Journal of Scientific Temper
Vol 5(1-4), Jan-Dec 2017, pp. 34-44

RESEARCH ARTICLE

Gatekeeping Eco-Media S&T Information for Newspapers

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ABSTRACT

Gatekeeping is a process where selection and rejection of a particular information is executed in media houses. Protection of water-bodies and eco-sites through communication is essential. Unearthing the scientific facts behind each eco-site and communicating this information to people passing through the gates of local newspapers is the objective of this study. This study concentrates on eco-sites that are damaged by human activities, pollution, etc. Key science communication messages are generated at eco-sites for the media to inculcate scientific temper on ecological issues among the public. It also involves engaging the local community to protect and conserve the eco-sites, and disseminating the scientific information on pressing issues pertaining to the eco-sites to newspapers.

The results are an analysis of the outcome of Science Communication activities in newspapers and raising awareness on eco-water issues. Science Communication is a combination of several components including dissemination of S&T information, activities, community engagements, etc. These components act as an influence in Gatekeeping for communicating science to the common people.

KEYWORDS: Gatekeeping, Eco-sites, Eco-media labs, Science literacy, Scientific temper

Introduction

India is a developing nation, where science communication is considered one of the essential tools for making it a developed nation. However, in India, science communication is the media's least concern. Patairiya's (2002) study shows that only three per cent of the total space is allocated for Science and Technology (S&T) coverage by Indian mass media. Less coverage of S&T

communication in newspapers is one of the principal reasons for the slow rate of development of the society.

The ecosystem consisting of water-bodies, including tanks, ponds, rivers, and catchment areas is being affected by climate change, environmental pollution, and abuse of land and resources. These damages have created a chain of severe problems in water supply, and they are the cause of most diseases, poverty, and impact on socio-economic development. Scientific information behind these issues often does not get a place in news publications.

The basic needs of our society — access to safe drinking water, adequate sanitation, and proper hygiene — cannot be fulfilled without protecting water resources. Lack of basic scientific knowledge or ignoring the responsibility of protecting water bodies, failing to save them from pollution, encroachments, and unscientific practices are leading to water shortage in rural and urban areas. The role of newspapers in engaging ecological sciences among the public is the need of the hour.

News Gatekeeping is a process where selection and rejection of a particular information is executed in media houses. Unearthing the scientific facts behind each ecological site and communicating this information to the common man through passing the gates of local newspapers are the objectives of this study.

Aim of the Study

The primary objective of this study is to analyse the contents of newspapers' reporting, which are outcomes of engaging the public and media with science at the local sites of ecological importance. The analysis will be done based on the theories of News Gatekeeping and Models of Science Communication.

Methodology

At the first level, this study was carried out in the eco-media labs at field locations for unearthing scientific facts behind the state of the eco-sites. A pre-campaign was carried out at all these sites to involve the local public for community learning of scientific facts, and during the in-campaign, media persons were also included.

The campaign involved six eco-sites that have been damaged by human activities, pollution, etc. Key science communication messages were generated at the eco-sites for the media to protect and inculcate scientific temper on ecological issues among the public. Eco-sites including rivers, tanks, and streams from the southern districts of Tamil Nadu were covered in this study. This study is a part of an on-going project of the National Council of Science and Technology Communication (NCSTC), DST, Govt. of India.

The research engaged the local community and local media to protect and conserve the eco-sites and disseminate the scientific information on pressing issues of the eco-sites. The outcome of this *Science in Action* at ecological locations is ecological S&T information published in the newspapers. This information was further analysed in this research paper to see an understanding of science by its newsworthiness — which is an important factor of news gatekeeping.

Results and Analysis

The change seen during the activities of renovation, restoration and cleaning by this initiative along with public and media, has enlightened the eco-activism. Key science communication messages generated at the eco-media lab were helping along with the media to protect water bodies and inculcate scientific temper on ecological issues. These news publications helped the audience around the eco-sites to understand and develop creative solutions for the continuation of the restoration work.

The S&T Communication at the eco-media lab engaged the local community, and demonstrated the importance of behaviour change, methods of restoration, sustainable protective works and also kindled a love for nature.

Understanding of Science by Journalists

Statement Revisited (2011), called the 'Palampur Declaration on Scientific Temper', argues that our education system has still not sufficiently evolved to inculcate scientific temper among younger minds. In media houses, coverage of science is a low priority as it is not considered attractive for the audience. Only if the individual

news reporter or editor thinks that the information is fit for publication, the information can pass through the gate. The Gatekeeping theory put forth this as an individual level for opening or closing the gate.

