Environmental Pollution and its Impact on Coastal Inhabitants in Kanyakumari District

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ABSTRACT

The advancement of speed culture led the people to be very much time conscience. As a result, lot of innovation and invention took place in the society which in turn polluted the environs. Knowingly or unknowingly the human beings, flora and fauna all are prone to pollution which is susceptible to environmental related diseases. Therefore this paper is an indicator to show how the people in the coastal villages are affected due to environment and marine pollution. Results from 225 samples measures that there is a significant difference in pollution in almost all the sample villages. Eventhough people are aware of pollution, they are helpless and unable to minimize or eradicate the same. It becomes the slow poison which they consume day by day. Hence the government has to enact rules and regulation strictly to reduce or minimize the pollution in the country, particularly in the coastal villages. Otherwise the 14.47 million fishermen who contribute one per cent to India's GDP will be affected vulnerably. It is the need of the hour to be addressed to all walks of life through advertising campaign or any form of awareness programme.

Keywords: environmental pollution, coastal populace, environment related diseases

Introduction

The world is the beautiful creation of God. In the initial stage everything was balanced on the earth. Environment was pure and fresh. It helped the animals, plants and all the living beings. Human lives together in the society and their rituals always played a vital role for their development. Due to this development and modernization the environment is polluted considerably. Today, Environmental pollution is one of the most serious problems faced by both humanity and other life forms on the planet. Particularly the pollution in the coastal villages is unimaginable and it affects the life of 14.47 million of fishermen in India. Several research point out that due to human activities on land account for about 75 per cent of the marine pollution worldwide. Most nutrients, sediments, pesticides, heavy metals, pathogens, and thermal pollution entering the seas come from land –based sources, such as sewage, forestry and farming activities, industrial discharges, mining and landfill sites. This in turn affects the coastal waters and estuaries which are valuable marine breeding grounds. They cause algal blooms, deplete water of oxygen, impede photosynthesis below surface waters, destroy marine life and contribute to the increased incidence of toxic algal blooms that release toxicants which are harmful to fish and other marine inhabitants.

Statement of the Problem

With the advancement of civilization, the earth is polluted to the maximum. Forest is converted into agricultural field and then agricultural field into village and then on villages into towns. Population explosion and urbanization badly affect the atmosphere. The environmental problems in India are growing rapidly. The increasing economic development and a rapidly growing population that has taken the country from 300 million people in 1947 to more than 1.27 billion people today is putting a strain on the environment, infrastructure, and the country's natural resources. Industrial pollution, soil erosion, deforestation, rapid

industrialization, urbanization and land degradation are all worsening problems. At this juncture the researcher wants to know what the factors that pollute the marine environment are and whether the coastal inhabitants are aware of its pollution and its impact in the coastal villages. To fill this gap this research study is undertaken.

Objectives

The primary objective of this paper is to analyze and measure the extent of pollution in the three taluks of coastal villages in Kanyakumari District in terms of awareness, factors influencing, and its impact in the study area.

Methodology

There are thirteen coastal districts in Tamilnadu. The researcher has purposively selected Kanyakumari District for this study which is in the southernmost tip of Indian Peninsula and closely linked with the coastal villages of Kerala. This district is divided into four taluks namely, Agastheeswarm, Kalkulam,Vilavancode and Thovalai. Among these four taluks, Agastheeswarm, Kalkulam and Vilavancode are in the coastal belt. The coastal belt of this district has a length of 71.5Kms (India's total coast line is 8118km) with 47 coastal villages. The researcher has selected the coastal taluks where in the villages which have the highest and lowest population on the basis of multi stage sampling. Further the respondents are chosen on the basis of simple random sampling basis. The collected data had been analyzed with the help of the statistical tools like one sample ANOVA with post hoc test using Duncan Multiple Range Test (DMRT). The secondary data were collected from various books, journals and websites.

Table 1
Sample villages

Taluk	S. No	Name of the village	Total Population	No. of Sample
Agastheeswarm	1	Kanyakumari	7770	50
	2	Siluvaiyanager	397	25
Kalkulam	3	Colachel	9947	50
	4	Chinnavalai	1248	25
Vilavancode	5	Neerodi	7035	50
	6	Helen colony	1031	25
		Total	**27428**	**225**

Source: Marine Fisheries Census 2010, Part – II (4) – Tamilnadu, Government of India, Ministry of Agriculture, New Delhi, p.107.

