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Contract farming based on value chain of agricultural products: An inevitable approach to organizing production and the market

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Abstract
Contract farming is a model that can overcome many value chain failures of agricultural products. The special circumstances of the country show that this model can be used as a main option to strengthen the link between farmers and related industries. In the present study, the library and field method (based on a supplementary questionnaire by experts and specialists of 32 provincial agricultural jihad organizations in 2018) has been used. Studies show that the problems of the agricultural sector in the value chain of agricultural products is mainly due to lack of coordination and inadequate link between different parts of the chain, lack of access to the market for farmers, especially small farmers, instability of employment and income, supply of agricultural inputs, high transaction costs and the final cost of production, lack of working capital liquidity, lack of access and identification of target markets. Therefore, contract farming is a model that connects the value chain actors of agricultural products in the chain and during these connections, along the value chain to respond to the market, as a trusting tool in business relations with industries will lead to success that ultimately leads to risk reduction and business creation with the aim of developing the agricultural sector. Due to the inevitability of using this method in completing the value chain and according to the results of this study in different provinces, the feasibility of establishing a center or an office to monitor contract production in the agricultural sector is suggested, so that both production planning and marketing of agricultural products and finally designing the scope of support for this issue in the future is achieved with maximum utilization and the least error.

Keywords: contract farming, value chain, risk reduction, market, price fluctuation

Introduction

Agricultural production is a risky process that is affected by various natural, economic and political factors. These factors cause instability in the income of agricultural producers by creating fluctuations in prices and fluctuations in production performance

(Hosseini, 2006). Past and current policies of Iran's agricultural sector try to develop the level of cultivation and production of some crops by interfering more and more in the market mechanism and creating deviations in the prices of agricultural inputs and outputs, while these policies failed both in performance and in culture (Hosseini and Tarshizi, 2009) which indicates the impossibility of designing appropriate policies without considering all value chains of agricultural products by the government. In general, value chain is a chain that includes all activities related to the flow of goods and conversion of materials, from the stage of preparation of raw materials to the stage of delivery of the final product to the consumer (Haghighat, 2011). On the other hand, the main reason for the fluctuation of agricultural prices in recent years in the country can be the lack of proper production planning by farmers to select and determine the amount of crop cultivation. (Haji Mirzajan, 1394).

Therefore, one of the biggest problems in the agricultural sector in the country is the lack of awareness of farmers about the balanced planting of agricultural products in terms of demand, which on the one hand, disrupts the balance of a product and significantly reduces its price in one year and increase prices and people's dissatisfaction. Weak management in the agricultural products chain and the entry of intermediaries in this field can be considered the main problem of this part of the country's economy (Haji Mirzajan, 2015) which has caused instability in the agricultural products market.

Accordingly, the present study seeks to introduce and express the benefits of value chain-based contract farming as an inevitable approach in organizing production and the market so that this model can overcome many problems in the agricultural sector, including price fluctuation of products. Therefore, in this study, several main questions have been proposed as follows using library and field study and background literature methods:

* Can contract farming be effective in the value chain of agricultural products?

* Can contract farming help build trust and reduce trading risk?

* Can contract farming in the value chain of agricultural products reduce transaction costs?

* Can contract farming link farmers to value chains and provide a stable market for farmers?

The study of the problems of the agricultural sector in Iran shows a lack of proper coordination between different sectors of the chain. In other words, there is weak communication and coordination between producers, processing industry, warehousing industry, transportation industry, retail and wholesale networks and consumers. This has led to a large gap between producer and consumer prices in agricultural products. Therefore, it is necessary to strengthen the relationship between different parts of the value chain, especially the relationship between manufacturers and related industries, by using an appropriate mechanism. The study of the structure of the agricultural sector in Iran shows the characteristics that make the need to pay attention to the creation of new links between farmers and related industries more than ever. Contract farming is a model that can overcome many of these shortcomings. The specific circumstances of the country also indicate that this model can be considered as the main options for strengthening the link between farmers and related industries by policy makers and planners (Khaledi, 2002).

According to what has been said, providing a suitable platform for strengthening domestic

and foreign investment through contract farming is necessary. For this purpose, and in line with the development of contract-based agriculture in particular and value chain of agricultural products in general, the Minister of Jihad for Agriculture announced the change of approach from production-oriented agriculture to commercial or market-oriented agriculture to internal and external organization.

Objectives of the present study:

The effect of contract farming on the value chain of agricultural products, building trust and reducing transaction risk through contract farming, reducing transaction costs through contract farming in the value chain of agricultural products, linking farmers in the value chain and creating relative market stability for farmers. In order to achieve the above goals, in the section on theoretical foundations, the related theories and research methods are explained, and then in the background section, the studies are reviewed in the field of value chain of agricultural products, contract farming and the role of contract farming in value chain will be examined.

Theoretical Foundations

Since the contractual relationship in contract farming is one of the well-known economic mechanisms and one of the important tools of the market, so its creation and application in agricultural product chains can be studied and analyzed based on economic theories. Therefore, in this section, the most important theories and theoretical views about contract systems are mentioned.

Exchange costs are a common approach to understanding contract farming. This approach shows that markets are made up of limited-rational economic actors (in other words, they suffer from severe information deficiencies and are unable to process all available information) and are opportunistic (deceit, lies, fraud and theft are their hallmarks, 2012). Such actors seek personal interest in trickery (Williamson, 1979: Young and Hobbs, 2002). In other words, the two main assumptions of this theory are limited rationality and opportunism that underlie contract breaches. According to the "discriminatory alignment" hypothesis, brokers strike a balance between exchanges and organizing mechanisms, and for this balance, at the same time, in terms of the characteristics of the exchanges, they make each exchange less desirable. The most important guidelines of this approach are that firstly, exchange benefits are obtained at a cost, and secondly, due to their cost-effectiveness, the market is not only a mechanism for organizing exchanges, but there are different mechanisms for performing a particular exchange. Hence allocation efficiency gives way to adaptive efficiency (Nasiri Aghdam, 2006).

Contract theory emphasizes the quality characteristics of products. In well-informed markets, prices are assumed to reflect all relevant quality characteristics; But if quality requirements are high, or product quality is uncertain, contracts can facilitate exchange for a particular quality of a product (Young and Hobbs, 2002). In contract theory, four types of interaction are important: market interaction (which depends on specifications). Local interaction (which relies on long-term relationships and trust); Industrial interaction (in which an individual or legal entity independently determines its scope) and civil interaction (in which there is a collective agreement between firms to avoid disputes and set standards). In general, this theory helps to understand how certain standards can be set.

This is expressed in the concept of value chain governance (Prowse, 2012). The reason for the increasing importance of value chain governance is, first, the increase in demand for diverse products and second, the need to reduce risk. In addition, the two conditions that give companies the ability to guide, persuade, or compel other companies to do a particular method are economies of scale (giving large companies the power to influence other companies) and constraints (such as creating or increasing barriers to entry (Prowse, 2012: Humphery & Memdovic 2006).

According to this view, markets, networks, and hierarchies are three general forms of interaction between chain components. This classification looks at the complexity of the information required, the extent to which this information is used, and the capabilities of suppliers. In other words, homogeneous products (products that are offered in one original form) are often traded in the markets, but products that are very different are traded through networks depending on the competence of the product suppliers or the quality information and characteristics of the product; Therefore, the market alone is not enough for such products (Prowse, 2012).

