." **Swiss dairies are now in an even stronger position to manipulate quantity and prices in their interest which has worsened the situation of dairy farmers.** The EMB highlights that policy makers have to play a much stronger regulatory role in the dairy market than this is currently the case in Switzerland.

The “milk package” is seen rather critically by

EMB. Most importantly, farmers should have the possibility of multiple memberships in cooperatives and producer organizations. Some bargaining associations have been established as a response of changing structure of dairy market in the EU. One of the problems at the dairy market is provided by the on-going reforms of the CAP i.e. liberalization and structural changes are realistic threats for the existence of many dairy farmers. Expansion of the size of dairy processors and retailers are the main problems. Farmers cannot avoid that their ever increasing processing cooperatives will have to introduce structures of internal governance and control which stray away from traditional cooperative principles like direct democratic control and self-management.

There is different development in the member states. For example, it used to be a popular belief in Denmark that the cooperatives preferred to be 'masters of their own house' without resort to the legal system at large. But it was demonstrated to the contrary that the Danish cooperatives frequently resorted to legal advice and the court system (Henriksen et al. 2012). The legal background (rules of the game) permitted the enforcement of contracts (play of the game) which allowed a successful cooperative movement to emerge, solving various incentive problems associated with cooperatives in general and the dairy industry in particular. Moreover, this development was already apparent from a far earlier date than most other countries, taking off already in the 1880s. In the late nineteenth century, Danish butter increased both its market share and price in the important English market. Successful development of cooperation is critically dependent upon the homogeneity of economic interests among members (Henriksen et al. 2012). In a seminal article from 1951, Kindleberger pointed to the social cohesion in the Danish countryside which enabled farmers to create the necessary institutions. That may well be true as far as the establishment of cooperatives go. They did not emerge and thrive in a legal void, however, dependent only on informal trust. Instead they utilized the freedom to write their own statutes, which they subsequently monitored and enforced. Henriksen et al. (2012) argued that neither cultural homogeneity nor a trust promoting culture was sufficient conditions for the success of the cooperative movement in Denmark. Danish contract law assisted them in this by enforcing contracts, which were economically meaningful, but which might not have been available in other jurisdictions such as Ireland (Henriksen et al. 2012).

In Germany, approximately 90000 dairy farmers sell their produce to roughly 100 dairies, many of which are cooperatives (about two thirds by market share). In spite of this large share of producer- owned processors, German dairy farmers are threatened by recurrent patterns of price fluctuation and an in general low level of prices. This leads to a situation on the market in which milk producers get the short end of the stick in the supply chain. As a consequence, rapid structural changes happen in the dairy sector and over the last ten years half of the dairy farms in German had to shut down business. Given that the law making bodies in Germany explicitly encourage cooperation among producers and the bundling of agricultural produce, some German dairy farmers in 2007 decided to form the producer organization MEG (Milcherzeugergemeinschaft-Milk Board) (Hanisch and Rommel 2012).

The main aim of the newly established producer organization named MEG is to reach a "fair" milk price. The term "fair price" is defined as a price which enables farmers to cover all costs related to production. This is also reflected in the fact that the main benchmark for price negotiations with MEG are costs of producers, not overall demand at the market. MEG also advocates binding contracts and rules of conduct for trade between farmers and their dairies in order to make the price received by farmers more predictable. Currently, MEG in Germany has 18000 members. Only active dairy farmers can become members. This rule has been made to address a problem, frequently observed in dairy processing cooperatives. The main aim of MEG is to bundle a large share of dairy produce to arrive at a better bargaining position vis-à-vis dairies and eventually at a cost- covering price. Costs should explicitly be considered to calculate a binding minimum base price on the national level. These prices should, however, not be achieved by subsidies, but through a shortening and control of

supply to be implemented by a European monitoring body.

At the time of the interview, MEG's self-assessment of their performance was rather disenchanted. In their efforts to bundle dairy produce, they represent about 20 percent of the

German dairy farmers and about 17 percent of the German milk. According to their own assessment this is not sufficient to substantially influence prices in the future. The main limits for further bundling are currently seen in the "aggressive behavior" of larger processors which strongly discourage farmers from membership in a bargaining association.

Until now, MEG has not been engaged in direct price negotiations with dairies anyway and farmers receive the "normal" prices their respective dairies pay. In the years to come, MEG will try to build up an own (pooling) infrastructure for bundling the produce with the final aim to negotiate prices with (processing) dairies. Even though MEG has political positions and frequently comments on agricultural policy, it explicitly defines itself as a producer organization with the sole (economic) objective of bundling produce (Hanisch and Rommel 2012).

According to MEG, former cooperative members were very unsatisfied with their shrinking influence in decision-making processes in "their" firms. Low prices and the infinite quest for growth are not seen as a way forward and many dairy farmers view the management (control) as largely detached from farmers' (owners') interests. In some instances it was also reported that conflicts between large and small farmers were aggravated by the payment of volume premiums, in particular by large dairies. This has led to a decline in cooperative spirit and eventually rendered a formerly "special" and trustful relationship of farmers with their cooperative dairies into a "normal" business relationship, often marked by a lack of trust. It was also pointed out by MEG representatives that some of the large cooperative dairies have a substantial share of non-dairy farmer members with a relatively high influence on decision-making and interests different from those of dairy farmers.

Interestingly, **MEG does not differentiate between cooperative and investor-owned dairies.** The matter for MEG farmers is the fair price. In the focus interview, MEG also has highlighted the somewhat tense relationships with other agricultural associations, especially the German Farmers' Association which they criticize for actively misinforming farmers on their rights to bundle their produce. This has led to much skepticism of farmers vis-à-vis producer organizations (Hanisch and Rommel 2012).

As mentioned above, MEG is not primarily engaged in lobbying activities, but is nonetheless occasionally commenting on political issues and contributes to the formulation of positions via the BDM and the EMB. Apart from the desire for a more regulated market with a monitoring body responsible for controlling supply in alignment with demand and thereby ensuring higher prices, MEG is especially interested in preserving the achievements of the national "Marktstrukturgesetz" in order to maintain the bundling possibilities necessary for MEG work. **Other issues highlighted are the desire to arrive at a nationally binding base price for milk that reflects the costs incurred by farmers.** Even though it is acknowledged that there will still be some farms that go out of business, the pressure on dairy farmers is perceived as too high. Milk prices should enable most farmers to cover their costs and to stay in business. In this regard mandatory membership of *all* dairy farmers in a producer organization and the negotiation of national base prices are also seen as useful. To enhance bundling efforts also shorter contracts with dairies and flexible delivery amounts are seen as crucial. **For the farer future, direct negotiations with retailers are envisioned, with the role of dairies then limited to the mere provision of contracted processing services, as opposed to their current roles as independent – and powerful – players on the dairy market** (Hanisch and Rommel 2012).

At this point it can be useful to remind finding a recent study. This study aimed to examine the business relationship between the dairy industry and dairy farmers in North-Western Germany was carried on, particularly with respect to negotiating the conditions of milk supply (contracting parameters) **after the quota expiry in 2015**. It was based on a farm survey with 161 personal interviews distinguishes two aspects: **What are the attitudes of German dairy farmers towards contracting? What are farmers' preferences for the contract**

attributes pricing, volume regulation, contract duration, and intensity of the settlement (Schlecht and Spiller 2009)? Although long-term and stable business relationships are typical in the industry, milk suppliers' have a preference for entrepreneurial freedom and independence. In general, dairy farmers prefer contracts without volume controls, i.e. flexibility concerning production volumes. The maximum length of contract

terms is two years. Hence, current durations can be maintained in future contracts. Farmers strongly reject the cooperative price setting due to a perceived lack of control. They favor (frequent) price negotiations or the application of a reference price. Furthermore, there are relationships between farmers' attitudes and preferences for contract attributes. Dairy processors should consider their suppliers' attitudes, if they want to raise their acceptance for new contract systems. In addition, it is important that contracts between dairies and farmers match their respective goals. Moreover, contract systems should go well together with the dairies' supply management concept (Schlecht and Spiller 2009).

The history of the Dutch Dairymen Board (DDB) in the Netherlands dates back to 2002 when a survey of Dutch dairy farmers showed a high dissatisfaction with dairy cooperatives, in particular with the little influence farmers have on decision-making in and prices paid by large processors. This has led some farmers to start an initiative for an organization of dairy farmers which in 2006 culminated in the formal foundation of the DDB. Beside the economic aim of milk bundling, the DDB also explicitly considers itself a political organization. Originally, beside political representation of farmers "frustrated with their cooperatives" the main economic aim was to bundle milk for marketing with the aim to achieve a higher farm gate milk price. Very quickly, however, bundling efforts of the board have been impeded by the Dutch cartel office which considers such practice as illegal. The DDB currently is, thus, not engaged in any price negotiations, even though about one third of the Dutch dairy farmers have formally authorized the DDB to do so, once the pending legal issues are resolved. Following a consulting study of scholars from Utrecht University, DDB is currently mainly focussing on lobbying national and European bodies for a legal environment which would allow farmers to form producer organizations.

More specifically, political claims for price-covering prices and a reorganization of dairy– farmer contracts are brought forward as aims. As a first step towards this aim, a Europe-wide cost- monitoring body is seen as essential. The CAP support shall be reframed to a support system that is much more based on costs. Some of these transparency efforts and the establishment of a monitoring system are seen as a core task for the umbrella organization EMB in which DDB is a member.

Very much like the German MEG and the Dutch DDB can be best described as a national producer organization. Even though there is a strong political component in the DDB, the major objective is economic, i.e. to bundle produce of farmers. The DDB is very critical of both types of traditional organizations of producers – cooperatives and farmers' associations. The Dutch dairy sector is even more dominated by cooperatives than the German one. The DDB does not differentiate its position towards private and cooperative dairies. Each dairy firm is assessed individually. The DDB claims that farmers have in many cases been deprived of the control over the dairy cooperative.

Most importantly, the DDB demands a stable legal environment for its bundling efforts. National implementation of the "milk package" would in this regard be very much welcomed by the DDB. More generally, the DDB demands political support based on a European monitoring system of costs. Several national grassland and fodder regulations are also seen as unnecessary and as weakening the position of Dutch farmer vis-à-vis European competitors. The DDB also strives to reform the internal organization of large dairy cooperatives. It is claimed that control over these large dairies has to get back into the hand of farmers. Voting systems with regional representation and very few farmers as board members are seen as critical in this regard. Allowing a direct vote of directors and increasing the share of farmer representatives on the board, while at the same time limiting the power of professional managers, are seen as key strategies for the reformation of cooperatives in the interest of dairy farmers. Also, the increasing debt–equity ratio and the inevitable growth logic leading to more and more mergers and acquisitions are seen as false strategies for cooperative dairies. Similar to Germany volume premiums of up to three cent per kg have in some cases led to a division of large and small farmers in cooperatives.

The DDB sees such practices very critical and is generally opposing volume premiums (Hanisch and Rommel 2012).

As opposed to the Netherlands and Germany, **Italy** is a milk-importing country with prices above the European average. Compared to the other two countries, the share of cooperative dairies is much lower (around 40 percent) and cooperatives are to a larger extent involved in value-addition,
e.g. in cheese production and specialty markets. The Associazione Produttori Latte della Pianura Padana (APL) was founded and registered as a producer association in 1998 "to give a voice to dairy farmers and to improve consumer welfare by ensuring high quality dairy products" as part of the COOP AGRI. The history of some of its members dates back to 1950.

APL is at the same time an umbrella organization of ten cooperatives and an organization of individual farmers who "automatically" become members of APL by membership in one of the ten cooperatives. Out of a total of 30,000 Italian dairy farmers, 910 are members in APL out of which 510 sell their produce via the ten cooperative members of APL. APL accounts for about 350,000 tons of milk in Italy – about 5 percent of the nationally processed amount. This may appear as a relatively small amount of farmers organized in APL, but it has to be noted that APL largely focuses on value addition and cheese production.

APL is already one step further than the other bargaining associations and directly negotiates prices with dairies which use APL's milk predominantly for cheese production. Pooling and quality control is done by APL and its members; processing is organized by dairies. Even though APL can claim some success in achieving higher prices for members, the relationship with dairies is described as conflict-laden, because prices are still way to low to cover farmers' costs. It is also noted that some small specialty cooperatives exist which pay very high prices for high-quality milk. In most cases these prices are cost-covering which is regarded as positive. In a broad categorization, the APL representatives state that the larger a particular dairy, the more conflict-laden is the respective relationship, largely independent of the legal status, even though cooperatives are often smaller and are assessed somewhat more positively. APL is very much concerned about the "low-quality imports" from other member states with which Italian farmers cannot compete. Also APL has vaguely mentioned conflicts with traditional farmers associations without providing too much detail about the particular issues at stake.

The national policy allows bundling of produce and given the fact that currently APL is mainly engaged in the negotiation with dairies for cheese production there are no serious problems with the possibility to bundle and negotiate produce in the name of farmers. A key concern of APL is the – in their perception – only weakly implemented quality control for imports.

The "milk package" and the CAP more generally are seen very critical by APL. Both are accused of following the wrong approach by ignoring farmers' costs and abolishing support and quantity limitations. It is also criticized that no cost monitoring systems exists and that farmers' costs do not play any role in the political debate.

For Italy, APL envisions a commission of policy makers, dairies, consumers and farmers with equal rights to discuss a reorganization of the dairy market with the aim of "fair" prices for farmers, based on cost calculations. On the European level a monitoring system has to be established which documents costs, demand, prices and quality. Ideally, quantity constraints with subsequent increases in price from the to-be-founded monitoring body would then be enforced on the basis of such cost calculations. A more thorough quality control of cross-border milk trade and the reduction of corruption of officials in this regard are also on the political agenda of APL (Hanisch and Rommel 2012).

3.1.2. Contract Farming in the USA

Almost one-third of the total value of production on USA farms is produced under contractual arrangement. While contracting has been significant and growing since 1960s, farmers have begun widely to use contracts to produce or market agricultural commodities 1900s. According to the 2003 figures, contracts covered 47.4 % of the livestock production

and 30.8 % of crop production (Macdonald and Korb 2006). Only 12 percent of U.S. farms had contracts in 2008, but contracts covered 38.5 percent of the value of U.S. agricultural production. While five major field crops accounted for 37% of the value of commodity production in 2013, they accounted for only 21% of

the value of production under contract. **Contract production is used more heavily in production of specialty crops, hogs, and poultry, which together accounted for 48% of the value of contract production, but only 26% of the value of all production.** Farms that use contracts are different. Contracting farms are larger, whether measured in terms of whole farm production or a specific con- tracted commodity, than farms that produce the same commodities without contracts. Those farms that contract for one commodity usually do it extensively, using contracts for their other commodities (MacDonald et al. 2013). In every commodity class, there are farms that use contracts and farms that don't. Farms that use contracts usually commit most production to the contract. For example, contracts accounted for 32% of the value of all cattle production in 2013, which includes production at cow-calf, stocker, and feeding stages. However, contracts accounted for 92% of the value of cattle production on farms that used contracts While contracts covered less than 20% of corn, soybean, and wheat production in 2013, farms that used contracts placed 49, 60, and 61% of their corn, soybean, and wheat production, respectively, under contract in 2013; they combine cash sales, contracting, and storage as part of their risk management strategy. Contracting farms in other commodity categories—livestock, specialty field (MacDonald 2015).

However, aggregate contract use has stabilized in recent years and no longer suggests a strong trend. Recent data about contract farming is available by farm type. In 2015, small farms made up about 57 percent of the farms with contracts, but accounted for 26 percent of the production under contract. In contrast, large-scale and nonfamily farms together accounted for 18 percent of farms with contracts, but 53 percent of contract production[11].

Much of the increase in use of vertical coordination in the USA swine industry has taken place through contract production. The percentage of pigs produced under contract increased from 18% to 57.3% in the USA agriculture from 1991 to 2003. It can be realized that in the USA, the broiler industry is almost entirely vertically coordinated as in most of the developed countries (Vukina and Poster 1996). A variety of contractual arrangements are available through feed companies, integrators, genetic firms and packers. However, little is known about the profitability and risk characteristics of these alternatives. These leading sectors will be presented in following subheadings.

It is argued that, farmers face rather lower price and yield risk through contracting, while losing their autonomy to some extent. However, it is pointed out that autonomy still matters to farmers. One of the Economic Research Service researches shows that, in the case of pig farmers, a moderate risk adverse producer would need to be paid a price premium of 12% to give up the autonomy of independent production (Key and Mcdonald 2006). Analyses in the USA show that contracts change market structure. In the hog and poultry and also in the grain industry, it is argued that contracts are providing a way to lower costs, gain easy market access and meet consumer demands but change market functions. Prices received by farmers and paid by consumers are public while the intermediate prices are not visible anymore (Perry and Banker 2000). Some actions have to be taken to improve contract farming conditions from the point of view of farmers (Etka 2006). A report which demanded legal arrangement to include some provisions in contract is interesting as it shows some problems in implementation. Some important ones are: Processor must present the contract with honest and accurate information including both oral and written communications. A three days time has to be given to producer to change his/her mind before signing contract. And inclusion of some additional provisions about banning unfair trade practices were reported (Etka 2006).

On the other hand, the producers are organized under bargaining cooperatives in the USA. There were very successful experiences against economically powerful integrators who tend to exercise monopolistic behavior. Agricultural bargaining cooperatives have become an integral part of the marketing system of certain agricultural commodities (Marcus and Frederick 1994). By the early 1960s, there were more than 325 cooperative bargaining associations involved in contract

[11] USDA, Economic Research Service and UDSA, National Agricultural Statistics Service, 2015 Agricultural Resource Management Survey.

negotiation (Allen 1972). There are generally two types of contracts: marketing and production contracts.

Marketing contracts: They refer to verbal or written agreements between a contractor and a grower that sets a price or pricing system and an outlet for the commodity before harvest or before the commodity is ready to be marketed. This type of contract can take many forms:

- Forward sales of a growing crop, where the contract provides for later delivery and establishes a price or contains provisions for setting a price later.
- Price setting after delivery based on a formula that considers grade and yield.
- Pre-harvest pooling arrangements, where the amount received is determined by the net pool receipts for the quantity sold.

Production contracts: These contracts specify detailed production practices: input supplied by the contractor, quality and quantity of a particular commodity, and set a price or pricing mechanism. The number of farms used marketing contracts (10.3 percent) is more than used production contracts (2.2 percent) in 2008. Marketing contracts also covered a greater share of agricultural output—22 percent versus 17 percent. However, production contract coverage has increased substantially since 1991-93, a development that primarily reflects the growth of poultry production, where production contracts are commonly used to produce and market birds, as well as the rapid expansion of production contracts in the hog sector. Production contracts are rarely used in crops, outside of some seed and horticultural production; livestock accounts for 97 percent of the value of production covered by such contracts. Marketing contracts are used in both crop and livestock production, although crops accounts for nearly two-thirds of the production covered by marketing contracts (Macdonald and Korb 2011).

Contract use varies widely across commodities, and contracts for different commodities also exhibit distinctive features. The large sample sizes in ARMS, as well as commodity-specific versions of the ARMS questionnaire, allow for a detailed look at contract use in certain specific commodities. In 2007, 67 % reported using verbal or written contracts for procurement, a significant decrease from 76 % in 2004. The percentage of the volume of organic products under contract, however, remained largely unchanged between 2004 and 2007. In 2007, an average of 46 % of organic products purchased was obtained by written, negotiated contracts; 24 % were procured through verbal agreements or ongoing implicit relationships between suppliers and handlers. The remaining 27 % of organic products were acquired through spot markets; these shares are largely unchanged from 2004 (Dimitri et al. 2010).

Marketing contracts are often used for crop production. The percentage of other crops produced under marketing contracts were sugar beets (95.1%), cotton (50.9%), soybeans (13.6%) and corn (29.7%) (MacDonald and Korb 2006). Production contracts are more likely to be used for livestock production. Poultry and poultry products produced under production contracts accounted for over 87.2% of the total value. On the other hand, 50.4% of the value of hogs production and 25.4% of the cattle were covered by production contracts (MacDonald and Korb 2006).

In the USA agriculture, farmers can be also contractors as in the out grower schemes. Big farmers act as contractors often in animal production. The farmer as a contractor, can specialize in one of the stages of production, and pay another producer to either provide young animals or finish the production of commodity.

Organic food products are excellent candidates for contract production and marketing because they are produced using a distinct process and are in high demand. A report summarizes survey data on contracting in the organic sector, addressing the extent of contracting, the rationale for using contracts, and contract design for select commodities. In 2007, contracts were used chiefly to procure needed products, particularly those in short supply. The next factor leading to contract use is the desire to source products with specific

quality attributes. Large firms were more likely to use contracts for procurement. Assistance offered by contractors to suppliers typically included transportation or technical advice on organic standards. Contractors rarely assisted suppliers with obtaining organic certification or with the transition to organic. Exploring contract use for a group of 13 commodities, the analysis examines provisions on quality, organic certification verification, and

pricing. Nearly all contracts required firms to provide evidence of organic certification. Most contracts included provisions regarding quality, with the most common provision being minimum quality standards. Best management practices, which can have a significant impact on final product quality, are specified in some contracts for nearly all products (except for nuts). Some contracts impose a penalty for low quality (typically in corn, soybean, and seed contracts, such as those used by farmers for raising crops), while others offer a premium for high quality (typically in milk, coffee, and wheat contracts).

Quality verification was an essential component of contracts, and the verification method depended largely on whether quality was observable. Grain quality has both observable and unobservable attributes, so verification consists of both physical observation and testing for specific attributes. Because the quality attributes for coffee and milk are largely unobservable, nearly all quality verification is done through testing. The methods for determining contract-specified prices paid to suppliers vary by product. The market price for organic products was specified most often in contracts for apples/pears, coffee, and seeds. Quantity discounts were part of contracts for nearly all products, except for berries, and were most common in seed, wheat, rice, and tomato contracts. Flat prices were specified most often for onions/garlic, poultry, and grains. Flat prices that depended on the supplier' past performance were most prominent for seeds, coffee, apples/pears, berries, grapes, onions/garlic, and tomatoes (Dimitri et al. 2010). Survey findings suggest that handlers rely on contracts to procure organic ingredients and commodities.

There exist a number of laws and regulations that directly regulate the conduct of contract parties in the USA. Furthermore, any contract itself is a set of rules that are established by the contract parties that they intend to follow. In general, these rules are enforceable in court, if one of the parties breaks the contract. Each state has its own laws and rules that are directed towards agricultural contracting. Usually, these regulations are related to the activities in production and marketing of agricultural commodities produced in an individual state. In addition, there are a lot of rules that clarify the procedures established in the state laws.

