



## **Barriers to the Promotion of Agricultural Land Consolidation in Rural Areas from Farmers' Point of View (Case Study: Fash Dehedtan of Kangavar County)**

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### **Abstract**

**Purpose-** The present study aimed to investigate the most important obstacles to the promotion of agricultural land consolidation in the rural areas of Kangavar County. This study seeks to answer a key question: What are the main obstacles to the implementation of agricultural land consolidation policy in the villages of the study area?

**Design/methodology/approach-** The present research is an applied one conducted in a descriptive-analytical method; field work was used for data collection and factor analysis was used for data analysis. The population of the study included 1216 land users. Using Cochran's formula, 211 questionnaires were developed and randomly distributed among the users. The stratified sampling method was used to determine the number of samples in the villages. Cronbach's alpha was used to determine the coefficient of validity of the questionnaire in the village; the validity of the questionnaire was 0.816, which indicated the data were suitable for the research.

**Findings-** The findings show that 'the factor of investment and fund' accounts for 14.445% of the variance, which is the most important obstacle to the development of land consolidation in the rural areas. However, the lack of support of government agencies and organizations, infrastructural weaknesses, individual factors, lack of creativity, lack of intellectual participation and trust, lack of management and production practices, lack of knowledge and awareness, and lack of access to communication facilities in rural areas are important constraints on land consolidation in the rural areas of the study.

**Keywords:** Rural development, agricultural consolidation, opportunities, Fash Dehestan (Kangavar County).

**Paper type-** Scientific & Research.

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## 1. Introduction

Essentially, agricultural development is a fundamental change in the economic, social and cultural variables of any society, and its realization requires the coordination between its various dimensions. Sustainable agriculture development is not feasible without economic, cultural, social and political development; however, economic, cultural, social and political development will not go a long way without a logical and scientific approach to agricultural development in the long run. On the one hand, the obstacles to agricultural development in the country thus include low investments and government funds, lack of proper physical infrastructure and lack of strategic plans and policy-based approaches. On the other hand, the fragmentation of agricultural lands and their dispersion is one of the structural challenges of traditional exploitation of land in the country, which is rooted in the peasant-lord-system and is now considered as one of the obstacles to agricultural and rural development (Einali, 2013).

In addition, land fragmentation and the fragmentation of plots belonging to each farmer is affected by socioeconomic factors (inheritance, land division, land purchase, sale, endowment, etc.) and physical-environmental factors (topography, distance from the village, access to roads, soil quality, distance from water resources, etc.) in different parts of the country (Jamshidi et al., 2009). These factors lead to introversion and stability against changes, reduced venture (Matondi, 2013), lower productivity, higher production costs, lack of access to funds and financial resources (Sikor, Müller, & Stahl, 2009; FAO, 2008). It also hinders the use and the application of new practices in agriculture and lowers the efficiency of production factors. One of the strategies recently been taken into consideration in most countries of the world which has even been implemented in some of them and has had positive outcomes is the promotion of agricultural land consolidation. Therefore, on the one hand, changes in farmland structure through farm management reform not only encourages rural economy, but also has been introduced as an effective tool for rural development in most countries (Gonzalez & Smith, 2007). On the other hand, it makes ground for overcoming the barriers in the rural labor market, providing the required microfinance, and

growing real estate businesses (Sohrabivafa, 2013). Land consolidation encourages the land owners to make more investment, meanwhile it makes way for optimal allocation of production factors based on water and soil, the efficiency of the new production structures, the use of modern irrigation methods and commercial production, etc., all of which improve the agricultural productivity (Stockdale, 2006). Other effects include the transfer of technology and new practices and consequently the conversion of a traditional agriculture to a commercial one (Nandanwar, 2011), higher income and wealth, as well as creating employment for the success of domestic development of rural communities (Stockdale, 2006). As a result, any changes in this section can be related to changes in land ownership structure. Therefore, the consolidation of agricultural land is considered as one of the major factors in the transformation of the agricultural sector whose proper implementation can play a significant role in achieving the goals of agricultural and rural development (Amir Nejad, 2007).

Fash Dehestan (rural district) is one of the most suitable areas for agriculture in Kermanshah Province; however, despite abundant water resources and fertile soil, it faces many problems in agriculture and retaining population in rural areas. Fash Dehestan has enough water resources and fertile soil, but its crop yield and agricultural productivity is very low due to the fragmentation and dispersion of agricultural land, leading to the migration, and in some cases, land use change in the study area. Based on field studies, every agricultural land is divided into 3 to 15 plots, in some cases a 2-hectare piece of land has been divided into 15 plots, which has significantly affected the efficiency, the income of the villagers, and the way the agricultural land is used. Therefore, the purpose of this study is to analyze the obstacles to the development of agricultural land consolidation in rural areas in Fash Dehestan (Kangavar County) and seeks to answer the following question: What are the most important barriers to the implementation of land consolidation policy in the rural areas of the study area?

## 2. Research Theoretical Literature

Agricultural and rural issues are closely interconnected. Due to their interconnection, the role and significance of agriculture in rural development activities, the concepts of agricultural development and rural development have been used interchangeably in many papers. Rural development, which makes use of water resources, soil, fertile agricultural lands, science and technology, livelihoods, population structure, etc., plays an essential role in the development of countries as the basis of the system of habitation and national activity (Hejrati, 2000). Therefore, given the importance of agricultural activities in the national and local economies, agriculture is one of the most important factors in the economies of developing countries (Poza & Daugherty, 2013), which its optimal use is one of the most important goals of sustainable agriculture development and economic development in the world (Guo et al., 2015).