Michael Porter introduced the value chain model in 1985. According to this model, the activities involved in production organizations can be divided into two parts: main activities and support activities. The main activities are those activities that are called value-added. That is, doing them increases the value of the product. These activities are divided into five categories: inbound logistics, manufacturing operations, outbound logistics, marketing and sales, after-sales service. All of these activities are a direct source of profitability for the firm.

Support activities are those activities that are performed in line with the main activities and preparation of the conditions for their implementation. Support activities are also divided into four categories: procurement activities, technology development, human resource management, and organizational infrastructure (Portner, M.E., 1985).

Contract theory and value chain governance literature both show that just as the governmental and non-governmental sectors seek to regulate and control commodity chains, the private sector (in collaboration) pursues the same activity. Both theories also focus specifically on increasing the role of standardization in organizing value chains (Prowse, 2012).While theories of transaction cost and value chain governance emphasize relationships between firms, theory of competency determines the firmness, nature, structure, and boundaries of an firm based on the skills and tacit knowledge of individuals and teams that are nurtured by the organization. Of course, the ability to create and strengthen contract farming functions largely depends on the skills and experience of members and the organization's ability to improve these capabilities (Prowse, 2012). Proponents of this theory argue that corporate knowledge is necessarily superior to what exists in the marketplace because applied knowledge in the form of competence can exist in the body of an organized group of people (Young and Hobbs, 2002).

It is clear that the performance of contract farming depends heavily on the expertise of those who manage the operation, and this is an issue that is often overlooked in the discussion of contract farming (Prowse, 2012).

From the perspective of agricultural change in political economy, they believe that contract farming (1) expands when the

government has a small role in the market of institutions and products. 2) Contracts can often be efficient on the basis of monopoly. 3) Contract farming leads to the exploitation of the farmer. 4) All production risks and damages caused by natural factors are borne by the farmer. 5) Farmers become wage workers. 6) The distribution of income and labor within the family changes to the detriment of women and leads to the exploitation of children. 7) It has formed the class of capitalist farmers who turn small-scale farmers into workers. 8) Changes in local markets and communities, such as reduced production of food products and increased food prices (Prowse, 2012).

In general, some of the findings of this theory are important issues in contract farming studies, such as the issue of risk transfer to farmers, issues related to the farmer's household or the possibility of negative impacts on local markets. However, it should be noted that in the studies related to this view, no attention has been paid to internal and external issues of the company, the characteristics of specific goods and products or the role of rules and standards in contract farming (Prowse, 2012).

Among the approaches and theories examined, most studies related to contract farming have been conducted in the form of transaction cost theory. According to this view, since contracts involve costs, transaction costs are economically justified when: 1. The buyer is a large firm. 2. The product has a variety of quality, vulnerability, technically difficult production and unit value in high volume. 3. The destination market is willing to pay more than the price for certain goods with certain characteristics, which can only be guaranteed by concluding a contract between the farmer and the buyer. 4. The political environment is favorable (Minot, 2007)

In general, a framework for evaluating or determining the effects of contract farming for future field studies or evaluating it in the agricultural sector of different countries can be provided. In this context, the following hypotheses can be used in recent empirical studies of contract farming and to improve its models (Prowse, 2012).

1) Smallholder farmers are excluded from new economic trends based on contract farming unless inequality in land size and ownership is low among farmers, in which case their participation in contract farming is higher.

2) Farmers will have a higher income than others by participating in contract farming.

3) Production of products with a high degree of diversity in quality, high perishability, difficulty in production, or high price-to-weight ratio - high quality fruits and vegetables, spices, flowers, tea, tobacco, grain products, dairy products, poultry and organic products - more common through contract farming.

4) Contract farming is mainly done by large companies.

5) Contract farming is often used to supply the market of developed countries and supermarkets in urban centers of other countries.

Now, using the mentioned hypotheses, we can examine the strengths and weaknesses of contract farming development programs in countries.

Contract farming has different definitions and concepts in different countries and the laws related to them are very different. In this regard, we can refer to two levels of laws and regulations at the national and international levels that affect contract farming systems at different levels and scales. United Nation

Convention on contracts for the International Sale of Goods (Vienna, 11 Apr. 1489, (1980 U.T.S.3, entered into force 1 Jan,1988. is currently the most important legal framework for many contracts for the sale of goods and services worldwide.

Another related international instrument is the Principles of International Trade Contracts (PICC), developed and implemented by UNIDROTI. The first version of the PICC was developed in 1994 and last revised in 2010. Agricultural contracts use it or parts of it as a legal framework agreed upon by both parties. The Food and Agriculture Organization of the United Nations (FAO) has prepared various documents on the implementation of contract farming and its operations. National laws In different countries have proposed different legal systems for contract farming, the formation and application of which depend on various factors such as legal traditions and the time and manner of enactment of laws; Thus, the rules and regulations relating to contract farming may be found in various contexts such as civil law, agricultural law, general commercial law, specific agricultural contract law, specific product or subsection law, and so on. These sources and legal authorities are different in terms of specialization in the field of agricultural contracts (Khosravi, 2016).

In the United States, in addition to general contract laws, there are special rules for agricultural contracts. In France, the contract farming system is governed by the laws of the agricultural sector, known as the Rural and Fisheries Act, and covers a wide variety of issues related to agriculture and fisheries. In India, the national contract farming system is nationally covered by the 1872 National Law on Contracts, but the Goods Sale Act of 1930 addresses the issue in more detail. Spain has a special law on contract farming, which in 2000 passed a special law that deals with the relationship between producers, buyers and processors of agricultural products (ibid).

In Iran, Article 33 of the Law on the Sixth Five-Year Development Plan obliges the government to implement the third and sixth paragraphs of the general policies of the resistance economy in order to diversify tools to support the agricultural sector, provide resources and equip, develop and secure investment to increase agricultural exports. Value-added and completion of value chain of agricultural products in relation to exemption from paying VAT on services of this article, production and broadcasting of educational and extension programs through radio, creation of export clusters, trade marks and allocation of export incentives to export of agricultural products, forgiveness of profits and fees and compensate for loans received by farmers affected by unforeseen events are considered.

Review of literature

Numerous foreign studies have been conducted on value chain promotion of agricultural products, contract farming and the role of contract farming in value chain promotion, although in domestic studies only the issue of supply chain and value has been addressed and unfortunately contract farming has been neglected. The following are some of these studies and their results.

Heike Hoeffler (2005), in his study on potato value chain promotion in Kenya, states whether contract farming can help build trust and reduce transaction risk. This study showed that contract farming is a model that successfully combines value chain actors in agricultural value chain, builds trust and reduces risk in business transactions, and its potential benefits depend on a set of complex factors including product nature, economic and social relationships up to the structure of

product demand. The experience of creating and cultivating potato value chain in Kenya shows that many problems can be solved if business partners have a common understanding of inefficiencies, causes of unreliability and related costs in the value chain process;

Therefore, facilitating the arrangement of the contract is only one of the tools to create this common understanding in this process. In the course of these relationships along the value chain to respond to the market, contract farming is also just a tool to establish a reliable business relationship between farmers and industry, which will reduce risk and ultimately lead to better business as well as development. This approach makes the value chain of agriculture more competitive and leads to rural participation and development in Africa.