The upper level is represented by the federal regulation. The federal laws have a direct impact on the contractual relationships in agriculture. The contract provisions developed by the parties are not allowed to change the imperative rules established by the federal and state level laws and regulations. The contracts define the aspects that are not specified by either the federal and/or state regulations. Usually, contracts parties are given a lot of freedom in defining the rules of their behavior. Theoretically, the contract parties should specify their responsibilities in a way that benefits both parties in the most efficient way. This is a very important right of the parties involved in contractual relationships.

As the industry experience shows, two very important problems arise due to the presence of this rule. The contractor usually stipulates grading standards along with terms for compensating the grower. More commonly, in California and Washington, the amount paid to the grower is negotiated through a bargaining association that represents several producers. Despite the availability of several legislative arrangements which are directly or indirectly affecting production contracts, there is no specific regulation directly related by contract farming at federal level.

Many states have considered legislative proposal, but only Minnesota, Wisconsin and Kansas have enacted new laws on the subject (Hamilton 1994). In 1990, Minnesota enacted legislation to protect growers. Among other stipulations, the law requires notice before termination, the right to cure, and reimbursement for investments in the case of premature termination. This law has become a model for other legislative proposals.

In 1993, Wisconsin passed legislation that allows a grower a 72-hour grace period to cancel a contract. It also requires integrators to specify in writing all conditions that might cause deductions in payments to growers (Levin-Solomons 1999). Processors often oppose such legislation. For instance, it was reported that, legislation to protect poultry growers in

Alabama in 1994 failed after a $90000 lobbying campaign by processors who claimed that the law would undermine the broiler industry in that state (Hamilton 1994). Enforcement of lien is an important legal issue to protect farmers. During a production failure resulting in losses to creditors or in the case of bankruptcy, the lien secures the

amount to be paid for the product by the processor to the grower or producer. For instance, California enacted a producer's lien statute to protect farmers (Peterson and Peck 1997). Unlike California, Oregon has two separate producer liens. The Agricultural Producer Lien covers fruit, berries, vegetables or meat animals and The Grain Producers Lien covers grains (Watson 1997).

The first problem related to the contract farming is the impact of the inequality in bargaining power on the way contracts are drafted. Many food processing and agricultural input manufacturing industries are very concentrated (i.e. are characterized by oligopolistic and/or oligopsonistic market structure). Therefore, these firms might use their market power to specify contract terms that are favorable for them (MacDonald and Korb 2011). The second problem is a reasonable inability of the contract parties to foresee all details of their contractual relationship at the stage of signing a contract. This means that any contract parties are not able to write a complete contract. Later, when the contract is being executed, any undefined earlier situation might result in major disagreements. One of the consequences of the disagreements is the opportunistic behavior of the contract parties. The other consequence is a court litigation resulting in additional expenses (MacDonald and Korb 2011).

The Rural Advancement Foundation International-USA's mission (RAFI)[12] convenes the Campaign for Contract Agriculture Reform (CCAR). Through this national alliance of organizations, RAFI works to provide a voice for farmers and ranchers in contract agriculture[13]. The primary goal of this program is to ensure that the producer relationship is fair, balanced and transparent. Currently, their efforts are directed at defending the final Grain Inspection, Packers and Stockyard Administration (GIPSA[14]) rule and developing new strategies for broader contract fairness in agriculture.

The RAFI Contract Agriculture Reform Program is an expansion of Foundation's 15 years of support for contract poultry farmers trapped in bad contracts. The poultry industry has been fully vertically integrated and dominated by contract production for almost 40 years. Poultry growers can document the evolution of contracting in the poultry industry from a mutually beneficial agreement among neighbors to a one-sided, legalized form of debt bondage. The poultry industry model of corporate concentration, vertical integration and contract production is rapidly spreading to other commodities including pork, tobacco, beef, soybeans and other crops. Responding to these changes and drawing from the poultry experience, RAFI-USA is providing analysis of the long-term social, legal and economic impacts of the contract agriculture system and possible viable alternatives.

In addition, RAFI-USA is working in collaboration with other national farm and community organizations for reforms to protect the family farmer who turns to contract production. The final GIPSA rule went into effect on February 7, 2012. The rule extends new rights to contract farmers, who often incur hundreds of thousands of dollars in debt and have contracts that may only last a few months.

Because of the new rule, companies can no longer force farmers to spend money on expensive equipment upgrades without proper compensation. The rule also protects farmers from subjective contract termination, and financial loss when flocks are delivered late, through no fault of the grower. In the spring of 2012, RAFI produced a fact sheet with the Farmers' Legal Action Group (FLAG) and distributed it to more than 500 growers throughout the country. The mailing went to all of the growers from the eight key producers' states that we visited to educate and write in comments about the proposed rule and through the grower associations. They worked with poultry grower leadership to educate them about the final rule so that they could monitor compliance based

[12] The Rural Advancement Foundation International-USA's mission is to cultivate markets, policies and communities that sustain thriving, socially just and environmentally sound family farms. RAFI works nationally and internationally, focusing on North Carolina and the Southeastern United States. RAFI is a nonprofit organization based in Pittsboro, North Carolina and

incorporated in 1990.

[13] http://rafiusa.org/programs/contract-agriculture-reform

[14] GIPSA is a USDA agency that facilitates the marketing of livestock, poultry, meat, cereals, oilseeds, and related agricultural products, and promotes fair and competitive trading practices for the overall benefit of consumers and American agriculture.

on what they were hearing from growers that they work with. The USDA released regulations that will provide new, much-needed protections for contract poultry[15].

Under the new rules:

- Companies must provide farmers with a written copy of the contract before the farmer makes an initial investment in his or her poultry houses;
- Contracts with confidentiality clauses must allow farmers to discuss contract offers with federal or state agencies, immediate family members, business associates, farmers who contract with the same company, accounting services hired by the farmer, a lawyer or financial advisor before signing;
- Contracts must state that if a farmer is put on a performance improvement plan (in other words, if they've received a warning that could potentially lead to their contract being terminated), they must be told why, what steps will be taken to help them improve, how they can regain good standing, and the factors that will be used to determine when or if the contract will be terminated;
- Farmers must be notified in writing within 90 days before a contract is terminated, expired, not renewed or not replaced.

3.1.2.1. Broiler Industry

After World War II, the broiler industry grew into one of the most integrated of the USA agricultural industries. Today integrators produce nearly all broilers under contract with growers. Broiler production nearly tripled between 1940 and 1945 despite poor feed quality and heavy disease losses (Martinez 1999). The high volume of military demand actively encouraged production in newly emerging commercial production areas (Goodhue and Rausser 1999). Besides this incentive, following the war, adoption of technological advance in genetics, disease control, nutrition and material handling have accelerated the development of the industry. These innovations increased the size of the production unit. During the early stage of broiler industry, growers would buy feed from a dealer, chicks from a hatchery, and other supplies from another dealer and sold them to the processors who offered the highest price. Along with the high capital requirements of new technologies, fluctuation in the live broiler prices left the broiler growers in financial difficulties.

Large feed companies recognized the potential of broiler industry and established production contract with growers. The first recorded broiler contract was signed in 1933 (Martinez 1999). A rapid increase in the higher supply caused a drop in the live broiler prices toward end of the 1950s. Many hatcheries and feed companies experienced considerable losses because of the overproduction and depressed broiler prices. In order to coordinate production capacity at each stage, feed companies became more directly involved in the broiler business. They developed a closer relationship with processors by acquiring or merging with processors and by building growing facilities.

As feed companies increased their processing operation, independent processors and producers found themselves with fewer markets for buying and selling broilers. Hence, independent processors established their own contracts with feed companies to obtain birds or with growers to produce the birds. In the 1970s, many feed companies left the broiler industry because of depressed broiler prices and high input costs. Processors took over control of almost all stages to gain efficiency with the improved coordination.

A few major processors control the vertical stages in broiler industry from breeding to market ready products, through vertical integration and production contracts. In 1950, 95% of broiler producers were independent. Presently, production contracts cover nearly 99 percent of commercial broiler production, with processor owned facilities accounting for less than 1 percent. The few inde- pendent broiler farms produced an estimated 31 million broilers in 2006, but that accounts for less than 0.4 percent of production (MacDonald and Korb 2011). A 1996 survey of broiler companies conducted by the Broiler Industry listed 48 companies, which account for almost the entire USA

[15] http://blog.farmaid.org/2009/12/usda-issues-new-regulations-protecting.html

broiler production. The top 15 companies jointly control 77% of the total industry production. The largest broiler company produces about 22% of the entire broiler output.

According to a survey conducted in 19 broiler companies, 17 companies were using tournaments as the way of setting prices; the remaining two companies were using fixed performance standards (Tsoulouhas and Vukina 1999). Knoeber and Thurman (1995) found much stronger evidence of risk reduction in the broiler chicken industry under relative performance contracts. Their research concluded that 89% of the broiler growers showed statistically significant variance reduction with relative performance contracts as compared with standard (absolute) performance contracts. According to the National Chicken Council[16] about 29,500 family farmers have production contracts with the companies. Approximately 95 percent of broiler chickens are produced on these farms, with the remaining 5 percent raised on company-owned farms. Approximately forty companies are involved in the business of raising, processing and marketing chickens on a "vertically integrated" basis – that is, the company owns or largely controls each step of the process (Knoeber and Thurman 1995).

As the broiler industry has become more integrated, the types of the contracts have also changed. The first contracts between integrators and growers were open account contracts. The other types were guaranty-price contracts, flat-fee contracts, feed conversation contracts. Today, combination contracts are often used which combine the desirable attributes of previously used contracts. Production contracts (resource providing contracts) are legal agreements between an integrator and a farmer (producer) that bind the producer to specific production practices. Broiler contracts vary, but all of them have two common features. One of the main features is the division of responsibility for providing inputs. The other important feature is the method used for grower compensation. Growers provide land and housing facilities, utilities (electricity and water) and labor. Operating expenses such as maintenance, repair, and chicken house clean up, and manure and dead bird disposal are also the responsibility of the farmer (Vukina and Poster 1998). The integrator provides chicks, feed, medication and advisory services. Typically, the processor company owns and operates hatcheries, feed mills, processing plant and provides transportation of feed and live birds. The other inputs such as fuel and litter can be the responsibility of either the integrator or the producer or can be shared. Most of the integrators require strict technical qualifications regarding construction and equipment of chicken houses. Chicks of certain genetic characteristics and feed mix are also provided by the integrators. Broiler contracts can be only one flock or more than just one production cycle (Hamilton 2001). According to 2006 data, over 90 percent of contracts based grower payments on performance, and almost all of those used a tournament scheme, in which performance is measured relative to other producers. But tournaments are not universal—13 percent of farms did not receive payments based on tournament performance. Over half of producers received seasonal fee adjustments in response to changes in energy prices, while 20 percent had fuel expenses covered by integrators. Smaller fractions received fee adjustments based on the market price for broilers, facility financing from the integrator, or contract provisions that provided for payments in the event of catastrophes (MacDonald and Korb 2011).

Poultry (or livestock) contracts differ from those used in other commodities because contracts do not involve the sale of commodities; instead they create other forms of legal relationship such as service contracts. That means contract growers do not own the product. They are being compensated for what they provide, land, building, fuel and labor. That is why producers could be accepted as relative piece-rate workers (Skully 1998).

Problems between grower and processor often result in litigation. The more common claims include: Early contract termination, requirements for additional improvements, manipulation of quality, quantity or cost of inputs, under-weighing of poultry and feed, misevaluation of the producer's performance etc. (Hamilton 2001). Integrators can force changes in operation whenever they wish, since there is no contract to prevent such changes.

Broiler growers often complain that these changes are excessively expensive (for example, new ventilation system), but they almost have

[16] https://www.nationalchickencouncil.org/about-the-industry/statistics/broiler-chicken-industry-key-facts/

no choice since they have large sunk investments. It was argued that in this situation growers face a "hold-up" problem (Lewin-Solomon 1999). Another source of risk for the grower is non-renewal of the contract (Aust 1997).

Most broiler contracts have a similar remuneration scheme which include minimum guaranteed payment, performance payment, and disaster payment. The performance payment is based on a fixed base price per pound of live meat produced and the variable bonus payment is based on the grower's relative performance. The bonus payment is determined as a percentage of differences between average settlement costs of all growers that belong to the integrator's particular center whose flocks were harvested in the same period and producer's individual settlement costs. Settlement costs are obtained by adding chick, feed, medication and other customary flock costs and dividing by the total pounds of live poultry produced. For below-average settlement costs (above- average performance) the grower receives a positive bonus, and for above average settlement costs, he receives a negative bonus. A grower with settlement costs substantially above the average cost (typically this threshold is set at 1.25 cents) will be excluded from the average, hence, other growers are not rewarded when one grower per forms badly. Similarly, costs that are substantially below average also are excluded from the average (Vukina and Poster 1998).

3.1.2.2. Pork Industry

At the beginning of the twentieth century, most hogs were slaughtered by the five largest packers. They generally purchased most of their hogs through commissions from local markets. Since the beginning of the 1900s, the numbers of farms that rise hogs have been falling and the average inventory per farm has risen steadily. This trend has continued during all of the twentieth century. Prior to 1993, most pigs were raised on farms with fewer than 1000 animals in inventory. In 1996, 4880 USA farms with at least 2000 pigs in inventory accounted for 51% of the total USA swine inventory (Zering 1998). The pork sector has two production stages, farrowing and finishing. Two decades ago, most hog operations integrated farrowing-finishing operations. There has been a trend toward larger, more specified farrowing and finishing operations in recent years (Ward 1997). While 87 percent of hogs were purchased on the spot market in 1993 by 1999 that number had dropped to 35.8 percent, and as of January 2006, only 10.6 percent of hogs were sold on the spot market. The remainder was sold under some type of contractual arrangement. That means during almost 10 year span hog production under contract increased from 34% to 65% because processors wanted more control over the characteristics of the hogs they were buying. That helped provide consistency in meat to consumers. Growth in hog contracting was driven in part by production differentiation. Processors wanted more control over the characteristics of the hogs they acquired, which helped them provide a consistent quality of meat to consumers. In recent years, multi-year marketing contracts have been widely used between the large hog producer-integrators and large packers.

Contracts in the hog market take two forms: production contracts and advanced marketing agreements. Similar to arrangements that dominate the poultry industry, production contracts are agreements between farmers, also known as growers, and their contractors. Under these agreements contractors retain ownership of hogs. Growers build facilities, often to contractors' specifications, and receive all inputs from contractors: feeder pigs, feed, transport, veterinary services, and many supplies. Packers may provide technical advice, dictate management techniques, and monitor the compliance of the grower. In return, the grower receives a fee for service in an economic relationship some have likened more to wage labor (Wise and Trist 2010). A study on hog production in the USD shows that, for very large-scale operations (those with more than 5000 head) production contracts influence farm structure in a substantially different way. Results indicate that contract adoption was not associated with an increase in the scale of production for the largest operations. Additionally, after adoption, the use of production contract was not associated with greater growth. It is

likely that beyond a certain size, economies of scale in hog production are limited (Key, et al., 2008). This suggests a compelling motivation for very large independent operations to adopt a production contract, as 28% of the large-scale potential adopters did between 2002 and 2007 (Key 2010). Advanced marketing agreements (AMAs) specify terms of a future sale.

The producer retains ownership of the hogs and is responsible for more management decisions, although some contracts will specify standards for management. Details of the contract will dictate the quantity of hogs delivered, their quality, the location and timing of delivery, and a formula for payment. This formula to calculate payment is often tied to the thin spot market and based on the packer's quality assessment. A farmer may hold a production contract, an advanced marketing contract, or both. In 2004, nearly 90 percent of hogs were sold and or produced through one or more forms of contract (Key and McBride 2007).

According to a 1994 survey, more than 50% of hogs acquired by packers were under long -term contracts via formal, written contracts with a definite term often ranging from four to seven years. Likewise, large producers indicated that 63% of the contracts were written rather than verbal and 59% were for a fixed period (1 to 15 years). The remaining contracts were verbal and typically continued until canceled (Lawrence et al. 1997). The packers involved in these arrangements required a minimum value of hogs with either minimum quality standards or specific genetics. According to another survey conducted in 1996 with the 17 swine companies, two firms used tournaments, nine used fixed performance standards, one used a fixed payment per pound, one used the bracketed scheme, and one paid a fixed rent per square foot of the house, and three companies were growing pigs on company- owned farms (Tsoulouhas and Vukina 1999). Some research results show that, relative to independent production, contract farming reduces grower income variability. Relative performance contracts have the potential to further reduce income variability as opposed to absolute or standard performance contracts. Martin (1997) argued that relative performance contracts reduced income variability for 36-70% of the contract growers (Martin 1997). In 1999, 59% of the hogs in the USA were obtained through multi-year contracting while only 2% were contracted in the 1970s and 1980s (Martinez 1999). These contracts typically specify that the producer deliver a certain quantity of hogs to a certain location at a specified time. In return, the producer receives a market-based price that is adjusted for quality premiums. A majority of the contract hog production is horizontally contracted among producers. The producers having more assets, managerial skills, and are the risk-takers provide the hogs and the feed to others who raise them (Lawrence et al. 1997). Hog production and marketing contracts are generally written to last for 5-12 years and often require the provision of a notice of termination no shorter than a specified period, usually about six months. Provisions often exist to extend the initial terms for an additional time period subject to mutual agreement. In addition, it is possible to renegotiate the terms if new technologies or regulation arise (Hennessy and Lawrence 1999).

Historically, production contracts have existed in three different categories of the pork production system, and recently two additional categories of contracts have emerged. Of these categories, the most common contract is for the finishing phase (Martin 1999). Despite different types of contracts changing from region to region, widely used payment methods for the finishing contracts were presented by Martin (1999) as follows:

i. Payment per pound of gain + Potential bonus; Grower payment = $0.05 x (Pound gained) + feed conversion bonus + mortality bonus.

ii. Payment per hog marketed + Potential bonus; Grower payment = $10.00 x (head marketed) + feed conversion bonus + mortality bonus.

iii. Payment per square foot or per pig space; Grower payment = $4.00 x (Square feet available in barn) + any potential bonuses or, Grower payment = $32.00 per pig space per year + any potential bonus.

Bonuses and performance incentives are important for both parties involved in the contract. In general, a bonus is determined for a low feed conversion ratio and a low mortality rate. For instance, if a standard feed conversion ratio in the contract is 3.2, but the producer achieves a 2.9 feed conversion, the grower would receive a $1.50 bonus (50 cents for each 1/10 point difference) on each animal marketed. For the mortality rate, a 2% death

loss standard frequently appears in contracts (Martin 1999). Recently manure management also became an important factor in contract arrangement. Production contracts give the responsibility to growers for providing facilities, labor utilities, waste disposal, land, and water. Contractors provide feed, livestock, veterinary care and

medication, managerial support, and marketing. The contractor bears all market risk and keeps any residual profit or losses (Zering 1998, Swinson and Martin 1997). Pork producers are rather well organized.

The principal organization is the National Pork Producers Council (NPPC) which is a producer organization that claims a membership of 85000 producers in 44 affiliated state associations. The NPPC is governed by a board of directors elected by delegates who are elected by producers (members) in each state association. Another nation-wide organization is National Pork Board which is an independent body of 15 members appointed by the Secretary of Agriculture. Members are producers from at least 12 states and/or importers (Schrader 1998).

In the past, the role of cooperatives has been small while their share of feed supplied to hog producers may be as high as 45% in some areas (Schrader 1998). More recently, Farmland Industries have attained about 6% share of hogs slaughtered and other cooperatives have actively increased their shares. New cooperatives have been formed to supply feeder pigs for producers. Some corn producers have formed hog production cooperatives as a means to market corn. In addition, group marketing, especially by smaller producers, is increasing (Schrader 1998).

Despite the rapid structural changes in the U.S. hog industry, the literature on buyer power in hog markets is quite limited. The most egregious form of buyer power occurs when a single buyer offers a take-it-or-leave-it price to a farmer. But buyers can exercise market power in other ways as well. Packers are known to offer lower prices to farmers who do not deliver a fully loaded trailer of hogs, a form of "undue preference" based on volume (Perry 2010). It was seen that the available literature, which has been generally presented as demonstrating that buyer power is not a significant problem. But it is a fact that U.S. hog markets have undergone rapid concentration in the last 25 years, with the top four packers now controlling two-thirds of the market and one food company, the industry leader, commanding 31 percent. The U.S. pork packing industry has moved to rely on larger plants that take advantage of economies of scale. As larger plants have been built, companies relying on smaller plants have gone bankrupt or been acquired by larger packing companies. In 1976, only 12 plants slaughtered more than one million hogs and hogs slaughtered by those large plants accounted for 27 percent of the U.S. supply. By 1998 the larger plants slaughtering over one million hogs had increased to 30, and by 2006, nearly 95 percent of U.S. hogs were slaughtered in plants that handled over one million head annually (GIPSA 2008).

In 1982, the top four hog packing firms (CR4) controlled 36 percent of the market. By 2006, their share had risen to 62 percent. Since then, with the mergers in 2007, the CR4 has risen to 67 percent in 2010 (Wise and Trist 2010).

Farmers are particularly vulnerable to buyer power because many are selling perishable goods (e.g. live animals) or products that would require large storage capacity (e.g. several tons of corn). For hog farmers, this can be particularly problematic because they operate on very tight margins, rely on selling their animals at optimum weight, and need to bring in the next litter on a fixed schedule. Having just one buyer, or even just two or three, can allow the buyer to take advantage of the farmer's need to sell. Hog farmers also have limited options for shipping their animals to a distant buyer who might offer a more competitive price. Shipping live animals long distances is expensive, causes high levels of mortality, and can reduce the quantity "shrinkage" and quality of the meat (Wise and Trist 2010).

3.1.2.3. Dairy Industry

The dairy industry in the United States has undergone significant structural change over the past eight years. Total milk cow operations have declined significantly, while the number of large operations has increased. The number of milk cow operations continues to decline in the United States. There were 65000 milk cow operations in 2009 compared to 97460 in 2001, a decline of 33 percent. Despite the large decrease in milk cow operations during this

time period, both milk production and milk cow numbers have been on the rise. Milk production increased 15 percent, from

165332 million pounds in 2001 to 189320 million pounds in 2009. Milk cow inventory showed a smaller increase of 1 percent, from 9.10 million head in 2001 to 9.20 million head in 2009[17] .