Land consolidation is a process of land reform which changes agricultural land structure through farm management reform. It not only promotes rural economy, but also encourages activities in rural areas and rural development process (Eftekhari, 2003). Indeed, land consolidation is a process aimed at helping communities to use resources optimally, and spatially re-organize the land plots according to public agreement, which eventually leads to the modernization of society in all its economic, social, and political dimensions (Kopeva, Noev, & Evtimov, 2002). Therefore, the objective of land consolidation under the EU regulations established in 1999 is to help farmers and villagers increase the efficiency of production factors (land, water, manpower, and capital) by improving the agricultural land structures, ensuring income, enhancing the quantity and quality of production, and also increasing the capacity of rural households to improve their economic conditions and their living standards (Ríos & Díaz, 2011). Land organization is the result of improving the management of natural resources (esp. water resources) (Sallaku et al., 2010), increasing cultivated areas, and increasing the income and productivity of farmers (Sohrabi Vafa, 2013). However, due to changes in the structure and conditions of lands and the agricultural infrastructure, land organization will have different and long-term effects on agricultural promotion and rural development (Sklenicka et al., 2014). The member states of

EU have been required to prepare national development plans for 2007-2013 to support agricultural land consolidation as one of the most important measures to achieve rural development. For example, in the Munich Statement, land consolidation is a tool for rural development in the Eastern and Central European countries with the main purpose of consolidating fragmented lands and improving land productivity by concentrating them on the smallest possible parts, providing roads and essential infrastructure, and maintaining the environment and rural livelihoods (Munich Statement, 2002). In another example, while investigating the process of land consolidation in the Czech Republic, Rembold (2003) considered cadaster with a logical zoning of lands based on soil quality as one of the most effective methods and introduces it as the basis for land valuation, which leads to better management of the basic production resources in addition to increasing the crop yield and the competitiveness of production in the agricultural sector. According to Vitikainen (2004), in the context of land consolidation experiences in Europe, reducing the size of plots and their number is the most justifiable reason for land consolidation programs, and the main obstacles are land exchange, the difference in fertility, access to water resources and roads. Tran (2006) in Vietnam states that according the Land Law (1993), five rights were granted to families, including the rights of transfer, exchange, inherit, rent and bail. These rights played an important role in land consolidation, and they were made possible with the cooperation of farmers, local cooperatives, farmers' unions and government-related agricultural institutions at the regional and local levels (Transponder, 2006). As the size of the land increases, there is a higher tendency to cultivate money-making products the farmers' income, land productivity, and the mechanization of agricultural activities increase as a result (Zvi, 2002). Mann (1959) believes that land consolidation encourages land reform, prevents erosion, and helps repair irrigation systems through integrating the fragmented plots (Mann, 1959). Agrowal (1996) argues that consolidation has led to the rearrangement of lands and the rehabilitation of communication networks and the drainage of rural settlements in a compact form of farming and crop construction (Agrowal, 1996). Therefore, the agricultural land consolidation

programs in European countries have started extensively in different ways since the 16<sup>th</sup> century (Ayranci, 2009) and continued after World War II in most countries of the world, especially in Western European countries (e.g. Germany, the Netherlands, Spain, etc.). These countries have used scientific methods to achieve goals such as improving production and achieving food security.

In the 1960s and 1970s, most European countries developed comprehensive plans in cooperation with the United Nations Agricultural and Food Organization (FAO) to consolidate agricultural lands. With the advent of sustainable development theories from the 1980s, socio-economic and environmental factors were added to development variables aiming to increase production, as they have been considered a tool for rural development, especially entrepreneurship in agriculture.

The implementation of agricultural land consolidation plans in Iran dates back to 1960s when rice fields in Mazandaran Province were consolidated under the supervision of Chinese experts; farmland leveling began at Amol rice research station, its surrounding areas, and some parts of Babol, Ghaemshahr, and Sari. However, land consolidation as a serious and new approach to development officially began in the first five-year Land Development Plan after the Islamic Revolution (1989-1993), which is a fundamental move to improve the conditions and the quality of infrastructure in agricultural lands (Ashkar Kalae et al., 2006). Therefore, in order to overcome the challenge after the Land Reform, the government adopted the policy of agricultural land consolidation in different regions of the country, which for some reasons did not win the farmers' trust and eventually failed, with the exception of a few cases. The most important land consolidation plans conducted with the aim of laying the ground for under-pressure irrigation were considered by the Ministry of Agriculture in the first Development Plan after the Islamic Revolution (1989-1999). In these projects, the land consolidation operations were introduced as "land improvement and rehabilitation programs" and were implemented as national and provincial plans on one million hectares of land in the country, and the performance analysis was considered for the end of the program (Sohrabi, 2013). For example, some of the successful

examples of land consolidation projects included: rice field consolidation project in the village of Islamabad in Amol County (1990), rice field consolidation project in Abandansor village, Sari County (1991), rice field consolidation project in Ejbarkalay, Amol County (1992) and Soteh Fereydunkenar (1993), and Kateh posht Amol (1995) (Amir Nezhad and Rafiee, 1999). In addition, in some parts of the country, local communities, having developed local knowledge and trust, achieved acceptable results in consolidation of agricultural lands (Vosoughi and Faraji, 2006).

Many studies have been conducted on agricultural land consolidation in Iran and other countries of the world. Rios et al., (2011) using descriptive-analytical methods concluded that land consolidation is a driver of rural development and rural entrepreneurship, as it can be a source of job creation and rural development that generates income and reduces immigration. Aslan et al., (2007) concluded that land management provides an opportunity to improve the ownership structure of the fields which increases the productivity and facilitates the use of modern technology in the fields, and make way for more employment and income for the farmers. Georgievsk (2016), in an article entitled 'land consolidation as a way of agricultural development in Macedonia', shows that land fragmentation is one of the main obstacles to Macedonian agricultural development, and the establishment of rural cooperatives and government technical support are effective factors for implementing land consolidation plans.