Results and Discussion

Pollution creates havoc in the life of the inhabitants, flora and fauna. As a result knowingly or unknowingly they are affected by various ailments. Fishermen, in general solely depend upon the sea for their livelihoods and are tremendously affected due to domestic,

industrial sewage, toxin and chemical particles which reduce the fish stock as well as harms the species in the sea.

Table -2

Villages with Pollution

Factors	Villages						F-value	P- value
	Kanyakumari	Siluvaiyanager	Colachel	Chinnavalai	Neerodi	Helen Colony		
Awareness about Pollution	47.44^{bc} (10.412)	42.00^{ab} (9.101)	46.84^{bc} (13.281)	44.48^{abc} (12.603)	40.12^{a} (8.373)	50.04^{c} (13.903)	3.973	<0.002**
Factors contributing to Marine Pollution	36.56^{a} (8.956)	42.96^{c} (4.869)	40.10^{abc} (8.227)	38.88^{ab} (7.677)	43.90^{c} (5.607)	41.40^{bc} (8.155)	5.664	<0.001**
Impact of Environment Problems	28.48^{a} (9.633)	32.68^{b} (7.004)	25.92^{a} (4.681)	26.52^{a} (6.893)	37.60^{c} (6.041)	26.52^{a} (7.693)	18.158	<0.001**
Impact of Coastal Pollution	35.30^{a} (6.674)	43.44^{c} (4.292)	37.66^{ab} (5.498)	38.28^{b} (5.397)	46.78^{d} (2.720)	44.28^{c} (40.61)	34.282	<0.001**

Source: Computed Data

Note: 1. The value within bracket refers to SD

2. ** denotes significance at 1% level

3. *Different alphabet between villages denotes significance at 1% level using Duncan Multiple Range Test (DMRT)

Since, p value is less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence it is concluded that there is a significant difference among Kanyakumari, Siluvaiyanager, Colachel, Chinnavali, Neerodi and Helen colony with respect to awareness about pollution. Based on Duncan Multiple Range Test (DMRT), the respondents of Neerodi and Helen colony (VilavancodeTaluk) are significantly differ from Kanyakumari, Siluvaiyanager, Colachel and Chinnavali at 1% level towards awareness about pollution but Kanyakumari and Colachel are similar towards awareness about pollution. It is noted that Chinnavilai village is corresponding with all the selected villages. Since, p value is less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence it is concluded that there is significant difference among Kanyakumari, Siluvaiyanager, Colachel, Chinnavali, Neerodi and Helen colony with respect to factors contributing to marine pollution. Based on Duncan Multiple Range Test (DMRT), the respondents of Kanyakumari is significantly differ from Siluvaiyanager, Colachel, Chinnavali, Neerodi and Helen colony at 1% level towards factors contributing to marine pollution. It is noted that Colachel village is alike with all the selected villages. Since, p value is less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence, concluded that there is significant difference among Kanyakumari, Siluvaiyanager, Colachel, Chinnavali, Neerodi and Helen colony with respect to environment problems. Based on Duncan Multiple Range Test (DMRT), the respondents of Siluvaiyanager and Neerodi are significantly differ from other selected villages at 1% level towards environmental problems. It is noted that Kanyakumari, Colachel, Chinnavali and Helen colony are parallel towards environment problems.

Since, p value is less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence it is concluded that there is significant difference among Kanyakumari, Siluvaiyanager, Colachel, Chinnavali, Neerodi and Helen colony with respect to coastal pollution. Based on Duncan Multiple Range Test (DMRT), the respondents of Kanyakumari, and Neerodi significantly differ from other selected villages at 1% level towards costal pollution. The following table clearly depicts the factors as per the taluk wise.