Milk marketing in the USA is regulated by Federal Milk Marketing Orders. Marketing orders classify milk by ultimate use by consumers. For example, Class I is milk for fluid consumption. Milk orders specify minimum prices that buyers must pay for milk used in each class. Federal order prices are minimums only. Market conditions can often lead to prices above Federal order minimums. Milk orders also specify rules for distributing milk.

Large dairy farms make use of forward contracts to price milk, and they may enter into production contracts with other dairy operations to raise their heifers. However, contracts are not used exclusively by large operations in the sector. Small producers of organic milk rely on contracts to assure outlets for their products and to realize the price premiums that such products can bring (MacDonald and Korb 2011).

The dairy sector of the USA has been an exception among the other agricultural sectors in that producers' cooperatives have an important role in milk marketing and processing. According to 1997 data, dairy cooperatives received or bargained for 83% of all milk sold by farmers. Ninety eight percent of the total amounts of milk received by the cooperatives came directly from member- producers; the remaining 2% came from non-members or non-cooperative firms. Between 1992 and 1997, the number of dairy cooperatives decreased from 265 to 226 while the number of bargaining cooperatives increased from 135 to 138 (Ling 1999). Dairy cooperatives, as a group, represent the most prominent of all agricultural marketing co-op sectors. Co-op milk and dairy product sales represented 42 percent of total commodity marketing by all U.S. agricultural cooperatives in 2007 (Ling 2009). Dairy cooperatives account for a majority of milk sold in the United States, especially at the first-handler level and in the manufacture of "hard" dairy products (butter, cheese and milk powders). In 2007, there were 155 dairy cooperatives in the nation owned by 49,675 member-producers, or 84 percent of the nation's licensed dairy farms. They delivered 152.5 billion pounds of milk, or 83 percent of all milk marketed (Ling 2009).

There were 45 cooperatives that processed and manufactured dairy products in 2007, the same number as in 2002, while 12 cooperatives operated receiving stations only and 98 had no milk- handling facilities. Sixty-three percent of total cooperative volume was sold as raw milk in 2007 versus 61 percent in 2002. The other 37 percent was manufactured at plants owned and operated by cooperatives. There were 49,675 member producers marketing milk in 2007, 19 percent (11715) fewer than 5 years earlier. Three regions - East North Central, North Atlantic, and West North Central
- together accounted for 85 percent of all member producers and 51 percent of cooperative milk volume. The Western region was the top source of cooperative milk. At 58.1 billion pounds, it represented 38 percent of all cooperative milk (Ling 2009).

The experience of dairy cooperatives can be useful for other agricultural industries facing pressure of tighter vertical coordination. Milk production reported by the top 50 cooperatives was up
1.6 billion pounds from last year to 152.3 billion pounds total. That compares to total U.S. milk production which was up 3.49 billion pounds to 192.8 billion.

The number of member farms was down 2.2 percent to 40415 farms, while total U.S. farm numbers dropped 3.3 percent to 53127 farms in 2010. In 2010, the top 50 cooperatives marketed 79 percent of the 192.8 billion pounds of total milk produced in the U.S. That is the lowest market share held by the top 50 cooperatives since 2007. Members of the top 5 cooperatives handled 42 percent of the total U.S. milk production while representing 28.8 percent of total U.S. dairy farms (Brown 2010).

Dairy cooperatives can be classified into three categories based on their function in the marketing channel (Ling and Liebrand 1998).

- Bargaining cooperatives: These cooperatives operate as bargaining associations. Government administered milk prices serve as a floor and the starting price in the

bargaining

[17] http://usda.mannlib.cornell.edu/usda/current/USDairyIndus/USDairyIndus-09-22-2010.pdf

process. Milk payment is usually pooled. In 1997, there were 138 pure marketing cooperatives, 44 cooperatives which have receiving stations and were also acting as bargaining cooperatives.

- **Bargaining-balancing cooperatives:** These cooperatives bargain for milk prices and also manufacture the surplus into commodity dairy products for supply balancing.
- **Others** include undifferentiated hard product manufacturing, niche marketing, and fluid processing and diversified dairy cooperatives.

3.1.2.4. Vegetable Processing

Vegetables for processing are mostly produced under contracts. The only exemption is those perennial crops such as asparagus and some potatoes which are produced for both processing and fresh market (Marion 1986). In 1993, 11700 farms reported at least one crop production contract. Nearly half of these farms had contracts that involved processed vegetables (Perry et al. 1996).

In general, a crop production contract indicates which inputs will be provided by the contractor, limited in most cases to seed and custom services such as harvesting and hauling. The amount to be produced is specified with detailed requirements regarding production practices such as chemical and fertilizer applications. Sometimes, the contracts' quality provisions can be very detailed and strictly enforced. Many contracts include provisions requiring the grower to use only pesticides that are approved by contractor. The contractor generally stipulates grading standards along with terms of compensation of the grower. According to a Farm Costs and Returns Survey (FCRS), contractors provided seed to nearly 80% of the farms with a single production contract. The share of the farms getting special hauling services was 70% and the percentage of the chemical provided was reported as 60% (Perry et al. 1977).

For payment purposes they often use fixed price, applying premiums or discounts based on the quality of the crop. Vegetable producers are generally well organized under a bargaining cooperative (Hamilton 1994). In most cases, the association does not assume title to the vegetables. Vegetable contracts involve either guaranteed shipments in pounds per week or based on acres of production. Another special feature of vegetable contracting is the application of "passed acres" in which the integrator has the right not to harvest or accept all the crops raised under the contract. One of the most common reasons for this application is the crop raised is larger than the quantity the processor can handle (Hamilton 1994).

In order to get detailed information about contractual relationships at the field and farm level between producers and the first handler of the fruit and vegetables (processors or wholesalers), the findings of a research done by Hueth are summarized (Hueth 1999). The contract between producers and integrators is generally a detailed written agreement that sets forth specific plans concerning when and how particular crop should be grown. However, sometimes coordination might also realize with an informal mechanism through repeated interaction. Even when a contract takes a written form, there may still be a number of provisions which are only implicitly understood by both parties. It was determined that the coordination mechanisms used to arrange contracts vary considerably across commodities. Commodity attributes, local tradition, technology, and government regulation were identified as important factors which potentially affect the type of coordination and content of the contracts.

Hueth (1999) mentioned the proprietary nature of the contracts. He stated that "even if it is possible to obtain an example of a written contract (some integrators actually prohibit growers from sharing their contracts with anyone but the growers' lawyer), the explicit terms of contracts reflected in formal documents are only part of the story".

According to a survey of processed and fresh market commodities (15 fruits and vegetables), input control was provided through selection of seed variety, and plants,

fertilizers, pesticides, labor, and financial support. Monitoring is carried out by field men who provide technical information and communication in addition to controlling grower's behavior. Monitoring efficiency was evaluated by the median of annual field visits per grower for each commodity which varied between 1 and 100 annual visits. The different bases were used for the quality measurement. In ten of the commodities, some form of in-house quality measurement was used; in eleven commodities, government

sponsored services; and in five commodities, some form of third-party services was used. In almost all of the contracts, residual claim was placed.

There is a difference in emphasis given on quality measurement between processing and fresh market integrators. All of the interviewed processors have been using detailed measurement of quality to adjust grower payment, while fresh market integrators have been rarely adjusting the grower's payment (Hueth 1999).

3.1.2.5. Sugar Beet Industry

Sugar beets are one of leading raw material for manufactured sugar in the United States. Sugar beets, a sturdy crop grown in a wide variety of temperate climatic conditions, are planted annually. Sugar beets can be stored for a short while after harvest, but must soon be processed before sucrose deterioration occurs. A recent development has been the introduction of genetically modified (GM) seed varieties. In the 2009/10 crop year, GM varieties accounted for about 95 percent of planted area, up from about 60 percent in 2008/09[18].

Basically, sugar beets are grown in five regions encompassing 11 States, and tend to be grown in rotation with other crops. Two of the regions are east of the Mississippi River, while the three other areas are in the Great Plains and Far West. The western regions represent dry land farming that depends on irrigation as a primary water source. The eastern regions depend on rainfall. Historically, sugar beet yields in the western areas have tended to be higher than in the east. However, with the adoption of new disease-resistant and GM seed varieties, yields in the eastern areas are much closer to those in western areas. In all areas, sugar production is enhanced by technologies that allow the de-sugaring of molasses that, otherwise, would be a relatively low-value byproduct.

The largest and most dynamic region for sugar beet production is in or close to the Red River Valley of western Minnesota and eastern North Dakota. Area planted in the Red River region grew consistently through the 1990s and averaged 731,000 acres in the 2000s, or about 55 percent of total planted U.S. sugar beet acreage. Long, cold winters aid the storage of sugar beets harvested in October and allow the slicing of sugar beets well into the following spring, thereby making more efficient use of slicing capacity at the factories. A second area of sugar beet production is in Michigan. Area planted in this region in the 2000s averaged 163,000 acres, or about 12 percent of total U.S. acreage.

Since the beginning of the USA sugar beet industry in 1879, sugar beet has always been grown under a contract. In 1995, there were nine companies processing sugar beet and three of them are grower owned cooperatives. American Crystal Sugar Company (ACS) was incorporated in 1899 as American Sugar Beet Company. In 1971, the company cut 20% of the contracted beet acreage in some states and closed some processing plants in different states (Balbach 1998). The differences between the farmers' interest and decisions of the company have created conflicts. Red River Valley Growers Association decided to buy American Crystal and form a cooperative. The growers who supply to the company became the owner. Despite the decline in the sugar beet production in the several western states, American Crystal Sugar's acreage increased from 165000 acres in 1972 to 400000 acres in 1992[19]. Recently ACS members associations represent 10000 family farmers in all 11 producing states (California, Colorado, Idaho, Michigan, Minnesota, Montana, Nebraska, North Dakota, Oregon, Washington and Wyoming)[20].

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[18] http://www.ers.usda.gov/topics/crops/sugar-sweeteners/background.aspx

[19] American Crystal Sugar Company is a world-class agricultural cooperative specializing in the production of sugar and related agri-products. American Crystal is owned by nearly 2,900 shareholders who raise approximately 425,000 acres of sugarbeets in the Red River Valley of Minnesota and North Dakota. Additional acreas are contracted in eastern Montana and western North Dakota. As the largest beet sugar producer in the United States, the company utilizes innovative

farming practices, low-cost production methods and sales and marketing leadership to produce and sell about 18 percent of America's finest quality sugar. See more at: http://www.jobshq.com/employers/page/profile/employer/1454/#sthash.P7rtENO3.dpuf

[20] http://www.americansugarbeet.org/who-we-are/who-we-are.html

In the first sugar beet contracts written in the USA, payment was based on tonnage of beets delivered and sugar content. Major changes in contracts were made during World War I. The price of refined sugar rose more than 75% when price controls were removed. Sugar beet growers wanted to share this sugar price increase. Payment scales were changed to sugar content and the market price of sugar base, and ACS changed the payment system and added the average net selling price base instead of a fixed price per ton. This system is still used by the traditional owner-investment companies. In the 1970s, the cooperative processors made another change in beet contracts. They developed extractable sugar contents. This contract is based on the actual amount of recoverable sugar per ton of beets. A new system was developed to measure the amount of recoverable sugar by measuring the sugar loss to molasses. The amount of sugar lost in the molasses by-product is measured as a percentage of total sugar content. The pounds of sugar recoverable from a ton of beets are calculated by subtracting the percentage sugar loss to molasses from the percentage sugar content. For example, beets with 17.57% sugar content and a 1.495% sugar loss to molasses yield
312.5 pounds recoverable sugar per ton of beets.

(0.1757–0.01495) x 2000 pounds per ton = 321.5 pounds per ton.

According to Balbach (1998), this new system, only used by cooperative processors, provides efficiency through decreasing production costs for refined sugar, sugar loss to molasses and increasing the extraction rate and also sugar produced per ton of beet sliced.

Two types of contracts are used by other non-cooperative companies; the eastern contract and the western sliding-scale contract. In the eastern contract, growers and processors share revenues and costs at a fixed ratio. Growers receive 53.1% of the gross sales of sugar and by-products less 53.1% of the marketing costs. Growers are responsible for 53.1% of the sugar losses that occur in storage. All of the production costs belong to growers. Also, there are incentives based on the impurity level. In the western contract, the payment per ton of beets depends on the average net return per 100 pounds of sugar received by the processing company and the individual sugar contents of a grower's beets. The extraction rate is fixed.

The three general contract types used in sugar beet production are: Western, Eastern and extractable sugar (Hueth and Melkonyan 2004). Under a Western contract, growers are paid according to raw sugar content of the sugar beets delivered to the processor, adjusted by a fixed sugar extraction rate. Under an Eastern contract, growers are paid a fixed share of gross revenues from sugar and sugar byproducts, less adjustment for marketing costs and storage losses. Implicitly, extractable sugar is the basis for an Eastern contract. Under an extractable sugar contract, growers are paid according to the amount of sugar extracted from sugar beets rather than raw sugar content. An important distinction among these contract types is that the Western contract does not address extractable sugar, the Eastern contract does so indirectly (by using the less valuable byproduct sales as one determinant of revenue) and extractable sugar contracts do so explicitly[21].

3.1.3. Contract Farming in Turkey

When we evaluate the structure of Turkish food industry from the point of view of vertical coordination, the relationships have been varied from spot market transactions, long established client relations to contractual arrangements. As observed in the investigated region, the spot market transaction was dominant in some sub-sectors while contract farming was the only way of vertical coordination in others.

National figures about the application of contract farming are not available. Beet sugar processing, and the commercialized part of broiler production operate under contractual relationships. In vegetable and fruit processing contract farming has been used widely along

with the other procurement ways. Seed industry has been developed rapidly after 1980s with indolent of the multinational seed companies as joint ventures or production agreements with local seed firms. Seed

[21] http://www.agmrc.org/commodities__products/grains__oilseeds/sugarbeet-profile/

production not only target domestic market but also foreign markets. This production, of course, has been realized under contract farming.

No special legislative arrangement related to contract farming existed in Turkey until 1996. In June of 1996, the Ministry of Agriculture circulated a directive in order to control contractual arrangements. Despite the general character of this direction, it was highly detailed even describing a certain pricing formula. This direction was immediately amended two years later in August of 1998, to outline a general framework compared to the detailed structure of the previous one. It was not more than a standard contract form giving the Directorates of the Ministry of Agriculture at the province and district levels the right to control and partake in the arbitration process as a third party.

The Law of Agriculture which was issued in 2006 has given some responsibilities to the Ministry of Food, Agriculture and Animal Husbandry (Ministry of Agriculture and Forestry-presently) to make some regulations in order to development and dissemination of contract farming. The Ministry has given priority to the contract farming getting the supports provided by the Law of Agriculture to encourage it. A new regulation was published in 2008 according to this law (2006). Some provisions such as compulsory registration of the National Farmers Registration System, having a written document and the involvement of the Provincial Directories of the Ministry have been criticized by lawyers from the point of freedom of contract principle (Kılıç and Bor 2009).

Recent development in this field is the regulation that makes milk production contracts compulsory. This milk special legislation aims to regulate raw milk transaction between producers and processor. Sustainability of the milk market, to establish a traceably system in the milk production are declared among the other aims. After 2004, 301 milk producers association has been established having more than 500 members. Unfortunately these organizations could not meet expectation from them being efficient drafting and implementation of milk contracts. They could get some lessons from the USA and EU experiences.

In this chapter, broiler industry and beet sugar processing have been reviewed separately while vertical coordination and the structure of contractual relationship in other sub-sectors are presented based on a field survey conducted in the Bursa region[22]. Although results of this are rather old, these are presented here because the findings of it remain almost unchanged. This region had 6.2% of total plants, 8.2 % of established capacity, and 7.4% of total production of Turkish food industry in 1990 (Anonymous 1993). Although these figures reveal rather unimportant amounts, fruit and vegetable processing, vegetable oil, dairy and hop industry are well developed in this region. Hop production and processing exist only in Bilecik Province (Rehber 2007a). Approximately 50-60% of the fruit and vegetable processing plants which have rather large capacities are located in this region. For example, 24 of the largest tomato paste plants of the 42 total are in this region. Bursa Province by itself has supplied more than 55% of the Turkish tomato paste production (Akgul and Rehber 1993). In this region contract production has reached almost 80% in tomato production (Keskin 2012).

3.1.3.1. Broiler Industry

The first attempt to establish a modern broiler industry as in the other sectors was initiated by Government through the foundation of a Central Poultry Research Center in 1930. Considerable progress was not being achieved until 1950. Around 1950, introduction of improved parent stocks contributed a real transition in the sector. Further progress was realized after 1963 by using imported hybrid varieties from abroad and a remarkable increase in exports at the beginning of 1980s has accelerated this process (Güneş et al. 1990).

The beginning of the vertically coordinated broiler production goes back to 1969 with the establishment of Turkish Development Foundation (TKV) to bring about rural development. At the beginning, TKV started broiler production in a certain region by providing selective

credit. Later, the small-size broiler growers were organized under regional Corporations which provide chicks, feed, services, processing and marketing. In 1985 these regional corporations were organized under a central Corporation (Holding) known as KOYTUR. The number of regional corporations has reached

[22] Bursa, Balikesir, Bilecik and Canakkale Provinces were included.

11; the number of growers who have a contract relationship with these corporations is 2220 with total 75 billion bird/year capacity, almost 20% of the total production capacity of Turkey. Until 2002, KOYTUR produced broiler meat products under the Lades and Köy-Tür brand names. But this holding has to terminate its activities because of some financial problems. The Köy-Tür brand name was bought by a private corporation[23].

According to 1997 data, there were 6785 broiler farms plus farms which have poultry production as a side-activity, of which 72.6% have a capacity less than 5000 head/per year. Since 1997, broiler production has shown a considerable increase. Poultry meat production has reached to 1723919 tons in 2012, while it was 696187 tons in 2000[24]. Nowadays, 91% of the production of broiler meat, hatching eggs and chicks, and 75% of the production of table eggs are carried out by a small number (respectively 29 and 45) of large capacity integrated firms. Broiler meat production in Turkey is developing rapidly settled 8th place in the world as of 2013, 3.3 million tons of broiler meat is expected to be produced in 2023 (Okur et al. 2016).

Broiler sector has shown a rapid development and private companies have accomplished to be organizing under an association named as “Breeding Poultry Association” in 1992 and were renamed as "Poultry Meat Producers and Breeders Association" in 1994. The Association has been restructured; eggs oriented breeders left, while rest of members remained active. Presently 28 companies are registered to BESD-BIR that has been controlling more than 90% of the sector. In the meantime as being a founder member of IPC (International Poultry Council), BESD-BIR presents the Turkish broiler industry within the international platform.[25]It is not possible to say that this association has given importance what the contracting problems required they have faced.

Two types of vertical coordination could be observed in the sector. First, some are fully integrated. From growers to wholesalers, all activities from chick rising to processing are under control of the integrator in this system. A second system can be called partial integration. Either some of the production inputs (chicks and/or feed) or some services, i.e., processing and feed preparation, are provided from other companies outside the system.

Broiler contracts vary from integrator to integrator. Many broiler contracts are only one flock in duration. Both growers and processors have non-renewal rights. In general, the contracts have two common features. One of main features is the division of responsibility for providing inputs. The other important feature is the method used for grower compensation. The growers provide land, housing facilities, utilities (electricity and water), and labor. Operating expenses such as repair, maintenance, cleaning, and manure and dead bird disposal are also the responsibility of the farmer. The integrator provides chicks, feed, medication and advisory services. Typically, the processor company owns and operates hatcheries, feed mills and processing plant while providing transportation of feed and live birds. Other inputs such as fuel and litter are the responsibility of the producer. Most of the integrators require strict technical qualifications regarding construction and equipment of chicken houses (Turhan ve Rehber 2007).

Integrators can force changes in operation whenever they wish since there is no contract to prevent such changes. Broiler growers often complain that these changes are excessively expensive (for example, new ventilation system), but they have no choice since they have already had large sunk investments.

Although the calculation methods have been varying from integrator to integrator, most broiler contracts have a similar remuneration scheme based on the performance evaluation. The performance payment is based on the feed conversation and mortality rates. A fixed price is determined and adjusted based on the grower’s relative performance.

Standard mortality and feed conversion rates are determined differently from integrator to integrator. The standard feed conversion rate is calculated as an average of the grower’s performances that are in the production scheme. The standard mortality rate is determined

[23] http://www.ciftlikdergisi.com.tr/koy-tur-efsanesinde-sona-dogru.html
[24] http://www.tarim.gov.tr/Sayfalar/Anasayfa.aspx
[25] http://www.besd-bir.org/kurulus-amaci

arbitrarily based on technical assumptions (ms) generally as 5 % while standard feed conversion rates is 2%. Calculation of the amount paid to the growers is presented here as an example.

The total flock size (c) is 10000 heads. The sample firm has also a 1.9 feed conversion rate and 7% death rate. The fixed basic price per kg live weight is 3.8 Unit/kg (p_1). 1.25 unit/kg (p_2) is the amount considered for extra feed conversion rate above or below the standard, whereas 0.02 (p_3) units is the amount considered for extra 1% mortality rate above or below the standard.

The amount supplied by the growers:

S = c x f (1 – m) = 10000 x 1.9 (1 – 0.07) = 17760 kg.

Since the grower has a lower feed conversion rate, ((fs – f) = (2.0 – 1.9) = 0.1), he will get a bonus per kg equal to (fs – f) x p2 = 0.1 x 3, 8 = 0, 38 units/kg. The 7% mortality rate is 2% ((ms – m) = (7 – 5) = 2) more than the standard rate. Therefore he should get less as a penalty equal to (ms – m) x p_3 = 2 x 0, 02 = 0, 04 units/kg.

The price paid to this grower equals to:

p = p_1 ± (fs–f) x p_2 ± (ms – m) x p_3

p = 3.8 + 0.38 -0.04 = 4.14 units/kg

The total amount of payment:

T = S x p = 17670 x 4.14 = 73 153.8 units.