Guo, Jolly and Zhu (2005) in a case study in 13 Chinese provinces stated that farmers' incentives to join contract farming were: 56% market access, 33% protection against price changes, 8% credit and 3% technology. In fact, the most important incentive for farmers to join contract farming has been market access. In another part of the research, the benefits of contract farming are evaluated from the perspective of farmers who consider contract farming to be effective in improving product quality and stabilizing the selling price. The distance from the target market has a positive and significant relationship with farmers choosing the contract. Government support is also one of the key factors in attracting farmers to contract farming. Le Thi Kim Oanh et al. (2010) in their study on the important role of contract farming in the value chain approach of black tea in Vietnam by comparing two value chain of tea with contract farming and without contract farming argued that the value chain of tea product in the form of contract farming leads to high added value and the stability of the link between the actors in the chain and creates favorable conditions for farmers to produce easily and have a more stable source of income.

Maitre dHotel, Lemeilleur, & Bienabe (2011) stated that there are many restrictions for smallholder farmers to access the agricultural market. They identified six factors that affect the capacity of smallholder farmers to access agricultural markets: barriers to entry (structural barriers, trade constraints, access to capital and credit, and strategic barriers), high production risks, and a lack of economies of scale, high marketing risks (rising transaction risks and price fluctuation), high transaction costs (market search and information costs), screening costs, bargaining costs, transfer costs, monitoring costs and enforcement costs, low bargaining power (relative capacity to obtain favorable conditions) and lack of human and social capital. They argued that agricultural unions can increase the capacity of smallholder farmers to access the market. This is because unions can make the necessary investments in training, packaging, control and communications, which is useful for marketing quality products and increasing the bargaining power of farmers through bulk sales.

Martin Prowse (2012) in his study on contract farming in developing countries showed that contract farming can be successful for small farmers and increase their income and the quality of products produced is based on set standards. Small companies, like large companies, can enter into farming contract and use different agricultural models depending on the type of product and the ability of the company and other factors. In contract farming, in addition to the agreement of the two parties, a third party (government, civil society organizations and non-

governmental organizations) that is acceptable and trustworthy to all, can monitor contract design, implementation of programs and quality assurance, and solve problems against misunderstandings and tensions.

M.Soren (2012) in order to investigate the value chain of rice seeds with contract farming BADC and the activities of related actors in the value chain of rice seeds and also by selecting 20 farms with contract farming, 3 BADC stations of seed production center, 20 rice seed factories, analyzed BADC agricultural contracts in the rice value chain in selected areas of MYMENSIHGH in Bangladesh. The results of the study showed that in order to stabilize the price of rice, the production price should be predicted in time before planting by BADC to adjust the rice level based on it in contract farming. By implementing contract farming, agriculture can receive the expected return. Market information is effective for rice grain value chain.

Roeblano M. Briones (2014), in his study of smallholder farmers in high value chains, addressed the limitations associated with inclusive growth. Linking small farmers to modern markets, both domestic and export, increasingly requires participation in modern supply chains. This study, in the first survey of small shareholders in the Philippine tobacco industry, states that participation in contract farming stabilizes and significantly increases profitability for tobacco farmers.

Thanda Kyi et al. (2016) in a case study of Tat Koon town on the role of contract farming in improving corn value chain and farmers 'livelihoods analyzed production and marketing in the corn value chain process, including farmers' economic conditions and market margins in the region and farm area. Preliminary data for the study include 120 sample farmers from Tat Kun villages and 15 village brokers, 14 local wholesalers, a poultry farm and two corn exporters. The results show that almost all farmers in the area with a level of primary education and good agricultural experience usually cultivate corn on their farms and most of them sell their products immediately after harvest at low prices to village brokers (brokers).

Therefore, they often have machines with a lack of financial resources to supply inputs and have the least market power in the value chain. Marketing intermediaries also face problems such as limited working capital, storage equipment, high transportation costs, poor communication infrastructure, and inefficient market information systems. Therefore, to solve these problems, through contract farming, introduction of applied methods of efficient fertilizers, use of advanced and modern technologies of corn production in the region, training of knowledge skills to farmers, special loans for farmers in the form of contract farming are necessary.

Adu-Gyamfi Poku et al. (2018) conducted a study on the preparation of agricultural contracts for farmers in the African bio-economy, "Case study of large projects in Ghana" and the results showed that in contract farming both parties to the contract (buyer and seller of the product) consider that market challenges for farmers and businesses lead to sustainability and profitability. As competitive value chains expand in the agricultural sector in Africa, there is a need to design fair and transparent agricultural contracts and direct investment of the company to support the production activities of the farm in a strong environment.

Tavassoli et al. (2007) in examining the situation and marketing bottlenecks in Iranian agricultural products stated that there are many issues and problems in the field of

marketing of agricultural products, including inadequate infrastructure of marketing facilities, price instability, seasonal agricultural products, and pointed out the inadequacy of the market information system, high production costs, a lot of waste during different stages of production, the presence of many brokers and intermediaries, as well as the inadequacy of government support in market development and marketing policies of rural products. These factors prevent farmers from achieving high incomes and increase the added value of products and prevent fighting poverty and deprivation of villagers.

Asadi (2010) in a study entitled Marketing Management of Agricultural Products offers the following suggestions: Special attention of rural organizations to the packaging and processing of products, the use of graduates of management and economics in agriculture to help market-oriented marketing and sales activities, attention to transportation fleet of agricultural products and training on the principles of quality product purchase and training on quality product production.

In 2012, a study of value chain analysis of selected industries in Ardabil province was conducted as a case study of value chain analysis of potato processing industries, to study the production situation, identify weaknesses, strengths, opportunities and threats, increase existing competitive advantage, identify new competitive advantages and value added in this industry. Based on studies and researches, lack of strategic plan, insufficient and scientific attention to storage and warehousing and traditional consumption culture (sales advertising), were identified as three missing links of this industry in Ardabil province, and emphasized the role of provincial and national officials in reviving these missing links.

Hosseinzadeh (2015), in the study "Analysis of poplar value chain model in West Azerbaijan province in order to improve it" presented a suitable strategy for value chain development using the ANP method. The results of prioritization showed the following criteria effective on the development of poplar wood value in West Azerbaijan province.

Puryousef et al. (2017), in his study on the economic effects of value chain on commercial cooperatives (studied by Birjand cooperatives) indicated the promotion of the development of value chain activities and the growth of economic value of the company. Also, the relationship between each of the initial activities and value chain support with economic value added was significant, which confirmed the above result at a stronger level. The results of this study are consistent with the results of Porter's famous study (1985), which led to the presentation of his model.

Aghaya et al. (2012), in their study, investigated the development and model of cotton industry based on contracts, which according to the results, the basis of problems in the cotton industry and its processing in the country is the lack of supply chain integration. Vertical development of the cotton chain (integration and participation of organizations along the chain) is possible through contract farming. The need to develop the supply chain of cotton products through contract farming initially requires a change in the approach of government supportive policies in the cotton industry.

Khaledi (2012), investigated contract farming as a solution for the development of the agricultural sector and the results indicated that one of the methods of creating links between farmers and industries in the agricultural sector as well as domestic and global markets is contract agriculture. The

special circumstances of our country indicate that this model can be considered by policymakers and planners as an option to strengthen the link between farmers and related industries. It is necessary to provide a suitable platform for strengthening domestic and international investment through contract farming. In the early stages, when the possibility of communication between farmers and industries is associated with problems, the relevant unions and organizations can play this role.

Khaledi and Kazemnejad (2015) in their study have dealt with the macro model of market development of agricultural products based on supply chain. The results of the technical report showed that, based on international experience and the recommendation of the Food and Agriculture Organization (FAO), contract farming is a good solution to develop the supply chain and strengthen farmers' ties with domestic and international markets. Therefore, this method, as a useful tool, can strengthen the relationship between small agricultural producers in developing countries and markets and pursue their interests.

