



## Barriers the Success of Water Users Cooperatives in Dashte Azadegan and Hoveyzeh Townships, Khuzestan Province, Iran

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### Keywords:

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### Abstract

The purpose of this research was identified barriers to the success of water users' cooperatives in Dashte Azadegan and Hoveyzeh Townships, Khuzestan Province, Iran. This research was an applied study and the research method was descriptive. Members of water users' cooperatives considered as statistical population. The sample size was 256 farmers based on Krejcie & Morgan table. After designing and validating the questionnaire, the questionnaire was pre-tested among 30 people and Cronbach alpha was determined between 0.711 to 0.851. The main tool was a questionnaire. All data processing and statistical analysis was performed using the software SPSS<sub>20</sub>. Based on the results of factor analysis the factors were categorized into four main components, which have been named infrastructure, economical, managerial and organizational, cultural and social factors. The obtained results from the factor analysis revealed that the four mentioned factors explained 65.291% of the variation of barriers of success of water users' cooperatives.

### 1. Introduction

Management of Irrigation and Drainage Networks by government in the past few decades has not resulted in optimal operation and maintenance and the irrigation efficiencies are far below the design bases (Milani, Toutakhaneh and Fani, 2007). Decentralization and outsourcing of government activities to potential users is a major policy issue-which is currently practiced in water management. In other words transfer of water management to water users in the form of water use groups is a common practice. Therefore, farmers' adoption toward participatory water management is significant factor (Afshar and Zarafshani, 2011). Salmani (2001) argues that, in order to reach an efficient consumption of irrigation water, farmers' participation in the form of water users' associations in management and exploitation of irrigation and drainage networks seems crucial and can pave the

way for optimum usage of water. Mousaei (2012) mentions following factors as influential on participation in exploitation and conservation of irrigation network: participating beneficiaries' representatives in local water distribution planning, promoting participation culture among beneficiaries, local management authority on water resources and developing shared benefits. Water User Cooperative is organization for the management and efficient use of water, with emphasis on the participation of all stakeholders. Barriers for the success of cooperatives of water users in the form of five indicators of knowledge, participation, economic incentives, social incentives and mutual relationship farmers with water organizations, have been investigated. The estimated coefficients indicate that economic incentives have had a major role (Amini and Khaiati, 2006). A water user cooperative (WUC) society is an organization of water users administered on the principles of

cooperation and its role is to implement water institutions, and in the process to achieve a fair water allocation across different locations (Rohith and Chandrakanth, 2011). Shahroudi, Chizari and Pezeshkirad (2009) showed that attitude rate more than half of studied farmers (55.1%) regarding agricultural water management were at positive relatively and positive levels. Moreover, the results from statistical analyses indicated that WUC was very effective on the development of factors related to the social, human, physical, financial, and natural capitals, so that the WUC irrigation network with increases in the components of social confidence, solidarity, and participation, improved extension contacts, developed appropriate information channels, improved the status of regional irrigation system, and increased water users' participation in irrigation water management were more effective on farmers' attitudes toward the development and application of agricultural water management strategies such as under-pressure irrigation technology compared to non-WUC irrigation networks.

## 2. Materials and methods

The purpose of this research was identified barriers to the success of water users' cooperatives in Dashte Azadegan and Hoveyze Townships, Khuzestan Province, Iran. This research was an applied study and the research method was descriptive. Members of water users' cooperatives considered as statistical population. The sample size was 256 farmers based on Krejcie & Morgan table. After designing and validating the questionnaire, the questionnaire was pre-tested among 30 people and

Cronbach alpha was determined between 0.711 to 0.851. The main tool was a questionnaire. All data processing and statistical analysis was performed using the software SPSS<sub>20</sub>. The research conducted in 2015. Appropriate statistical procedures such as frequency, percentage, mean, standard deviation and correlation coefficient were applied to analyze the data. In order to measure the barriers to the success of water users' cooperatives, different appropriate scales were developed and included in the final format of the questionnaire. The responses to each item of the scales were obtained on a five-point continuum viz., very disagree, disagree, no idea, agree and very agree with the scores of, one, two, three, four and five, respectively. Then a total score was calculated for different scales by summing up the item's assigned scores, which indicated overall score for barriers of the success of water users' cooperatives in Dashte Azadegan and Hoveyze Townships, Khuzestan Province, Iran.