The method of calculation as presented above can be formulized as follows: T = S x p

T = (c x f (1 – m)) x (p_1 ± (fs – f) x p_2 ± (ms – m) x p_3)

3.1.3.3. Sugar Beet Processing

Sugar beet production and processing is very important from the contracting point of view because it is the first sector that the contract farming widely applied. The first sugar factory was established in Usak and Alpullu. In 1935 all sugar beet processing factories are unified under the Turkish Sugar Company (TURKSEKER) which is a state owned firm. TURKSEKER is the biggest sugar producer in Turkey with 25 sugar factories. In addition to the government-owned TURKSEKER factories, there are six other privately-owned beet sugar producers in Turkey. There were 407350 farmers producing under contractual relations with this organization in 1994. In the Turkish sugar sector there are 7 beet sugar producers and 5 starch based sugar (SBS) producers, and the total sugar production quota is allocated to these 12 companies. The 7 beet sugar producers have 33 factories which have a total production capacity of 3.1 million MT per year. All the SBS producers are private and they have a total capacity of processing 888 thousand metric tons of corn. The total sugar production capacity of Turkey is 4137000 tons; 3147 thousand of this is beet sugar, and 900 thousand tons is starch based sugar. Sugar beet planted area is expected to increase by three percent to 340,000 hectares (ha) in MY 2018/19 due to the slightly increased quota for sugar production. Sugar beet production is forecast at 20.5 million metric tons (MMT) in marketing year (MY) 2018/19.

Sugar production and markets have changed substantially during the past 30 years. Sugar was primarily produced from sugar beets in Turkey until the first starch based sugar factory was established in 1986. Sugar Law was enacted in 2001 and The Sugar Board was organized. The Sugar Board announces the annual production quotas for the whole sugar sector, including starch based sugar. Quotas are divided into three groups. The 'A' quota specifies how much sugar (from both corn and sugar beets) companies can sell in Turkey within a marketing year. The 'B' quota is an extra amount that is produced and kept as spare or as a buffer, and its volume is calculated as a certain percentage (generally 4%) of the A quota. The 'C' sugar is allocated for export sugar and is sold at world prices. There is no C quota announced, since excess A-quota is purchased by factories as C sugar which cannot

be marketed domestically and is only for utilization in products that will be exported.

The privatization process has started in 2000 and a new privatization process road-map for 14 state-owned sugar factories, under the portfolio of the Privatization Agency in 2018. Four factories

have already been sold. Six of them are belong to The Sugar Beet Producers Cooperatives except being partner of the one other plant. All production has been under contract farming since the beginning of the industry. This production system is also important as the first implementation of contract farming.

Sugar Board was abolished and all authorities were transferred to the Ministry of Agriculture and Forestry. Starch-based sugar quotas were decreased to five percent from ten percent. The privatization of state-owned sugar factories is continuing. There are also Sugar Beet Producers Cooperatives. These were established in 1951 to provide agricultural inputs and extension services. These local cooperatives have been organized under a national organization called as PANKOBIRLIK in 1972 (Rehber 2011). Presently 31 local cooperatives are member of this union with theirs about 1.5 million members. Besides other partnership of some enterprises Union has 5 sugar factories.

The relationships between companies and producers were being organized by these cooperatives. The farmer in contractual relationship with a company had to be a member of the cooperative until 1994. Since 1994, this has not been required and the role of cooperatives is not as important. After the privatization in 1980s, contract provisions were being determined in favor of the farmers by the producers cooperative that had the ownership of some factories which were running as SEEs before (Anonymous 1994). It was argued that this ownership integration through producers' cooperative has increased the financial efficiency in the privatized plant as in the USA (Koening 1995). Indeed, in Turkey, there would not be any difference in farmers' income through the type of integrator because prices are subject to the government price support system and are determined by the government.

The planted area contracted down to 293168 hectares due to the decreased production quotas and since the quotas remain unchanged for 2012/2013. Even though the number of farmers planting sugar beets has decreased more than 60% in the last decade (came down to 196904 farmers in 2010), this has been a result of not only the application of quotas, but also largely due to the commencement of a farmer registration system. With this new system, only one person from a family is recorded as the farmer in the online registry system instead of several members from the same family.

In the sugar beet production a simple pricing system is used based on the sugar content of the beet. Every year, the basic price which is based on 16% average sugar content has been announced by the Council of the Ministries. A premium is added or deducted according to the sugar content of the beet supplied. The premium is calculated by dividing the basic price by 16. The amount calculated for 1% sugar content is used as a premium, which is being used for the calculation of the price paid to farmers. If the supplied beet has sugar content more than 16%, the added amount equals the amount of extra percent times premium. If the sugar content is below 16%, same system is used vice- versa. In the price system, an extra premium is also paid for early harvest to regulate supply. The sugar beet plants are classified into four groups according to the harvest period to determine the early harvest premium. That is, the early harvest premium varied from group to group. This premium is paid only if the beet has sugar content greater than or equal to 16%. The government had supported the sugar sector with high procurement prices in the past (before the enactment of the Sugar Law), whereas the price is now determined by the consensus of sugar factories and producers (or their representatives) before plantation. The Sugar Board (presently is a directorate in the Ministry of Agriculture and Forestry) sets the level of production and allocates to the seven companies each year. Producers then contract growers in the vicinity of their factories (currently 33). The government had supported the sugar sector with high procurement prices in the past (before the enactment of the Sugar Law), whereas the price is now determined by the consensus of sugar factories and producers (or their representatives) before plantation. Consequently, sugar prices increased steadily from an average of 1.51 TL/kg in 2007 to 1.79 TL/kg in 2011

which were not found satisfactory by producers.

3.1.3.4. Contract Farming in a Studied Region

In the studied region, contractual relationships have been widely observed, mainly in tomato paste, vegetable and fruit processing industries along with spot market transactions. Contractual arrangements account for 75% as an average especially in tomato and peas production. In dairy industry, there was no straightforward contractual links between producer and dairies. About 60- 70% of the raw milk was sold in open market; the remaining 30-40% was handled in some kind of open-auction system. In the open market, processors either have stable or mobile procurement centers or raw milk bought through brokers and other middlemen.

In the auction system, as widely used in Balikesir Province, producers are organized under a cooperative or mostly under Village Service Unions which are semi-governmental organizations. These village service unions are having an active role in organizing these auctions in favor of farmers. The role of these organizations is similar to the bargaining cooperatives in the USA (Marcus and Frederick 1994). However, there are some problems in practice. It was observed that, in olive processing and vegetable oil industries, cooperative organizations, spot market transactions and long standing clients' relationship accounted for more than those of contractual arrangements. "MARMARABIRLIK (The Marmara Union of Olive Sales Cooperatives)" in olive and "TRAKYABIRLIK (The Edirne Union Oil Seeds Sales Cooperatives)" in sunflower seed processing have significant shares and also have a regulator role in the table olive, olive oil and sunflower oil markets. In the region of study, some olive producers are also members of the "TARIS (A top management of four agricultural sales cooperatives)" which is located in the Aegean Region. Marmarabirlik, which is a sales cooperatives union, has the biggest share in olive processing and marketing in the region with its 8 local cooperatives and 37418 members. Trakyabirlik is also a very efficient nation-wide union which has 48 local cooperatives and 138806 members. This union's share of sunflower growth for oil production was 34.4% in 1995 (Dayanikli 1995). However, these agricultural cooperatives have significant problems as mentioned before. Hop production was included in the scope of this research because of its interesting features concerning producers and industry relationship. In the hop industry, private sector, a state enterprise and a farmer cooperative organization have been sharing the market. One private company tries to grow raw material in its own plantation along with contractual relationships with farmers as an out-grower scheme (Glover 1987). Another private company and State Monopoly operate in the market only during harvesting season as buyers with an advance-paid price system. There is also a farmers' cooperative organization as a third alternative. In such a structure, despite the favorable offers, the private company could not succeed in increasing the number of the contractee farmers and also its market share over 60%. There is competition between farmers' cooperatives and private companies. The role of the cooperative in marketing shows the importance of the farmers' organization in contractual relationships and of obtaining bargaining power through those organizations (Koening 1995, Ling and Liebrand 1995, Rehber 1996).

i. Contents of Contracts

Twenty five contracts have been examined from the region pertaining to this study. There was no special legislative base in Turkey until 1996 for production contracts which were prepared mainly on the basis of the contract sample of the Turkish Sugar Industry Stock Companies or of the personal preferences of the integrators.

There were some differences in the contents of the contract details often written in a language not easy to understand by farmers. They appear as provisions that the producers should obey arranged by the processors. Contracts generally compromise four main sections (Buccola 1980). In the first section, both parties are defined; in the second, the economic provisions of the contract and the responsibilities of both parties are presented. The third section includes technical conditions and the last section includes the authority and method for resolving disputes and dissatisfactions. The end of a contract has a signature

and authorization clause.

The length of the contracts found in our sample was mostly one year; the only exception was the hop production contracts which span more than one year. Eighty percent of the examined contracts are based on tonnage while 20% have an acreage basis. The contracts have been signed by an individual producer or by a producers group in which all producers are responsible reciprocally to

each other. Each producer group has a representative or a responsible producer who has the right to change or add provisions to the contract and also act as the representative of the processor. The share of this group approach is about 60% of the investigated contracts. Although the contract indicates both producers and processor's responsibilities, the producer is also responsible for extra debt receipts, especially when he has received inputs or payment in advance from the integrators. While the share of payment in advance in contract implementations was 76%, the share of the contracts which have a debt receipts placed was about 60%. The price and payment systems vary from contract to contract. The rate of the contracts in which the constant price approach has been used was 36%, whereas the constant price plus a premium system was used in 44% of the investigated contracts.

ii. Contracts from the Producers' Perspective

In the study region, interviews have been carried out with 75 contractees and 16 farmers who do not have contractual relations. Sixty five percent of the interviewed farmers have produced field tomatoes. Contract farming is also widely used in the production of broccoli and green pepper. In the production of tobacco, contractual relationship is compulsory as in all of Turkey. Sixty two percent of the farmers, who were interviewed, indicated guaranteed price and sale as the main reasons for signing a contract. Credit facilities and technical aids were indicated as secondary reasons. Producers generally interpret contracts as the only way of coordination, and are not necessarily being interested in what is written on the contracts. However, 54% of the producers who replied to questions about contract provisions said that they did not read the contract beforehand and merely signed it. Twenty percent of the producers who read the contract indicated that they could not understand most of the language used. In practice, contracts are prepared by the processors and offered to the producers to sign who would like to produce under contract. Sixty percent of the farmers have expressed some problems concerning the contractors' responsibilities such as delay in payment, delivery, inadequate technical input aids, and information. Processors would like to spread delivery over a long period. This causes a backlog at the delivery points and very often quality deteriorates resulting in a loss of the quality premium.

Interviewed farmers were not happy with the group approach to signing contracts. For example, in production, each group consisted of 30 farmers. The first farmer in the list was the group leader and the second one was the second in command, they sign the contract for group members. The most important problem with this approach is that group members do not meet and do not feel responsible to each other. It is clear that there is no benefit with this group approach beyond being a sound guarantee for the processor. Attitudes of group leaders acting as representatives of the processors would not be an acceptable behavior for the other farmers in the group.

Almost all of the producers would like to have a contract which is authorized by a third party, preferably represented by the Farmers Union or Directorate of Agriculture or by the so called 'muhtar' (the elected head of village). Respondent farmers replied 95% positively to the question for organizing a bargaining cooperative as widely seen in the USA. Sixty five percent of them stated difficulties on establishing such an organization.

In the study region, 25 farmers, who are not involved in a contractual relationship, were interviewed. Only 16 questionnaires were evaluated. Seventy three percent indicated that they were familiar with contract farming, and 56% had contracts previously. Disputes related to price and methods of payment were primary reasons for not continuing with contracts. As observed in the hop production, the dissatisfaction along with the availability of other marketing alternatives has caused an attitude against contract farming. However, even the contractee farmers had a tendency for using other alternatives to decrease market risk.

iv. Contracts from the Processors' Perspective

It is a fact that the processors prepare contracts, which means that they determine the

conditions of the contracts. However, most of the interviewed processors have agreed that all

contract provisions could not be realized. Consequently, contract production could not function as a way of providing raw material, which has quality and quantity requirements.

The contractor firms argued that, farmers are reluctant to use modern inputs and technologies which were generally advised by the field experts of the firms. According to the processors, the most significant problem has been purchasing the commodities and payment. Except for the price which is subject to government intervention, all product prices are affected by the price in the open market regardless of the price in contracts. 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. In order to avoid this, farmers are forced to sign an open debt receipt in addition to the contract. Moreover, the farmer who is acting in the same manner repeatedly has been punished by contract exclusion for at least a few years. In practice, this approach was called the 'red pencil'. Conversely, when the contract price is over the open market price, farmers try to supply more product which they have obtained from relatives or from outside of the contract's parcels.

There has been a competition between firms and provinces. Firms which do not have any contractee farmers, have been offering higher prices to the contractee farmers of other firms when a shortage occurs in the production or when demand for processed food increases. Another significant problem for processors in the situation of disputes, relates to the fact that the contract itself has no meaning.

Going through the court created long delays in order to solve disagreements and disputes between producers and processors. That is why the need for mediation or a conciliation system is clear. Processors who do not have any contractual relationship considered that they have used contract farming in the past, but it is no longer used because they can easily purchase raw material in domestic open or foreign markets. Thirty three percent of them indicated that they could use this system if they need.

3.2. Contract Farming in Developing World

3.2.1. A General Review

In the developing and less-developed countries, contract farming is offered as a vehicle for the transfer of technology, modernization of peasant smallholders, and the creation of a stable and politically conservative class of family farmers. This system was accepted and used as one of the promising institutional frameworks for the delivery of price incentives, technology and other agricultural inputs. Contract farming represents an expanding and much suggested method of agro- industrial integration for developing economies. It is argued that this system of coordination holds great potential for rural development if it can be integrated easily into the national economy. Contract farming is also evaluated as a method by which agriculture in the developing world is converging with that in the developed world (Watts 1992). Contract farming has been also widely used since the 1980s, especially for the products that are called "non-traditional" in some third world countries (Echanove and Steffen 2005). It is impressed that contract farming has spread enough in the region that it can be considered as a significant agent of capitalist development in agriculture (Clapp et al. 1994).

Recently trade liberalization and the opening to foreign investment have affected expanding of contract farming very significantly in the developing world. They have a considerable potential as suppliers of attractive agricultural products and at a convenient cost for export markets. Developing countries are also final consumer markets with increasing needs of large quantity of products to feed the growing population especially in the urban areas. It is also argued that contract farming offers opportunities for the small farmers to access competitive markets based on the services provided by the companies which help modernizing their production capacities. 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) (Little 1999).

The 'Smallholder Contract Farming' issue has been raised simultaneously by different Farmers' Organizations within the Development Cooperation Committee (DCC) of the International Federation

of Agricultural Producers (IFAP) and by different agro-agencies, members of AgriCord[26]. The 'Smallholder Contract Farming' program is part of Agricord's and IFAP DCC's action plan on trade capacity development. The priorities of this action plan were defined during the 2001 meetings of the Regional Committees and the Development Cooperation Committee. More than 70 Farmers' Organizations from developing countries participated in meetings for Africa (Cairo, Egypt), Latin America (San José, Costa Rica) and Asia (Tokyo, Japan) (Stessens et al. 2004).

The World Investment Report (WIR) 2009 by UNCTAD states that contract farming activities by TNCs [Transnational Corporations] are spread worldwide, covering over 110 developing and transition economies, spanning a wide range of commodities and, in some cases, accounting for a high share of output (Oya 2012).

Contract farming is today one of the most debated institutional arrangements for production and marketing of agricultural commodities in developing countries. Reviewed literature reflects the tremendous variety of contracting schemes in Africa and Asia regarding both the contracted parties, the social organization of the schemes and the heterogeneity of the contract itself. Rather than relying on commodities purchase from farm gates or on spot markets, however, supermarkets rely on complex supply chains in which commodities are produced under contracting in order to ensure that they have access to a stable supply of commodities that satisfy specific quality requirements. **Consequently, contract farming - the economic institution where in a processing firm and a grower enter in to a contracting which the firm delegates the production of agricultural commodities to the grower - is playing an increasingly important role in developing countries** (Bellemare 2012). Moreover, the institution of contract farming is expected to play an even more important role in developing countries in the future. With the advent a growing popularity of **fair trade commodities** industrialized countries over the last decade, industrialized country consumers have been increasingly linked to developing-country producers (Bellemare 2012).

Several studies show that small farms are much less engaged in contracting than bigger ones, although contracting may be highly profitable for them, especially in developing countries where it can improve market access. Higher transaction costs for smaller farms may be an issue but third party involvement (public or private) could help to reduce them (Vavra 2009).

Some studies show that the primary role of the governments should be that of a facilitator among partners to create an environment where contract farming could successfully be realized more than giving direct subsidies (ADB 2005). However, also in many African, Latin-American and South Asian countries the state played a very important role in the agro-food chains. For example, in Brazil and Mexico, wholesale markets were run by the state (Reardon and Swinnen 2004); in South Asia the state heavily regulated food markets and many African commodity markets and trade regimes were controlled by state organizations. In many of these countries, the state played an important role in agricultural production and marketing in the decades after independence from colonial power. Governments in Sub Saharan Africa (SSA) and South Asia were heavily involved in agricultural marketing and food processing through the creation of marketing boards, government- controlled cooperatives and parastatal processing units. These government institutions were often monopoly buyers of agricultural products, especially for basic food crops and important export crops (Swinnen and Maertens 2006).

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[26] AgriCord is the network of "agri-agencies", non-governmental organisations for development cooperation with structural links to the farmers' and rural members' organisations in their home countries (8 EU Member states and Canada). AgriCord and agri-agencies provide support to farmers' organisations in developing countries, covering both capacity building and concrete operations. AgriCord is composed of 9 agri-agencies and 4 associated members:

http://www.agricord.org/about

Some researchers stated that the growth of contract farming is related to the implementation of neo-liberal policies that are connected with the removal of state supports to agriculture based on the experiences in several third world countries. In the recent decades, there has been a tendency for transnational corporations to shift from land ownership to a contracting system.

A survey of agro-food processors in five CIS countries (Armenia, Georgia, Moldova, Ukraine and Russia) found that food companies which used contracts with suppliers grew from slightly more than one-third in 1997 to almost three-quarters by 2003 (Swinnen and Maertens 2006). Further east, in Armenia, Georgia, Moldova, Ukraine and Russia, the percentage of food companies utilizing contracts rose from 25% in 1997 to 75% in 2003 (Prowse 2012*).* In some studies, it is argued that contract farming arrangements changed the farming structure in less developed countries and was not for the benefit of the small growers (Runsten and Key 1996). There is possibility of exploitation as an unorganized mass of smallholders by a single buyer. Political as well as economic factors play an important role in determining the distribution of benefits resulting from contract farming (Glover 1983). Excluding small farmers by contractor firms seems to be a common problem in some contracting schemes and needs to be solved (Guo et al. 2006, Simmons 2002). Some researches show that contract farming is not beneficial to the small farmers and in some cases; small farmers have been excluded altogether. Another study again focused on the suffering of the small farmers in Africa who produce on contract (Porter and Howard 1997).

There are also opposite observations. For example, in Indonesia, contracting firms favored larger farmers in the cultivation of rice and corn while favoring smaller farms in the cultivation of seed corns and broiler (Simmons et al. 2005). A discussion about the contract farming in the Vietnam advised a two-tired contract system for the poor small farmers where companies make contract with cooperatives and the cooperatives subsequently make contracts with members and other farmers (Philips and Xuan 2005). It was argued that, generally, group contracts with the intermediation of local NGOs and farmers' organizations and institutions make the contracts more durable, enforceable and fair. Necessity of the legal protection to contract growers was indicated to protect them from the undesired effect of contracting (Key and Runsten 1999).

In this chapter contract farming implementations have been reviewed based on the studies available in different continents.

3.2.2. Africa

Indeed, contract farming schemes should be examined case by case in order to understand their specific structures and their potential as a tool of rural development policies (Bauman 2000). Most contracting schemes have more than one actor beside processors and growers, **especially in Africa where private sector involvement is rare**. A review of 67 contract farming schemes in Africa showed that 70% of them have fully or partly government ownership (Little and Watts 1994). Some of the largest out grower's schemes such as tea in Kenya are public sector schemes. Some cases are more complicated in which public sector schemes are under private management or a private scheme may be supported by government subsidies, extension and research (Baumann 2000).

Analysis of the Kenyan experiences has shown that contract farming has the potential to provide a Pareto-improving form of governance, and it can be used to increase the income available to the rural sector and it is a practice which may be engaged in for both efficiency and anti-competitive motives (Gross 1994). Also, a research shows that contract farming within smallholder tea production in Kenya has changed family member relations and the role and the statue of the women and men in the family (Bulow and Sorensen 1988).

A study based on the experience of seven countries in East and South East Africa with contract farming and out grower schemes, in Kenya, Tanzania, Zambia, Zimbabwe, Lesotho, Swaziland and Malawi, shows that in most cases, performance in delivering services has

been enhanced and resulted in increased income to the farmers despite the high management costs. Another study of the experience of Zimbabwe shows that contract farming has been the motivating force behind the decision of small-scale producers to grow non-traditional vegetables under contract for export (Masakure and Henson 2005). Decreasing uncertainties, providing indirect and direct cash benefits,

and interestingly providing a social prestige and being a source of self-satisfaction are found to be the main motivation, although these factors have shown variation under different conditions (Masakure and Henson 2005). In Swaziland, Fourth National Development Plan advocates the development of our grower schemes based on the example of Vuvulane Irrigated Farms as an alternative strategy for rural development (Levin 1988).

Coulter et al. (1999) investigated the importance of the relationship between contract farming and farmers cooperation, besides the role of government and non-governmental organizations in the development of food industry and small farmers in Sub-Saharan Africa (Coulter et al. 1999). Contract default and scale of farmer operations have been shown as two main problem areas which threaten the potential of contract farming based on the research in Zambia, Zimbabwe and Uganda.

Barrett (2008) in the analysis related with the Eastern and Southern Africa suggest that, a farmer's expected scale of supply matters insofar as firms face smallholder-specific fixed costs that make bulk purchases more attractive. The presence of such smallholder-specific fixed costs clearly favors smallholders with more land suited to growing the contracted crop, better technical ability, and more experience growing commodities under contract, as well as the neighbors of such farmers and members of FOs or cooperatives, given that they can more easily tap into a social network relevant to their contracting activities. This scale effect is reflected in market participation data by a high concentration of sales among a small number of growers (Barrett, 2008).