According to the studies, it can be acknowledged that the lack of institutionalization of contract farming and its identification in the value chain of agricultural products for farmers and industries, the lack of an efficient and reliable management system for organizing the agricultural product chain, lack of standardization methods for agricultural products, lack of information system for the market of agricultural products, the lack of a strong market-oriented organization for agricultural products that strengthens the link between production and the market, the lack of incentives to join farmers and industries in contract farming in the value chain of agricultural products, the lack of an institutional and regulatory framework to facilitate and prepare contracts, information and its implementation, the monopoly of the sale of the product by a sponsor has effects, for example, in the production of tree products that are not easily converted into other products, the monopoly of the sale of the sponsor causes farmers to offer a limited supply of a product. And, finally, no risk sharing in the contract farming of Rojin agro-industry (as the example under study) and the ambiguities in the contract and the use of a fixed price in contracts is one of the challenges in the value chain of agricultural products in the country.

Discussion

In this study, library and field methods have been used. In the library method, government documents were used and in the field method, a questionnaire was prepared by experts and specialists in the Ministry of Agricultural Jihad from 32 provincial agricultural jihad organizations in 2018 using Excel software. Also, as a sample, the value chain of tomato product based on contract farming of Rojin Tak Agro-industrial Complex in Kermanshah province has been studied. The agricultural sector is one of the three main sectors of the economy that plays a significant role in the country's food supply, social welfare, GDP and economic growth. Examining the problems of the agricultural sector in the country shows a lack of proper coordination between different parts of the chain. Poor communication and coordination is observed between producers, processing industry, warehousing industry, transportation industry, retail network, wholesale and consumers. This has led to a large gap between producer and consumer prices in agricultural products. A value chain is a set of operations performed in an industry as a chain to create value. Products pass through the loops of this chain, and in each loop, value

is added to the final product. The activity of the chain components along with the service providers to them, especially the government, makes the overall competitiveness or non-competitiveness of an industry. The main links in the value chain include producers of raw materials, processing, conversion and complementary industries, domestic and international markets and consumers.

According to the statistics published by the Information and Communication Technology Center of the Ministry of Jihad Agriculture, the amount of production of various agricultural products under the agricultural, horticultural, livestock, poultry and fisheries sectors in 2018 has reached 117.7 million tons, which compared to 2017, there was a decrease of 0.8%. Among them, the production of various crops amounted to 81.2 million tons, the production of horticultural products amounted to 20.53 million tons and the production of protein products from 14.23 million tons in 2017 to 14.77 million tons in 2018 and showed a 3.8 percent growth. The first to fifth ranks of provincial products in agricultural sub-sectors can be seen in the following tables.

Table (1): The first to fifth ranks of the province's agricultural production in the country

Rank	Province	Production (thousand ton)	Percent in total
First	Khuzestan	12759364	15/71
Second	Fars	6433994	7/92
Third	Khorasan Razavi	5158128	6/35
Fourth	West Azerbaijan	4775722	5/88
Fifth	Hamedan	3639619	4/48

Source: Information and Communication Technology Center of the Ministry of Jihad Agriculture

Table (2): First to fifth ranks of horticultural products in the agricultural sector in the country

Rank	Province	Production (thousand ton)	production percentage from the whole country
First	Fars	3053600	14/9
Second	Mazandaran	2898449	14/1
Third	South Kerman	1231666	6
Fourth	Tehran	1165951	5/7
Fifth	West Azerbaijan	1038735	5/1

Source: Information and Communication Technology Center of the Ministry of Jihad Agriculture

Table (3): First to fifth provincial ranks of livestock and poultry production in the agricultural sector in the country

Rank	Province	Production (thousand ton)	production percentage from the whole country
First	Esfahan	1618414	10/96
Second	Tehran	1392395	9/43
Third	Khorasan Razavi	1343048	9/1
Fourth	Fars	873541	5/92
Fifth	Mazandaran	822287	5/57

Source: Information and Communication Technology Center of the Ministry of Jihad Agriculture

Table (4): The first to fifth ranks of the province fishery products of the agricultural sector in the country

Rank	Province	Production (thousand ton)	production percentage from the whole country
First	Mazandaran	76300	15/60
Second	Khuzestan	63538	12/99
Third	Guilan	51263	10/48
Fourth	Hormozgan	27781	5/68
Fifth	Lorestan	26217	5/36

Source: Information and Communication Technology Center of the Ministry of Jihad Agriculture

According to the information received from the Office of Transformation and Complementary Industries of the Ministry of Jihad Agriculture, the number of units of conversion and food industries (processing, packaging and storage) until the end of 2018 was 11082 units with a capacity of 57.8 million tons of agricultural raw material and employment of more than 140 thousand people. Of these, 2307 units worked with a capacity of 7018.5 thousand tons of raw materials for the horticultural sector, 5273 units with a capacity of 17932 thousand tons of raw materials for the agricultural sector, 1471 units in the livestock sector with a capacity of 13611 thousand tons of raw materials, 197 units in the fisheries unit with a capacity of 914 thousand tons of raw materials. The table below shows the first to fifth ranks of the conversion and complementary industries in the country.

Table (5): First to fifth ranks of the province of agricultural conversion and complementary industries in the country

Rank	Province	Raw material absorption capacity (thousand tons)	Percent
First	Khorasan Razavi	6794	11/74
Second	Mazandaran	6587/80	11/39
Third	Esfahan	3735	6/46
Fourth	Fars	3646/04	6/30
Fifth	Golestan	3086	5/33

Source: Office of Transformation and Complementary Industries of the Ministry of Jihad Agriculture

Improving the coefficient of self-reliance in basic products and supporting the development of exports are the major goals of the agricultural sector in the Sixth Five-Year Development Plan. Natural resources have determined the capacity to support it. In 2018, the export of agriculture and food sector accounted for 6994.19 thousand tons worth $ 6391.76 million, which is equivalent to 5.42 percent in terms of weight and 14.43 percent in terms of value of total exports of non-oil goods. The main exports of this sector are allocated to ten countries, of which Iraq and Afghanistan account for 41.2% and 12.3% of the total exports, respectively. The total import of agriculture and food sector amounted to 20478.80 thousand tons with a value of 10716.90 million dollars, which includes 67.85% in terms of weight and 26.02% in terms of value, respectively. The main imports of this sector are from eleven countries, of which the Netherlands and the United States account for 15.2% and 9.4% of the country's total imports, respectively. The trade balance of agricultural products and food industry in 2018 was -4441 million dollars, which has improved by 5.7% compared to the same period of the previous year (Export value decreased by 2% and import value decreased by 1%).

Based on a questionnaire completed by the elites and agricultural experts of the Jihad Agricultural Organization of the provinces based on the indicators in the value chain of agricultural products, 47 priority value chains of provincial agricultural products have been determined, of which 28% are under the agricultural sector (including products: oilseeds, rapeseed, sunflower and others), cotton, rice, sugar beet, potatoes, sugarcane, legumes, onions, vegetables and summer, garlic, peanuts, cucumbers and melons), 55% of the horticultural sub-sector (including products: medicinal plants (Rosemary, Viper's-buglosses, hazelnut, black root), mushrooms, dates, apple, almond, barberry, saffron, tomato, olive, citrus, pistachio, pomegranate, grape, strawberry, lemon, walnut, flower and ornamental plant, cherry, jujube, tropical fruits, greenhouse products, kiwi, black fig, tea, apricot and hazelnut), 13% of livestock and poultry (including products: white chicken, red meat, quail, milk, honey , Eggs) and 4% of the fisheries sub-sector (including products: fish and shrimp).