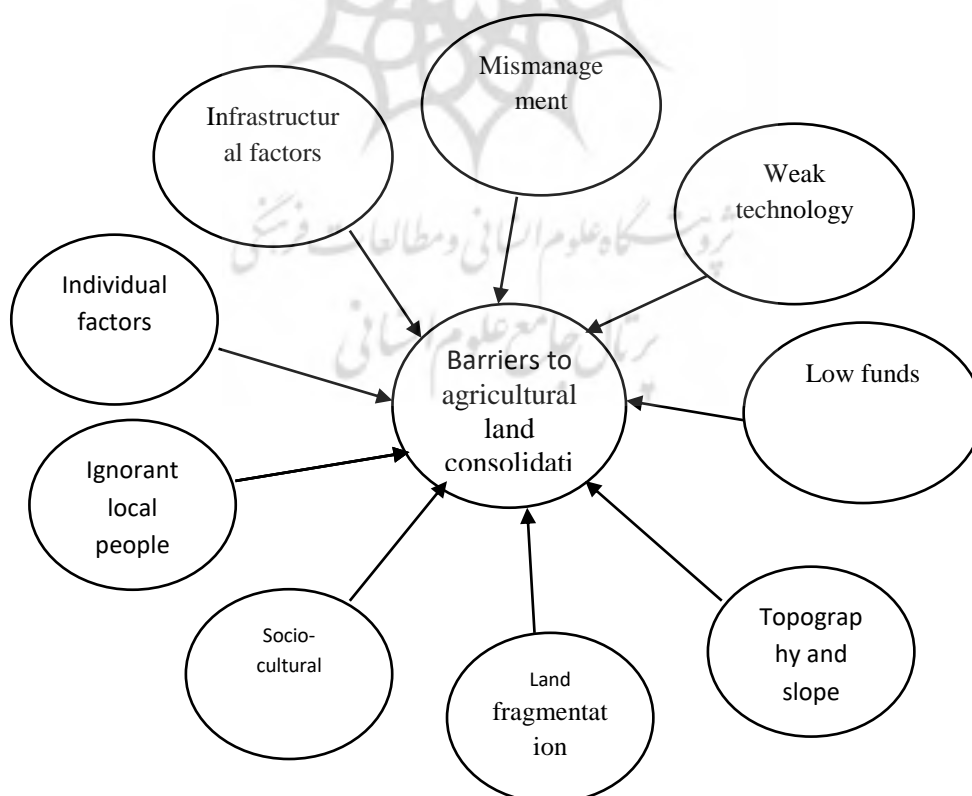
Zio et al., (2015) concluded that land consolidation as an appropriate approach to achieve sustainable use of land resources does not focus solely on the amount of arable land to balance and consolidate farmlands, rather it includes other aspects, such as improving the quality of agricultural land, restoring environmental conditions, and progressing in the economic formulation. Dopalmer (2014) in a study called 'FAO, an experience with land consolidation in Eastern and Central European countries' showed that land consolidation has increased agricultural competitiveness, and increased farm size has improved rural conditions. Lemmen et al., (2012) found that properly informing the villagers about land consolidation processes in rural areas plays an important role in

higher investment made in production and marketing, and could strengthen the basis for entrepreneurship in the agricultural sector. Huang et al., (2010) believed land consolidation is a means for creating employment and income, increasing production capacity, and eventually improving the economic situation and improving the living standards of the farmers. Yu et al., (2010) came to the conclusion that land consolidation has improved the natural ecosystem, environmental and socio-economic status of the villagers. Teimouri et al. (2009), using descriptive - analytical and field studies, concluded that factors such as age, agronomy, land area, crop area, number of crops, types of production system and average production cost affect the implementation of land consolidation plans. Zarifian et al., (2012) found that land integrity is one of the major factors of agricultural development and under-pressure irrigation projects, and variables such as consultancy with experts, agricultural history, membership in organizations, number of land plots and land revenues are among the factors that facilitate rural development. Mohammadi Yeganeh and Nabati

(2013), in their research entitled 'the obstacles to agricultural development in rural areas, a case study of Karyani village in Bijar County', concluded that structural factors in Karyani Dehestan are the main obstacle to rural development of agriculture; nevertheless, cultural, environmental and market factors received lower priorities.

Miraskari et al., (2013) in their study entitled 'an analysis of the barriers and management approaches to management of agricultural land consolidation from farmers' point of view, a case study of Dareh Shahr County', concluded that cultural factors and rules were the biggest obstacles to agricultural land consolidation in the study area.

Mahdavi et al., (2017) in their study entitled 'An assessment of the barriers to agricultural land consolidation, a case study of the villages in Azna County' came to the conclusion that farmers would rarely like to consolidate their lands, and mostly prefer to temporarily consolidate their lands with their relatives and friends, which is the main individual and socio-economic obstacles to land consolidation.



**Figure1. Conceptual model of the study**

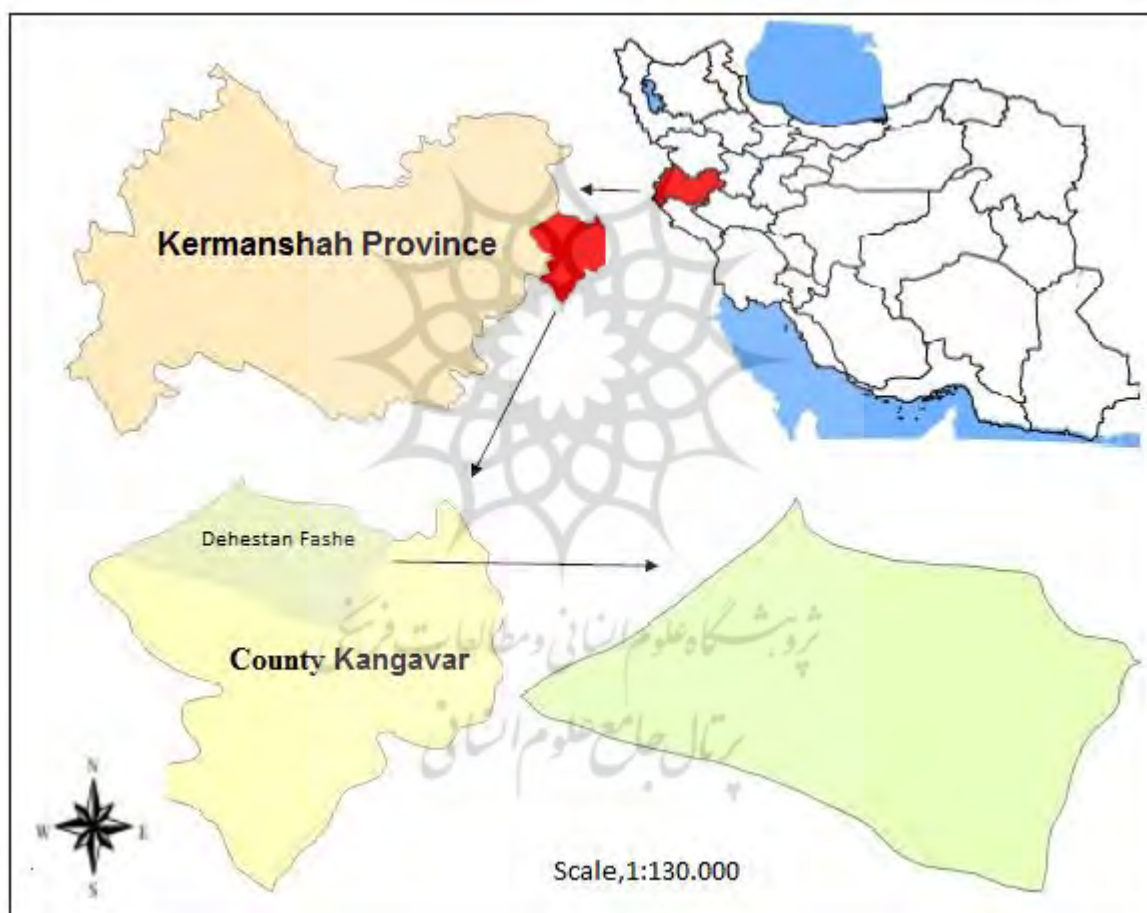
(Source: Research findings, 2017)

### 3. Research Methodology

#### 3.1 Geographical Scope of the Research

Fash Dehestan (rural district) is in Kangavar County, Kermanshah Province, with a population of 4335 people and 1613 households. It is located in the 10 km east of the Kangavar County. Fash Dehestan, located in the central part of Kangavar County, is comprised of 19 villages. It has a moderate climate with a rainfall of 500 mm per year. A large number of deep and semi-deep wells

are used to irrigate agricultural land within the study area. Concurrent with the implementation of land consolidation plan in the country, two villages in this Dehestan were qualified for the plan and land consolidation has been implemented in them. Khoram Abad village has 160 hectares of rainfed land and 51 hectares of irrigated land, and Sarab village has 186 hectares of rainfed and 36 hectares of irrigated lands.