The relatively high upfront investment required to participate in modern markets is a challenge to participation of smallholders. In the same way that much of the early Green Revolution literature focused on limited small farmer uptake of improved seeds, fertilizer and other components of "modern" production systems, a large share of the emerging literature on modern value chains has been concerned with smallholder participation in contract farming arrangements (CFA) and with whether these same value chains might be leaving many poorer farmers behind (Barrett, 2008).

Although most of the evidence comes from staple grain markets, a relatively small group (i.e., less than 10%) of relatively well-capitalized farmers located in more favorable agro-ecological zones accounts for a significant majority of market sales throughout the world (Barrett, 2008). This suggests that gains from agro-food value chain transformation accruing to net sellers in the form of higher profits will likely concentrate in the hands of a relatively modest share of the farm population in the developing world, although there is presently scant hard evidence on this important point. Most empirical studies of the welfare effects of CFA transformation and participation have struggled to establish causality, that is, to ensure that the estimated impacts on welfare can truly be ascribed to CFAs rather than to unobserved factors.

However also in other regions where the state played an important role in food chains vertical coordination was widespread. For example, many of the African parastatal organizations provided both inputs to farmers and purchased their outputs. Government marketing organizations and parastatal processing companies used vertical coordination (VC) systems with upstream suppliers. The dominant form of state-controlled VC was that of seasonal input and credit provisions to small farmers in return for supplies of primary produce. In fact, state-controlled VC was often the only source of input and credit provision for peasant farmers. For example, the government marketing boards ADMARC in Malawi and NAMBOARD in Zambia provided seasonal inputs to peasant farmers deducting the value of the inputs from the payment made for marketed output at harvest time (Poulton et al. 2010). Also parastatal cotton companies such as CMDT in Mali, SODECOTON in Cameroon and the Ghana Cotton Development Board in Ghana provided credit and inputs to cotton farmers (Poulton et al. 2010). Also extension services were offered by the government, either implicitly within VC of marketing boards and parastatal processing companies – e.g. the Ghana Cotton Development Board – or through other channels. Also more complex and

extensive systems of state-controlled VC existed. For example, the Ghana Cotton Development Board also provided extension services and the Kenyan Tea Development Cooperation was involved in effective control at all levels of the operation including planting material, production processes, quality control and extension services (Poulton et al.1998, Bauman 2000).

In many Sub-Saharan African (SSA) countries, state-controlled vertical coordination has been particularly important – and still remains important in some countries. For example in Kenya, by the mid-1980's more than 230000 rural households, or about 16% of the rural population, were involved in outgrower schemes with large parastatal companies and government marketing boards for the production and marketing of tea, sugar, oilseeds and tobacco (Baumann 2000).

Barrett et al. (2012) evaluated the results from empirical studies of contract farming arrangements in three countries from Africa including India and Nicaragua (Ghana, Madagascar and Mozambique) to inform a conceptual framework of the determinants and dynamics of smallholder participation in CFAs (Barrett et al., 2012). Conditional on a firm choosing to enter a region, it chooses contract terms and the growers to whom it offers contracts within that region. Conceptually, the decision is reasonably simple: the firm offers contracts to the farmers for whom the firm's expected profit levels are the greatest, up to the point that it meets its product throughput requirements. At this stage, the difficulty for firms lies in identifying which farmers are likely to be the most profitable suppliers, given the considerable uncertainty surrounding farmers' inclination or ability to adhere to the contract. In order to identify the best contracting partners among smallholders, firms look for readily observable indicators. For horticultural products, for example, access to irrigation is typically key factor. Membership in a farmer organization (FO) or participation in a nongovernmental organization (NGO) extension program can be another observable signal that helps the firm identify the best prospective suppliers, because of the technical support, bulking, and prospective group enforcement mechanisms that commonly come with FOs or NGOs (Barrett et al., 2012).

3.2.3. South America

In the years following World War II, contract farming has been substituted for several different forms of agricultural production in Latin America. It was argued that contract farming is a part of the tobacco sector since 1918 in Brazil (Watanabe et al. 2017). Nowadays, significant part of the production of vegetables, fruit, and livestock for industrial processing is produced through contract farming. Indeed, the significant growth and importance of poultry and swine supply chain is due to the adoption of innovative productive system through contract farming. Besides food sector, contract farming is used in the biodiesel production system with the intervention of State that requires the purchase of feedstock produced by family farmers. However, as many countries, Brazil has no specific law for contract farming. The absence of a specific legal framework in Brazil, and the lack of autonomy of this type of contract, compared to other legal models known by the executors of the law, have led to numerous misunderstandings. Specially, when the Judiciary is called upon to settle disputes on contract farming, judges conduct it like other legal types such as futures, labor contract; agrarian partnership etc. (Watanabe et al. 2017). A considerable effort has been initiated in Brazil since 1998 to issue a specific law for contract farming.

In Honduras bananas once cultivated on corporate plantations, are now grown by associate producers under contract. Contract farmers in central Honduras have been producers of Asian vegetables for American markets since 1989. A study based on the interviews with 15% of farmers (a sample size of 70) in the Comayagua Valley shows that contract farming holds the potential to provide benefits to small farmers who would otherwise be unable to access export markets (Imbruce 2008). Production relations between firms and farmers are found often asymmetric and can be exploitative. Poor communication and legacies of mistrust between commodity agriculture and small farmers lead to ambiguities in the contracting system that are misinterpreted by both firms and farmers, creating social tensions between contracting parties. This article will consider how farmers' navigation of the contracting system and competition between export firms has led to changes in the system. Through competition for a limited pool of outgrowers, firms adjust

their policies in favor of farmers without explicit attempts of labor organization on the part of the farmers (Imbruce 2008).

In Peru breweries that once bought barley on the world market are now supplied by contracts with a network of farmers. Key and Runtsen (1999) based on their study of Mexican frozen vegetable industry and other studies of contract farming in Latin America noted that many processors are

contracting primarily with large-scale growers leaving smallholders (Key and Runtsen 1999). One study in Mexico shows that contract farming dominates the horticultural crops for processing and export and grain for private companies. For the grain companies, the main impetus for contracting is to obtain government subsidies, either in production and/or marketing process. Mexican government promotes contract farming (agricultura por contrato) as an instrument that resolves problems in the grain marketing because these products were subject to free trade (Echanove and Steffen 2005).

3.2.4. South and East Asia

In the rapidly growing economies of Southern Asia, besides the emergence of processing enterprises which meet the diversifying and growing domestic and international demand, contract farming system has been a contributing factor in the rural growth process. The responsible public sector institution, FELDA (Federal Land Development Agency) was established by the Indonesian government in 1956 and as a result Indonesian schemes are now widespread and active (Glover and Ghee 1992). A research, which was based on the case studies of village level processing and marketing activities involving soybean, cassava and tobacco in Indonesia, illustrates that significant additional income and employment can accrue to farm producers from such agricultural marketing and processing activities at the village level (Kawegae et al. 1994). According to the results of a study of contract farming in some regions of Indonesia, it positively affected welfare and reduced absolute poverty (Simmons et al. 2005).

Results of a comparative study in Bangladesh show that although the independent farmers were able to get higher prices as compared with the contract farmers while contract farmers were better off in getting net return (Begum 2005). It is found that contract farming system is substantially more profitable compared to the independent farming system in study was carried on in Bangladesh. Net return of vertically integrated contract farming system in broiler production was 1.7 times higher compared to the independent farming system. The higher profitability that results from contracting may be due to productivity which comes from financial support, technical information exchange and marketing assistance. Moreover, in the contract farming system, price risk and part of production risk due to mortality was shared by the integrator insurance policy. Contract farmers were also assured of more stabilized prices even during period of low demand. Well organized vertically integrated poultry farming could be a feasible approach to increase the poultry production in Bangladesh and by following this system various problems of running commercial farms may be solved as well as contract poultry farmers will receive more benefits than independent farmers. It could be suggested that for increasing the poultry production and developing poultry industry, government as well as other private integrators could take the initiative to establish such effective and well-organized contract farming systems in Bangladesh (Begum 2005).

Another analysis in Thailand based on a survey of 445 rice farmers shows that organic rice contract farming is more profitable than conventional non-contract farming by a significant margin for all scales of production. The finding reveals that a combination of contract and organic farming is effective in improving the profitability and efficiency in rice production (Setboonsarng 2006).

Gulati et al. (2005) point out those profits for contracted swine producers in the Philippines and Thailand were much lower than for independent producers in 2002. With reference to tobacco production in Sri Lanka, it is argued that contract farming can only contribute in meeting the basic needs if the income and employment it generates can be distributed with a measure of efficiency (Kirk 1987). However, Thailand's experience is quite opposite. Attempts and efforts have failed in almost every case examined (Manarungsan and Suwangindar 1992). In Thailand, the state not only proactively promotes but also mediates between farmers and contractor companies. However, a study of the Thai experience shows

that, despite the state's involvement in the contract farming, it failed in decreasing the role of middlemen in the process. The research concludes that if there are enough mechanisms to monitor and use contract for development purposes, it could provide potential benefits for all the parties involved, especially small and marginal farmers (Singh 2005). In a study of contract farming in Thailand, notes that most of the contracts are one-sided in favor of the

company. For example, in a contract with the one company, farmers agree to sell their produce exclusively to the company, but on the other hand, the company is not committed to buy the product from the farmers (Sing 2005). The contract farmers do not even receive a copy of the contract when it is signed. The Thai Senate Committee on Agriculture and Cooperatives reached similar conclusions. Although its report recognizes the potential of contract farming to modernize the agricultural sector in Thailand, it also admits that "most of the contracts exploit farmers and producers. Farmers have to follow the conditions set by the processing factory which are not equitable". Low incomes are one of the major complaints of the farmers. Broiler raisers under contract with one multinational company in the Northeast of Thailand can earn as little as a month per worker, after deducting the costs of production and repaying the debt to the company, the bank or the loan shark. The way farmers' incomes are calculated is usually very complex. It can vary according to many factors such as efficiency, the quality of the product, its size, and usually the market price as well. This calculation makes it very difficult for the farmer to anticipate how much he or she will eventually get and to check if the contract has been honored (Delfore 2007).

One of the recent study based on the primary data collected from the 52 broiler units in Chiang Mai province of Thailand in 2011 shows that contract farming looks quite attractive for farmers as well as for private companies but most of the farmers complained about long waiting until the delivery of the next cycle of chicks have started (Areerat et al 2012).

It was indicated that both farmers and firms enjoy greater flexibility if the farms are small and have diversified production activities. Of course, the failures in the related government policies have also had negative impacts on contract farming. Perhaps the most important reason for the success of the Malaysian and Indonesian experiences is the strong and continuous support provided by their Governments (Ghee and Dorall 1992).

Experiences in the same sub-regions of the world have shown variations. For example, the Malaysian schemes appear to be the most successful. They are long established and are comparatively larger in size and number. The Malaysian experience of contract farming is characterized by public sector involvement in settlement- out grower schemes. For example, in the Sarawak state of Malaysia, contract farming is initiated as a part of an action program that trains indigenous smallholders in commercial poultry production. The result shows that this public contract scheme served more to support disadvantaged minorities than to create a pool of competitive firms (Morrison et al. 2006).

A study was use the example of the Vietnamese dairy sector to analyze the effectiveness of existing contracts between a processor and smallholder farmers in terms of incentivizing the production of high quality milk (Saenger et al. 2012). A framed field experiment is conducted to evaluate the impact of two incentive instruments, a price penalty for low quality and a bonus for consistent high quality milk, on farmers' investment in quality-improving inputs. Statistical analysis suggests that the penalty drives farmers into higher input use, resulting in better output quality. The bonus payment generates even higher quality milk. They also find that input choice levels depend on farmers' socio- economic characteristics such as wealth, while individual risk preferences seem to be less important. In the study, implications for the design of contracts with smallholders are also discussed (Saenger et al. 2012).

Contract farming arrangement in the Laos can be considered as a typical one. As contract farming in the Lao PDR is relatively new, having been promoted only in the last 5 years, most reports focus on the impacts of large-scale concession farmers, with relatively few studies addressing the economic and social benefits of small-scale contract farming or the types of contract farming that are most beneficial to the poor. Within this context, contract farming is emerging as a mechanism that has the potential to lift small-scale farmers out of poverty, but only if it is well managed. The variations in contract farming resulted in varying implications in terms of agreement types, degree of flexibility, extent of material support, and strength of relationships between the contracting farmer and the firm.

Overall, contract farming has resulted in beneficial material and non-material outcomes for the Lao PDR farmers as observed in the three case studies (Manorom et al. 2011). The extent of the benefits varies according to the contract farming arrangement. The results of the case studies

strongly suggest that there is no single contract farming model that can work best in all situations, and that contract farming models are crafted to address certain production and marketing limitations that prevent efficient functioning of industries and markets. However, considering the higher levels of access to services of contract farming farmers and the high levels of overall satisfaction with contract farming, it would appear that engaging in contract farming is a valuable way to enter into commercial, cross-border agriculture. The policies promoting cross-border trade and small-scale contract farming appear to be generating positive results and should be maintained and enhanced (Manorom et al. 2011).

China's agrarian transition started with the de-collectivization reform in the late 1970s, which devolved both use rights of farmland and some decision-making rights over the production process to rural households, and opened up markets for the sale of surplus grains and other crops. A precursor to contract farming emerged in 1985, when the state abolished the state-monopolized procurement and marketing of grains and replaced compulsory grain production quotas with grain purchasing contracts with rural households, signed prior to planting (Oi 1986). The contracts only covered staple grains – rice, wheat and corn. While the terms of these contracts were similar to those of production contracts elsewhere involving, for example, the seed strain, the quality, quantity, price and date and place of delivery (Zhang 2012).

Because of the China's political economy: strong collective institutions, active state support for agriculture and strong domestic markets, some distinctive features of contract farming were underlined. The recent turn in China's agrarian transition towards vertical integration of agriculture with industries is, however, undermining these conditions and may move China towards more convergence with other countries. Studying contract farming in China's unique political economy context shows not only how variations in the political economy can alter its practice and impact, but also how it needs to be evaluated in comparison with competing alternative (Zhang 2012).

Chinese agriculture has undergone fundamental changes after the agrarian reforms initiated from beginning in 1978. Since 1990, contract farming has been supported by the Chinese governments. According to the Department of Agriculture, the planted area under all types of contract reached 18.6 million hectares in 2001, which is approximately 40% higher than in 2000 (Guo et al. 2006). For example, Hu et al. (2004) investigated a supermarket corporation that started contracting with farmers for its own markets and exports. This firm started with 300 farms in 1999 and reached 4500 farms in 2003 (Hu et al. 2004). Chinese experience shows that government support could significantly influence farmers' and firms' choice of contracts. Meanwhile, there are also some general arguments against contract farming. In such a structure, agricultural policies which are shaped by public institution both at the level of national governments and international organizations are losing their importance and are being replaced by unregulated, transnational market forces (Nanda 1995).

Expansion of agro-capital brought contract farming into a sector that had long been dominated by small-independent family farms. A series of national surveys conducted by China's Ministry of Agriculture (MOA) found that the percentage of rural households engaged in market-orientated, commercial agriculture nationwide increased from 10 per cent in 1996 to around 50 per cent in 2005 (Niu 2006). Among the various organizations that intermediated commercial producers' transactions with markets, the majority used contract farming; nationwide, the number of organizations that engaged household farmers in contract farming rose from 8377 in 1996 to 58186 in 2002 (Niu 2006).

The growth of contract farming is a part of China's 'hidden agricultural revolution', driven by structural changes in the society. For smallholding producers, both the growing demand for higher- value food products by urban consumers and the rising land-to labor ratio created by a declining rural birth rate and massive labor migration encourage them to shift from grain production to specialized production of high-value commodities. For agribusiness companies, the growing consumption of high-value and processed foods, rising scale of food

retailing, increasing incidences of eating out and surging demand for industrial inputs in farming in the domestic markets also make agriculture a new venue for capital accumulation, attracting them into agriculture (Zhang 2012).

The growth of contract farming in China was also fuelled by the central government's plan for agricultural modernization and industrialization. China's household-based smallholding agriculture, created by the de-collectivization reform, has inherent limitations. Chief among these are the high costs and risks in gaining the capital, the skills but especially the market access needed for commoditized agriculture, which deterred many small agriculturalists from making the transition. The central government began to formulate and implement its agricultural modernization program in the mid-1990s, which aimed to transform China's small-scale, household-based agriculture into a modernized agriculture, with the emphasis on increased scale, specialized production of higher-value goods and market-orientation (Zhang 2012).

Agribusiness companies set up contract farming arrangements with household farmers in one of the following three patterns. First, in what is called the 'company + household' model, companies directly contract with rural households and set up terms of production and purchasing (Zhang 2012). In the second, the 'company + base + household' model, besides contracting with rural households, companies also set up their own production bases – corporate farms using wage labor – on land that they directly control, usually in the same geographical areas. For example, a domestic poultry meat processing company in Shandong, receives 40% of the poultry that it processes for multinational fast- food chains from about 10000 farmer households in Changyi and neighboring counties, which produce for the company on contract. The company, however, simultaneously runs a base farm on land leased from villages that provides another 40–50 per cent of its poultry supply. In the third model, 'company + intermediary + household', companies establish contract arrangements with intermediary agents, who represent individual farmers in their dealings with companies. While the most typical intermediary agents are producer cooperatives formed by rural households, village authorities and even local governments sometimes act as the intermediary, signing contracts with companies and coordinating the production of rural households. A contract relationship may also involve more than one intermediary. For example, in a contract production of bee honey, six of the
54 beekeeping cooperatives in Zhejiang Province's Jiangshan city – all formed by beekeeping households – entered contract arrangements with a Shanghai-based health product company. The city's Association of Beekeepers was also involved in mediating and monitoring the contract fulfillment by both parties.

China's 'company + base + household' model is similar to the nucleus-estate and outgrowers scheme in other countries and the 'company + household' model is also a widely found practice elsewhere. In other countries, a variation of China's 'company + intermediary + household' model emerges from the role played by large, capitalist growers acting as intermediaries who subcontract to smaller farmers. In China, however, due to the egalitarian distribution of land and absence of large land owners, no incidence of such subcontracting has been reported (Zhang 2012).

A study examines what factor determines demand of firms for contract farming, and how the market condition affects their demand based on the data of 208 pork processing firms in Jilin and Henan Provinces in China. These firms faced a severe price competition, and failed to differentiate their products that allow them to raise selling prices. Under this market condition, few firms have demands for employing contract farming. Contract farming effectively controls the safety of pork but generates further costs, since the firms have sufficient power to differentiate products and set higher price. However, firms can afford to do contract farming only by suppressing procurement price from farmers. Contract farming, as theory predicts, is taken by the firms who are motivated to produce high quality agro products, and willing to bear monitoring cost for inspecting pork. However, substantial part of firms chose procurement through middleman, which saves transaction costs and transportation costs (Miyata et al. 2009).

Another study based on an analysis of a survey of 100 agribusiness firms engaged in

contract farming in Zhejiang province of China finds that private contract enforcement mechanisms play an important role in influencing smallholders' decisions to breach or fulfill contracts. Contract arrangements such as floor pricing, or requiring smallholders to make specific investments facilitate self-enforcement and significantly improve the smallholder's contract fulfillment rate. This is

particularly important in Chinese agriculture since the business environment is characterized by an absence of effective public enforcement institutions (Guo and Jolly 2008).

Contract farming in India can be traced back to the colonial period when some commodities like cotton were produced for England. Seed production has been carried out by seed companies for more than four decades in India (Singh and Asokan 2005). India has become the second largest producer of fruit and vegetables in the world. Contract farming is generally recommended to improve the productivity (Bhatia 1994). The colonial era was a period of the introduction of cash crops such as tea, coffee, and rubber, poppy and indigo in various parts of the country, mostly through a central expatriate-owned estate surrounded by small out growers' model. An international tobacco firm introduced cultivation of Virginia tobacco in Coastal Andhra Pradesh in the 1920's incorporating most elements of a fair contract farming system and met with good farmer response. This was replaced by auctions in 1984. Another multinational company introduced tomato cultivation in Punjab in the 1990's under farming to obtain inputs for its paste-manufacturing facility established as a pre-condition to its entry in to India (Kolekar et al. 2013).

Contract Farming was the strategy of choice for almost all food processing projects contemplated in the 1980s and 1990s. Contract farming is again popular, and even more common for bulk production of subsistence crops, such as paddy rice, maize and wheat. Commodity co- operatives, which emerged in the 1950s, provided most services envisaged under ideal contract farming to their members and bought back the supplies offered at contracted prices, although these were not strictly contract arrangements (Rani 2007). Seed production has been carried out through contract farming by the seed companies quite successfully for more than four decades in the country. The new agricultural policy of 2000 sought to promote growth of private sector participation in agribusiness through contract farming and land bearing arrangements to accelerate technology transfers, capital inflows and assured market for crops (Rani 2007).

Since the Green Revolution, the Central Government started the largest contract farming model, through which it subsidized fertilizers, provided new hybrid variety seeds, provided training and also guaranteed the procurement by State agencies with a minimum support price. Agricultural Produce Marketing (Regulation) Act circulated by the Central Government to the States in 2003 for implementing marketing reforms has provisions for the registration of contract farming sponsors and recording of contract farming agreements. In addition, protection of title or rights of the farmers over the land under such contracts, dispute settlement mechanism and a model draft agreement suggesting various terms and conditions have been included. To help States in the formulation of rules in this regard, the Ministry of Agriculture has also circulated a set of Model APMC Rules to them for adoption and providing a legal framework to contract farming (Chakrabarti 2015).

A study, which examines relationship between firms and small producers of milk and broiler, finds that contract farming has considerably reduced transaction costs and improved market efficiency to benefit the smallholders (Birthal et al. 2005). Another study about the poultry production in the state of Andhra Pradesh in India shows that contract production is more efficient than non-contract production (Ramaswami et al. 2006). Another study carried on in India finds out that in spite of several advantages, the farmers under contract farming have certain problems like delay in payments, delay in the delivery of inputs, etc. These need to be addressed by the companies in the interest of sustaining long-term synergistic relationships between the firm and farmers. The government should also enact suitable bye-laws to make contract farming a more transparent and balanced enterprise (Nagaraj et al. 2008).

