

ANALYSIS OF THE BARRIERS LEADING TO FAILURE OF LAND CONSOLIDATION OF THE FIELDS

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Abstract

The biggest problem in transition from traditional agriculture to modern and up-to-date agriculture is the lack of land consolidation of the fields. The present study aimed to analyze the barriers to effective land consolidation of fields in the city of Urmia. This study is a descriptive survey research. It is practical and data was gathered by field study. Data was gathered by a questionnaire which its content validity was approved by supervisors and consultants and its reliability was approved with Cronbach's alpha with the value of 0.837. The statistical population was all the landowner farmers of Dehestans (A type of administrative divisions of Iran. It's above the village and under the Bakhsh) of Urmia, Iran, of which 330 were randomly selected with Morgan's Table and cluster sampling. The Pearson correlation coefficient results showed that there is a 1 % statistical significance between the variables of economic barriers, social barriers, political and governmental barriers, domestic and natural barriers, and field structure and failures in land consolidation and multiple regression analysis indicated that the economic, social, political, governmental, domestic, and natural barriers and field structure have a %69 effect on failures in land consolidation. Significant positive effect of different barriers on land consolidation is as follows: Economic barriers, 47.4 %; social barriers, 23.2 %; political and governmental barriers, 21.1 %; domestic barriers, 10.5 %; and natural barriers and land structure 9.5 %.

Key words: domestic barriers, economic barriers, lack of land consolidation, political and governmental barriers, social barriers, natural barriers and land structure, Urmia, Iran

INTRODUCTION

Exploitation systems have always had important role in agriculture development and was always one of the fundamental issues regarding water and soil source usage in the agriculture of Iran. Its importance is due to the fact that exploitation system management type can affect or cause limitations in the production amount, attribution and usage of agriculture technologies and equipment of fundamental issues, usage of machinery, and optimum usage of sources with proper yield and planners have always searched for ways to minimize the management deficiencies and problems in these systems [13].

Primary agriculture exploitation systems (yeoman, farmer, rent, ownership) that have no production systems enter cooperative production systems (joint stock, traditional cooperation, production cooperation, joints) and finally private systems (Land capitalism,

Agro-Industrials) [11]. Although the system parts in exploitation include production sources (water and soil, land and technology), system activist (villagers, farmers, managers, source owners), and system environment (natural, social, economic, cultural, political environment), we should not forget a key, subtle, and forgotten element related to this system and that is wrong planning, wrong decision making by internal decision makers or opposite decisions dictated by foreign countries [19].

Small production units and scatter of the parts cause problems for fundamental equipment, watering yield increase, agriculture machinery usage, and mechanization which are barriers to the usage of advanced production methods [12].

All these elements and lack of proper exploitation system, have negative effects on financial efficiency, sources, and production factors in agriculture; so much that in many

cases, not only does not lead to increase of production efficiency and optimum usage of production elements and sources, also in many cases lead to environmental waste and destruction of water and soil sources [3].

Development of agriculture in our society is not only a basic need but is also inevitable and it is unavoidable to change traditional structures, improve production amount, reduce poverty, and create new capacities. However, this is only possible with change of attitudes and improper beliefs on development in general and specifically development in agriculture [1].

Environmental and national elements of exploitation systems, in turn, are affected by global environment and we know- through experience- that global changes affect national environments directly and indirectly and agriculture exploitation systems indirectly and can have positive and/ or negative effects [4].

The exploitation systems' challenges are almost the same as agriculture challenges. We can divide them into two main groups: a) challenges out of agriculture field and b) challenges inside agriculture [17].

There are many challenges against land consolidation and some of them are: the lands being small and outspread, the number of parts in each ownership, lack of sufficient infrastructure in agriculture field, inability of micro and farmer systems in saving and investment and usage of new technologies, agriculture credits, lack of water and improper use of it in agriculture, and lack of production in surface unit [14].

Zarifian et al.[21] studied family exploitation systems and urban production cooperation's stability in Agh Ghala, Golestan, Iran. The results indicated that 14.7 % of the exploitations studied (cooperative and family) were very unstable; 42.1 %, unstable; 22.1 %, averagely stable; 20.3 %, stable; and only 0.9 % very stable. Comparison of stability mean of two exploitation systems studied showed that stability of cooperative exploiting system in economic, social, environmental dimensions is in better condition compared to family exploitation. The results also indicated that the six variables of investment, age of the exploiter, amount of cooperation, field size,

access to institutions, and machinery have direct effects and the variables of agriculture information resources exploitation and literacy level of the exploiter have indirect effects on stability level of exploitation systems.