Based on the information extracted from the questionnaire, the provincial priority value chains in order to develop contract farming are described in Table (6). According to this table, it can be seen that the highest priorities in the value chain of agricultural products in the provinces of the country are related to the sub-sector of horticultural products and are among the first, second and third priorities of all provinces. The livestock and poultry sub-sector also has the third and fourth priorities of the provinces (Table 7).

Table (6): Provincial priority value chains for contract farming development

N	Province	Priority Products in the form of contract farming				
		First priority	Second priority	Third priority	Fourth Priority	Fifth priority
1	East Azarbaijan	Garden products	Chicken	Trout	Milk	Medicinal Plants
2	West Azerbaijan	Apple	Grape	Sugar beet	Honey	Sunflower
3	Ardabil	potato	tomato	peanut	Milk	Chicken
4	Esfahan	Medicinal plants / Mohammadi flower	Ornamental fishes	potato	Onion	Types of meat / milk
5	Alborz	Mushrooms	Strawberry	Ornamental flowers and plants	Seedling production	Greenhouse vegetables
6	Ilam	Garden products	Vegetables	Oil Seeds	Farmed Fish	Chicken
7	Bushehr	Date	Farmed shrimp	tomato	Chicken	Honey
8	Tehran	Apple	Mushrooms	Cherries	Types of meat / milk	Ornamental flowers and plants
9	South Kerman	Garden products	Greenhouse products	Citrus	Date	Quail
10	Chahar Mahal & Bakhtiari	Almond	Milk	Fish	potato	Beans
11	South Khorasan	Barberry	Saffron	Jujube	cotton	Camel meat and milk
12	Razavi Khorasan	Saffron	tomato	potato	Apple	Sugar beet
13	North Khorasan	tomato	cotton	Medicinal Plants	Chicken	Milk
14	Khuzestan	Aquaculture	Date	tomato	Vegetables	Types of meat
15	Zanjan	Olive	Raisins	potato	Trout	Types of meat

16	Semnan	Melon	Grape	cotton	Pistachio	Medicinal plants / Harsh
17	Sistan & Baluchestan	Fishery products	Date	tropical fruits	Chicken	milk
18	Fars	Citrus	Apple	Figs	Medicinal Plants	Date
19	Qazvin	Olive	Raisins	Fruits and vegetables	Red Meat	Chicken
20	Qom	Chicken	Pistachio	Honey	Medicinal Plants	Red Meat
21	Kurdestan	Cold Fish	Strawberry	Grape	Honey	Types of meat
22	Kerman	Pistachio	Medicinal Plants	Greenhouse products	Types of meat	Milk
23	Kermanshah	tomato	Canola	Sugar beets and sugarcane	Honey	Beans
24	Kohgiluyeh and Boyer-Ahmad	Apple	sour lemon	Medicinal Plants	Types of meat	Milk
25	Golestan	Oilseeds / Cotton	Citrus	ornamental Flowers and plants	Chicken	Red Meat
26	Guilan	Olive	Rice	Kiwi	Tea	Hazelnut
27	Lorestan	Pomegranate	Walnut	Black figs	Medicinal Plants	Apricot
28	Mazandaran	Chicken	Citrus	Kiwi	Milk	Red Meat
29	Markazi	Mohamadi flower	Herbs	Beans	Pomegranate	Fish farming
30	Hormozgan	Shrimp	Greenhouse products	Date	Vegetables	chicken
31	Hamedan	Raisins	potato	Garlic	Chicken	Red Meat
32	Yazd	Greenhouse products	Pistachio	Medicinal Plants	Chicken and red meat	Quail

Table (7): Percentage of provincial value chain priorities of agricultural products by subsection (percent)

Subsection	First priority	Second priority	Third priority	Fourth priority	Fifith priority
Agricultural	6/25	15/62	31/2	18/75	12/5
Garden	75	71/8	59/4	25	21/87
Livestock and poultry	6/25	6/25	3/12	50	6/25
Fisheries	12/5	6/25	6/25	6/25	3/12

The main links in the value chains include producers (farmers), industry and processing, domestic market and export to analyze the territory of the commodity as an example value chain of potato, poultry, legumes and tomatoes in different provinces and related problems. Which is expressed as follows:

Potatoes are one of the basic, sensitive and essential crops that are also covered by the Guaranteed Purchase Law. If its market price is lower than the minimum guaranteed purchase price, the government is obliged to purchase a guaranteed product in order to protect farmers. It is estimated that its production in the country is equal to 5142.8 thousand tons, its consumption is 3694 thousand tons in 2018, which per capita consumption was 45 kg. Statistics show that the average export of the above product over the past five years has been about 600 thousand tons to the target countries. In general, about 10% of potato production in the country enters the industrial sector for processing and about 10% of it is exported and the rest is consumed in the domestic market. Based on field information, Ardabil, Khorasan Razavi, Khuzestan, Zanjan, Hamedan, Kerman, Isfahan, Chaharmahal & Bakhtiari provinces have the value chain of the above product and the results extracted from supplementary questionnaires show that 90% of these provinces in the processing and conversion industries, 38 percentages in supply of inputs and 38% in price fluctuation of the market. Other problems mentioned are the supply of raw materials for processing and conversion industries, currency rate changes, lack of agricultural organizations and high production due to the low capacity of processing and complementary industries. Chicken meat in the group of the first priority goods, basic, sensitive and essential, which is subject to the decisions of the staff of the Market Regulation Working Group, which includes any pricing, import, distribution, supply and storage. The poultry industry is of particular importance in the agricultural sector due to its extensive past and present links with other sectors of the economy, and chicken meat has the largest share of consumption among animal protein items. In a case study of the poultry industry in the value chain, the previous rings of the poultry unit (producer) in the chicken meat chain include: ancestral chickens, feed factory, vaccines and medicine, and the later rings include: slaughterhouse, processing and distribution in the domestic and export markets (Shafi'i Alavijeh, 1389). Based on field information from Ardabil, Alborz, Tehran, South Khorasan, Khorasan Razavi, Sistan and Baluchestan, Kurdistan, Ilam, Isfahan, Bushehr, Khuzestan, Zanjan, Fars, Qom, Qazvin, Kermanshah, Markazi, Hormozgan, Hamedan, south of Kerman. , Golestan, East Azerbaijan, Kerman, Kohkiluyeh and Boyer-Ahmad, Mazandaran and North Khorasan have value chain with priority of white chicken meat. 61.5% of these provinces are involved in supplying domestic and imported inputs, 38.4% of industries which include industry improvement, development and investment of industries, completion of related industries, establishment of packaging units, slicing and sorting, establishment of modern slaughterhouses equipped with 02 line, 23% price fluctuation of products and inputs in the market and 23% of the export market, which includes lack of infrastructure for export, improvement of carcass quality and weight loss, identification of target market standards and compliance with standards, improving quality and slaughter in modern slaughterhouses equipped with 02 line. And other problems are the weakness of organizations, lack of identification of target markets, a lot of waste, lack of awareness, lack of culture, lack of infrastructure, lack of working capital liquidity, transportation costs

