Television Programmes on Fisheries and Aquaculture: A Descriptive Study

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Abstract

Television is an effective medium for communication on which *Krishi Darshan* has been telecasting agriculture, animal husbandry, fisheries, and aquaculture based programmes since 2004 in West Bengal. In this context, a descriptive study of fisheries and aquaculture based television programmes telecasted on *Krishi Darshan* in West Bengal from 2008-2012 was performed by using content analysis approach to gain insights into and to analyze different topics of fisheries based programmes along with sector-specific programmes of agriculture, animal husbandry, and fisheries to make a valid comparison. Secondary data was accessed from the telecast register of *Krishi Darshan*. Sector-specific classification of programmes, namely agriculture, animal husbandry, and fisheries was also performed. Content analysis revealed that majority of the programmes were related to agriculture (83.13%) followed by animal husbandry (8.48%) and fisheries (8.39%). In case of fisheries, the majority of the topics were related to fish breeding, seed production, and hatchery management (28.72%) followed by general fisheries based topics, scientific aquaculture practices (20.21%), and brackish water aquaculture (11.70%). ANOVA showed that there was a significant difference with respect to agriculture, animal husbandry, and fisheries based programmes, and no significant difference was observed with regards to the number of different fisheries based programmes across the years. It is clear that fisheries based programmes are few in relation to other sectors. It is suggested that there is a need to increase focus on fisheries as it is a sunrise sector, and also because of its importance on our economy as well as on the livelihood, employment, and nutrition of the people of our country.

Keywords: television, agriculture, animal husbandry, fisheries, content analysis

Fishery, the sunrise sector in our country, has been playing a pivotal role in West Bengal (W.B.) as well. With rising trends in the fisheries sector, the Union and State Government have undertaken a number of development programmes for fisheries development in W.B. In addition to the developmental programmes, different fisheries and aquaculture based programmes are telecast via public (DD-Bangla) as well as private (ETV-Bangla) television channels as television is an effective media for communication (Ghosh, 2013).

Krishi Darshan show (Bengali version) is telecast (5 days in a week) in collaboration with the Ministry of Agriculture, Government of India, under the scheme Mass Media Support to Agriculture Extension, and is telecast at 5.30 pm on DD-Bangla channel. Such telecasting was started in the year 2004 in West Bengal. Two types of programmes namely, recorded field based (Rec) and live-phone-in programmes (Live) cover various aspects of agriculture, horticulture, animal husbandry, fisheries, dairy, and rural life of farmers (Ghosh, 2013).

Live-phone-in format of programmes is such that the farmer can get instant suggestions from the expert panel on different topics ranging from disease management and mitigation, pond preparation, feeding, nutritional, and other management aspects of their farming through a phone call. However, there is scope for short discussion on a particular problem with the expert panel members by the caller farmer which is live and instant. Every week, there are two live-phone-in episodes of the *Krishi Darshan* programme that are telecast on DDK-Kolkata. On the other hand, recorded field based programmes are shot on fields and edited later for allowing voice over telecast (Ghosh, 2013).

The main objective of these programmes is to create awareness among the rural viewers and to acquaint them with the latest technical and scientific knowledge with respect to crop cultivation practices, use of fertilizers, soil-testing, dairying, animal husbandry, home science, sericulture, horticulture, fishery, poultry, and weather forecasts in order to enlighten the agrarian viewers about the importance of education, personal hygiene, health and family welfare, and to

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provide healthy entertainment. However, there are not many studies about fisheries and aquaculture based programmes with reference to India, even when India is an important aquaculture country and is one of the major maritime nations in the world. Being home to more than 10% of global fish biodiversity, Indian fisheries occupy the second position in global fish production, with a combined annual fish and shellfish production from capture fisheries and aquaculture of about 8 million metric tonnes (Ayyappan, Jena, Gopalakrishnan, & Pandey, 2011). Out of the total fish production, inland fish production in India contributes 4.930 million metric tonnes and the state of West Bengal (W.B.) ranks first in this regard among the Indian states. In W. B., the fisheries' sector contribution to the state domestic product at current price for the year 2009-10 was 3.33% (Ghosh, 2013).