**Figure 2. Rural position of the studied area**  
(Source: National Mapping Organization, 2016)

#### 3.2. Methodology

This study is an applied one conducted in a descriptive-analytical method. Library research and field survey based on a questionnaire with a Likert scale were used for data collection. The population of the study included 1216 land users. Using Cochran's formula, 211 questionnaires were developed and randomly distributed among the

land users in the villages of Fash, Ab-Barik, Abdol-Tajedin, Homayoun Kesh, Darbsar, Shekarab, Hemianak, Rahman Abad, Sheshyekan, Foshkhoran, Gerdkaneh, Soleiman Abad, Dambadam, Khorramabad, Sarab, Zardeh, Rashtian, Hazarkhani, and Hesar. The stratified sampling method was also applied to determine the number of samples in the villages and the

share of each village. To determine the reliability of the questionnaire in the study area, the collected data were entered into SPSS software; the reliability of the questionnaire was 0.816 based on Cronbach's alpha, which indicated that the questionnaire was suitable for the research. In addition, the barriers to the development of agricultural land consolidation in rural areas were investigated from farmers' point of view according to five indicators (financial, socio-cultural, infrastructural, individual factors, and governmental organizations). In order to select the indicators, we attempted to consider research papers on agricultural land consolidation, as much attention has been paid to agriculture and land

consolidation in recent years. As the literature shows, the barriers to land consolidation include a large number of factors; however, this study seeks to investigate the important indicators that are the main obstacles to the consolidation of agricultural lands. Eventually, descriptive and inferential statistics (factor analysis) were used for the analysis of the data, and VIKOR model was used to investigate the barriers to land consolidation in the villages with regard to spatial distribution.

$n = 255$

$t = 95\%$  error rate for 1.96

$N = 1216$

$p = 0.7$  probability of a feature

$q = 0.3$  non-probability of the attribute

**Table 1. Number of users and share of each village from the questionnaire**

(Source: Agricultural Jihad, Kermanshah County, 2014)

villages	users and share	Rings well	questionnaire
Gard Heganeh	107	14	19
Dambadom	27	4	5
Rshtiyani	81	-	10
Darsar	34	-	6
Salman Abad	98	-	17
Shabakan	15	1	3
Hesar	55	-	10
Abdulatajeddin	75	-	13
Ab-Barik	63	3	11
Rahman Abad	36	4	6
Shekarab	26	3	11
Hazarkhani	45	-	8
Hmiyank	82	2	14
Fash	260	8	45
Zardeh	95	2	16
Hamankafsh	32	-	6
Fohsh khoran	85	1	15
Total	1216	70	255

**Table 2. The criteria and variables used in the study**

(Source: [Sohrabi Vafa, 2013](#); [Einali, 2013](#); [Bouzarjomehry, 2014](#); [Yasori et al., 2007](#); [Jamshidi et al., 2009](#); [Ahmadi and Amini, 2007](#); [Yasuri, Javan and Sabunchi, 2012](#); [Ríos and Díaz, 2011](#); [STUDIES, 2003](#).)

criteria	Variables
Investment	insufficient funds for agricultural consolidation, lack of investment funds for agricultural lands, lack of bank credits for agriculture, lack of investment for inputs and machinery, lack of infrastructure investment for consolidation of agricultural lands, lack of investment for the leveling of soil, lack of investment for water transmission, lack of investment in purchasing agricultural machinery
Socio-cultural	The low level of group work spirit among the villagers, the low level of education of the villagers, the lack of organizations and unions in various agricultural businesses, lack of cooperation among villagers to consolidate agricultural lands, weak information sharing network in agricultural sector, lack of awareness of the concept of consolidation, considerable disagreements over agricultural land, unfamiliarity with backgrounds of agricultural land consolidation and entrepreneurship

**Table 2.**

criteria	Variables
Individual factors	Lack of access tools to facilitate agricultural land consolidation, diversification of crops, low level of cooperation among villagers, conflicts over agricultural lands due to disagreements resulting from the way they are inherited, lack of individual readiness to accept the views on development of land consolidation, lack of interest in using modern technologies in land consolidation, lack of trust among friends and relatives in group work in agricultural consolidation, lack of individual management to improve consolidated lands and increase agricultural products, preferring new methods to traditional ones
Infrastructure	Lack of appropriate communication infrastructure in villages for land consolidation, lack of modern equipment for mechanization in agricultural lands, lack of adequate support for infrastructure to consolidate agricultural lands, waste of water resources while irrigating agricultural lands, fragmentation and small size of lands, dispute over land plots inherited by heirs, natural obstacles such as mountains, rivers, floodplains to promote land consolidation
Government organizations	Not paying due attention to the agricultural sector of the villages by government agencies, the lack of strategic plans for the consolidation of agricultural lands by government agencies and organizations, wrong policies of the organizations and government agencies in agricultural plans, poor and limited services provided by government in agricultural sector, lack of government support in agricultural production to raise crop yield, lack of appropriate management policies taken by government agencies in agricultural production, inadequate application of guidelines by rural managers and agricultural promoters in the selection of cultivars and seeds, lack of support from responsible institutions of the agricultural sector

#### 4. Research Findings

The descriptive findings of the study showed that out of 211 respondents, 83.8% were married and 16.2% were single. With regard to literacy, 18.9% were able to read and write, 12.6% had elementary education, 18% had junior high school degrees, 16.5% had senior high school degrees and 34% had high school diploma or higher. 98.5% of the participants were male and 1.5% were female. In terms of employment, 10.8%

were employed in state run agencies, 59.3% were farmers, and 29.9% of them were self-employed. Factor analysis was used to investigate the barriers to the development of agricultural land consolidation in rural areas. The Bartlett and KMO tests were used to test the suitability of the data for the analysis of variables. Bartlett test had a confidence level of 99% and the KMO value indicates the correlation and suitability of the variables for factor analysis (Table 3).