Table - 3
Taluk with Pollution

Factors	Taluk			F-value	P-value
	Agastheeswarm	Kalkulam	Vilavancaode		
Awareness about Pollution	45.63 (10.262)	46.05 (13.022)	43.43 (11.458)	1.101	0.334
Factors contributing to Marine Pollution	38.69[a] (8.368)	39.69[a] (8.017)	43.07[b] (6.618)	6.634	< 0.002**
Impact of Environment Problems	29.88[a] (9.018)	26.12[b] (5.477)	33.91[c] (8.426)	18.713	< 0.001**
Impact of Coastal Pollution	38.01[a] (7.099)	37.87[a] (5.436)	45.95[b] (3.574)	51.852	< 0.001**

Source: Computed Data

Note: 1. The value within bracket refers to SD
2. ** denotes significance at 1% level
3. *Different alphabet between taluk denotes significance at 1% level using Duncan Multiple Range Test (DMRT)

Since, p value is greater than 0.05, the null hypothesis is accepted at 5% level of significance. Hence it is concluded that there is no significant difference among Agatheeswarm, Kalkulam and Vilavancode with respect to awareness about pollution. Since, p value is less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence it is concluded that there is significant difference among Agatheeswarm, Kalkulam and Vilavancode with respect to factors contributing to marine pollution. Based on Duncan Multiple Range Test (DMRT), the respondents of Vilavancode taluk is significantly differ from Agatheeswarm and Kalkulam at 1% level but Agatheeswarm and Kalkulam are similar towards marine pollution. Since, p value is less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence it is concluded that there is significant difference among Agatheeswarm, Kalkulam and Vilavancode with respect to impact of environment problem. Based on Duncan Multiple Range Test (DMRT), the respondents of Agatheeswarm, Kalkulam and Vilavancodetaluk significantly differ from each other at 1% level towards environment problems.

Since, p value is less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence, it is concluded that there is significant difference among Agatheeswarm, Kalkulam and Vilavancode with respect to impact on coastal pollution. Based on Duncan Multiple Range Test (DMRT), the respondents of Vilavancode taluk significantly differ from Agatheeswarm and Kalkulam at 1% level but Agatheeswarm and Kalkulam are similar towards coastal pollution.

Findings

- The respondents of the Neerodi and Helen colony (VilavancodeTaluk) are significantly different from the sampling villages of Kanyakumari, Siluvaiyanager, Colachel and Chinnavali at 1% level towards awareness about pollution. It is inferred except Neerodi and Helen colony the rest of the villages are tourist places wherein the people do have great amount of awareness regarding pollution and its impact.
- The respondents of Kanyakumari is significantly different from Siluvaiyanager, Colachel, Chinnavali, Neerodi and Helen colony at 1% level towards factors contributing to marine pollution. It is inferred that around Kanyakumari there are many hotels and they pollute the sea by letting the wastage and sewage into the sea.
- Based on Duncan Multiple Range Test (DMRT), the respondents of Kanyakumari, and Neerodi significantly differ from other selected villages at 1% level towards coastal pollution. It is inferred that even these villages are thickly populated and many houses are situated near the sea shore which in turn pollute the sea .Moreover, Kanyakumari comes under the preview of town panchayat which do not dispose the wastage as it is regularly done in Colachel, because it is the municipality area.
- The respondents of Vilavancode taluk are significantly different from Agatheeswarm and Kalkulam at 1% level of significance but Agatheeswarm and Kalkulam are similar towards marine pollution. It is inferred except the Vilavancode taluk, the coastal village of Neerodi comes in between, i.e. the border of both the State of Tamilnadu and Kerala ,while in Helen colony, people are settlers and there is a huge waste land between the sea and the houses of the people.

Suggestions

- The municipality authorities or town panchayat can regularly collect garbage and dispose it in an appropriate place and set up recycling industry in the study area so that the sea may not be polluted due to the arrival of tourists since Kanyakumari district is one of the potential tourist places.
- The Government can construct proper drainage channels to dispose the household wastages which inturn may not pollute the sea water.
- The Government can set up a special monitoring force to impose certain penalties for all those who pollute the common places as well as the sea, as it has been practised in the developed countries.
- The Government can create awareness to the general public especially to the fishermen about the evil effects of pollution with the help of NGOs as well as through student communities in the form of street display or role play.
- The Central Government either should ban the manufacture of single – use plastic bags or the cost of bags must be very expensive in order to minimize the usages of plastic bags.

Conclusion

Scientists believe that due to environmental pollution the climate changes would increase the number of deaths and illnesses due to infectious diseases. It is estimated that due to pollution the global temperatures might increase by 1 to 3.5 degrees centigrade by the year 2100. Hence pollution is the major concern for every one of us. So every citizen of our

country, without any monitoring activities by the local authorities, should not pollute the environs with contaminated substance. Otherwise whatever wealth we leave to our younger generation, and happiness go in vain without proper or sound health.

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