In this context, a descriptive study of *Krishi Darshan*'s fisheries and aquaculture based television programmes telecasted in West Bengal from 2008-12 was performed. Content analysis approach was used to analyze different topics of fisheries based episodes on *Krishi Darshan* along with sector-specific episodes on agriculture, animal husbandry, and fisheries to make a valid comparison.

Methodology

Content analysis is a research technique for the objective, systematic, and quantitative description of manifest content of communications (Berelson, 1952). In 1952, Berelson published 'Content Analysis in Communication Research,' which heralded recognition for the technique as a versatile tool for social science and media researchers. Kerlinger (1986) defined content analysis as a method of studying and analyzing communication in a systematic, objective, and quantitative manner for the purpose of measuring variables. Holsti (1968) stated that content analysis is any technique for making inferences by systematically and objectively identifying specified characteristics of messages.

 As described by Das and Bhaskaran (2008), content analysis is the scientific study of content of communication. It is the study of the content with reference to meanings, contexts, and intentions contained in messages. Prakash,S., Kumar, and Prakash, G. (2012) also used content analysis as a tool for assessing television advertisements and usage of celebrity endorsers. However, the method achieved greater popularity among social science scholars as well as a method of communication research (Wimmer & Dominick, 1994). Broadly, content analysis may be seen as a method where the content of the message forms the basis for drawing inferences and conclusions about the content (Nachmias, D. & Nachmias, C. 1976). Content analysis is widely used in media communication also.

For achieving the objective of the present study, secondary data was accessed from the telecast register of *Krishi Darshan*, DDK-Kolkata for the period from 2008 to 2012. The list of fisheries based programmes was procured from this register along with sector-specific comparisons. They were later classified against different heads, that is, agriculture, animal husbandry, and fisheries based programmes. Analysis of Variance (ANOVA) with one way classification was done to test the null hypothesis, whether there is a significant difference as regards to the number of agriculture, animal husbandry, and fisheries based live-phone-in, recorded field-based programmes and combination of these two during the period from 2008 to 2012 and also to test the hypothesis that there is no significant difference with regards to the number of different fisheries based programmes across the years (2008-2012).
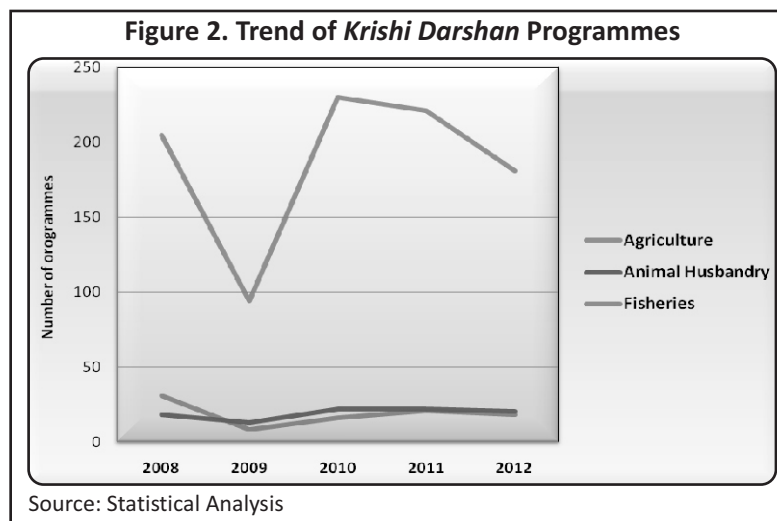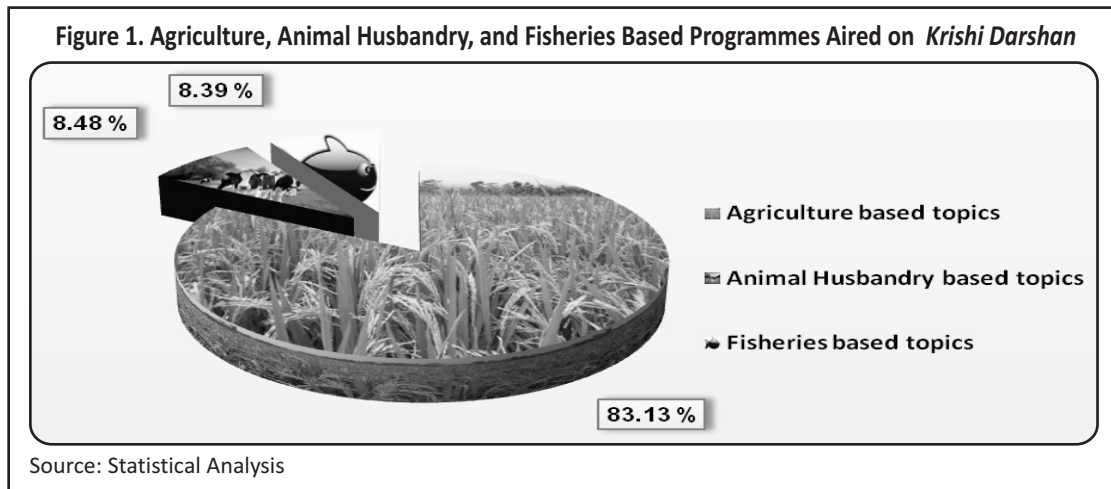
Results and Discussion