**Table 3. Bartlett test at a significant level**

(Source: Research findings: 2017)

Analysis	KMO Value	Bartlett value	significant level
barriers to agricultural land consolidation in rural areas	0.754	1102.822	0.000

In the following steps, 38 variables were used in a factor analysis model to investigate the barriers to promotion of agricultural land consolidation in rural areas. Thus, the indicators loaded in each factor above 0.3, form one factor and the variables that cannot be aggregated with them, form another

factor. The result of the reduction of 38 variables, represents 8 factors that explain 70.751% of the variance, which indicates that factor analysis and the variables were satisfactory. Table 4 shows the Eigen value, variance percentage, and percentage of aggregate variance.

**Table 4. The factorization of the variables**

(Source: Research findings, 2017)

Factors	Initial Eigenvalues	% of Variance	Cumulative %
Investments and credits	3.035	14.454	14.454
support received from government organizations and agencies	2.360	11.238	25.693
Infrastructure	1.895	9.024	34.716



**Table 4.**

Factors	Initial Eigenvalues	% of Variance	Cumulative %
Individual and creativity	1.805	8.596	43.312
Intellectual contribution and trust	1.655	7.882	51.194
Management and production practices	1.463	6.968	58.161
Knowledge and awareness	1.375	6.550	64.711
Communication accesses	1.268	60.40	70.751

### **Analysis of the factors**

#### **First Factor: investments and credits**

Eigen value of this factor is 3.035, which alone can calculate and explain 14.454% of the variance. Five variables were loaded in this factor. Of the five variables, the lack of financial resources for investing in agricultural land in the

villages with a factor load of 0.883 and the lack of investment in inputs and machinery with a factor load of 0.847 were the most important barriers to development of agricultural land consolidation (Table 5).

**Table 5. Variables loaded in the first factor**

(Source: Research Findings: 2016)

variables	factor Load
financial resources for investing in agricultural land	0.883
Access to/use of bank credits for agriculture	0.774
investment in inputs and machinery	0.847
Investment in the infrastructure for integrated development of the agriculture	0.700
Decline in funds for agricultural land consolidation	0.659

#### **The second factor: inadequate support of government agencies and organizations**

The Eigen value of this factor is 2.360, which alone can calculate and explain 11.238 percent of the variance. In this factor, 4 variables were loaded. Among the four variables studied in this factor, the variable of the inappropriate policies of the government agencies and organizations in rural agricultural plans with a factor of 0.805, the

lack of government support from agricultural production and the raise in crop yields with a factor load of 0.542, and the poor and limited service provided by government in agriculture and production with a factor load of 0.720 were identified as the most important obstacles to the development of agricultural land consolidation in this factor (Table 6).

**Table 6. Variables loaded in the Second factor**

(Source: Research Findings: 2016)

variables	factor Load
Lack of strategic plans for consolidation of agricultural lands from the state and government agencies	0.518
Lack of government support for agricultural production and higher crop yield	0.542
poor and limited service provided by government in agriculture and production	0.524
inappropriate policies of the government agencies and organizations in rural agricultural plans	0.805

#### **Third factor: Infrastructure**

The Eigen value of this factor is 1.895, which alone can calculate and explain 9.024 percent of the variance. In this factor, 4 variables were loaded. Of the four variables, the variable of the inadequate support from infrastructure to consolidate agricultural lands with a factor load of 0.824, and the dispute among heirs resulted from

small size of the plots and their distance with a factor load of 0.814 are identified as the most important obstacles to the development of agricultural land consolidation in this factor (Table 7).

**Table 7. Variables loaded in the Third factor**  
(Source: Research Findings: 2016)

variables	factor Load
inadequate support from infrastructure to consolidate agricultural lands	0.824
dispute among heirs resulted from small size of plots and their distance	0.814
Squandering of water resources on the way to the fields	0.379
Inadequate modern machinery on the fields	0.456

**Fourth factor, individual factors and creativity**

The special value of this factor is 1.805 which alone can calculate and explain the 8.596 of the variance. This variable has 5 variables. Among the five variables studied in this variable, the dispute and conflict on agricultural land due to their inheritable nature with a factor load of 0.780,

the production of access tools to facilitate activities in agricultural integration with a factor of 0.779 and a low level of trust between families and friends for group work in agricultural integration with a factor of 0.720 were identified as the most important obstacles to the development of agricultural land consolidation in this factor (Table 8).

**Table 8. Variables loaded in the Fourth factor**  
(Source: Research Findings: 2016)

variables	factor Load
Diversification into agricultural land products	0.661
Lack of access tools to facilitate agricultural integration activities	0.779
Lack of trust in acquaintances and friends for group work in agricultural integration	0.720
Lower interest in using modern technologies in integration	0.669
Controversy over agricultural land due to their propriety	0.780

**Fifth factor: trust and intellectual participation**

The Eigen value of this factor is 1.655, which alone can calculate and explain 7.882% of the variance. In this factor, 4 variables were loaded. Of the four variables, the low level of group work spirit and the lack of participation in solving people's disputes over agricultural land with a factor load of 0.823, lack of associations and

unions in various business and agriculture sectors with a factor load of 0.756 and lack of awareness about the concept of consolidation and weakness of informational network in agricultural sector with a factor load of 0.659 were identified as the most important barriers to development of agricultural land consolidation in this factor (Table 9).

**Table 9. Variables loaded in the Fifth factor**  
(Source: Research Findings: 2016)

Variables	factor Load
lack of associations and unions in various business and agriculture sectors	0.756
the low level of group work spirit and the lack of participation in solving people's disputes over agricultural land	0.823
lack of awareness about the concept of consolidation and weakness of informational network in agricultural sector	0.659
Lack of cooperation and trust among local people to consolidate agricultural lands	0.568

**Sixth factor: management and production methods**

The Eigen value of this factor is 1.463, which alone can calculate and explain 6.968% of the variance. Three variables are loaded in this variable. Of the three variables, the lack of government management and supervision on

agricultural production with a factor load of 0.783, lack of individual management for improving land consolidation and increasing agricultural products with a factor load of 0.756 were identified as the most important barriers to the development of agricultural land consolidation (Table 10).