Fe'li et al.[6], studied farmer exploitation (yeoman) in a research and argued that the best substitute is the village cooperative production exploitation system.

Fe'li et al. [6] studied the challenges and problems of farmer exploitation (yeoman) in a research and argued that their challenges are lack of proper infrastructures, smallness of fields and non-consolidation of lands, presence of non-experts in agriculture, low mechanization coefficient, and use of traditional methods. So they suggested the village cooperative production exploitation system instead of yeoman systems for more productivity of villagers.

Rousta & Teimoori [15], studied the priorities in deterrent factors to land consolidation in Darmian, Khorasan Razavi Province, Iran and concluded that the social factor is the main deterrent factor for land consolidation plans and on the next level were the cultural, economic and structural factors. They suggested education and promotion, building trust, and giving credit and financial facilities to implement land consolidation.

Hejrati & Afshari [10], studied the role of land ownership in village development in a case study of Paein Rokh Dehestan in Torbat-e-Heydarieh, Iran. The results showed that although the vastness of fields leads to increase in productivity per surface, the minor villagers did not have any interest in organizing and thought it would lead to joblessness and preferred the traditional cultivation method to the modern one.

Zarifian et al. [21], studied the effective elements on land consolidation in Kabootarahang villages in Hamedan, Iran and concluded that consulting the experts, agriculture background, membership in organizations, number of fields, amount of income, and field size were effective factors in accepting land consolidation by farmers.

Haghighat et al. [9], studied the obstacles in accepting the land consolidation in Fars

Province farmers' idea. According to the results the effective obstacles are agricultural, executive, socio-cultural, and financial. These factors determine 66.128 % of the general variance.

Sabates & Wheeler [16], suggested in a study that land consolidation in family fields close to each other happens spontaneously and informally with low costs and the outside efforts for legal and formal consolidation of scattered fields is not accepted.

Vitikainen's [20], studies in Europe indicated that the most justified reason for profitability of land consolidation is the size of the field and reduction of the number of the fields. The difference in accessibility of some fields to roads and water sources makes many problems for land change and consolidation.

Bahadur & Siegfried's [5], studies in Nepal indicated that access to credits, educational level, non-agricultural income, promotion services, projects implanted in this field, field size, and farmer's experience had significant effect on decision to accept the consolidation. Variables like farm size, number of promotion contacts, and amount of technology yield are effective factors on the farmers' decision to accept the consolidation in Saka et al.'s [18] study in South-west of Nigeria.

The results of Gergievsk's [7] study by the title of "Land Consolidation as One of the Modes for the Enlargement of Agricultural Land in Macedonia" show that dispersion of lands was one of the main barriers to agriculture development in Macedonia and establishing village cooperation and technical support from the government are important elements on implementation of land consolidation.

Gonzalez Garcia [8], research in Spain indicated that consolidation programs were important steps towards improvement of workforce efficiency and optimum productivity of fields and awareness increase in farmers on the financial and social results of land consolidation, transfer of useful information to farmers by propagators and governmental supportive programs are important factors in accepting this program.

The study of Akkaya Aslan et al. [2], in Turkey also showed that farmers' tendency to

use pressurized irrigation and mechanization in their fields affect acceptance of land consolidation.

Agriculture in West Azerbaijan, Iran, provides important part of income and general welfare of more than 300 thousand people directly and another 300 thousand, indirectly. These people earn their living in 148 factories and firms of alterant and supplementary industries with the capacity of 984,500 tons and 190 industrial fridges with the capacity of 457,000 tons by harvesting, sorting, packing, marketing, and selling of the products.

At the moment, the biggest challenge for us is the high rate of yeoman and management of the fields by large number of farmers who are the managers and owners of them, too. This causes reduction of products and improper use of facilities and therefore, reduction of income. Hence, this paper surveys the barriers causing the failure of land consolidation in Urmia, Iran so that we can determine these elements and work on removing them to see what are the most important reasons for failure in land consolidation programs.