Different sector-specific programmes (both recorded field based (Rec) and live-phone-in programmes (Live)) were

Table 1. Information About Sector Specific Programmes of *Krishi Darshan*

Topic	Number of Programmes					Total	Percentage
	2008	2009	2010	2011	2012		
Agriculture	205	94	230	221	181	931	83.13
Animal Husbandry	18	13	22	22	20	95	8.48
Fisheries	31	8	16	21	18	94	8.39
Total	**254**	**115**	**268**	**264**	**219**	**1120**	**-**

Source: Telecast Register, *Krishi Darshan*, DDK-Kolkata

documented to gain a clear insight about the trend of programming and making a comparison of fisheries, agriculture, and animal husbandry based programmes of *Krishi Darshan*. Based on the collected information, sector wise classification of programmes of *Krishi Darshan* is presented in the Table 1 and Figure 1. As seen from the Table 1 and Figure 1, a majority of the episodes were related to agriculture-based topics (83.13%) followed by animal husbandry (8.48%) and fisheries based topics (8.39%). An evident difference was observed between agriculture and fishery based episodes and this difference was tested statistically.

Figure 1. Agriculture, Animal Husbandry, and Fisheries Based Programmes Aired on *Krishi Darshan*

Source: Statistical Analysis

Figure 2. Trend of *Krishi Darshan* Programmes

Source: Statistical Analysis

The trend of *Krishi Darshan* programmes is presented in the Figure 2. In case of programmes on animal husbandry and fisheries, there was a slight increase in the programmes that were aired on the said areas from 2009 to 2011. In case of agriculture, the trend was not specific. However, it is clear that there is a difference in agriculture vis-à-vis animal husbandry and fisheries based programmes . Analysis of Variance (ANOVA), with one way classification, was done to test the hypothesis whether there is a significant difference with regards to the number of agriculture, animal husbandry, and fisheries based episodes . The ANOVA results are presented in the Table 2. It is clear from the Table 2

Table 2. ANOVA Table for Agriculture, Animal Husbandry, and Fisheries Based Programmes

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	93297.73	2	46648.87	45.34	0.00	3.89
Within Groups	12345.60	12	1028.80	-	-	-

Source: Statistical Analysis

Table 3. Information About Live-Phone-in Programmes of *Krishi Darshan*

Topic	Number of Programmes					Total	Percentage
	2008	2009	2010	2011	2012		
Agriculture	44	71	89	83	81	368	88.04
Animal Husbandry	3	12	5	3	4	27	6.46
Fisheries	1	4	6	8	4	23	5.50
Total	**48**	**87**	**100**	**94**	**89**	**418**	-

Source: Telecast Register, *Krishi Darshan*, DDK-Kolkata

Table 4. Information About Recorded Field Based Programmes of *Krishi Darshan*

Topic	Number of Programmes					Total	Percentage
	2008	2009	2010	2011	2012		
Agriculture	161	23	141	138	100	563	80.20
Animal Husbandry	15	1	17	19	16	68	9.69
Fisheries	30	4	10	13	14	71	10.11
Total	**206**	**28**	**168**	**170**	**130**	**702**	-

Source: Telecast Register, *Krishi Darshan*, DDK-Kolkata

that the test statistic $F_{Cal} = 45.34 > F_{Crit} = 3.89$ at $\alpha = 0.05$. The *P* value for the *F* statistic is less than the α value, that is, 0.05. Since the test statistic is much larger than the critical value, the null hypothesis of equal population means was rejected and it was concluded that there is a statistically significant difference among the three sectors, that is, agriculture, animal husbandry, and fisheries with regard to the number of programmes (live and recorded) telecasted on DD Bangla in West Bengal.