**Table 10. Variables loaded in the Sixth factor**

(Source: Research Findings: 2016)

Variables	factor Load
Lack of support from responsible institutions and agricultural sector administrators	0.446
lack of individual management for improving land consolidation and increasing agricultural products	0.521
lack of government management and supervision on agricultural production	0.782

**Seventh factor: knowledge and awareness**

The Eigen value of this factor is 1.375, which alone can calculate and explain 6.550% of the variance. Three variables were loaded in this factor. Of three variables, the lack of government management and supervision on agricultural production with a factor load of 0.783, and the

lack of individual management for improving land consolidation and increasing agricultural products with a factor load of 0.756 were identified as the most important barriers to the development of agricultural land consolidation in this factor (Table 11).

**Table 11. Variables loaded in the Seventh factor**

(Source: Research Findings: 2016)

Variables	factor Load
Not using the guidance provided by managers and promoters of agriculture in choosing the type of seed and cultivation/planting	0.881
Public awareness about backgrounds of agricultural consolidation and entrepreneurship	0.461
Preferring the old approaches to modern ones	0.307

**Eighth factor: communication access**

The Eigen value of this factor is 1.286, which alone can calculate and explain 6.040% of the variance. Three variables were loaded in this factor. Of the three variables, the variable of the lack of suitable communication infrastructure in rural areas required for consolidation with a factor

load of 0.811 and the lack of popular participation in accessing the agricultural activity areas with a factor load of 0.481 were identified as the most important barriers to the development of agricultural land consolidation in this factor (Table 12).

**Table 12. Variables loaded in the Eighth factor**

(Source: Research Findings: 2016)

variables	factor Load
lack of popular participation in accessing the agricultural activity fields	0.481
lack of suitable communication infrastructure in rural areas required for land consolidation	0.811
natural obstacles such as mountains, rivers, bunds to expand land consolidation	0.375

In order to use the VIKOR technique to measure the difference between sampled villages in terms of having five criteria, at first the mean of the

questionnaire data was calculated and presented in the initial matrix. Table-13 shows the indicators used and their number in the study area.

**Table 13. Matrix derived from the indicators used in the questionnaire**

(Source: Research Findings: 2016)

villages	investments	Social and cultural	Factor Individual	Infrastructure	Organization and offices
Gard Heganeh	3.07	1.71	1.71	2.58	2.44
Dambadom	2.68	2.17	2.17	2.32	3
Rshtiyani	2.84	1.74	1.76	2.5	3.18

**Table 13.**

villages	investments	Social and cultural	Factor Individual	Infrastructure	Organization and offices
Darsar	2.40	1.83	1.83	2.7	2.84
Salman Abad	2.97	1.93	1.94	2.6	3.17
Shabakan	2.57	1.96	1.96	2.72	2.6
Hesar	2.42	2.14	2.15	2.48	2.30
Abdulatajeddin	2.48	1.69	1.69	2.44	2.82
Ab-Barik	2.54	1.52	1.52	2.2	2.96
Rahman Abad	2.8	1.84	1.84	2.52	3
Shekarab	3.02	1.95	1.95	2.92	2.72
Hazarkhani	3.08	1.90	1.94	2.56	3.28
Hmiyank	2.82	1.74	1.74	2.33	3.18
Fash	2.56	1.70	1.71	2.41	2/59
Zardeh	2.83	1.96	1.93	2.72	3.15
Hamankafsh	3.64	2.01	20.01	2.73	3.76
Fohsh khoran	2.90	1.77	1.73	3.20	3.3

In order to prioritize the proposed villages in the study area and to determine the weight of each criterion, a questionnaire was first developed and 12 managers and experts of Jihad Agriculture were interviewed about the importance of the indicators (investment, socio-cultural and individual factors, infrastructure, governmental organization and agencies), and finally, their

significance was determined in the form of weight of variables. The power function was used to determine the weight of the indicators.

Rated power function:

$$(n - r_i + 1)^r$$

**Table 14. Indicator weight index**

(Source: Research Findings: 2016)

Criteria	investments	Social and cultural	Factor Individual	Infrastructure	Organization and offices
Weight	0.23	0.16	0.17	0.19	0.25

As table 14 shows, spatial analysis of the distribution of villages in the Dehestan of the study area in the indicators (of investment, socio-cultural and individual factors, infrastructure, governmental organization and agencies) shows a significant difference in the study area. The village of the Hamankafsh with the value of 0, due to the lack of public participation at various levels and the lack of government measures to reduce the rural deprivation, and lack of physical infrastructure and access to communication roads had the highest rank, and the Ab-Barik village (0.93) due to the long distance from the Dehestan center and because of geographical isolation, has the lowest rank in terms of the number of obstacles to land consolidation.

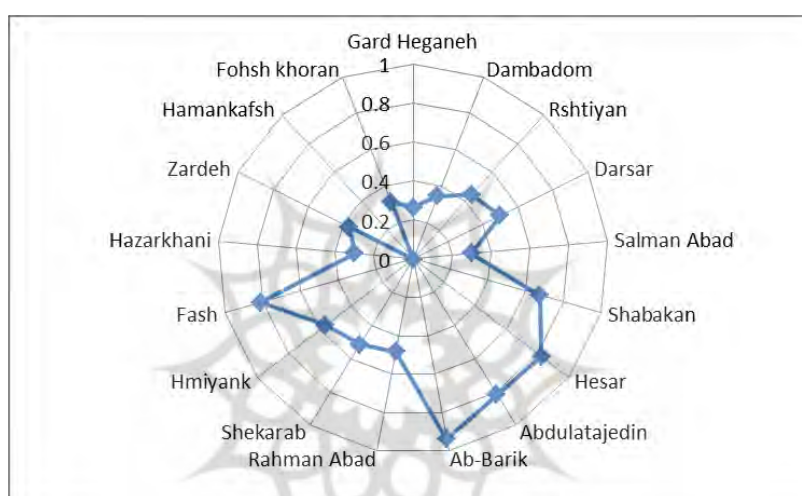
Table 15 shows the villages of the study area encounter a lot of obstacles, as the village of Hesar, Abtahedin and Fash respectively with the scores of 0.287, 0.816, and 0.813, were in a similar situation in terms of barriers they face. The villages of Shabakan, Hayang and Shekarab respectively with the scores of 0.677, 0.515 and 0.515 are in the same rank. The villages of Darsar, Rahman Abad, and Rshtiyan respectively with the scores of 0.499, 0.481 and 0.455 were very similar to each other. The villages of Zardeh (0.367), Dambadom (0.334), Fohsh khoran (0.312), Havar Khani (0.301), Salman Abad (0.300) and Gard Heganeh (0.265) encounter the highest number of obstacles analyzed in the study.