and inappropriate and changing market conditions. Among cereal products, beans are the second largest crop in the country after cereals and play an important role as the second food source to meet human protein needs in the world. Cereals are one of the basic goods and are subject to the guaranteed purchase law. Per capita consumption of legumes (lentils, chickpeas) in the country is projected at 8.7 kg per year. According to field information from Chaharmahal Bakhtiari, Kohkiluyeh and Boyer-Ahmad, Markazi, West Azerbaijan, Kermanshah and Khuzestan provinces are among the provinces with priority grain value chain. 33.3% of these provinces have problems in infrastructure, 16.6% in smallholder farmers and dispersion of production areas, 16.6% in supply of inputs (imported seeds), 16.6% in market problems, 16.6% in limited packaging.Tomato is one of the commodities that is less sensitive to basic commodities, but as soon as the production of this product decreases in the market, it becomes highly sensitive. In this regard, supportive and agreed purchases by the government are made by the Central Organization for Rural Cooperation in order to support producers and industries. In 1997, the production of this product in the country was equal to 5667 thousand tons, which is the highest production of this product in Bushehr, Khorasan Razavi, southern Kerman, Khuzestan, Zanjan, Fars, Qazvin, Kermanshah, Golestan and Hormozgan provinces. In general, about 30% of the tomato production in the country enters the industrial sector for processing and about 10% of it is exported and the rest is consumed in the domestic market. According to the information received from the provinces of Khorasan Razavi, North Khorasan, Kermanshah, Bushehr and Khuzestan are among the provinces with priority value chain of tomatoes. 40% of these provinces have problems in price fluctuation in the market, 20% of small farmers and dispersion of production areas, 20% of industries related to construction costs and lack of investment of investors, 20% of infrastructure constraints, 20% of supply of imported inputs.

The use of contract farming model in the value chains of the above products will strengthen the link between farmers and supporting companies and thus provide inputs for producers, adjust price fluctuation in the market, reduce transaction risk and the possibility of using export markets. Therefore, the basic problems in these chains are solved. According to the study, the main challenges in the provincial priority value chains in the four sub-sectors of horticulture, livestock and poultry, agriculture and fisheries include: lack of coordination and proper link between different parts of the chain, lack of access to the market, especially small farmers, employment and fixed income, supply of domestic and imported agricultural inputs (including: seeds, fertilizers, pesticides, soybean meal, barley, corn, medicines and livestock vaccines, bran, imported chickens, foreign flower stems, standard seedlings with cultivars, devices and parts Required, livestock and poultry feed, etc.), high transaction costs, high cost of production and price instability, exchange rate fluctuations for import of inputs and price fluctuation of domestic inputs, lack of infrastructure (water shortage, road between farms Distribution of farms, gas supply, exploitation of new fishing fleet, modernization of transport fleet, transportation problems, etc.), smallholder ownership, low productivity, low level of technical and modern knowledge of farmers, lack of knowledge of farmers and presence of insufficient manpower in the educational and extension process, lack of software specialized tools to organize production and

create a direct relationship between producers and the market and lack of access to markets and international forums, low quality of agricultural products, abundant waste, high risk, lack of working capital liquidity, creation, development, completion and investment in industries processing, conversion and complementary industries and related industries, as well as insufficient number of new slaughterhouses in accordance with current world standards, corn drying, packaging, sorting, slicing, price fluctuation of finished products in the market, non-compliance of manufactured products with world standards, branding, barriers to export licenses, permanent changes in customs regulations and export regulations, lack of export incentives, high marketing costs, lack of access and identification of target markets, export bases and lack of communication channels, illegal smuggling of livestock across the country, lack of appropriate consumer market development, production capacity is the impact of political and economic factors on imports, weak organizations and social participation, changing consumption patterns, high costs of culture and lack of comparative and competitive advantages.

Evaluation of value chain of tomato product of Rojin Tak agro-industry complex in Kermanshah province based on contract farming as a special and operational sample

Rojin Tak Agro-industrial Complex has been operating in the industrial sector since 2002 and has officially started agricultural activities in Kermanshah province since 2006 along with the industrial sector. This company is the only company in the country that works in the form of value chain of tomato product based on contract farming which has annual relations with the farmers of its contract and considers them as its main capital. The value chain of the tomato product includes the circles of producers (farmers), industries and processing, and domestic and foreign markets. The company has the potential to produce 3600 tons, with 3600 farmers from 313 villages with an area of 5000 hectares under cultivation, has implemented contract farming as follows.

Providing agricultural inputs including seeds, seedlings, fertilizers and pesticides with quality and appropriate to the land - education, holding extension classes, monitoring and crop control for free - preparing accurate statistics of farmers including: Name, land area, land type, land dimensions, the name of the city, town and village along with the installation of GPS devices in agricultural fields - the provision of new technologies, including the services of the company, is available in existing contracts. Studies show that the contract farming pattern used by the company is centralized and includes all types of farmers from small to large owner with less than one hectare to fifty hectares of land. In this model, Rojin Tak Agriculture and Industry has used two types of contracts, including contracts with hybrids (contracts for growing and purchasing tomatoes of hybrid cultivars) and non-hybrids (special contracts for purchasing tomatoes). In the type of farming contract with hybrid, the seedling is given to the farmer by the company and the product produced during the season is under the supervision of the company's experts and is evaluated in terms of performance. According to this contract, the farmer is obliged to deliver the product to the company and has no right to sell it to anyone other than the company. The farmer is obliged to sell the product to the factory based on the price set by the factory during the harvest season. In case of violation of the above subject, the company is allowed to collect its claims based on the expert evaluation of Rojin Company through the guarantee check that

the farmer delivers to the company at the time of concluding the contract, and the farmer waives the right to any objections and claims. In addition to the inputs received, the receivables are the amount of the farm's product based on the evaluation of the company's experts.

The farmer delivers a guarantee check by obtaining authenticity from the bank to the company at the time of concluding the contract and allows the company to have full discretion in case of non-payment of the company's claims for fertilizer, pesticides, seedlings, produce, consulting fee, etc. The company should act on its receipt only based on the opinion of the experts of Rojin Tak Company. The purchase price of tomatoes is specified at the entrance door of the factory and the minimum price is set as a guarantee for the purchase of each kilogram of pure tomatoes in this year's contract as a fixed amount equal to 5000 Rials. The farmer is obliged to insure his farm and provide the insurance policy image to the company. Obviously, the above company will not be liable for any damages to the farm. But in non-hybrid contract farming, the seed is given to the farmer and the farmer can sell the product at the current market price at the time of harvest and settle the cost of the company or deliver it to the company according to the contract. The purchase price of tomatoes is specified at the entrance door of the factory and the minimum price is guaranteed to be 4200 Rials as a guarantee for the purchase of each kilogram of pure tomatoes in this year's contract. The company pays the price of the product to their account through the banking system until the end of the year, after deducting any debts owed by the farmer, and the farmer waives the right to any objections and complaints in this regard.

Studies show that the challenges of Rojin Tak agro-industry include: (1) Unrealistic statistics of farmers and the amount of cultivated area announced by the Jihad Agricultural Organization of the provinces. (2) Lack of funding for the import of tomato harvesting machines. (3) The required financial resources in the form of working capital. (4) Training and counseling for farmers in agriculture and industry is free, but has been costly in the service centers of the Ministry of Jihad Agriculture. (5) The hasty and cross-cutting policies of the government lead to problems and crises for the company. In this regard, farmers who signed a hybrid agricultural contract (seedling 3402 hybrid) with the company were interviewed. The results showed complete satisfaction with facilitating the receipt of inputs (fertilizer, pesticides, seedlings), necessary training, visits, monitoring and control and improving productivity per unit area. Problems included long queues for product delivery and the type of settlement the company's account with farmers (in which the company pays 15% of the product at the time of delivery and the rest is settled by the end of the year).