The process of contract dairy farming in Indian rural economy is a new concept. It involves domesticating animals for and on behalf of big business establishments or Government agencies and forwarding the produce at a pre-determined price. Indian dairy is at the crossroads of development, it is said to be the one of the faster growing sectors among

various agricultural and allied sectors. The role of contract dairy farming involves government and private participation along with the rural workers. Further, it engages a good number of farmers and other rural workers to discharge other agriculture related activities like poultry. It can help in getting good quality, sufficient, timely and cost effective raw material which is a prerequisite for any successful agri-business enterprise. Thus,

contract dairy farming will lead to Public Private Partnership (PPP) in dairy industry which can help in overcoming the major constraints of extension system and dairy production. It increases the cost efficiency and uniformity of products by coordinating and managing each production stage. The contract farming would be a practice to transform dairy sector in particular and animal-agriculture in general, if regulations, infrastructure facilities, transfer of technology and target oriented policies and programmers are brought in practice (Kolekar et al. 2012).

Welfare impacts of contract farming based on the collected data collected from a survey of 474 farmers covering four commodity sectors, gherkins, marigold, papaya, and broiler chickens, in the southern Indian states of Tamil Nadu and was conducted between 2009 and 2010.The list of contracting farmers for the year of the survey was obtained from one contracting firm in each of the commodities studied (Narayanan 2012). The study shows that net welfare gains vary widely both across contract commodities and across farmers within a commodity sector. While contracting in papaya and broiler are associated with improvements in net profit per month for those participating and potential improvements of 47% and 123% for current non-participants, the impacts for gherkins and marigold are more ambiguous. The standard deviation of point estimates of treatment effects is quite large indicating variability in welfare gains from contracting to different farmers even within the same commodity sectors. It is therefore important to recognize that notwithstanding the sign of average treatment effects, contract farming arrangements have diverse impacts on income for individual farmers (Narayanan 2012).

4. *PROSPECTS AND CHALENGES*

4.1. Main Reasons and Benefits of Contract Farming

Increasing consolidation and concentration in the food supply chain is an important structural change that has been characterizing food industries of many countries during the recent decades. As a result of these processes, the stages of the food supply chain (agricultural input production, agricultural production, food processing, and food distribution) have become much more tightly connected than ever before. Globalization, new technologies, economies of scale and scope, constantly changing consumer preferences, and food safety issues are some of the drivers of increasing concentration and consolidation at different stages and in various sectors of the food chain.

These changes have a profound effect on the structure of the relationships among the food supply chain participants, on their decision-making process, and on their economic performance. The decision-making process has become much more complex, as the representatives of different stages of the food supply chain now get involved in making the related decisions. This means that there are much more considerations to take into account, and more conflicts of interests to resolve. Consequently, the goal of any food chain participant to maximize its profit is strongly affected by the decision-making and economic performance of other food chain participants directly or indirectly involved in the same economic relationship.

Market imperfections that may produce incentives for closer vertical coordination include imperfect competition in addition to imperfections caused by externalities and imperfect or asymmetric information. From the transaction cost framework, the neoclassic focus on market imperfections is limited because it ignores the cost of exchanges, i.e. transaction costs. The main reason for the vertical integration is to decrease these transaction costs. The degree of integration mainly depends on the frequency, asset specificity, and uncertainty regarding transactions. Asset specificity encourages internal coordination. Large investment in specialized assets increases the potential loss under unexpected market outcomes. Thus, uncertainty (price, quantity, quality and time) is an important factor favoring internal coordination along with the availability of asset specificity.

Uncertainty and reducing risk have significant coordination implications. **One of the main**

risks is that of prices of inputs and outputs. Coordination through contracting or integration will reduce price risk to some extent. A second source of risk is related to quantity and quality features. In an open market structure, it is almost impossible to provide the required quantity of commodity in a

certain quality. A third source of risk is food safety issues that can be analyzed into two dimensions; the risks for human life and for environmental pollution. These risk sources require rather personal and coordinated market relationships including contract production.

Another main important force behind the integration and contract farming is the changes in the market structure. Well-trained buyers demand produce with a certain quality and quantity over time. As demand for agricultural products increases under demographic pressure and the progressive raise of living standards in many regions of the world and as the offer on consumer markets tends to be ever more sophisticated, contract farming is expanding. Indeed, contract farming is used as a tool to organize and link production capacities and market needs, to increase and diversify the availability of products on local and global markets, and to improve value chain efficiency. Consumers have become more discriminating food buyers. Increased demand of prepared food and concerns about nutrition and food safety are the important determinants for strengthening vertical coordination (Berkama and Drabenstoll 1995). Delivering food products with improved safety characteristics requires coordination among producers, first handlers, processors, and retailers (Caswell et al. 1994). The primary motivation for such arrangements is to obtain greater control over the physical characteristics and quantities of commodities exchanged (Buccola and French 1981).

A strict control is required from seed to producer table for safe product through the food system which is so called traceability. This requirement can be considered as one of the important incentives behind the growth of contract farming because contracting provides one way to achieve traceability (MacDonal et al. 2004). Deyi (2005) argued that "adoptions of traceability system have redefined the nature of the contract between the company and farmers". It transformed incomplete contract to be more complete contract, and replaced the informal rule with the formal one. Thus reduced the reliance on relational contract, meanwhile it also provided a deferred right and ex post liability settlement mechanism that could efficiently prevent farmers from opportunistic behaviors and minimize the monitoring costs of the companies (Deyi 2005).

It is a fact that production technologies have been improving very rapidly. Market failure in conveying information about quality is one of the motives for increased vertical coordination (Hennessy 1996). Contract farming is seen as a sound way to push innovative technologies and provide more efficient production.

The establishment of a new processing plant requires large investment resulting in high fixed costs. An uneven supply of raw material greatly increases unit costs. Therefore, these firms have an interest in keeping raw material inflows at a steady level close to plant capacity (Roy 1963, Harryman 1994). Relying on open market purchases is unlikely to achieve this steady raw material flow.

Contract farming is also thought of as a way of commercialization and industrialization in agriculture especially for the developing and less developed countries. Contract farming will help small family farms and farm laborers who need capital and managerial assistance (Moore 1994). The majority of the farms are small. It is commonly recognized that small family farms are potentially an important source of growth in agricultural production and small-scale agriculture has some socio- economic advantages (Rehber 1996). There are some serious constraints as well regarding the problems of access to production inputs, services, and information. Small farmers often lack the necessary production and marketing information pertaining to new crops and varieties. Even with sufficient information, they do not have the financial resources necessary. Access to credit facilities is limited mainly because of the lack of collateral. Contract farming is an example of such a mechanism that deals with many of these constraints in an integrated manner (Roy 1963, Doye et al. 1992).

It is argued that, agro-industry can assist small farmers to shift from a subsistence traditional farming to rather industrialized one through contractual arrangement to produce mainly export- oriented high value crops (Patrick 2004). Government intervention and

subsidization policy could be seen as an alternative to contract farming. Public interventions and support policies are ineffective especially in the developing countries and they do not help to remove the obstacles mentioned above. Government efforts to subsidize are mostly in favor of big farmers. The New World Order of

global restructuring of the food industry symbolized by the GATT and newly established WTO, which are mainly aiming at lessening or cutting agricultural subsidies, must be considered here. One of the main reasons to be in a closer vertical coordination for the integrators may be to avoid government restrictions (Shepperd 1990).

Internal transfer of intermediate input and flexibility of adjusting production cost through internalization can be used as a way of reducing tax. Internal exchange is a means of avoiding control when the intermediate input is subject to price controls.

Apart from the reasons mentioned above, recent sophisticated ideas such as environmentally sound, sustainable and economically viable agriculture and standards and regulation related to both environment and health safety are the main driving forces behind the fast growing use of vertical coordination and contractual arrangements in agriculture (Boehlje et al. 1995). Although the reasons for change from open production and market exchange to all types of vertical relationships are essentially similar, some inherent characteristics of agricultural production and marketing dominate contractual relationships in agriculture. Despite the changes toward a market-oriented structure, the rapid decline in numbers and growth in sizes—especially in the developed western world, historically large number of individual farm units and spatial dimension of the agriculture which consists of scattered firms structure over a large area have been the major factors for the dominance of long- and short-term production contracts (Olson 1985).

Other main distinctive characteristics of agricultural products and markets that make contractual relationship between farmers and processor could be identified as follows (Rogers and Sexton 1994).

- Agricultural products are often bulky and/or perishable, causing shipping cost to be high, restricting mobility and limiting access to only those buyers located close to the production site.
- Processors need highly specialized agricultural products and other inputs cannot normally be substituted for a given agricultural product.
- Farmers are specialized to the supply of particular commodities through extensive investment in specific assets. This represents exit barriers for farmers and causes the raw product supply to be inelastic (Rogers and Sexton 1994).

4.2. Problems of Contract Farming

Contract production refers to the contractual arrangement between farmers (growers) and other firms (integrators) and sometimes with a third party involvement as schemes in different structures. Even though contractual relationship of the advanced agro-food system has many advantages, it also has inherent and implementation problems. The structure of contract farming in practice displays a great variety. Therefore, available structure and prevailing economic and market conditions must be considered when evaluating related problems.

The main problem for the farmers is the lack of bargaining power. Contracting is a negotiation to some extent between unequal, economically powerful buyers (processors, wholesalers etc.) and weaker farmers. Without any intervention, individual farmers have no ability to negotiate and bargain on the contract terms ex ante. Farmers are generally left with the only option of accepting or rejecting the contract. In the case of disputes, farmers have only the right, ex post, to sue or use mediation or an arbitration procedure if so placed in the contract. It is a fact that contracting is a negotiation between unequal, economically powerful agri-business and rather weaker farmers. However, farmers can cooperate to gain bargaining power to ensure fair contract terms (Harl 2000). If the integrator has gained a monopsony position, he could abuse his own position to violate contract provisions in his favor. That means when alternative marketing opportunities are closed out, an overly integrated firm or sector may beat down the terms of the contract. Of course this is not a desirable consequence for improving agricultural marketing. This problem can be described in short as

"bargaining problem" that will be discussed in detail in the following part of this chapter.

In general, along with a variety of related problems such as delays in delivery or payment, quality deterioration, etc., which are emerging from the implementation, contract farming generally has some disadvantages or problems as a production system as summarized below.

One of the economic factors favoring the increasing use of production contracts is the need to realize efficiencies through risk management. However, **contract farming creates its own risk**, despite reducing others. For the producer, the failure of producing according to contract standards will result in loss of the contract's premium prices; other risks include the non-renewal or termination of contracts, perhaps for non-economic reasons. For the processor, main risks are the failure to line-up supply, or losing timely receipt of desired quality and quantity of product, loss of technological advantage, and liability to the producers and to third parties (Kelley 1994). When the price for contracted commodity increases in the spot or alternative markets, farmers have a tendency to sell their products out of contracts or supply only a limited part of production under contracts.

A production contract includes a lot of provisions such as price, production practices, and other terms of trade which have uncertainties. In practice, however, contracts are incomplete. It is not possible to have a complete contract because it is not possible to foresee all contingencies in advance **(bounded rationality).** First, some contingencies, which parties may face in the future, may not be foreseeable at the contracting date. Second, even if they can be foreseen, there may be too many contingencies to write into the contract. It is difficult to describe and write these contingencies accurately and there will be a cost for writing down such a plan and realizing it and solving disputes. These contingencies are rather important for agricultural production due to inherent uncertainties. In practice, contingencies that have not been planned inevitably arise. In this case, parties must find ways to adapt. These adaptations introduce the possibility of **opportunism** (Williamson 1973). In general terms, incomplete characteristics of the contracts lead to problems of imperfect commitment. Under information asymmetry, there will be **moral hazard and adverse selection problems** which limit the contracts that can be written and enforced. This characteristic of the contracts creates some conflicts and disputes ex post. When the disputes occur, litigation will cause delays. A binding arbitration as another solution alternative can give some unexpected results for both sides.

One of the important factors in vertical relationship is uncertainty regarding production and marketing. Besides, asset specificity, task programmability and separability are primary determinants of the degree and type of vertical coordination (Mahoney 1992). In the contractual relationship, the length and the comprehensiveness of contracts depend on these features. Today's specialized farmers do not have the flexibility to shift from commodity to commodity. They often have sizable specific investments in machinery and equipment. In the case of high asset specificity, sunk cost may create a **hold-up problem**[27]. Along with idiosyncratic characteristic of investments, farmers are locked into production of certain commodities because of poor alternative uses of land or inability to enter into production of other crops or commodities. These conditions make farmers weaker in bargaining if the processors have the market power. The farmer loses his independence and autonomy to some extent varying with the contract conditions. That means the farmer's management function is transferred to another person. It is arguable that, a skilled farmer gets worse under a contract than if he takes his chance in an open market. Contracting has been criticized by some scientists referring to it as a way of **proletarian behavior** because of that it secures the farmer's land and labor while leaving him with the formal title for both (Clapp et al. 1994). Some of the contractual relationships also create new legal arguments. For instance, in poultry production, contracts do not involve sales of commodities. Poultry production under contract is a good example that producers are not considered even as farmers because they do not have the product, just leasing their labor, poultry house, equipment etc. to the contractors. In this relationship, **producers are not owners of the commodity.** They are paid for their labor and housing facilities. This creates a

[27]A group of Iowa tomato growers brought suit against Heinz for damages, claiming an alleged breach of a crop production

contract. The growers sought damages allegedly caused when the integrator terminated their growing arrangements after they had purchased an expensive tomato harvester. Growers argued they had purchased expensive mechanized tomato harvesters and made other investments in field preparation relying on the company's promises (Hamilton 1994).

relationship similar to those between labor and business firms and requires farmers to act together and become organized as labor unions.

The contract is generally in written form, but the explicit terms of contracts reflected in the documents are only part of the story. That is, some of the provisions are implicitly used by the integrators. Other more common claims of the producers include contract termination, manipulation of quality, quantity or cost of inputs, and misevaluation of production performance. For instance, broiler growers often complain that these changes are sometimes excessively expensive but they have no choice since they already have large sunk investments. The group approach and extra debt receipts for inputs provided by integrators create problems for the producers as observed in some developing countries such as Turkey.

Generally, contracts are prepared by the integrators and often the language is used that is not easily understandable by the producers. Sometimes, firms might intentionally avoid transparency in some clauses and especially in the price determination arrangement using complex formulas not well understood by farmers (Silva 2005). In addition, sometimes it is so long and is not so clear especially about provision related with integrator firm. For example, in a contracting scheme in Zambia, smallholders have to sign an 18 page agreement which specifies their obligations. The company has to provide some services, but there are no corresponding clauses protecting farmers in case of the companies default (Baumann 2000).

Socio-economic effects of contract farming implementations have to be discussed as a part or a way of industrialized agriculture besides firms and farmers level problems. In other words, monitoring and assessment of impacts of contract farming on macro-economic level by using some indicators such as poverty reduction, competitiveness of agriculture and equity are important. It is widely argued that contract farming has undesired consequences from the sustainable agriculture and development points of view. Intensive farming practices through contracting which require use of chemicals, improved seeds and GMO etc. have been threatening environment. The over exploitation of natural resources such as ground water, soil and created pollution are shown as examples of environmental degradation due to contract farming (Singh 2002). The multinationals tend to move new regions and contract with new growers after a certain period exhausting the local resources (Sharma 2004). Contracting farming schemes are mostly export-oriented and forwarded to producing high value products and vegetables. These export-oriented products probably do not serve to national needs and food security.

4.3. Bargaining Problem

In a market structure, if one of the parties affects prices, marketing, procurement, hiring practices, or induces reactions among other firms that lead to market-wide changes in these variables, that party can be described as having exercised market or bargaining power. Bargaining power is the ability to negotiate or bargain with sufficient influence to bring about a desired result (Ladd 1964). In other terms, bargaining power, bargaining strength or bargaining skill, suggest that the advantages go to the powerful, the strong or skillful (Schelling 1956). Price leadership in purchasing raw materials is a common example in the food industry. Market power of the buyer or seller creates efficiency losses through monopolistic behavior. But some economists have argued that "market power has positive virtues in a dynamic, technologically advanced economy" Brandow (1969)[28].

Bargaining power, in general, consists of economic, behavioral and sometimes political characteristics. Let us consider economic characteristics of the power. If the commodity is in the hands of the seller who cannot be perfectly substituted by another seller, the buyer becomes dependent on the seller. The seller can exercise economic power by threatening to withhold the good. From the substitution possibility point of view, the individual farmer has no power. Despite the

[28] Brandow (1969) indicated that pure competition is not a feasible alternative for most industries; including foods. The costs of sufficiently small production units are too great. The art of getting good performance involves accepting necessary and useful forms of power while preventing those that threaten the effectiveness of competition.

growth in the size of farms, supply of an individual farmer cannot meet the buyer's demand. In addition, the possibility to withhold agricultural raw products for a long period is almost impossible for the producers due to the bulkiness and perishability.

The individual farmer behaves almost as perfect competitors in marketing. This structure gives the buyers more freedom. For example, contracts for only one grow-out period may seem to be equally risky to broiler integrators and growers, but failure to renew the contract is more damaging to growers than to integrators (Rehber 2000).

Information plays a key role in the bargaining process (Kennan and Wilson 1993). The bargaining process would operate more smoothly if both parties have the same information; this would eliminate conflicts about accuracy and make objectives more realistic (Baab et al. 1969). Few individual farmers have basic market information or even if they have, this information is mostly incomplete or inaccurate. Processors seem better informed about production and market conditions (information asymmetry), which makes them rather powerful.

Antitrust oversight and related legislation may be seen as the first attempt to cope with the anti- competitive effects created by buyers (integrators). There are some views that support intervention only by legislation (Lanzillotti 1960). The necessity of such attempts is not deniable, but it is not possible to control and regulate economic systems by legislation in every case. Even if conditions are favorable for regulations, any regulation will be interfered upon by attempts to optimize each party's contractual relationship. Another significant way is to strengthen farmer's bargaining power via establishing cooperative actions like bargaining cooperatives as in the USA (Hueth and Marcoul 2003, Rehber 2000). Organizing under a bargaining cooperative improves producers' ability to cope with these disadvantages and related inherent and implementation problems of contracting.

4.3.1. Bargaining Cooperatives

Agricultural producers are considered to be in economically weaker position both in input and output markets. In a changing environment of agro-food industry, producers are also challenged by industry concentration, global competition, vertical integration, and a continued decrease in commodity prices. In response to these challenges some farmers are starting to organize cooperative associations to negotiate collectively with buyers (processors) over price and other sales conditions for their produce. The concept of collective bargaining by farmers with processors or buyers is consistent with **countervailing power** notion of the natural behavior of individuals to form organization to counteract the market power of large corporations (Oczkewski 2004). This countervailing power concept is one of the main motives behind establishing producers' groups such as cooperatives or associations. Some of these organizations are designed to perform marketing functions such as assembly, storage, processing etc. and sometimes bargained with buyers. In the USA, along with the specialized bargaining cooperatives in certain agricultural commodities, some organizations such as National Farmer Organization (NFO) and the American Agricultural Marketing Association (AAMA) have been organized. These organizations do not normally handle products but confine their activities in such services as collecting market information, assisting contract analysis and negotiations. For example, principal purpose of NFO was to develop collective bargaining for all American agriculture (Berry 1973).

Bargaining cooperatives are a variation of marketing cooperatives. Bargaining cooperatives are generally organized to negotiate with buyers, usually processors, on the behalf of their members (producers) for price and other terms of trade and production such as quality of product and timing of delivery (Warman and Kennedy 1998). Producers join to gain strength in negotiating terms for such items as price, quality, quantity, and delivery with processors and other buyers. Producers are expecting from their bargaining associations to establish common quality, common price, and rules on marketing their product.

Farmers' bargaining associations are voluntary cooperatives that are organized to give

individual farmers a greater voice and more power in dealing with a relatively small number of processor buyers. The members of the cooperative use the bargaining organization as a means of representing their collective views and accomplish their collective aims concerning prices and terms of trade

(Bunje 1980). The main objective of bargaining cooperatives is to increase grower's returns through providing bargaining power for its members. These associations are considered as a type of cartel that control disposition of the members' product (French 1987). In this way, producers may experience monopolistic behavior to have balanced power in the uncompetitive markets created by fewer and larger integrators.

Bargaining cooperatives generally do not take possession of products and not deal with processing and marketing of processed products. Bargaining cooperatives are producers' organizations that generally only negotiate on terms of trade with buyers. They also differ from usual marketing cooperatives in that their facilities are limited generally to an office and perhaps a testing laboratory. There are some exceptions in practice. Some cooperatives perform both bargaining and marketing functions. One example is dairy cooperatives in the USA that started as bargaining organizations but subsequently added processing facilities. Cooperative bargaining associations are an institutional feature of some agricultural products in the USA. These organizations provide a wide range of services to members, but the main function is the negotiation of price and other contract terms with contractors. Bargaining cooperatives are relatively new organizations that began in the early 1950 (Marcus 1994). Since 1950, bargaining cooperatives have become an integral part of the food industry supply chain in marketing certain agricultural commodities and products. Bargaining cooperatives operate in many fruit and vegetable markets in the USA especially on the West Cost (Siebert 2001). Agricultural Fair Practices Act issued in 1967 provided legal basis for the formation of these cooperatives and subsequent legislations in some States have created additional support. However, lack of legal protection for grower organizing efforts has been attributed by some scientists as a reason for decrease in the number of active bargaining associations (Ginder et al. 2006).

Although one of the bargaining issues is the price of product, it was argued that bargaining cooperatives do not have any direct influence on price (Hueth and Marcoul 2003). The price negotiation may be a useful way of price discovery under the market uncertainty. But it is clear that bargaining cooperatives have an important role in improving market efficiency by ensuring the contract reliability. Managing supply and controlling non-member free riders are the main problems such organizations face (Iskow and Sexton 1992). The public good aspect of bargaining creates problems for bargaining cooperatives; each member has an incentive to become a non-member (Ladd 1974). That is why bargaining cooperatives try to provide other services to the members such as supply of production inputs. In practice, on the other hand, processors and handlers employ a number of tactics to discourage farmers to become organized under bargaining cooperatives or associations. These attempts take place in the form of terminating contracts, offering less favorable terms to association members, blacklisting association members, and offering incentives to nonmembers. Establishing such organizations needs legislative support. In addition, a farmers' knowledge and beliefs about the goals and the philosophy of the association have vital importance (Rehber 2007).

Despite these problems, they are a countervailing power and as such a beneficial force in improving the degree of competition in many of the agricultural commodities markets (Cramer et al. 1997).

Three types of bargaining cooperatives can be identified according to their functions.