MATERIALS AND METHODS

This study is a descriptive research and has practical goals and uses field study to collect data. The statistical population was all the farmers and farm owners of Urmia, Iran. According to the statistics of Agriculture Jihad Organization, the number of yeomen in this city is 16,000. Sample size was determined as 330 ones by Krejcie and Morgan Table and they were chosen randomly by cluster sampling in each village. In this study we used a questionnaire to collect data which its content validity was approved by supervisors and its reliability was approved with Cronbach's alpha (0.837). The results were analyzed by SPSS software.

RESULTS AND DISCUSSIONS

The results showed that mean age of owners was 47 with the minimum 17 and the maximum 76. Most of the participants were in the 41-50 range of age. 42 respondents were women and 286 of them were men. 80 of

them had attended school up to high school level and 70 of them had the diploma. Cultivation history mean was 27 years with the minimum of 2 and maximum of 55 years. Highest cultivation history was in 0-20 years' range. 256 respondents had their own house and 68 were tenants. 160 of them were self-employed and 120 of them had farming as their job. 280 of them used the help of their family and 45 of them used seasonal workers as human force. 270 of them used their own machinery and 60 of them used the rented ones to supply the machinery needed. Pearson correlation coefficient was used to investigate the relationship between the variables of the study. The results showed that there is a 1 % of statistical significance between the variables of economic barriers, social barriers, political and governmental barriers, family and natural barriers, and field structure and failures in land consolidation. The results are shown in Table 1.

Table 1. Correlation Coefficient between variables of the research according to the responders

Variables	Correlation Coefficient with Failure in Consolidation Rs	P significance
Economic Barriers	0.745**	0.000
Social Barriers	0.693**	0.000
Political and Governmental Barriers	0.715**	0.000
Family Barriers	0.202**	0.000
Natural Barriers and Land Structure	0.453**	0.000

**P<0.01

The results of multiple regression indicate that multiple correlation coefficient rate is R=0.831 and determination coefficient rate was R²=0.690.

Table 2. Linear Regression of Survey on Effective Factors on Failure in Land Consolidation

Correlation Coefficient (R)	Determination Coefficient (R ²)	Adjusted Determination Coefficient (R ²)	F	P
0.831	0.690	0.685	129.506**	0.000

**P<0.01

The amount of determination coefficient shows that economic, social, political, governmental, family, and natural barriers and

field structure have a 69 % effect on failures in land consolidation and the F calculated in statistical level of %1 shows that these effects were positive and significant. The results are shown in Table 2.

According to the values of β in Table 3, the formula is written as:

$$Y = 21.735 + 0.474 X_1 + 0.232 X_2 + 0.211 X_3 + 0.105 X_4 + 0.095 X_5$$

The results showed that the positive significant effect of various barriers on land consolidation failure is as follows: Economic barriers, 47.4 %; social barriers, 23.2. %; political and governmental barriers, 21.1. %; domestic barriers, 10.5 %; and natural barriers and land structure 9.5 %. The results are in consonance with those of the results of Pearson correlation coefficient.

Table 3. Effect Size of Effective factors on Land Consolidation

Variables	B	Standard Deviation	β	t	P
Constant	21.735	1.143	-	14.643	0.000
Economic Barriers (X1)	0.348	0.031	0.474	4.199	0.000
Social Barriers (X2)	0.169	0.042	0.232	4.025	0.000
Political and Governmental Barriers (X3)	0.122	0.033	0.211	3.655	0.000
Family Barriers (X4)	0.085	0.030	0.105	2.467	0.014
Natural Barriers and Land Structure (X5)	0.077	0.035	0.095	2.171	0.021

CONCLUSIONS

According to the researcher, the economic barriers are of the most important factors in land consolidation and as long as the economic conditions of the farmers are adjusted and facilities updated and financial sources provided, they cannot succeed in land consolidation and they will not cooperate with each other on this field.

The results of this study are in complete consonance with those of the study by Haghghat et al. [9], that studied the obstacles in accepting the land consolidation in Fars Province farmers' idea. And according to the

results of factor analysis, concluded that the effective obstacles are four elements of agricultural, executive, socio-cultural, and financial. These factors determine 66.128 % of the general variance in general.

The results of this study are in complete consonance with those of the study by Bahadur & Siegfried [5], in Nepal indicating that access to credits, educational level, non-agricultural income, promotion services, projects implanted in this field, field size, and farmer's experience had significant effect on decision to accept the consolidation.