**Table 15. Final Rankings**  
(Source: Research Findings: 2016)

villages	Gard Heganeh	Dambadom	Rshtiyani	Darsar	Salman Abad	Shabakan	Hesar	Abdulatajedin	Ab-Barik
Rating	0.265	0.344	0.445	0.499	0.300	0.677	0.827	0.816	0.938
villages	Rahman Abad	Shekarab	Hmiyank	Fash	Hazarkhani	Zardeh	Hamankafsh	Fohsh khoran	
Rating	0.481	0.515	0.562	0.813	0.301	0.367	0	0.312	

Figure 3 shows the ranking of villages in terms of the obstacles they encounter in land consolidation, where the village of Hamankafsh has the highest and the village of Ab-Barik has the lowest rank in

terms of barriers. This shows that Fash Dehestan is facing many problems and requires more attention from people and government officials.



**Figure 3. Ranking of villages in terms of the obstacles they encounter in land consolidation**  
(Source: Research Findings: 2016)

## 5. Discussion and Conclusion

Land is one of the most important factors in production process of the agricultural sector. The small-scale units are a factor limiting the productivity and crop yield due to the ineffective use of technology, machinery and agricultural production factors. The purpose of the agricultural system is to achieve the goals of sustainable agriculture and promote the living standards of farmers especially the poor ones, and let them use the findings of technology, in simple and practical methods to increase crop yield, and reduce costs and make more money and raise the living standard of their families. Therefore, one of the effective factors that can reduce fragmentation of agricultural lands is to implement land consolidation plans. In fact, land consolidation is a standard tool for pursuing rural development, raising the effectiveness of land use, and to

control soil erosion, protect natural resources, rationalize rural development and other social and economic issues. Therefore, this paper investigates the factors and variables necessary for land consolidation in rural communities. However, you can compare them with some land consolidation studies conducted as field works or observation. Therefore, in most studies, common points are presented in terms of indicators. Obstacles to land consolidation include structural factors, cultural factors, laws and regulations, environmental, market, individual, social and economic factors. The studies conducted by Mohammadi Yeganeh and Nabati (2013), Mir Askari et al. (2013), Mahdavi et al., (2017) particularly concord with this study. The results of this study shows that the analysis and the output of this research are particularly in accord with the facts expressed in the level of the cities of Bijar,

Azna and Dareh Shahr. On the other hand, given the indicators relevant to barriers to land consolidation, and considering the local conditions, the barriers to agricultural land consolidation are at an acceptable level and should be considered in terms of the obstacles to agricultural land integration and economic, socio-cultural, commercial, infrastructure and individuals aspects. It is worth noting that the techniques used by the researcher in this regard have been able to present the reality of the regions, and this shows that the present study on barriers to agricultural land consolidation is important in terms of the indicators used. Therefore, we may conclude that the results of this study are valid and its results could be extended to other similar regions. In general, based on the results of this study and in line with studies conducted by other Iranian researchers, one can argue that the present study is valid and confirms the barriers to agricultural land consolidation in the studied villages in terms of the obstacles to land consolidation in the city of Kangavar and other similar areas.

The samples encountered some limitations, the most important of which are: the complexity of land fragmentation in terms of socio-cultural dimensions due to the inheritable rights of the families and the extent and diversity of agricultural activities on lands and morphological and geological features, lack of cooperation to improve institutional, technical and executive capacities in implementing land consolidation projects, lack of supportive institutions in infrastructure to confirm swaps and high costs of this process, lack of funds for agricultural land consolidation, lack of a comprehensive plan, inappropriate policies in agriculture and its products, lack of awareness and creativity about land consolidation, lack of support granted by government organizations in agricultural land consolidation plans, lack of efficient management

in production methods, and lack of public participation in rural areas. Accordingly, it can be concluded that the most important restrictions in the field of rural land consolidation are related to investment criteria and lack of support granted by government organizations and agencies. Besides, the findings of the research show there is a significant difference between the villages in terms of spatial distribution, as the village of Hamankafsh with the value of 0, due to lack of public participation at different levels and failure to reduce rural deprivation resulted from the lack of physical infrastructure and access to communication roads has the highest rank, and the village of Ab-Barik with the value of 0.93, due to the long distance from the Dehestan center and geographical isolation, has the lowest rank in the amount of barriers to land consolidation in the study area.

#### Recommendations

1. Land consolidation should be implemented gradually by removing the barriers mentioned in Hamankafsh village, facing the most obstacles to agricultural land consolidation, as the total removal of the obstacles requires a great deal of time.
- 2- Hamankafsh village needs more educational and informative courses to raise the level of public awareness of the farmers.
3. The authorities should make attempts to raise funds, which is the most important barrier from the farmers' point of view.
4. Practical laws should be passed and implemented to consolidate lands and prevent the fragmentation of agricultural land to pave the way for effective implementation of the plans in villages of the study area.

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## موانع توسعه یکپارچه‌سازی اراضی کشاورزی در نواحی روستایی از دیدگاه کشاورزان

### (مطالعه موردی: دهستان فش - شهرستان کنگاور)

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## چکیده مبسوط

### ۱. مقدمه

اصولاً توسعه کشاورزی تغییر بنیادی در متغیرهای اقتصادی، اجتماعی و فرهنگی هر جامعه محسوب می‌شود و تحقق آن، مستلزم ایجاد هماهنگی بین ابعاد گوناگون آن است. توسعه کشاورزی پایدار بدون توسعه اقتصادی، فرهنگی، اجتماعی و سیاسی امکانپذیر نیست و توسعه اقتصادی، فرهنگی، اجتماعی و سیاسی نیز بدون نگرش منطقی و علمی به مسأله توسعه کشاورزی در بلند مدت، راه به جایی نخواهد برد. لذا از موانع توسعه کشاورزی در کشور از یک سو می‌توان به کاهش اعتبارت و سرمایه‌گذاری، نبود زیرساخت‌های فیزیکی مناسب و فقدان برنامه‌های راهبردی و سیاست‌های اصولی در این زمینه از یک سو اشاره کرد و از سوی دیگر، خرد شدن اراضی کشاورزی و پراکندگی قطعات آن یکی از چالش‌های ساختاری بهره‌برداران سنتی در کشور است که ریشه در نظام ارباب-رعیتی دارد و امروزه از آن به عنوان یکی از موانع توسعه کشاورزی و روستایی قلمداد می‌شود.