Inadequate coordination and linkage between different parts of the value chain of agricultural products and high risk, which is one of the main problems. As stated in the potato value chain promotion study in Kenya, contract farming is a model in which the value chain actors of agricultural products are successfully linked in the chain, and during these connections along the value chain to respond to the market, only a tool to build trust in business relationships. It is with industries that reduce risk and ultimately lead to better business as well as agricultural development. This value chain approach makes agricultural products more competitive and leads to farmers' participation.

A study of the important role of contract farming in the value chain approach of black

tea in Vietnam shows that contract farming leads to increased value and stability among the actors in the chain, creating favorable conditions for farmers who have a more stable source of income. contract farming eliminate the challenges of smallholder farmers, low product quality, uncertain relationships and market instability, and set reasonable prices for producers with less difference than the market, help improve production quality, link between producers and support that leads to a feeling security between the two parties and the use of appropriate, adequate and quality inputs includes the use of technical and scientific methods and the establishment of production cooperatives. Problems of small farmers with high costs, lack of market access and lack of agricultural inputs, lack of access to new techniques and knowledge, lower product prices lead to variable and low incomes. A study of contract farming in developing countries showed that contract farming can make small farmers successful and increase their income. The quality of the products is based on the set standards. Also, in the value chain of rice based on contract farming leads to stabilization of rice prices, access to market information, modern cultivation and the use of new technologies, reducing the cost of the product leads to reducing transaction costs.The study of smallholder farmers in the high value chain has shown that contract farming is a suitable model for small farmers in commercial agriculture, which reduces transportation costs by preparing infrastructure in rural areas. The study of value chain of corn product based on contract farming showed problems such as marketing intermediaries, limited working capital, necessary equipment for storage, high transportation costs and poor communication infrastructure and inefficient market system are eliminated through contract farming and reduce transaction costs in the process.

In the study of contract farming as a solution for the development of the agricultural sector, the results indicated that one of the methods of creating links between farmers and industries in the agricultural sector, as well as domestic and global markets is contract agriculture. The special circumstances of our country indicate that this model can be considered by policymakers and planners as an option to strengthen the link between farmers and related industries. It is necessary to provide a suitable platform for strengthening domestic and international investment through contract farming. In studying the macro model of market development of supply chain-based agricultural products, based on international experience and the recommendation of the Food and Agriculture Organization (FAO), contract farming is a good solution to develop supply chain and strengthen farmers' ties with domestic and international markets. . Therefore, this method, as a useful tool, can strengthen the relationship between small agricultural producers in developing countries and markets and pursue their interests. Paying attention to the effective improvement and development of the agricultural product chain has a positive effect on job creation in urban and rural areas and through the development of businesses and market access for farmers, especially smallholder farmers, leads to poverty reduction and increased income. Thus, the use of contract farming in chains using international and domestic experiences, by creating a stable relationship between supply chain actors by reducing waste during the harvest and post-harvest stage and thus providing food, with appropriate price and quality, food security has one of the major goals of the agricultural sector. On the other hand, due to the fact that small farms often have high production efficiency and have advantages in terms of labor costs,

motivation and management, but are faced with severe capital constraints and inability to use technology and also lack the ability to apply the necessary standards. Therefore, they have a strong tendency to enter into contract farming, because economies of scale in purchasing the required inputs and transportation allow such farmers to benefit from the benefits of contracts with companies. Therefore, the entry of farmers into contracts by strengthening value chain links, connects production to the market and has a positive and significant effect on value chain. According to the results of research and other studies in this regard and in order to solve the problems and challenges in the agricultural sector, the following items are proposed in order to develop and complete value chains of agricultural products based on

contract farming:

1) In order to improve the level of technical and modern knowledge of farmers and farmers' knowledge and understanding, it is necessary to institutionalize contract farming in value chain of agricultural products using the capacities of paragraph (d) of Article 33 of the Sixth Development Plan Law to produce and broadcast educational and extension programs. Take action through radio.

2) To organize production and create a direct relationship between producers and the market and lack of access to markets and international forums, an accurate and reliable system of the entire value chain of agricultural products, including: information of farmers and land and product, industries and processing, domestic markets and external should be created.

3) In order to remove legal and regulatory barriers during the value chain based on contract farming, it is necessary to create a national code and regulations in order to develop appropriate regulations and processes (including technical, legal, financial, regulatory, etc.).

4) In order to improve, strengthen and complete the value chain of agricultural products based on contract farming, use government support incentives for related groups. (Using the financial resources of paragraph A of Note 18 of the Budget Law for all value chain links, including: manufacturers, processing, conversion, complementary and export industries. using the capacities of paragraph (b) of Article 33 of the Sixth Development Plan Law: allocating 20% of the fund resources Supporting the agricultural sector for facilities for export of this sector. using the capacities of paragraph (c) of Article 33 of the Sixth Development Plan Law to create export clusters, trademarks and allocating export incentives to the export of agricultural products. using the capacities of paragraph (x) of Article 33 Sixth Development Plan Law: Forgiveness of interest and commissions and fines on loans received by farmers affected by contingencies and deferral of the loan principal for three years use of the capacities of paragraph (d) of Article 33 of the Sixth Development Plan Law: allocation of at least fifteen percent of the average facility Granting the country's non-specialist operating banks to the agricultural sector, the subsidy system of the agricultural sector based on contract farming in the form of value chain of agricultural products.

5) Given the small size of farmers in the value chain, capacity building for small and weak producers in the chain to support the growth and maturity of the value chain should be considered.

6) One of the problems in value chains is the lack of insurance coverage, which requires

insurance coverage for contract farming, document risk and breach of contract. Contract farming system as a national strategy in agricultural development, market risk management (especially prices), creating security and income stability for farmers, improving the quality and standard of products, providing agricultural inputs, access to domestic and international markets, retail ownership, training and promotion, apply knowledge of users and similar cases,

7) Using the contract farming model in a transparent manner with the common understanding of the parties to the contract, by formulating the product price flexibly according to the prices in domestic and foreign markets and specifying the exact time of payment of the purchased product to farmers, for products in the agricultural sector.

8) Due to the inevitability of this method in completing the value chain and considering the different results of this study in different provinces, it is suggested that the possibility of establishing a center or an office to monitor contract production in the agricultural sector be on the agenda. It is possible to achieve maximum utilization with the least error in the future in both production planning and marketing of agricultural products, and finally in designing the scope of support for this issue in the future.9) The study of contract farming in developing countries shows that an effective and successful factor in the field of contract farming is the presence of a third party (government, civil society organizations, non-governmental organizations) in designing contracts, implementing programs and quality assurance of the process.

10) Previous studies have shown that the use of contract farming is the only model that leads to a reduction in costs in the value chain process. It is with the industry that reduces risk and ultimately leads to better business and effective development.

11) In addition, the most important incentive for farmers to join contract farming is market access, which leads to improving the quality of products based on defined standards, stabilizing the selling price of the product, increasing value added, maintaining the link between chain actors, stabilizing farmers' incomes and optimal use of agricultural inputs. It is the basis of new methods.

12) The position and share of contract farming of the total agricultural and industrial products of the country in the five-year document of the country plan is essential.