According to the researcher, the social barriers are of the most important factors in land consolidation. Lack of trust to each other, lack of interest in cooperation, and different sizes of fields are some of important social factors. Farmers should show interest in cooperation and work together to solve this problem and move towards land consolidation.

The results of this study are in complete consonance with those of the study by Haghghat et al. [9] that studied the obstacles in accepting the land consolidation in Fars Province farmers' idea. And according to the results of factor analysis, concluded that the effective obstacles are four elements of agricultural, executive, socio-cultural, and financial. These factors determine 66.128 % of the general variance.

The results of this study are in complete consonance with those of the study by Vitikainen [20], in Europe that indicated the most justified reason for profitability of land consolidation is the size of the field and reduction of the number of the fields. The difference in accessibility of some fields to roads and water sources makes many problems for land change and consolidation.

The results of this study are in complete consonance with those of the study by Saka et al.[18], which indicated that variables like farm size, number of promotion contacts, and amount of technology yield are effective factors on the farmers' decision to accept the consolidation in South-west of Nigeria.

According to the researcher, political and governmental factors are the beginning point for land consolidation. If the government does

not take proper and calculated decisions and execute necessary rules, the program will fail and this will disappoint the farmers and become the biggest barrier in the cooperation of the farmers.

The results of this study are in consonance with those of the study by [17], which showed that mental factors; communication and information; personal inabilities; position of paddy fields; environmental factors; local institutes; and credit, promotional and governmental support of paddy field farmers in Mazandaran province, Iran, were effective in accepting the and consolidation.

The results of this study are in consonance with those of the study by Gergievsk [7], about land consolidation as one of the modes for the enlargement of agricultural lands in Macedonia. This study shows that dispersion of lands was one of the main barriers to agriculture development in Macedonia and establishing village cooperation and technical support from the government are important elements on implementation of land consolidation.

The results of this study are in consonance with those of the study by Gonzalez Garcia [8], in Spain which indicated that consolidation programs were important steps towards improvement of workforce efficiency and optimum productivity of fields and awareness increase in farmers on the financial and social results of land consolidation, transfer of useful information to farmers by propagators and governmental supportive programs are important factors in accepting this program.

According to the researcher, family is the main pillar of consultation between people and their ideas in motivating or preventing from cooperation with other farmers to consolidate lands are very important. Finding proper ways to help consolidate lands should start from home with the help of promotion and training programs of agriculture Jihad Organization.

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According to the researcher, natural barriers and land structures are important factors in land consolidation. The position of fields in relation to each other and also facilities like roads and other elements is very important and leads to motivation or prevention of farmers in land consolidation.

The results of this study are in consonance with those of the study by Fe'li et al. [6], that studied the challenges and problems of farmer exploitation (yeoman) in a research and argued that their challenges are lack of proper infrastructures, smallness of fields and non-consolidation of lands, presence of non-experts in agriculture, low mechanization coefficient, and use of traditional methods.

The results of this study are in consonance with those of the study by Zarifian et al[21], that studied the effective elements on land consolidation in Kabootarahang villages in Hamedan, Iran. They concluded that consulting the experts, agriculture background, membership in organizations, number of fields, amount of income, and field size were effective factors in accepting land consolidation by farmers.

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elements on implementation of land consolidation.

The results of this study are in consonance with those of the study by Akkaya Aslan et al. [2], in Turkey that showed farmers' tendency to use pressurized irrigation and mechanization in their fields affect acceptance of land consolidation.

The general results indicated that the factors and barriers studied (economic barriers, social barriers, political and governmental barriers, domestic barriers, and natural barriers and land structure) are of the most important reasons and factors in prevention of success in land consolidation. The starting point of change in any country is the government that should provide the situation that leads to trust by farmers so that they would willingly move towards consolidation and cooperate and share knowledge with other farmers. On the other hand, family has a great role, too. It should provide the proper conditions in all aspects- from financial to educational- in order to increase the role of the family. Making villas and changing farms into recreational sites should be avoided and fragmentation of lands in inheritance issues should be prevented and save them for yield increase by land consolidation for a better future for the country. Because human feeding is related to agriculture and its products and agriculture has a strategic and key role in today's world.

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