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Social License for Aquaculture: A Case Study of Tundurru Village of West Godavari District, Andhra Pradesh (India)

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Abstract

The purpose of this article is to learn what the residents of Tundurru think about the potential growth of aquaculture in the area and to have a better understanding of how the community feels about food parks in the region as a whole. A standardized questionnaire was provided to 172 villagers, and the data was gathered, quantified, analyzed, and interpreted in a comprehensive manner. There appears to be widespread opposition to aquaculture's detrimental effects on the environment despite their knowledge of the sector's economic advantages. As a result, it is recommended that the first step in establishing new development initiatives is to get social license. Before starting a project, the government or management should double-check all potential stumbling blocks.

Keywords: establishment, environment, social license and negative impacts of aquaculture

Introduction

As one of India's fastest-growing industries, aquaculture is a major player. Aquaculture's horizontal expansion is a priority for both the federal and state governments. Entrepreneurs, businesspeople, and corporations, as well as traditional farmers, have flocked to the area in recent years because of its promise of quick profits. About 171 million metric tons of fish were produced worldwide in 2016. In 2016, India contributed 7.1% of global production, or 5700 thousand metric tons (FAO, 2018). Since 2006, the value of Indian aquaculture exports has risen from \$1763,000,000.00 to \$5546,000,000.00. The total amount of shrimp produced in 2016-17 was 600,000 tons. By 2020, India hopes to produce one million metric tons (MT) of shrimp (Harkell, 2018). The

aquaculture industry has unquestionably contributed to the expansion of the country's economy and the creation of new jobs. However, its negative environmental impact is denounced by everyone.

Context of the Study

"Social license" is described as "the continued approval among the local community and other stakeholders, ongoing approval or broad social acceptability and, most typically, as ongoing acceptance" (Sociallicense.com). In India, environmentalists' public criticism of water abstraction led to the Honorable Supreme Court ordering the closure of brackish water shrimp aquaculture, leading to the

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conclusion

that a lack of social license could lead to human rights violations, environmental irresponsibility, anti-poor policies, or a host of other interrelated issues that could be more difficult and expensive to address (Bueno, 2008). In many places where aquaculture is widely practiced, there is a simmering discontent over aquaculture's influence on the environment and other issues. In Tundurru village of West Godavari District in Andhra Pradesh, open agitations against food parks are taking place. State and national newspapers carried headlines about this problem for a while because of an ongoing dispute between villagers and state officials about whether or not to allow the park to be built in their area.

It was only natural that the researcher, also from the same district, would be interested in learning more about why the residents of Tundurru are opposed to development projects in the hamlet and what their thoughts are on aquaculture expansion.

Methodology

Sample: Samples from Tundurru, Bhimavaram Mandal and West Godavari District were gathered to conduct this study.

Profile of the Respondents: Farmers (33.7%), students (16.8%), employees (23.2%), unemployed (5.2%), and businessmen (5.2%) are among the sample villages (20.9 percent). More than two-thirds of those surveyed are landowners, compared to less than one-third of those who are landless. 50.8 percent of landowners are aqua farmers, compared to 49.1 percent of paddy farmers, according to the data. There are 66.2 percent men and 33.8 percent women in the sample. Their age ranges

range from 20-40 (56.9%), 40-60 (24.4%), and over 60 (4.4%). (18.6 percent). Primary (20.9 percent), Secondary (38.3 percent), Intermediate (5.7 percent), and Undergraduate and above are all literate (34.8 percent).

Objectives of the Study:

- To find out what the locals think about the environmental impact of aquaculture.
- To find out what the locals think about aquaculture's potential economic benefits.
- In order to understand why there has been a rise in opposition to food parks and similar initiatives.

Statements of Intent: The villagers agree that aquaculture is not good for environment.

The villagers agree that there are economic benefits from aquaculture.

Research Tools: Instruments that are used to collect data for analysis and interpretation are known as research tools. The researchers in this study employed both traditional and statistical methods to obtain data, analyze the outcomes, and finally reach their stated goals.

Using questionnaires, researchers can learn more about a certain topic by gauging the views and attitudes of those who fill them out. A questionnaire based on the Likert Five-Point Scale, a psychometric scale initially established by American social psychologist Rensis Likert, is being used in this investigation. Participants' preferences or level of agreement or disagreement with a statement can be obtained by using the Scale. It's a two-sided scale that gauges how people feel about a statement on the positive or negative side. A declarative statement in a typical Likert Scale is

intentionally designed to express a strongly positive or strongly negative view rather than a neutral one. Agreement, highly agreement, neither agreement nor disagreement and disagreement and strongly disagreement are all included. People can indicate their preferences by ticking or circling the option that best fits their needs and desires.