## 3. Results and discussion:

### 3.1 Descriptive Statistics:

Results show that the mean of the farmers' age was about 45.27 years old with a standard deviation of 10.44 years old. Table 1 shows the education levels of the farmers. The results indicate that more than 54 percent of the farmers had lower than Diploma level of education, while only 10.5 percent of them educated in university levels.

In order to assess the barriers to the success of water users' cooperatives, 20 statements were designed and asked from farmers to show their opinions. Based on the results, table (2) is provided.

Table 2. Summarizes Demographic Profile and Descriptive Statistics of Respondents.

<i>Personal Characteristics</i>	Frequency	Percent	Cumulative Percent
<b>Age</b>			
22-30	34	13.3	13.3
31-40	56	21.9	35.2
41-50	90	35.2	70.3
51-60	60	23.4	93.8
61-70	16	6.3	100
<b>Education level</b>			
Illiterate	10	3.9	3.9
Lower than Diploma	139	54.3	58.2
Diploma	78	30.5	88.7
University	27	10.5	99.2
No answer	2	0.8	100
<b>Income (Million Rial)</b>			
20-200	53	20.7	20.7
200-400	132	51.6	72.3
400-600	42	16.4	88.7
600-800	11	4.3	93
No answer	18	7	100

Table 3. Prioritizing factors affecting the aquaculture market development from the perspective respondents

Statements	Mean	Sd	CV	Rank
1. The lack of effective irrigation projects	3.75	0.970	0.259	1
2. Failure to consult with farmers before implementation, of projects	3.94	1.042	0.264	2
3. Lack of authority	3.80	1.007	0.265	3
4. Lack of government support	3.97	1.053	0.265	4
5. Lack of attention to the training needs of farmers	3.99	1.059	0.265	5
6. Ethnic divisions	3.71	0.988	0.266	6
7. Bank strictness on land ownership documents	3.89	1.044	0.268	7
8. The conflict between the farmers and Natural Resources organization	3.91	1.058	0.271	8
9. Mistrust of farmers to Project Manager	3.86	1.081	0.280	9
10. Lack of knowledge and skills of farmers	3.76	1.055	0.281	10
11. Late returns of of projects	3.77	1.093	0.290	11
12. Disregard of the right of ownership	3.77	1.107	0.294	12
13. Weakness and exhaustion infrastructure	3.79	1.116	0.294	13
14. Single-purpose cooperatives of water users	3.84	1.147	0.299	14
15. Small pieces of land	3.51	1.055	0.301	15
16. Inefficient management	3.86	1.167	0.302	16
17. Lack of coordination between land and water custodians	3.74	1.143	0.306	17
18. The share of water charges	3.84	1.193	0.311	18
19. Scattered pieces of land	3.46	1.143	0.330	19
20. The lack of communal land ownership	3.60	1.242	0.345	20

It presents the mean, standard deviation and then, items were ranked by using the coefficient of variation on respondents' views, and it also shows the frequency responses of entire population of study about each item. The statement "The lack of effective irrigation projects " is allocated as first priority. In this item, 61 persons of respondents were very agree, 103 were agree, 61 had no idea, 29 were disagree and 2 persons were very disagree.

Based on the results the items of the lack of effective irrigation projects, failure to consult with farmers before implementation of projects, lack of authority, lack of government support and lack of attention to the training needs of farmers were assigned in the first priority to fifth, respectively.

### 3.2 Inferential statistics:

In order to classify the barriers of to the success of water users' cooperatives, factor analysis was used. In this term, 20 items were designed and evaluated the statements in the correlation matrix. Bartlett and Kaiser-Meyer-Olkin (KMO) tests, were used to fit the data for factor analysis (Table 3). The KMO coefficient was equal to 0.916 which indicates perfect correlation between the data for analysis. Table (4), shows the number of factors that are statistically significant for the analysis and mentioned 4 factors with eigen values greater than 1.