References:

1. Asadi, Sh. 2010, Marketing Management of Agricultural Products in Horizon 1404, Islamic Azad University, Rasht Branch.
2. Aghaya, Gholamhossein, Tusi, Mandana, Amjadi, Afshin, Kazemnejad, Mehdi, Gilanpour, Omid, Khaledi, Mohammad, 2012, Development and presentation of a model for the development of the contract industry based on contracts, Planning Research Institute, Agricultural Economics and Rural Development.
3. Puryousef, Azam, Saghafi, Mehdi, Hemmatfar, Mahmoud, 2017, Economic effects of value chain on commercial cooperatives (studied by Birjand cooperatives), Institute of Business Studies and Research.
4. Tavassoli, b. Khalifa Soltanian, f. Chizari, M. Medicine Rad, Gh. 2007, Review of the situation and marketing bottlenecks of Iranian agricultural products, 6th Iranian Agricultural Economics Conference.
5. Haji Mirzajan, M. Dressing, m. Dehghanian .ف ، 2016, presenting a Supply Chain Planning Model for Perishable Crops,

Production and Operations Management, Volume 6, Number (1), Consecutive (10).
6. Hosseinzadeh, Omid, 2015, Analysis of Poplar value chain model in West Azerbaijan province with the aim of improving it, Iranian Journal of Wood and Paper Industries, Year 6, No. 1.
7. Hosseini S. ص. And Tarshizi M. 2009, Evaluation of wheat protection policy in Iran, Iranian Journal of Economic Research and Agricultural Development, Volume 2-40, Number 2, pp. 11-1.
8. Haghighat, Shaghayegh, 2011, investigating the effects of global value chain on the promotion of local clusters, National Conference on Entrepreneurship and Management of Knowledge-Based Businesses, Mazandaran University.
9. Khaledi, Mohammad, Kazemnejad, Mehdi, 1394, Macro model of supply chain-based agricultural market development, Institute for Planning Research, Agricultural Economics and Rural Development.
10. Khaledi, Mohammad, 2012, contract farming; A solution for the development of the agricultural sector, Research and Information Center of the Vice President for Parliamentary Affairs.
11. Khosravi, Ali, 2016, contract farming, Tehran: Negar Noor.
12. Customs site of the Islamic Republic of Iran www.https: //.irica.gov.ir
13. Website of the Statistics Center of the Ministry of Jihad Agriculture, report on the level of harvest and production of crops in the crop year 1396-97 www.http: //amar.maj.ir
14. Website of the Statistics Center of the Ministry of Jihad Agriculture, report on the level of harvest and production of horticultural products in 1997 www.http: //amar.maj.ir
15. Website of the Statistics Center of the Ministry of Jihad Agriculture, report on the level of harvest and production of livestock and fishery products in 1997 www.http: //amar.maj.ir
16. Website of the Deputy Minister of Livestock Production of the Ministry of Jihad Agriculture www.http: //dla.maj.ir
17. Website of the Deputy Minister of Agriculture of the Ministry of Jihad Agriculture www.http: //zeraat.maj.ir
18. Shafiee Alavijeh, Amir; Teymouri, Ebrahim, 2010, Presenting a Strategic Analysis Model in Determining the Vertical Integration in Business with Value Chain Analysis Approach (Case Study: Poultry Industry), Fifth International Conference on Strategic Management.
19. Sixth Five-Year Development Plan Law
20. Calendar of the Deputy for Commercial Development and Agricultural Industries, 1398.
21. Accounting and financial controls, http://accountingbahmani.blogfa.com/post/12.
22. Adu-Gyamfi Poku, Regina Birner and Saurabh Gupta, 2018, Article Making Contract Farming ArrangementsWork in Africa's Bioeconomy: Evidence from Cassava Outgrower Schemes in Ghana, Sustainability 2018, 10, 1604; doi:10.3390/su10051604, www.mdpi.com/journal/sustainability
23. FAO. 2001, contract farming partnerships for growth, Agricultural Services Bulletin. No.145.
24. FAO. 2007, Challenges of Agribusiness and Agro-Industry Development, Rome: Food and Agricultural Organization (FAO), committee on Agriculture
25. Guo, H, Jolly, R. and shu, J. 2005, Contract farming in chain: supply chain or Ball and Chain?, paper predented in the Minnesota International Development Conference, University of Minnesota.

26. Heike Hoeffler, 2005, Article Promoting The Kenyan Potato Value Chain: Can Contract Farming Help Build Trust and Reduce Transaction Risks?, Promotion of Private Sector Development Programme (PSDA),GTZ – Deutsche Gesellschaft für Technische Zusammenarbeit GmbH, Ministry of Agriculture, P.O. Box 41607, 00100 Nairobi, Kenya.
27. Hosseini, D., M. & Gharib Reza, A. M. 2004, Comparison of protectionist policies in the agricultural sector of Iran and the world. Management organization and Planning. (In Farsi).
28. Humphrey, J. and O. Memdovic, 2006, Global value chains in the agrifood sector, Working Paper, United Nations Industrial Development Organization.
29. Industry Value Chain Analysis http://erfan84.blogfa.com/post-53
30. Le Thi Kim Oanh, Vu Dinh Ton, Tran Huu Cuong, Philippe Lebailly, 2010, Influence of contract farming on black tea value chain; A case study in phutho province, Vietnam, Vietnam National University of Agriculture, Vietnam.
31. M. Soren, M. I. A. Mia, M. J. Alam, A. K. M. G. Kausar and M. R. Hossain, 2012, Value chain analysis of BADC contract farm rice seed in selected areas of Mymensihgh district, Former MS students, Department of Agribusiness and Marketing, Bangladesh Agricultural University, Mymensingh, Bangladesh.
32. Maitre d'Hotel, E., Lemilleur, S., & Bienabe, E. 2011, Linking Small holders to Efficient Markets. Paper Presented at the 3rd European Forum on Rural Development – 1 April 2011. Retrieved from http://www.ruralforum.info/images/ficheros/bs6-en.pdf.
33. Martin Prowes, 2012, Contract farming in development countreies – A review, Institute of Development Policy and Management, University of Antwerp.
34. Minot, N. 2007, Contract farming in developing countries: patterns, impact, and policy implications, Case Study 6-3 of the Program, Food Policy for Developing Countries.
35. Portner, M.E., 1985, Competitive Advantage: Creating & Sustaining Superior Performance, New York, NY: The Free Press.
36. Prowse, M. 2012, contract farming in developing countries: A review, Research department. AFD.
37. Roehlano M. Briones, 2014, Small Farmers in High Value Chains: Binding or Relaxing Constraints to Inclusive Growth?, Philippine Institute for Development Studies Surian sa mga Pag-aaral Pangkaunlaran ng Pilipinas, discussion paper series no. 2014-23.
38. Thanda Kyi and War War Kyaw, 2016, Contract Farming Potential: Case Study on Improvement of Maize Value Chain and Farmers' Livelihood, Ministry of Agriculture, Livestock and Irrigation.
39. Williamson, O.E. 1979, Transaction Cost Economics: The Governance of Contractual Relations, Journal of Law and Economics, No 22, pp.233–262. Working Paper, United Nations Industrial Development Organization.
40. Young, L.M. and J.E. Hobbs, 2002, Vertical Linkages in Agri-Food Supply Chains: Changing Roles for Producers, Commodity Groups, and Government Policy, Review of agricultural Economics, Vol. 24, No 2,pp.441-428.