It has been previously mentioned there are two types of programmes on *Krishi Darshan.* These are live-phone-in and recorded field based programmes. Sector wise classification of live-phone-in programmes and recorded field based programmes of *Krishi Darshan* are presented in the Tables 3 and 4 respectively. It is clear from the Table 3 that a maximum number of live-phone-in programmes were related to agriculture based topics (88.04%) followed by animal husbandry (6.46%) and fisheries (5.50%) based topics. ANOVA with one way classification was done to test the hypothesis whether there is a significant difference as regards to the number of agriculture, animal husbandry, and fisheries based live-phone-in programmes. The result shows the test statistic $F_{Cal} = 69.85 > F_{Crit} = 3.89$ at $\alpha = 0.05$. The *P* value for the *F* statistics is less than the α value, that is, 0.05. Since the test statistic is much larger than the critical value, the null hypothesis of equal population means is rejected, and it is concluded that there is a statistically significant difference among the three sectors, that is, agriculture, animal husbandry, and fisheries with regard to the number of live-phone-in programmes telecasted on DD Bangla in W. B.

As seen from the Table 4, 80.20% of recorded field based programmes were related to agriculture followed by fisheries (10.11%) and animal husbandry based topics (9.69%). It is also clear from the Tables 3 and 4 that fisheries based recorded programmes were telecast more in comparison to the live-phone-in programmes. ANOVA with one way classification was done to test the hypothesis whether there is a significant difference as regards to the number of agriculture, animal husbandry, and fisheries based recorded field based programmes, and it was found that $F_{Cal} = 15.51 > F_{Crit} = 3.89$ at 5% level of significance. With this, the H_0 was rejected leading to the conclusion that there is a significant difference among agriculture, animal husbandry, and fisheries with regard to the number of recorded field based programmes telecasted on DD Bangla .

Further content analysis of fisheries based television programmes of *Krishi Darshan* telecasted on DD Bangla was performed and the results are presented in the Table 5. It is observed from the Table 5 that in case of fisheries based programmes, majority of the topics were related to fish breeding, seed production, and hatchery management (28.72%) followed by general fisheries based topics, scientific aquaculture practices (20.21%), and brackish water aquaculture (11.70%). With reference to episodes related to pond and water quality management and pisiculture through SHGs, only one programme from each category had been telecast.

Table 5. Content Analysis of Fisheries Based Programmes on *Krishi Darshan*

S. No.	Topic	2008 Recorded	2008 Live	2009 Recorded	2009 Live	2010 Recorded	2010 Live	2011 Recorded	2011 Live	2012 Recorded	2012 Live	Total	%
1	Fish breeding, seed production, and hatchery management	10	1	3	0	3	1	4	1	4	0	27	28.72
2	General fisheries based topics and scientific aquaculture practices	9	0	0	0	2	0	2	1	4	1	19	20.21
3	Brackish water aquaculture	4	0	1	0	1	0	3	0	2	0	11	11.70
4	Ornamental fish farming	5	0	0	0	2	0	1	0	0	0	8	8.51
5	Fish health management	0	0	0	2	1	1	0	2	0	1	7	7.45
6	Prawn farming	1	0	0	0	1	1	1	0	1	0	5	5.32
7	Seasonal fish farming	0	0	0	2	0	0	1	2	0	0	5	5.32
8	Integrated fish farming	0	0	0	0	0	2	0	0	1	1	4	4.26
9	Culture of endangered fish species and its conservation	0	0	0	0	0	1	0	1	0	0	2	2.13
10	Women in fisheries	0	0	0	0	0	0	1	1	0	0	2	2.13
11	Fish processing technologies	0	0	0	0	0	0	0	0	1	1	2	2.13
12	Pond and water quality management	0	0	0	0	0	0	0	0	1	0	1	1.06
13	Pisiculture through SHG	1	0	0	0	0	0	0	0	0	0	1	1.06
	Total	30	1	4	4	10	6	13	8	14	4	94	