There are three portions to the survey. Sample respondents' personal information is gathered in Section I of the survey. There are 10 statements in Section-II of the report that collect their views on aquaculture's environmental impact. These include issues

such as the impact of aquaculture on wild fisheries, water pollution and water scarcity, as well as air pollution and the loss of soil fertility. Economic benefits such as high profits, job creation and development of villages, food security, increased asset value, infrastructural and industrial growth and women's employment are the focus of Section-III with eleven statements.

Using a Z-Test, a hypothesis is tested when the sample size is more than 30. Z-Test is used for statistical analysis because the sample size in this study is 172.

Analysis of section-II

The responses of the villagers on the statements 1-10 given in Section-II of the questionnaire are presented in Table 1 for statistical analysis and interpretation of data.

Sl.No.	<i>Likert Five-Point Scale</i>					Adjusted into two columns	
	SA	A	NAND	D	SD	A	D
1	103	31	0	09	29	134	38
2	137	15	2	8	11	152	20
3	122	27	0	13	10	149	23
4	129	21	10	4	8	155	17
5	63	78	4	20	7	143	29
6	94	49	0	17	12	143	29
7	94	60	4	3	11	156	16
8	71	74	6	20	1	148	24
9	130	17	8	17	0	151	21
10	138	1	6	06	21	142	30
Means	108.1	37.3	4	11.7	11	147.3= 147	24.7= 25

from 1 to 10

(Source: Primary data)

SA = Strongly agree; A = Agree; NAND = Neither agree nor disagree; D = Disagree; SD = Strongly disagree.

First four columns of Table 1 are rearranged into two columns for statistical analysis (last two). As a result, the sum of the replies in the "strongly agree" and "agree" columns is judged

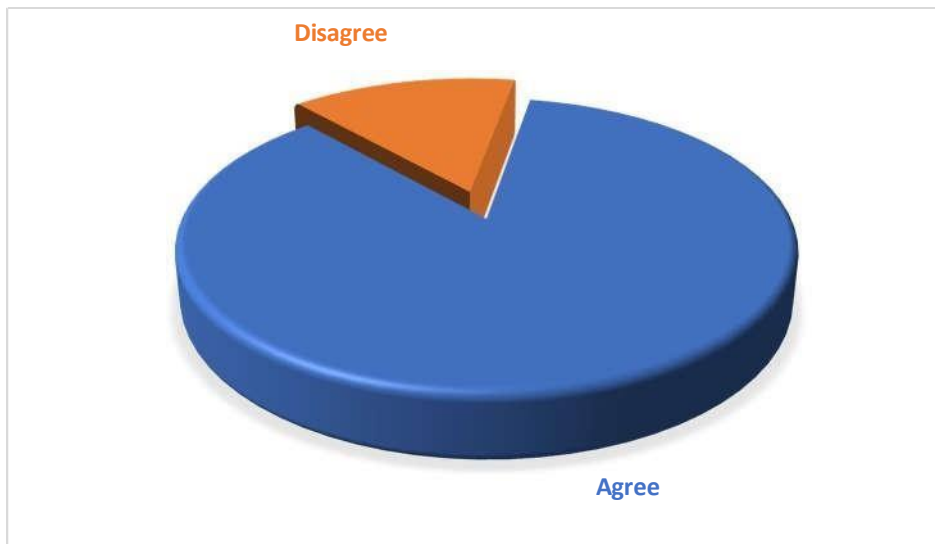
to be agreed. Furthermore, the total of replies in the columns that disagree and strongly disagree is deemed to be disagreed. Neither side gets an equal part of the column's comments, which are divided evenly between agreeing and disagreeing.

When testing the null hypothesis, the estimated value of Z is compared to the critical value of Z. For example, the sample size is 172 and the number of favorable cases is 147; the sample proportion of the favorable cases is 0.8547; and the significance threshold is (95 percent =0.05) percent, or 95 percent. P and Q are assumed to be 0.85 and 0.15, respectively. Hence, P=0.85 is the null hypothesis (x does not differ substantially from), while P 0.85 is the alternative hypothesis The formula for calculating the Z-statistic is shown below.p

Z is equal to

When you divide 0.8547 by 80.5, you get the following: $\sqrt{0.85(1-0.85)/172}$

Interpretation: This proves that the calculated value of Z 0.171 is smaller than the Z-critical value 1.96 (Z = 0.1711.96) and so is not important when compared. As a result, we can accept the Null Hypothesis. Aquaculture is not good for its bad ecological repercussions, including health concerns for people, as the researcher's statistical analysis of the Section-II shows that 147 out of 172 respondents agreed



the questionnaire are presented in Table 2 for statistical analysis and interpretation of the data.