### ۲. روش تحقیق

نوع تحقیق کاربردی، روش مورد استفاده توصیفی-تحلیلی و برای گردآوری داده‌ها و اطلاعات از روش‌های کتابخانه‌ای و پیمایش میدانی مبتنی بر پرسشنامه با سؤالات طیفی استفاده گردید. جامعه

آماري این تحقیق ۱۲۱۶ بهره‌بردار در نظر گرفته شده است که با استفاده از فرمول اصلاح شده کوکران ۲۱۱ پرسشنامه بدست آمد و بین بهره‌برداران به صورت تصادفی توزیع و پخش گردید است. برای تعیین تعداد نمونه در روستاها از روش نمونه‌گیری طبقه‌بندی استفاده شده است و سهم هر یک از روستاها مشخص شده است. جهت تعیین ضریب اعتبار پرسشنامه در دهستان مورد مطالعه، پس از جمع‌آوری پرسشنامه‌های مذکور داده‌ها وارد کامپیوتر شدند و با استفاده از نرم افزار SPSS و روش آماره‌آلفای کرونباخ، اعتبار پرسشنامه به میزان ۰/۸۱۶ بدست آمد. که نشان از رضایت بخش بودن داده‌ها برای انجام تحقیق می‌باشد. همچنین به منظور بررسی موانع توسعه یکپارچه‌سازی اراضی کشاورزی در نواحی روستایی از دیدگاه کشاورزان در پنج معیار (سرمایه‌گذاری، اجتماعی و فرهنگی، زیرساختی، عواملی فردی، سازمان و ارگان دولتی) مورد بررسی قرار گرفته است و اقدام به تهیه و تدوین پرسشنامه مطابق با طیف لیکرت گردید است.

### ۳. یافته‌های تحقیق

اصولاً توسعه کشاورزی تغییر بنیادی در متغیرهای اقتصادی، اجتماعی و فرهنگی هر جامعه محسوب می‌شود و تحقق آن، مستلزم ایجاد هماهنگی بین ابعاد گوناگون آن است. توسعه کشاورزی پایدار بدون توسعه اقتصادی، فرهنگی، اجتماعی و سیاسی امکانپذیر نیست و توسعه اقتصادی، فرهنگی، اجتماعی و سیاسی نیز

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#### ۴. بحث و نتیجه‌گیری

نتایج تحقیق نشان می‌دهد که عامل سرمایه‌گذاری و اعتبارات با توجه ۱۴/۴۵۴ درصد واریانس، مهمترین مانع توسعه یکپارچه‌سازی اراضی کشاورزی در نواحی روستایی می‌باشد. ضمن اینکه عدم حمایت سازمان‌ها و ارگان‌های دولتی، ضعف زیرساختی، عامل‌ها فردی و خلاقیت، فقدان مشارکت فکری و اعتماد، فقدان مدیریت و شیوه تولید، نبود دانش و آگاهی و عدم دسترسی‌های ارتباطی در نواحی روستایی از محدودیت‌های مهم توسعه کارآفرینی در روستایی مورد مطالعه بوده است. از طرف دیگر، از طرف دیگر، یافته‌های تحقیق نشان داد که بین روستاها از لحاظ توزیع فضایی تفاوت معنادار زیادی وجود دارد، به طوری که روستای همان‌کفش با میزان (۰) به دلیل عدم مشارکت مردم در سطوح مختلف و توجه نکردن مسئولیت برای کاهش محرومیت روستایی و از سوی دیگر به دلیل نبود زیرساخت فیزیکی و دسترسی به راه‌های ارتباطی دارای بالاترین رتبه و روستای آب‌باریکی با میزان (۰/۹۳) بدلیل فاصله زیاد نسبت کانون دهستان و به دلیل انزوای جغرافیایی دارای پائین‌ترین رتبه به لحاظ برخورداری از میزان موانع یکپارچه‌سازی در محدوده مورد مطالعه را دارا می‌باشند.

**کلمات کلیدی:** توسعه روستایی، یکپارچه‌سازی کشاورزی، فرصت‌ها، دهستان فش - شهرستان کنگاور.

#### تشکر و قدرانی

پژوهش حاضر حامی مالی نداشته و حاصل فعالیت علمی نویسندگان است.

بدون نگرش منطقی و علمی به مسأله توسعه کشاورزی در بلند مدت، راه به جایی نخواهد برد. لذا به منظور بررسی موانع توسعه یکپارچه‌سازی اراضی کشاورزی در نواحی روستایی از دیدگاه کشاورزان در دهستان فش - شهرستان کنگاور پرداخته شده است و در پی پاسخ‌گویی به این سوالی کلیدی که مهمترین موانع اجرای سیاست یکپارچه‌سازی اراضی کشاورزی در نواحی روستایی در محدوده مورد مطالعه کدامند؟ ز آزمون تحلیل عاملی بهره‌گرفته شده است. نتایج تحقیق نشان می‌دهد که عامل سرمایه‌گذاری و اعتبارات با توجه ۱۴/۴۵۴ درصد واریانس، مهمترین مانع توسعه یکپارچه‌سازی اراضی کشاورزی در نواحی روستایی می‌باشد. ضمن اینکه عدم حمایت سازمان‌ها و ارگان‌های دولتی، ضعف زیرساختی، عامل‌ها فردی و خلاقیت، فقدان مشارکت فکری و اعتماد، فقدان مدیریت و شیوه تولید، نبود دانش و آگاهی و عدم دسترسی‌های ارتباطی در نواحی روستایی از محدودیت‌های مهم توسعه کارآفرینی در روستایی مورد مطالعه بوده است. از طرف دیگر، از طرف دیگر، یافته‌های تحقیق نشان داد که بین روستاها از لحاظ توزیع فضایی تفاوت معنادار زیادی وجود دارد، به طوری که روستای همان‌کفش با میزان (۰) به دلیل عدم مشارکت مردم در سطوح مختلف و توجه نکردن مسئولیت برای کاهش محرومیت روستایی و از سوی دیگر به دلیل نبود زیرساخت فیزیکی و دسترسی به راه‌های ارتباطی دارای بالاترین رتبه و روستای آب‌باریکی با میزان (۰/۹۳) بدلیل فاصله زیاد نسبت کانون دهستان و به دلیل انزوای جغرافیایی دارای پائین‌ترین رتبه به لحاظ برخورداری از میزان موانع یکپارچه‌سازی در محدوده مورد مطالعه را دارا می‌باشند.

پژوهشگاه علوم انسانی و مطالعات فرهنگی

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