Variables explained 65.291 percent of total variance and 34.709 percent of the remaining variance was related to factors that were not identified through factor analysis. These 4 factors were renamed after loading variables as:

Infrastructure, economical, managerial and organizational, cultural and social (Table 4). Then to identify the variables associated with each factor, as well as to reconstruct the more the factor matrix was used to charge variable (Table 5).

### 4. Conclusion and recommendation

The purpose of this research was identified barriers to the success of water users' cooperatives in Dashte Azadegan and Hoveyze Township, Khuzestan Province, Iran. Based on the results, the statement "The lack of effective irrigation projects " is allocated as first priority. In this item, 61 persons of respondents were very agree, 103 were agree, 61 had no idea, 29 were disagree and 2 persons were very disagree.

Based on the results the items of the lack of effective irrigation projects, failure to consult with farmers before implementation of projects, lack of authority, lack of government support and lack of attention to the training needs of farmers were assigned in the first priority to fifth, respectively. Based on the results of factor analysis the factors were categorized into four main components, which have been named infrastructure (Firoozabadi and Hossaini, 2011), economical (Ebrahimi Meimand et al, 2013), managerial and organizational (Nasrolahi, et al, 2015; Unal, 2008), cultural and social factors (Benturaki, 2000). The obtained results from the factor analysis revealed that the four mentioned factors explained 65.291% of the variation of barriers of success of water users' cooperatives.

Table 3. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.916
Bartlett's Test	7526.753
Sig	.0.000

Table 4. Initial Eigen values for determine the number of factors

Rank	Component	Eigen values	% of Variance	Cumulative %
1	Infrastructure	7.770	21.583	21.583
2	Economical	6.044	16.787	38.370
3	Managerial and Organizational	5.008	13.910	52.280
4	Cultural and Social	4.684	13.011	65.291

Table 5. The introduction of the extracted factors and variables of each factor

Factors	Statements	Factor Loading
Infrastructure	Weakness and exhaustion infrastructure	0.834
	Scattered pieces of land	0.808
	The lack of communal land ownership	0.661
	Small pieces of land	0.597
	Single-purpose cooperatives of water users	0.446
Economical	The share of water charges	0.685
	The lack of effective irrigation projects	0.683
	Late returns of of projects	0.628
	Lack of government support	0.570
Managerial and Organizational	Bank strictness on land ownership documents	0.635
	Failure to consult with farmers before implementation, of projects	0.612
	Inefficient management	0.528
	Lack of coordination between land and water custodians	0.497
	Disregard of the right of ownership	0.415
Cultural and Social	Lack of authority	0.385
	Lack of attention to the training needs of farmers	0.797
	Ethnic divisions	0.742
	Lack of knowledge and skills of farmers	0.655
	The conflict between the farmers and Natural	0.614
	Mistrust of farmers to Project Manager	0.578

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## موانع موفقیت تعاونی‌های آب‌بران در شهرستان‌های دشت آزادگان و هویزه،

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هدف اصلی از این تحقیق شناسایی موانع موفقیت تعاونی‌های آب‌بران در شهرستان‌های دشت‌آزادگان و هویزه، استان خوزستان بوده است. این تحقیق از نوع کاربردی و توصیفی تحلیلی بوده است. اعضای تعاونی‌های آب‌بران در شهرستان‌های دشت‌آزادگان و هویزه به عنوان جامعه آماری در نظر گرفته شدند. تعداد نفرات نمونه آماری بر اساس جدول کرجی و مورگان ۲۵۶ نفر برآورد شد. روایی از طریق پانل متخصصان و پایایی از طریق ضریب کرونباخ آلفا بین ۰/۷۱۱ تا ۰/۸۵۱ محاسبه شد. ابزار اصلی تحقیق پرسشنامه بوده است و تحلیل و پردازش داده‌ها از طریق نرم‌افزار SPSS<sup>20</sup> انجام شده است. بر اساس نتایج تحلیل عاملی، چهار عامل اصلی به عنوان موانع موفقیت شناسایی شد. این موانع شامل، موانع زیرساختی، اقتصادی، مدیریتی و سازمانی، فرهنگی و اجتماعی بودند که ۶۵/۲۹۱ درصد تغییرات موانع موفقیت تعاونی‌های آب‌بران را تبیین کردند.

چکیده

کلمات کلیدی:

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