Source: Telecast Register, *Krishi Darshan*, DDK-Kolkata

Table 6. ANOVA Table of Fisheries Based Programmes (Both Live & Recorded)

Source of Variation	SS	df	MS	F	P-value	Fcrit
Between Groups	19.91	4.00	4.98	1.18	0.33	2.51
Within Groups	273.86	65.00	4.21	-	-	-

Source: Statistical Analysis

Results of ANOVA (Table 6) with one way classification was done to test the null hypothesis that there is no significant difference as regards to the number of different fisheries based programmes across the years (2008-2012) and the H_0 was accepted because $F_{Cal} = 1.18 < F_{Crit} = 2.51$ at $\alpha = 0.05$, leading to the conclusion that there is no significant difference among the numbers of different topics of fisheries based programmes telecasted on *Krishi Darshan*.

Conclusion

In India, West Bengal is the topmost state in fish production, with both inland and marine production being 15.38 lakh tonnes (Ghosh, Sharma, and Ambulkar, 2013), even then, only 94 (8.39%) programmes related to fisheries based topics had been telecast during the last five years as compared to 931 (83.13%) numbers in agriculture and 95 (8.48%) in animal husbandry. So there is a need to increase the number of fisheries based programmes so that fishers and other stakeholders can get acquainted with the recent advancements in fisheries and aquaculture. As far as the lesser number of fisheries based programmes in comparison to agriculture based programmes being telecasted is concerned, special initiatives are being taken by the *Krishi Darshan* unit, DDK-Kolkata in collaboration with State Agricultural Universities (SAUs) and Department of Fisheries, Government of W. B.

Research Implications

Fisheries and aquaculture play a predominant role in W.B., and the demand of fish is so high that at present, the state fish production is unable to meet the demands. There are different schemes, plans, and programmes being

implemented by the State Government to reduce this gap. In addition to strategies related to production, there is a dire need of effective extension strategies, including popularization of fisheries and aquaculture based television programmes, which have wide reach and effectiveness (Ghosh, Sharma & Das, 2013).

Acknowledgment

References

Ayyappan, S., Jena, J. K., Gopalakrishnan, A., & Pandey, A. K. (2011). *Handbook of fisheries and aquaculture* (pp. 1-25). New Delhi: Directorate of Information and Publications on Agriculture, Indian Council of Agricultural Research.

Berelson, B. (1952). *Content analysis in communication research*. New York: Hafner.

Das, D. K., & Bhaskaran, V. (2008). *Research methods for social work* (pp. 173 - 193). New Delhi : Rawat.

Doordarshan Kendra (DDK)-Kolkata. (2012). *Telecast register* (2008-12). Krishi Darshan, Doordarshan Bhawan, Golf Green City, Kolkata.

Ghosh, A. (2013). *Effectiveness of fisheries based television programmes in West Bengal* (pp. 3-5, M.F.Sc. Dissertation). Central Institute of Fisheries Education (Deemed University) : Mumbai.

Ghosh, A., Sharma, A., & Ambulkar, R. (2013). Seed Mahotsav scheme for increasing the scope of indigenous fish marketing in West Bengal: Perception and constraint analysis. *Indian Journal of Marketing, 43* (9), 25-31.

Ghosh, A., Sharma, A., Das, S. K. (2013). 4 P's model for effectiveness of fisheries based television programmes. *International Journal of Research in Applied, Natural and Social Sciences, 1* (6), 27-34.

Holsti, O. R. (1968). Content analysis. In G.Lindzey & E.Aronson (Eds.). *The handbook of social psychology* (2nd ed., pp. 596-692). New Delhi: Amerind Publishing Co.

Kerlinger, F. N. (1986). *Foundations of behavioural research* (3rd Ed.). New York: Holt, Rinehart and Winston.

Nachmias, D., & Nachmias, C. (1976). *Content analysis. In research methods in the social sciences* (pp. 132 - 139). UK : Edward Arnold.

Prakash, S., Kumar, M., & Prakash, G. (2012). An analysis of TV advertising and usage of celebrity endorsers: A content analysis approach. *Indian Journal of Marketing, 42* (7), 36-44.

Wimmer, R. D. & Dominick, J. R. (1994). *Mass media research: An introduction* (4th Ed.), California: Wadsworth.