Factor Influencing on Participation of Fishermen Member Cooperative in Sustainable Fishing in Golestan Province

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Abstract

The aim of this study was to determine influencing factors on participation of fishermen member cooperative in sustainable fishing in Golestan Province. The methodological approach of this study was descriptive- correlative. The research population consisted of 144 fishermen who member cooperative, which were selected using census method. Validity of the instrument was established by a panel of experts consisting of senior faculty members in agricultural extension and education department, and research committee advisors. Reliability analysis was conducted by using and Cronbach alpha formula and result was 88. The results showed that 11.4, 71.2 and 17.4 percent of fishermen expressed their participation in sustainable fishing were moderate, good and very good respectively. Also variables of effect of extension- education activities, satisfaction of cooperative, social participation and attitude toward sustainable fishing with participation in sustainable fishing had been relationship of positive and significant. The results of the multiple regression analysis (stepwise method) revealed that the variable of effect of extension- education activities explained a variation of 31.7% of the participation in sustainable fishing.

Keywords: Participation, Sustainable fishing, Golestan province.

Introduction

Fish, fishing ,and fisheries are the facts that our society has limited knowledge and information about their condition in Iran and changing in world. Today ,in addition to that fish is considered a food source ,having social and economical dimensions. Although .fishing has little contribution in national economy and also in world economy but in countries having way to open sea and countries having good condition for pisciculture and reproduction . aquatics receive strong attention as a food source, making job, improving of fisher living status and earning foreign exchange . so , today it is considered to fish and fishing as a development status and as a factor that can be led to social and economical development .fishing had been a important food source for human from many years ago . Today most of the countries pay attention to fishing for food, solving unemployment problem , welfare of coastal residents and also earning income and foreign exchange. Now $\frac{1}{5}$ of animal protein in all of the world come from fish . in fact fish ,can provide most protein in world. Swimmer et al(2011) have shown in their

research that suitable instruments for fishing and development and improving it can make easy achieving to sustainable fishing . Kalshoven and Meijboom (2013) have shown in their research that achieving to sustainable fishing require to observing moral and cultural issues by producers and consumers . also supporting non public organizations and sea supervision councils can be influenced on sustainable fishing . Cowx and Aya (2011) have shown in their research that to change paradigm for protecting fish, they should move toward protecting ecosystem so it should imposed organizational reconstructing and integrative management planning in their performances. also in this area the ecological, sociological , economical and political factors should be taken account. Arlinghaus et al (2002) have concluded that to achieve to sustainability in fishing the information transmission, communications , training and marketing should be supported . and also reconstructed organizations and in addition to sociological and economical evaluating of plans , making decisions should be analyzed .

Patzelt and Shepherd (2011) have concluded that to determine sustainability opportunities the ecosystem and environmental knowledge of beneficiary should be improved and their understanding to dangers supported. Also cooperation with others and organizations and entrepreneurship knowledge among beneficiaries should be increased .

Vos and Bush(2011) have concluded that making fishing organizations and non public organizations is one of the ways achieving to sustainability in fishing . also effective communications and interaction among fishing organizations and industry can contribute to achieving to in fishing sustainability . Ahmed et al (2008) have concluded that to achieve opportunities in raising shrimp in form of sustainable living the human ,physical ,sociological factors in systematic and uniform should be taken account Tlusty et al (2013) have concluded that for sustainability in aquatic culture trade we should increase the technical knowledge of fisher and provide educational opportunities and also try for protecting aquatic ecosystem and improving of economical benefits . Olesen et al(2008) have concluded that for sustainable aquatic culture the government politics should be suitable and efficient and increase understanding and knowledge of users also a intellectual understanding prepare about environment analysis and ecosystem and take account the sociological factors. Ambak and Jalal (200)have concluded that it should be considered to aquatic ecosystem to achieve fish source sustainability in Malaysia and we should adapt to rules and regulations .   also considering to beneficiaries needs, emphasizing on local government role , sociological- economical dimensions and developing of technologies can led to sustainability of fish sources .

Research method

In one hand this survey consider to studying of systematic distribution ,explicit and exact of events and studied society characteristics, so it is descriptive and on the other hand try to measure the relation ship of independent variants with dependant variants of research so it is correlative.   So this survey is practical, because it is done to study of effective factors in pastures management. That results can guide the planners and managers about management and planning and sustainable fishing .statistics group of this research including fishermen member cooperative in Golestan province. In this research because of small group used the census method . the all group consist of 144fishermen . the important information is collected by questionnaire that is designed based on goals and research variants .to determine the content and superficial validity , several versions of questionnaire was given to senior faculty member and panel of experts in fisheries area .after receiving suggestions and necessary revisions the final revisions and suggestions is imposed and noted questionnaire prepared to final assignment. To final assign of research instrument the preliminary examinations was established. In this test the noted questionnaire was given to 30 fishermen who were climatologically, economically , cultural , sociologically similar to statistics group. After getting data the Cronbach alpha for all of the variants having ranking scale was measured 88%.

In this research independent variants including private characteristics of respondent fishermen(age , education , fishing history);economical characteristics (performance , income , other activities

);extension –communication characteristics (communicate with cooperative ,experts, using of information source .impacts of extension- education activities);sociological characteristics(satisfaction of cooperatives , sociological participation ,attitude toward sustainable fishing);technological knowledge and dependant variants in this research included in participating in sustainable fishing.