- The first type can be named as pure bargaining association, which does not handle or take title of the product, but merely sets minimum prices and terms of sales (Zeuli 2006). It establishes minimum prices and terms of sales for their members' production that are arranged by contracts which are executed by producers themselves. This type of bargaining cooperatives operate as bargaining associations and do not get involved in processing/manufacturing of commodities. California Tomato Grower Association is considered as an example of this type.
- The second type of bargaining cooperatives acts as exclusive sales agent of their

members and arranges contracts for the sale of their members' production in addition to negotiation on price and terms of trade. This type is named as **marketing type** (Bunje 1988). Some fruit producers' organizations belong to this group of cooperatives such as California Canning Peach Association (CCPA) that established in 1922. CCPA is the nation's oldest farm bargaining association. As a non-

profit farm cooperative, the CCPA is owned and directed by its member-growers and dedicated to serving their needs with a variety of services. Most importantly, the CCPA provides the leadership that safeguards the profitability and success of California's processing peach industry. The California Canning Peach Association is the only organization dedicated exclusively to improving the welfare of cling peach growers and the strength of California's cling peach industry. From pricing issues to legislative concerns, the CCPA provides its members with the best means available to positively influence their futures (http://www.calpeach.com).

Dairy cooperatives can also be included in this type. Bargaining cooperatives operate under the philosophy that dairy producers' role in the market is to produce milk and the role of dairy cooperatives is to secure the most profitable outlets for the milk and jointly prepare milk for market at the first-handler level. Further, processing and sales of dairy products are left to other handlers. Business risk for bargaining cooperatives is low as long as there are buyers of milk. Members make minimal financial commitment in their cooperatives because little capital is needed for bargaining operations. Their strength is in numbers; but in this case, the volume of milk cooperative members collectively possess. The government administered milk prices serve as a floor and the starting price in the bargaining process. Milk payment is usually pooled. In 1992, this category included. 135 bargaining cooperatives and 44 bargaining cooperatives that operated as receiving stations without other plant operations.

- **The third type** of cooperatives deals with some activities such as storing and processing in addition to realize functions that are executed by previous types. This type of cooperative is also called **bargaining-balancing cooperatives**. Some cooperatives in the dairy industry of the USA are examples of this category. For example, this type of dairy cooperatives bargains for milk prices and manufacture the surplus into commodity dairy products for supply balancing. The main function of these cooperatives is selling milk and performing related services to other handlers. A bargaining- balancing cooperative operates much like a bargaining cooperative, except that it has plant facilities to serve handlers' needs and/or to balance milk supply. Having the capability to dispose surplus milk substantially strengthens these cooperatives' bargaining position (Ling and Liebrand 1995).

There were 45 cooperatives that processed and manufactured dairy products 2007, while 12 cooperatives operated receiving stations only and 98 had no milk-handling facilities. Sixty-three percent of total cooperative volume was sold as raw milk in 2007 versus 61 percent in 2002. The other 37 percent was manufactured at plants owned and operated by cooperatives. There were 49,675 member producers marketing milk in 2007, 19 percent (11715) fewer than 5 years earlier. Three regions - East North Central, North Atlantic, and West North Central - together accounted for 85 percent of all member producers and 51 percent of cooperative milk volume (Ling 2009).

Bargaining cooperatives have also taken up activities other than price and terms of sale negotiations. These activities summarized below are termed sometimes as **non-pricing activities.**

- **Market development:** Market development both for raw commodity and processed products will be beneficial for farmers and processors. That is why most bargaining associations are involved in developing demand not only for members' produce but also the products made from these commodities. Common action together with the processors is advisable. These organizations are naturally not only interested in domestic market. Most of the products are subject to international trade both as export and import. Therefore, investigation of foreign market, national foreign trade policies and legislation are the concern of bargaining cooperatives. For instance, California Tomato Grower Association became aware of the threat of foreign competitors and realized the need to take more active role in controlling imports in the early 1980s. This led to the formation of the National Association of Growers and Processors for Fair Trade (Marcus and Frederick 1994).
- **Extension and training:** These include assisting farmers in adopting new crops and

practices, the education of decision and policy makers at the organization level (Ginder et al. 2006).

- **Food safety and traceability:** Food safety is an important issue for all steps of the food chain, from seed to consumer table. Bargaining cooperatives are trying to be active to provide safe supply from their members.
- **Political action (lobbying):** Bargaining cooperatives act sometimes like a trade association by sponsoring industry-wide promotional activities, participating in local and national lobbying activities (Hueth and Marcoul 2003). They attempt to influence the actions of decision-makers to follow the policies for the interest of their members.
- **Litigation and dispute solution:** Before conciliation came along, every matter was resolved either in court or by arbitration (Spolter 1992). In the case of disputes, farmers have only the right, ex post, to sue (litigation) or use mediation or an arbitration procedure if so placed in the contract (Rehber 1998). Going to litigation through court systems creates long delays. An arbitrator renders a decision and a third party imposes it by taking away the control from the parties. However, in the conciliation or mediation process the parties retain control of the process and outcome. Mediation brings parties together for collaboration. In arbitration, an arbitrator renders a decision and third party imposes it, taking all the control away from the parties. Since bargaining cooperatives generally do not get involved in any value-added activities, they do not have any profit to cover their operating expenses. Necessary funds to carry out their activities are generated from the various sources as following (Marcus and Frederick 1994):
- **Retains:** Cooperative which has contract for the sales of their members' produce can get the right to retain some amount of total sale values. This is placed in the membership agreement as a provision. Total retains could be paid directly to the cooperative by the processor. Amount of retain depends on sales amount. Sometimes it is determined as a percentage of one unit value of sold product.
- **Interest:** A cooperative may invest its funds to any investment instrument and gain interest. These interest payments will be the source of income to the cooperative.
- **Dues:** Some bargaining cooperatives collect dues monthly or annually. Amount of dues can be determined by a percentage of sales amounts.
- **Service charges:** Some bargaining cooperatives have persuaded processors to pay a service charge based on a certain sum per ton over and above what the processor pays as the purchase price for the members' produce.
- **Other sources:** Some cooperatives have a periodical, monthly magazine or journal. Sale and/or advertisement incomes of the publications become an income source of cooperative.

Australian experience can be given as a considerable example after explanation mainly based on the American practices. Australian Competition and Consumer Commission (ACCC) did not recognize collective negotiations by farmers (Oczkowski 2004) until 2003. The Australian Dairy Farmers Federation (ADFF) was formed in 1942 as an unincorporated association to represent the national interests of dairy farmers. In 1993, ADFF was incorporated as a company limited by guarantee. ADFF's name was changed to Australian Dairy Farmers Ltd (ADF) to reflect its changed business structure[29]. **Since that time dairy farmers have formed 18 collective bargaining groups**. These groups represent about 500 farming families. In March 2002, in response to an application by the ADF, the ACCC issued a final determination to authorize collective negotiations by dairy farmers across Australia of **contractual terms and conditions of raw milk supply to processors**. The ACCC considers collective bargaining by dairy farmers has the potential to deliver better access to information and resources as well as improved input into contract negotiations. Collective bargaining does this by providing an effective mechanism through which productive contractual discussions can be achieved. Collective bargaining can also reduce the transaction costs associated with negotiating supply arrangements for both dairy farmers and processors. Specifically, the ACCC authorization allows groups of dairy farmers to form collective bargaining groups, through which they may collectively negotiate terms of supply,

including pricing, with a dairy processing company that each

[29] http://www.australiandairyfarmers.com.au/dairy-farmers

member of the group wishes to supply[30]. In April 2003, the Australian Government funded a series of workshops to help dairy farmers understand and apply the 2002 decision by the ACCC to allow collective bargaining by dairy farmers. The workshops focused on the rules and the processes applying to the formation of groups and the potential benefits of collective bargaining as a farm risk management tool. A team of state and national dairy industry representatives, an ACCC representative and a consultant specializing in dairy pricing and marketing ran the workshops using specific local and regional knowledge.

As part of the application, ADF requested an umbrella authorization to minimize the costs associated with small groups of dairy farmers applying separately to the Australian Competition and Consumer Commission (ACCC) for collective bargaining authorizations. The ACCC decision was welcomed by the Australian Government and the dairy industry on the basis that they helped to re- dress the imbalance in market power between individual farmers and the processors they supply, particularly during the transition to a deregulated milk market. The umbrella decision in relation to the ADF application also reduces transaction costs for individual dairy farmer groups that no longer need to apply for separate authorization. In 2006 the authorization was extended to allow Australian dairy farmers to participate in collective bargaining until 2011. ADF have indicated they intend to reapply to have the 2011 deadline extended for a further 5 year period.

On 8 March 2011, ADF lodged an application for reauthorization to enable dairy farmers to collectively bargain with dairy processors on the terms and conditions of their raw milk supply contracts. The ACCC understands that the ADF collective bargaining process is supported and well understood by farmers and processors. For this reason the ADF is seeking to continue with the conditions of authorization that applied under the 2006 authorization. Among other things these conditions limit membership of collective bargaining groups to dairy farmers with a 'shared community interest'. On balance, the ACCC considers that the public benefits likely to result from the collective bargaining arrangements will outweigh any public detriments over an extended period. The ACCC grants authorization until 30 August 2021[31].

Recent attempts in the Europe milk sector at national level like MEG in Germany and union-wide organization like European Milk Board can be considered a kind of countervailing organization in a highly industrialized sector with higher concentration rates.

4.3.2. A Theoretical Approach to Bargaining Problem

Most agricultural markets include a large number of farms, where no farm has 1% of total sales. In a typical agricultural raw product market, farmers act as price takers (Sexton 1990). On the other hand, in the first handler markets for the agricultural products, there are relatively few buyers (firms) exerting monopsony/oligopsony power. The monopsony assumption may be questionable since there is more than one firm operating in the market. Some studies have shown the existence of one or more dominant firms exerting market price determination and reducing competition in contract negotiations (dominant firm price leadership oligopsony (Just and Chern 1980, Rogers and Sexton 1994)).

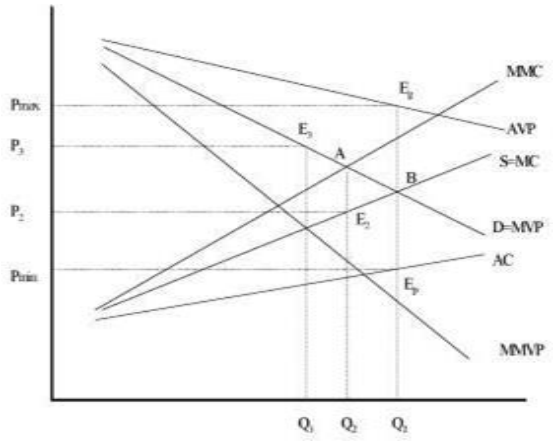
Farmers may face monopolistic power from a monopsonistic buyer. When producers (farmers) are organized under a bargaining cooperative, the relationship between producers (growers) and processor (integrator) can be considered as an example of bilateral monopoly and can be explained using the theory of bilateral monopoly. It is argued that, "even though the supplier and the buyer may select each other ex ante in a pool of competitive suppliers and buyers, they end up forming an ex post bilateral monopoly in that they have an incentive to trade between them rather than with outside partners" (Tirol 1993). Bilateral monopoly has been subject of considerable theoretical and empirical studies since Brandow (1928). Fellner (1947), for example, presented that, in the product markets, bilateral monopoly tends to establish a determinate output which equals the competitive

[30] http://www.daff.gov.au/agriculture-food/meat-wool-dairy/dairy/collective_bargaining_in_the_dairy_industry2
[31] http://www.accc.gov.au/media-release/accc-extends-dairy-farmer-collective-bargaining-arrangements

output. On the contrary, Morgan (1949) indicated that output, which maximizes joint profits of two groups in the society, would not usually be the same as that which maximizes the profits and surpluses of society as a whole (Morgan 1949).

In the monopsony market, in order to purchase one more unit of raw material, the monopsonist firm must pay a slightly higher price, i.e., the more raw materials the firms want to employ, the higher the price must be. That is why the monopsonist firm faces an upward sloping supply curve (S = MC) (Figure 4.1). This involves paying not only a higher price to the marginal input but also additional price to those already used. For a monopsonist, the marginal cost of using an additional unit of input is sometimes called the marginal outlay schedule (MO) or marginal-to-marginal cost (MMC) (Figure 4.1). Figure 4.1 illustrates the restriction of the output, which reduces quantity from the competitive level of Q_1 to the monopsonized level of Q_2. It should be noted that the product price, P2 associated with the monopsonized output is below the price that would prevail in competition.

Figure 4.1. Bilateral Bargaining and Joint Profit Maximization



Any gap between the demand (which represents the benefits to the society) and the supply curve (which represents the marginal cost to society) represents inefficiency. The inefficiency creates a deadweight welfare loss that equals the area of the triangle ABE_2 (Figure 4.1). If the supplier of an input is able to form a monopoly against a monopsonist buyer, it creates a bilateral monopoly structure. The monopoly supplier faces a downward sloping demand curve (MVP) because if he wants to sell an extra unit he must lower the price (Figure 4.1). Since the lower price received from the marginal unit would be the price for the previous units sold, the marginal revenue from the extra unit (MMVP) is lower than the price received from the marginal input (MVP). A monopolistic input supplier could maximize his profit at a point where his marginal production cost (MC = S) equals the MMVP associated with the demand for his product (Figure 4.1). A monopolist supplier of an input would prefer equilibrium E_3, whereas a monopsonist demander of the input prefers equilibrium E_2. At the point E_3, Q_3 would be produced at a price P_3. At the point E_2, Q_2 would be produced at a price P_2.

Thus, in the bilateral monopoly situation illustrated in Figure 4.1, the desires of the buyer and the seller are in conflict. Here neither point E_3 nor point E_2 is the equilibrium outcome. For the market to achieve equilibrium, both quantity and price are indeterminate and must be settled through bargaining (Spindler 1974).

In the bilateral relationship two cases can be distinguished:

i. The dominance of the buyer of the raw material (at point E_2), and

ii. The dominance of the seller of the raw material (producers) (at point E_3).

Cases (i) and (ii) are limiting cases of a range of possibilities. Analysis could be extended to include the possibility of imposing an all-or-non-clause on the opponent. For this purpose, the average revenue curve (AVP) of the buyer and the average cost curve of the seller (AC) are considered (Figure 4.1).

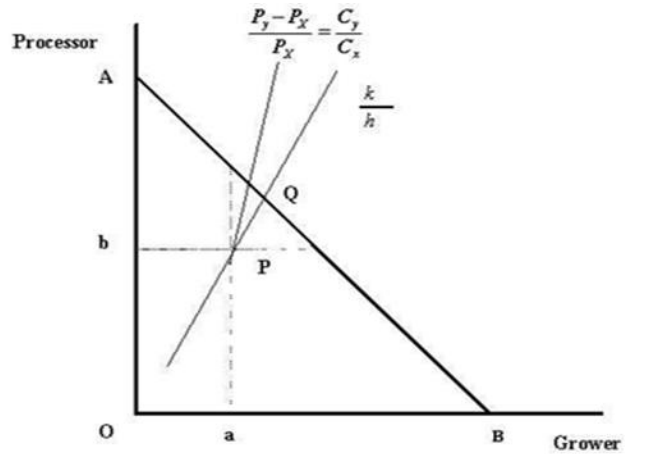
In a bilateral monopoly, each party exploits his bargaining power through a single price quantity combination offered to his opponent. The combination is chosen to leave the opponent only marginally better off than he would be in the no-trade situation. The AVP line indicates the appropriate price-quantity trade-off for the seller to impose upon the buyer. At any point along the AVP line the buyer is indifferent between the price-quantity combination offered and no trade at all.

On the other hand, the AC line represents the combination of price and quantity, which leaves the seller indifferent to the no-trade situation. The AVP and MC lines represent the greatest concession that the opposing firms can demand; they may be termed **concession loci** (Casson 1984). Each firm seeks to maximize its profit subject to the constraint imposed by his opponent's concession locus. In this condition, the third case would be as follows.

iii. The optimal policy for both sides is to fix the quantity Q1 corresponding to the intersection of the marginal cost curve (MC = S) of the seller and the marginal value product curve (MVP = D) of the buyer (Scherer and Ross 1990). In case (iii), **only the price is indeterminate.** The price may vary between those shown by the average cost of the seller (P_{min}) and those shown by the average value product of the buyer (P_{max}) for the quantity equating marginal cost (MC) with marginal value product (MVP). Here, the two parties agree upon the quantity to be traded (Q1) (Truett and Truett 1993). The buyer will seek a full concession from the seller by stipulating a price P_{min}. The seller at the same time will seek a full concession from the buyer by price P_{max}. The quantity of trade upon which the parties agree is the quantity that maximizes their joint profit measured by the area of the rectangle $P_{max}EgEpP_{min}$. The contract curve is defined as the locus of bargains from which it is impossible to move towards another bargain so as to improve the position of one party without worsening that of other (Fellner 1947).

Now let us determine the profit shares of the producer (grower) and processor (integrator). The parties to the contract need only to settle on mutually agreeable shares of the joint profit or the price of the intermediate product. The problem can be solved by using the theory of cooperative games. The geometric representation of the **Nash cooperative solution** is presented in Figure 4.2.

Figure 4.2. The Nash Bargaining Solution and the Formula Price Solution



If the bilateral monopolists are respectively, producer-seller and buyer-user of an intermediate product, their objective payoff frontier is a straight line with slope of –1

reflecting the various ways in

which they might divide their maximized joint profit (Bishop 1963). The maximum joint profit is measured by OA = OB. Point P is the no-trade point[32].

All points on the line PQ that divide the gain in the proportion of h/k between two players lies along the straight line passing through P and having the slope k/h. However, the Nash formula says nothing about how or why such a solution might come about (Dixit and Skeath 1999). Then h and k can stand for the two parties' relative bargaining strengths. The widely advocated Nash arbitration principle implies that under the assumed conditions the profit would be allocated equally between the two stages of production.

To arrive at a solution suggests that an allocation of profit will only be agreed upon when neither party believes that it is not worth demanding further concessions from the other party. Such a belief is likely to stem from the view that the other party cannot concede further because they are already no better off than they would be in no-trade situation. In this situation, **a bluffing behavior** could be expected (the seller or the buyer demand more than they expect to obtain)[33]. For example, a growers' organization may convince the processor integrator that he could generate a profit in the absence of trade. The bluff and counter bluff, of course, will not always give a unique allocation of profit. Very often, these approaches narrow the perceived amount of profit over which there is a controversy. That means allocation of profits will be achieved in two stages. First, each party exaggerates his own no-trade profit in order to increase the other party's willingness to concede. In the second stage, the Nash arbitration policy is invoked to allocate the remaining profit. The remaining profit will be shared equally between two parties.

Either party can also employ threats to alter the other party's expectation. Unlike bluffs, the object of threats is to alter the other party's expectations about his no-trade profit. When each party can threaten that outcome but nothing worse, the parties may be said to be engaged in **"fixed- threat" bargaining.**

The more general case of **"variable-threat" bargaining** implies that, in the absence of a mutually advantageous agreement, the parties have the option to adopt threats and counter threats, which may create damages[34]. For example, a producers' organization may reduce the buyer's expectation of no-trade profit by threatening if negotiations break down. While bluffs normally reduce the perception of the gains from profit, threats tend to increase them (Casson 1984). Once two parties have actually commenced regular trade with each other, they are both likely to become vulnerable to threats from the other party. This is because they may have non-recoverable sunk costs in the trading process. Typically these will be set-up costs, but in certain cases recurrent costs may be involved too. For example, the processor (as a buyer) has purchased a customized durable asset to process a precise variety of intermediate product supplied by the producer. Then, if the trade is aborted, it may be difficult to convert the processor's asset to an alternative use (Williamson 1971). When both firms are making specific investment in trade, each fears from the threat of the other. If a bluffing or threat behavior is effective, the no-trade point is going to be changed and a new Nash equilibrium is obtained.

An alternative solution of this problem is proposed here borrowing Blair and Kaserman's price formula approach (Blair and Kaserman 1987). They assumed that, in the absence of any contractual relationship, the profit function of the producer (grower) will be:

$\pi_g = XP_x - XC_x$ (1)

Where

X = Quantity of intermediate input,

---

[32] If no agreement is reached, producer will get a and processor will get b. Often a and b are both zero, but more generally, it is assumed that a+b < Total value to be shared (Dixit and Skeath 1999).

[33] The term "bluffing" is commonly used in several distinct ways. It refers to a player's deliberate misrepresentation of his expectation to influence his opponent, i.e. he demands a + a' while he expects to receive a. Bluffing can also refer to misrepresenting other aspects of a bargaining situation (Cross 1965 p. 71).

[34] Duopoly and other forms of oligopoly always involve variable threats as do more complex forms of bilateral monopoly, for

example when disagreements are accompanied by violence or other harassments. Duopoly exemplifies variable threat bargaining, bilateral monopoly exemplifies fixed-threat bargaining (Bishop 1963 p. 559 and 582).

P_x = Unit price of X,

C_x = Average cost of X

And the processor profit function will

be $\pi_p = YP_y - XP_x - YC_y$ (2)

Where Y = Quantity of final

product, P_y = Unit price of Y,

C_y = Average cost of transforming one unit of X into one unit of Y.

It was assumed that this two-organization desire to sign a contract would give joint profit maximization and the profit function of the coordinated production would be:

$\pi_t = \pi_g + \pi_p$ (3)

$\pi_t = YP_y - XC_x - YC_y$

Let us assume that the profit shares equal to α and 1- α to the grower and processor respectively where $0 \leq \alpha \leq 1$. The parties to the contract need only to settle mutually agreeable shares of resulting maximized profit. Setting $\pi_g = \alpha \pi_t$ (i.e. $XP_x - XC_x = \alpha (YPy - XP_x - YC_y)$), and assuming that X=Y (fixed input/output ratio) and solving for P_x we obtain

$P_x = \alpha (P_y - C_y) + (1 - \alpha) C_x$ or

$P_x = C_x + \alpha (Py - C_y - C_x)$[35]. (4)

If they could reach an agreement they need only to specify a single parameter, α. If α is determined, the intermediate product price, P_x could be assigned as a function of α and P_y. Determination of the α and 1- α or the ratio of α / (1- α) is considered a cooperative game based upon the mutual gains i.e. joint actions (Figure 4.2). That means bargaining parties (farmers' cooperative and the processor firm) find and implement a solution jointly, perhaps using a neutral third party. While the Nash solution led to the outcome h=k= ½, i.e. α / (1- α) = 1 and a fixed unique solution, the Blair and Kaserman (1987) model suggests sharing the profit (integrated monopoly markup) according to a single parameter, α, which is subject to bargaining.