Table 2

Farmers' Responses on Statements from 11 to 20

Sl.No.	<i>Likert Five-Point Scale</i>					Adjusted into two columns	
	SA	A	NAND	D	SD	A	D
1	140	12	8	5	7	156	16
2	119	23	0	5	25	142	30
3	87	33	6	5	41	123	49
4	56	52	8	27	29	112	60
5	148	11	0	3	10	159	13

6	99	44	10	9	10	148	24
7	159	4	0	0	9	163	9
8	119	33	4	5	7	154	14
9	147	21	2	0	2	169	3
10	151	13	3	0	5	165	7
Means	122.5	24.6	4.1	5.9	14.5	149.1= 149	22.9 =23

(Source:Primarydata)

When testing the null hypothesis, the estimated value of Z is compared to the critical value of Z. N = 172 participants are included in this study, and the number of favorable cases is equal to X = 149. The sample proportion of favorable cases is equal to $p = X/N = 149/172 = 0.8663$, and the level of significance is equal to (1-) percent, or $95\% = 0.05$. P and Q are assumed to be 0.85 and 0.15, respectively.

Hence, $P=0.85$ is the null hypothesis (x does not differ substantially from), while $P 0.85$ is the alternative hypothesis The formula for calculating the Z-statistic is shown below.

pZ is equal to

$$0.598 = 0.86630.85$$

$$\sqrt{0.85(1-0.85)/172}$$

Interpretation: When the calculated value of Z 0.598 is compared with the Z-critical value 1.96, it is proved that the calculated value of Z is less than its critical value ($Z=0.598 < 1.96$) and so it is not significant. Therefore, the Null Hypothesis is accepted. From this statistical analysis of the Section-III, it may be concluded that 149 out of 172 respondents accepted the opinion of the researcher saying that there are economic benefits from aquaculture.

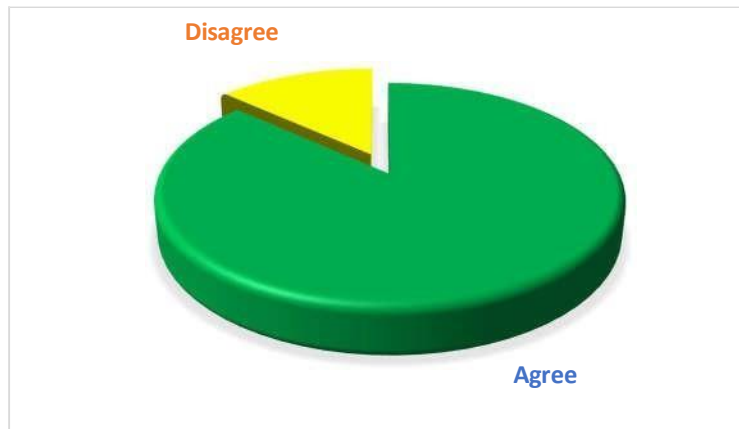


Figure2. Comparison of Agree and Disagree Responses

Findings&Suggestions

The results of the current study show that the villagers are fully opposed to aquaculture's negative influence on the environment. Villagers are aware of the harmful effects and are concerned about its spread. For the second goal, the respondents agreed that aquaculture offers numerous economic advantages to both the individual respondents and the village as a whole. More than half of them are directly involved in aquaculture and have reaped the financial rewards as a result. Indirectly, the rest of the population is touched by aquaculture, which generates revenue, creates jobs, and increases the value of property in the area.

In spite of the economic benefits of aquaculture, the villagers are not pleased with the expansion of aquaculture, as may be gathered from the findings. These residents' concerns about the impact food parks and related activities will have on the local environment and its environs have grown stronger as a result of their protests. As a result, there has been a rise in anti-establishment sentiment.

In these conditions, it is claimed that the first stage in establishing or expanding any economic activity is social permission, i.e., people's acceptance. It is therefore imperative that each new development project in industries such as agriculture and aquaculture be thoroughly vetted by the major stakeholder groups to ensure that the long-term environmental impact of the project is considered. In advance, they should ask themselves: "What is the possibility that negatively affected parties would oppose our position and take up our cause? When and where will the next obstacle be presented? and what are the anticipated ramifications of a challenge to the aquaculture sector?" (Bueno, 2008).

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