Satisfaction of cooperatives and social participation were measured with 5 questions , impacts of extension-education activities with 6 questions , using of information sources with 9 questions that all having lickert 6 choices range . attitude toward sustainable fishing was measured with 8 questions that having lickert 5 choices . range . giving score to noted range   is as follow :

1= very disagree ,2== disagree , 3= I don't have idea , 4=agree., 5=very agree , so maximum score for participation is 40 and minimum score is 8 . the technical knowledge was measured with 9 questions that is 3 or 4 choices . giving score is as follow ; correct response=2,and incorrect response =0

So the maximum score of technical knowledge will be 18 , and the minimum score will be 0.

Table 1:validity value of research variants

Variants	Cronbach alpha
Satisfaction of cooperative	81%
Social participation	86%
Impact of extension –education activities	89%
Using of information sources	79%
Technical knowledge	82%
Attitude toward sustainable fishing	77%
Participating in sustainable fishing	91%

Results
Participating value in sustainable fishing
Participating value in sustainable fishing was measured with 9 questions that having lickert 6 choices range .giving score is as follow :

0= nothing , 1= very bad . 2= bad, 3= moderate,4= good . 5= very good

So the maximum score is 45 and minimum score is 0

The following table   shows average , standard deviation ,variant coefficient and grade of each items related to participating in sustainable fishing among other fishermen.

Table 2 : prioritizing of items related to participating in sustainable fishing

Item	Average	Standard Deviation	Variant Coefficient	Grade
Following of fishing hours	3.67	0.67	0.184	1
no using of forbidden tools in fishing	4.19	0.79	0.189	2
No fishing of immature fishes	3.87	0.75	0.193	3
Releasing of non standard fishes during fishing	3.96	0.83	0.210	4
Following standard of net	3.96	0.83	0.210	4
Observing fisheries regulations	3.80	0.96	0.254	5
Standard using and no excessive fishing	3.80	0.96	0.254	5
Following standard trap	2.89	0.98	0.340	6
Observing fishing place	2.89	0.98	0.340	6

Lickert 6 choices range : 0=nothing ; 1= very bad ;2=bad ;3=moderate ;4=good ; 5=very good

Table(3) shows participation value in sustainable fishing among fishermen . according to table, has explained 11.4 of respondents , their participating in sustainable fishing at moderate level , 71.2 good and 17.4 very good .

Table (3): frequency distribution of fishermen based on participation value in sustainable fishing

Status	Frequency	Validity percent	Accumulating percent
Very bad (0-9)	0	0	0
Bad (10-18)	0	0	0
Moderate (19-27)	15	11.4	11.4
Good (28-36)	94	71.2	82.6
Very good (37-45)	23	17.4	100
Total	132	100	-

Average = 33.1   standard deviation =3.9   minimum= 26   maximum= 27

Determining of relationship and the role of research variants on participating value in sustainable fishing

Table (4), shows value, rate and relationship direction and significant level among research variants and participating in sustainable fishing . according to result there was positive and significant relationship between impact of extension – education activities and participating in sustainable fishing at 99 percent level. Also satisfaction of cooperatives , social participating , attitude toward sustainable fishing with participating in sustainable fishing in 95 % level had been positive and significant relationship . the above

results were verified by (Olesen et al., 2008);(Ambak and Jalal, 2006); (Patzelt and Shepherd, 2011); (Cowx and Aya, 2011) .

Table (4): determining of research variant relation with participating in sustainable fishing

Variants	Correlative coefficient	Significant level
Age	0.074	0.399
Fishing history	0.020	0.821
Income	0.008	0.923
Production value	0.017	0.850
Keeping in touch with cooperative	0.071	0.419
Keeping in touch with experts	0.002	0.981
Using of information sources	0.118	0.177
The impact of extension –education activity	0.564**	0.000
Satisfaction of cooperative	0.180*	0.039
Social participation	0.215*	0.013
Attitude toward sustainable fishing	0.208*	0.017
Technical knowledge	0.112	0.199

*p< 0.05   **p< 0.01

As it showed in table (5), the extension – education activities only in one step came into equitation .it means that the extension- education activities has influenced on participating in sustainable fishing and this variant has explained only 31% of participating variations in sustainable fishing . Above results have verified by (Tlusty et al., 2013); (Arlinghaus et al., 2002) .

Table (5): regression analysis of participating in sustainable fishing

Steps	R	R Square	Adjusted R Square	F	Sig
1	0.563	0.317[a]	0.312	60.3	0.000

a: extension education-activities

Table (6): standardized and non standardized coefficient of participating in sustainable fishing

Variant	B	Beta	t	Sig
Extension- education activities	0.97	0.56	7.77	0.000
Constant number	11.14	-	3.93	0.000

Dependent variant : participating in sustainable fishing
Based on β value in table (6) we can write regression equitation as follow :
Y=0.56X1
X1=extension – education activities

Suggestions

1)   It is suggested to improve sustainable fishing that followed the fishing places and standard trap . Also by observing fisheries roles and regulations prevent from excessive fishing .

2)   It is suggested to improve sustainable fishing that prevent from working of illegal Fishermen and using modern fishing methods and instrument. Also increase responsibility among fishermen and make aquatic   habitants .

3)   It is suggested to improve participating in sustainable fishing that developed extension- education activities and also presented more practical and functional trainings .

4)   It is suggested to improve participating in sustainable fishing that we increase social participating and fishermen satisfaction . Also improve their attitude toward sustainable fishing specially in protecting and reconstructing of rivers and increasing of fisheries sources .

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