I propose an alternative method to divide maximized profit between producer and integrator according to their shares in the total production cost. The share of producer α as a function of costs equals Cx/(Cx + Cy), and automatically the share of the processor (1– α) will equal Cy /(Cx + Cy).

Expressing $(C_x + C_y) = M$, $\alpha = C_x / M$, and substituting them into equation 4,

we get $P_x = C_x + C_x / M (P_y - (C_y + C_x))$ or since $(C_x + C_y) = M$,

$= C_x + C_x / M (P_y - M)$,

$= C_x + C_x P_y / M - C_x M / M$ and

$= C_x + C_x P_y / M - C_x$

$= C_x P_y / M$, since $\alpha = C_x / M$. $P_x = \alpha P_y$ (5)

According to the Nash and Blair and Kaserman solutions, the gains from trade is shared with a ratio of h/k and α / (1- α) respectively, which are determined as a reflection of the two parties relative bargaining strength (Figure 2). According to the proposed alternative here, the gain (profit) is shared with a ratio based on the actual cost figures i.e. $(C_x / M) / (1 - (C_x / M))$ or

$= C_x / (M - C_x)$ since $(C_x + C_y) = M$,

$= C_x / C_y$.

This ratio can also be expressed as a function of intermediate and final product prices from equation (5) as $P_x / (P_y - P_x)$[8] (In Figure 4.2). This approach provides a practical solution for the bargaining process. As in the Blair and Kaserman model, the only disadvantage to this approach is that it raises the possibility of overvaluation of the unit cost of production C_x or C_y which would result in a negotiation ex-post.

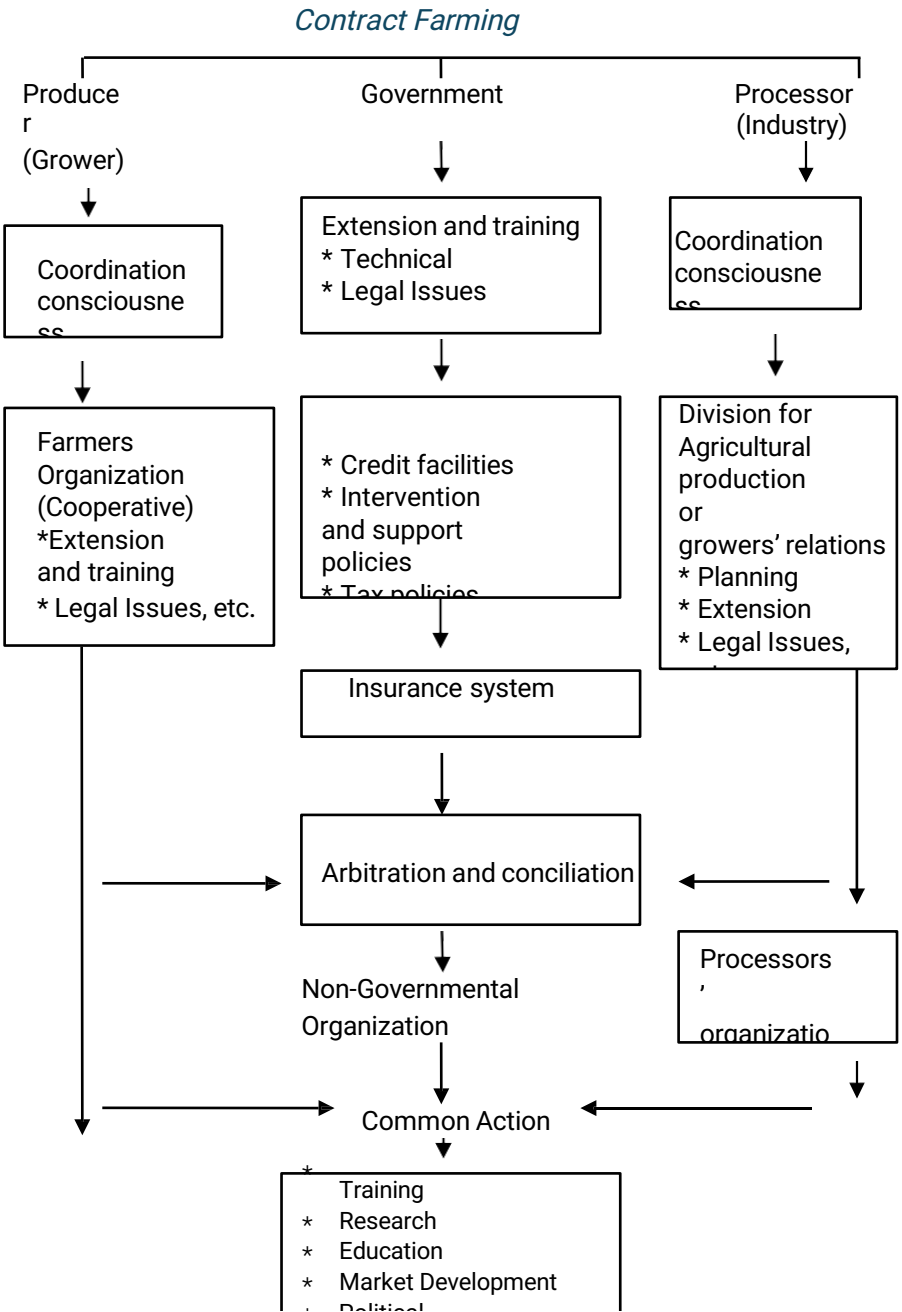
4.4. A Fair Model for Contract Farming

[35] Equations 1-4 are taken from the paper of Blair and Kaserman (1987).

Outgrower schemes have been used mostly in the developing world and have shown a great variety with their hybrid structure and multiple objectives. Therefore it is not easy to point out a standardized form for those schemes. A simplified model is discussed here for a standard production form to have a fair and successful implementation of contract farming for both-sides, agricultural sector and economy as a whole (Figure 4.3).

First of all both producer/grower and integrators (handler, processor etc.) must have collaboration consciousness. Both for the producers and processors, it is important to have established reputations for honesty and fair dealing. That means farmers should look at integrators as partners who are working for them rather than rivals. And also the same behavior is being expected from the integrators. Both sides are in need of each other in order to make a contractual relationship which operates for their mutual benefit. Otherwise, this cooperation would be always a source of dispute and dissatisfaction.

In contract farming systems, the individual producer has perhaps had many reasons to feel weakness in his market power. However, the history of agriculture producers demonstrates that growers have been seldom rewarded appropriately in the market place due to weakness in their states as farm entrepreneurs compared with other participants in the food industry. That is why it is very important for the producers to act in an organized manner. Recognition gained by organized groups is better as opposed to the lack of recognition accorded to unorganized farm producers (Anderson 1994, Coulter et al. 1999).



Organizing a bargaining cooperative among farmers makes them rather powerful in a contracted relationship (Scheid 1991, Moore 1994). Farmers' organizations can play a double role in facilitating contract farming schemes. They can first facilitate the organization of production and primary collection of the commodities. Secondly, farmers' organizations can play an advocacy role in negotiating favorable terms with the contractor by lobbying at national and international level and by identifying possible opportunities for contract farming (Stessens 2004).

Belgian experience highlighted the importance of a strong farmers' association which negotiates on behalf of the farmers. Based on the European sugar framework, national representatives of producers (CCB) and processors (SUBEL) negotiate inter-professional agreements, which are binding for all actors. CCB has been implicated in Belgian politics for more than 60 years. CCB improved quality control. CCB generates its funds by charging a supply levy (Claes 2004). Such an organization also could give opportunity to collaborate with the integrators' organization. The producers and processors could act together. For example, the California Tomato Growers Association needed to take a more active role in controlling imports. This led to the formation of the National Association of Growers and Processors for Fair Trade (Marcus and Frederick 1994). This attempt was successful in imposing some regulations on imports and in other aspects, such as market development, political action, making adjustments to consumer demand, etc.

Of course, these local bargaining organizations are to be organized on the national level. But in practice, under such organization, the level of negotiation is an arguable problem. It could be said that, in general, the collaboration and negotiation between farmers and processors might be better carried out in a decentralized way, at firm level. A nation-wide farmer and food industry organization could act as an administrative organism. It could retain a role as arbitrator and guarantee the application of private agreements. Experimentation, development of reference and agricultural techniques would probably remain in the responsibility of central body. Experiences in France have shown that, between 1961 and 1990, considerable shifts had emerged to decentralize the contracted economy from national level negotiations which were having difficulty reconciling industrial and marketing coordination (Valceschini 1995).

In contractual arrangements, the role of the integrator firm is so important in determining the majority of the production and marketing practices and measures. Therefore the efficiency of the firms' activities directly affects the efficiency of contract farming. The first step in successful implementation is the organizing of a sound organizational body. Contracts could vary from company to company, but all of them must have a special unit which deals with all contractual issues and is equipped with necessary persons and equipment. And its relationship to the other functions of the firm must be determined clearly (Brown et al. 1994).

The role of government is an important factor for successful application. The first function in retained state authority might be legislative arrangement. In agriculture, with a tremendous variety of production enterprises, it is not possible to put out comprehensive contract models which have strict rules. Instead, government could determine a framework

for a contract and enact some regulations to solve disputes and take part in such arbitration to some extent. The most direct way for the government to address production contract issues is to regulate them specifically. For example governments have begun to regulate contract relationships either by establishing requirements or by requiring that legal disputes go through mediation before one party can take the

issue to court in Turkey (national level) and in the USA (some states and federal level) . Governments can also require annual reports by contractors to gather more information about contracting and they can require registration or certification of certain entities that engage in contracting. For instance, licensing enables the government to control the use of certain practices more directly and to require the use of standardized contracts. Besides, this direct role of the government in contractual mechanism, agricultural support and intervention policies which aims at, in general, improving contract farming could be rather effective and functional. For instance, in USA for some products the bargaining strength of farmers is reinforced by marketing orders. In the European Union, according to the Commission Regulation; the production aid system is based on contracts between producers and processors and the particulars to be included in the contracts for the purposes of the aid system should be specified (Anonymous 1984).

Tax policy is an aspect which must be considered to promote contract farming. Contract farming is a way of recording systems of production. Farmers are presently reluctant to gain on arrangements for fear that they may pay more taxes. Therefore, adopting a tax policy which facilitates and remedies the situation could be recommended. On one hand specialization to produce a single product through contract farming has been increasing the profitability level; on the other hand it will increase the risk farmers faced.

Agricultural crop insurance policy could be a considerable way to promote reducing risks for both farmers and firms. Ineffective extension and training policies of the governments could be improved through contract farming. Credit policies in agriculture also could be realized by contractual arrangements that consider the contract itself as collateral.

It is recommended that there should be an independent organization to resolve disputes between firms and farmers which are the major causes of failure in contract farming. For solving the disagreements and disputes between producers and processors over quality standards, delays in delivery and payments and default on loans and the like, going through the court systems created long delays, thus an arbitration and/or a conciliation system would be useful (Spolter 1992) by involving government and non-governmental organizations' representatives. In arbitration, an arbitrator renders a decision and third party imposes it, taking all the control away from the parties. But in a conciliation or mediation process, the parties retain control of the process and the outcome.

5. *CONCLUSION*

The agro-food sector from producer to consumer involves a range of discrete and complementary activities changing from farm input procurement to consumption. The vertical relationships or coordination between these activities changes from open market transactions to vertical integration. Because of the changes in food consumer preferences and attitudes, technological improvements, food safety issues and related regulations, impersonal and open- market transactions between activities in traditional agro-food systems based on price signals are replaced by rather controlled impersonal vertical coordination mechanisms such as organizing cooperatives, short and long-term contractual relationships, and ownership integration in the advanced and industrialized systems. In addition to these reasons, recent sophisticated ideas such as environmentally sound, sustainable agriculture, standards and regulations related to environment, and health are the initiatives behind the fast growing close vertical coordination. Especially some implications such as good agricultural practices, organic-ecologic farming and traceability in general needs rather close coordination in the food production chain.

Contract farming as one of the alternatives of vertical coordination has gained importance in last decades. Contract farming is a continually evolving process. World-wide applications of contract farming have shown that the terms of the contract are shaped to match their own unique conditions and have varied from product to product, and that the experiences of each country differ from others. Product characteristics and regional and

national differences have to be considered in related analysis and evaluations. Product characteristics of the agricultural commodities are the main determinants of the form of vertical coordination. While some products such as poultry are handled in a fully coordinated contract system, some products such as grain are still subject to market

transactions. There are national and regional differences. For example, while the industries such as poultry are more or less homogenous, they show different governance structure in different countries. Hence, when analyzing contract farming, out-grower schemes or multipartite arrangements in the third world have to be considered alongside the implementations in developed countries.

Some distinctive features inherent in the production of agricultural commodities and markets favored the use of contractual relationships in agriculture versus full-integration (ownership integration). However, even in ownership integration, internalizing all transactions in a firm does not avoid the use of contracts, i.e., a firm can have all production assets or have complete control of them, but need to hire labor and use labor contracts. On the other hand, specialization in one of the stages of the agro-food chain can provide cost advantages. Therefore, coordination among the specialized firms through contractual arrangements or even open-market relationships may be more efficient than in ownership integration. A guaranteed market, easy access to credit facilities, and information are among the reasons for producers getting involved in contract. For integrators, the main reason is to provide a steady input supply with a guaranteed quality and quantity.

Besides the advantages of contract farming to both sides, there are some disadvantages as well. That means that contract farming could create some problems, such as losing some degree of independence for the farmer, creating a monopsony position, etc. In general, one of the significant reasons for contract production is to decrease uncertainties (risks) both for farmers and integrators. Under contract integration, producers bear some of the production risks, but price risks for the contracted commodity and most variable inputs are transferred to the integrator. However, the reduction in producers' and integrators' risks are replaced by other risks and problems related to the implementation of contracts. For example, integrators can force changes in operation at will since there are no contract provisions to prevent such changes. For integrators, the inability of producers to meet the technical requirements of contracts, quality problems, and disputes related to payment and other contract terms, and ex post contract negotiation are primary concerns and sources of risk.

In practice it is not possible to have a complete contract because it is not possible to foresee all contingencies in advance (bounded rationality). It is difficult to describe and write these contingencies accurately and there will be a cost for writing down such a plan and realizing it and solving disputes. In practice, contingencies that have not been planned inevitably arise. In this case, parties must find ways to adapt. These adaptations introduce the possibility of opportunism. In general terms, incomplete characteristics of the contracts lead to problems of imperfect commitment. Under information asymmetry, there will be a moral hazard problem which limits the contracts that can be written and enforced.

Asset specificity, task programmability and separability are primary determinants of the degree and type of vertical coordination (governance structure). In the contractual relationship, the length and the comprehensiveness of contracts depend on the above features. In the case of high asset specificity that cause sunk cost may create a hold-up problem.

Of course, some measures could be taken to outweigh these disadvantages of contract farming. Having a coordination and collaboration consciousness and acting in an organized manner for both sides is advisable for a successful implementation. In contract farming, the role of successful management (strategic management) is very important for efficiency as in every kind of vertical coordination. Establishment of a sound relationship between involved parties based on trust, confidence and mutual understanding is a critical issue in financial and economic efficiency. Legal and/or incentive systems based on reward and penalties can be used, creating trust and mutual confidence. The desired method is availability of coordination consciousness that the processor (principal) needs a group of producers (agents) as much as the producer needs the processor as explained in the presented cooperative model. Quality and quality control is one of the important issues in every stage of

the agro-food chain. A quality convention is required among the transaction parties in these stages. Quality requirements can be best defined and controlled by a third party, government and/or independent organizations along with the internal convention in the food chain.

In contractual arrangements, the role of the integrator firm is important as it determines contract terms (most of the production and marketing practices and measures). Therefore, the efficiency of the firms' activities directly affects the efficiency of contract farming. The first step in successful implementation is establishing a sound organizational body in the contractor firms. Contracts could vary from company to company, but all of them must have a special unit dealing with all contractual issues equipped with necessary staff and equipments. Also, its relationship to the other functions of the firm must be determined clearly.

It is recommended that there should be an independent organization to resolve disputes between firms and farmers, because these are the major causes for failure in contract farming. Solving disagreements and disputes between producers and processors creates long delays while going to court. In some cases arbitration is used as a way of conflict solution. In arbitration, an arbitrator renders a decision and third party imposes it, taking all the control away from the parties. Thus, mediation or a reconciliation system would be useful by involving government and non- governmental representatives.

One of the clear findings of the reviewed studies is that the fewer and larger processors have created a monopsonistic, anti-competitive market structure. Having title of the products (broiler industry), market information and production know-how as well as large market shares, strengthen their position in the market against farmers. In such structures the individual farmer is in a weak position at the bargaining table. Antitrust oversight and related legislation may be seen as the first attempt to cope with the anti-competitive effects created by processors (integrators). The necessity of such attempts are not deniable, but it is a fact that it is not possible to control and regulate economic systems in every case.

One possible alternative for farmers is to forge alliances among producers and to establish processing and marketing cooperatives as in Turkey and the USA. These directly assure access to available markets and enhance net returns. Availability of producer cooperatives in the market as an alternative also creates a countervailing power when facing the corporate monopsonistic behavior. It was observed in beet sugar industries both in Turkey and the USA that vertical integration of some processing companies by growers had real efficiency consequences.

Another significant way of strengthening farmers' bargaining power is the establishment of bargaining cooperatives, as in the USA. Organizing a bargaining cooperative among farmers makes them rather powerful in contractual relationships. Such an organization could also give an opportunity to collaborate with the integrators' organization. The producers and processors could act together. For example, the California Tomato Growers Association needed to take a more active role in controlling imports. This led to the formation of the National Association of Growers and Processors for Fair Trade. This attempt was successful in imposing regulation on imports and in other aspects, such as market development, political action, and making adjustments to consumer demand. This new relationship between farmers' organization and the integrator could be explained by the theory of bilateral monopoly. Bilateral monopoly has been subject of considerable theoretical and empirical studies since Brandow (1928). Some scientists indicate that, in the product markets, bilateral monopoly tends to establish a determinate output which equals the competitive output. On the contrary, some others suggest that output, which maximizes joint profits of two groups in the society, would not usually be the same as that which maximizes the profits and surpluses of society as a whole.

In the case of joint profit maximization, if quantity is considered as determinate, the question simply is to determine profit shares or the price of the intermediate raw material. The widely advocated Nash cooperative solution implies that under the assumed conditions, the profit would be allocated equally between the two stages of production. It can be proposed as an alternative practical way to divide maximized profit between grower and processor based on their shares in the total production costs, despite having some

estimation and overvaluation problems.

Although contracting needs government involvement in all countries, it must be underlined that the role of government is highly important in all contracting schemes in developing and less- developed countries. Improving the rural infrastructure, issuing direct and indirect regulations in

favor of small-poor farmers under the fair trade practices, aiming at the securing of food sovereignty and safety, encouraging the development of domestic markets and farmers' organizations etc., could be addressed as major responsibilities. When evaluating and monitoring those schemes, a project evaluation approach must be applied, considering the benefit and costs of all stakeholders. Expenditures for consultancy and expertise from the planning period to the end of these schemes have to be included in total project costs. While the role of the government is an important factor for successful implementation, it is not possible to establish a comprehensive contract model that covers a variety of enterprises in agriculture via legislation. Instead, the government could determine a framework for the contracts and enact regulation to solve disputes.

The most direct way for the government to address production contract issues is to regulate contract relationships either by establishing requirements or by requiring that legal disputes go through mediation before one party can take the issue to court. The government can also use indirect methods to encourage or facilitate contract producers' abilities to organize and bargain for more favorable contract terms as in some States of the USA. However, fortunately there are considerable international efforts to harmonize legal basis of the contract production by The International Institute for the Unification of Private Law.

Governments can also mandate contractors to submit annual reports to elicit more information about contracting. Registration or certification of those entities which engage in contracting should be made mandatory. For instance, licensing enables the government to control the use of certain practices more directly and to require the use of standardized contracts.

In addition to the general conclusions summarized above, some specific measures could be proposed to have a more industrialized and vertically coordinated agro-food system and well- functioning contract farming: Major structural changes have been going on in our changing world. For example, the rapid development in electronic information and communication technologies seems to make considerable changes in both inter-firm and intra-firm relationships (e-commerce). On the other hand, strict quality requirements, environment friendly approaches to production and marketing, such as traceability have been reshaping the agro-food structure. These changes in agricultural production and marketing, consumer preferences and technology have been accelerating the movement from market transactions to a tighter vertical coordination as contracting or full integration. New closer vertical coordination ways create new conditions and problems to investigate. There is a need for more comprehensive empirical studies (commodity level) to better model the structure and related problems of vertical coordination and contract farming.

Collection of nation-wide data related to the different aspects of contract farming has to be included in the General Agricultural Census as in the USA.

Government resources used in ineffective ways such as for price support, input subsidy and selective credit policies should be devoted to establishing a sound marketing and processing infrastructure through organizations which are owned and controlled by the producers.

The direct involvement of the government in farmers' interest economic organizations (Cooperatives) must be replaced with indirect support policies. Available cooperatives should be reformed so that the producers have control over their cooperatives.

Government policies regarding tax, credit, agricultural insurance and especially extension, must be evaluated to create a convenient environment. For instance, in the USA, the marketing orders have been strengthening the farmers' position in the contractual relationships.

Both producers and integrators have to improve their understanding and attitude about contracts and contractual relationships. Each has to be informed about the legal and technical issues related to contract farming through farmers' organizations or efficient government extension programs.

Contract farming is not a panacea to solve all related problems of agricultural production and marketing systems. However, this way of coordination could be evaluated as a way of providing easier access to credit, input, information and technology and product market for the small-scale farming structure. Contract farming also contributes to the development of a sound food industry. It might also be seen as a way toward, or as a part of rural development and can be promoted to

improve agricultural performance, especially in the Third World Countries. Contract farming could be evaluated as a form of structural convergence between developed and Third World agriculture and also a way to achieve a higher synthesis between agriculture and industry. Finally, it can be concluded that contractual relationships are not only a distinctive feature of highly industrialized agro-food systems, but also a way of establishing an industrialized and developed structure. But, to obtain the advantages of contract farming, the necessary measures must be taken to trade off those disadvantages, such as the exploitation of small farmers and natural resources by domestic and foreign corporations and multinationals.

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