Every day, a journalist has an opportunity to meet with science. If a journalist sees the issues and events from a scientific angle, he can blend the scientific information in the everyday routine. However, many journalists miss the opportunity to see the news items from the scientific angle. This research engaged journalists at eco-sites, so the individuals execute their powers in selecting particular information.

Newsworthiness of Six Eco-Water Sites

Newsworthiness is determined by news values and influences. Galtung and Ruge (1965) charted out 12 news values and Shoemaker and Vos (2010) have categorically analysed the levels of influences in the gatekeeping procedures. Science information and news items are not given adequate importance as far as placement in the pages is concerned.

Except science news items in science pages, the issues of social importance also need to be seen through the scientific angle. Better understanding of the issues with scientific background will lead to scientific solutions.

In the case of Kirudhumal River in Madurai city, the newspapers occasionally publish news items on the issues of sewage and blockages. The river had once overflowed with water like flash floods in Madurai, now the condition of its death has become newsworthy for newspapers. The issues of blockage, discharge of septic tank, sewage, plastic, polythene and toxic wastes were explained on the beds of the river to the media and the public. These wastes are choking the river. The state of this river has affected 15 thousand acres of agricultural irrigation area in about 150 villages. The establishment of a connection between the Public and Media at the eco-site has generated more understanding of the issues related to the river by this intervention.

Another river in Thirumangalam, Madurai Dt, Gundar River has issues including insufficient rainfall in the catchments, encroachments, over growth of *Prosopis juliflora* trees on the

beds, and illegal sand quarries having stopped the river's flow. Farmers have been requesting to get water from Vaigai and to implement the inter-linking project of Cauvery, Vaigai and Gundar. But the encroachments and *Prosopis juliflora* have impacted the water in the river. However, often this river is forgotten by mainstream newspapers. This particular intervention yielded newspapers' attention on the above said issues.

Varushanadu is a place where the Vaigai river originates. On the beds of catchments, garbage, needles, drug bottles and polythene items are embedded in the sand. These items were displayed to media persons during the removal through the cleaning of a particular stretch.

Teppakulam, Madurai is the largest temple tank in Tamil Nadu. It faces issues including burning plastic, Styrofoam wastes that were thrown away from nearby shops and eateries leaving carcinogens in the air. This threatens the residents with several health hazards including cancer. And this place is used as a place of open defecation too. For the first time the issue of association of carcinogen release in air from burning of Styrofoam was reported by the media.

Unlike any other rivers in Tamil Nadu, Vaigai River has been praised in Sangam literature about 2000 years ago. When Sangam poet *Mangudi Kilaar* mentioned about the resource of the land of Pandiyas in Madurai Kanchi, he said rain filled up Vaigai and in turn the river filled up the tanks and irrigated agriculture lands with water. Now in Madurai underground bore well pipes have reached to 350 feet in average.

Vaigai which used to run with water throughout the year is now carrying water only for few days in a year. Vaigai, which is normal near Sholavandan, gets polluted by human activity as soon as it enters Madurai city. The riverbed has become a dumping ground for the city's waste. For the first time, media, youth and public witnessed how plastics go a few feet under the river bed which has no sand.

Tourist places face severe ecological problems. If a place located in the hills is polluted, the problem is carried over to the plain areas too. *Bear Shola falls* is located in Kodaikanal, the crown of Palani hills. It is a place of nature's bounty in the laps of

skyline shola trees. As South-West and North-East Monsoons failed fewer amounts of water flow very slowly in these falls. Kodaikanal hills are famous for their tourism potential, but are today facing ecological challenges. The falls are littered with plastics and polythene.

Public Understanding of Science

THE TIMES OF INDIA, MADURAI
FRIDAY, OCTOBER 21, 2016

TIMES CITY / REGION

Students, locals clean dirty Kiruthamal river

TIMES NEWS NETWORK

K Antony Xavier

Madurai: As part of the cleaning initiatives of water bodies, students and faculties of the department of communication at the Madurai Kamaraj University along with people from Achampathu village cleaned Kiruthamal river bed on Thursday.

The drive was supported by the department of science of technology, Government of India. The team had cleaned a segment of Nilayur canal and removed Prosopis juliflora trees, plastic waste and construction debris on October 18. On Wednesday, the team took up cleaning up work at Pulloothu stream by removing bushes, alcohol bottles and plastic waste.

On Thursday, they cleaned Kiruthamal River, which is running around Madurai city as a garland, thus deriving its name. The river is highly polluted with sewage waste, plastic and other solid waste. The river that originates as streams from the Nagamalai Pudukottai hills runs around Madurai city and drains into Gundaru basin in Ramanathapuram district. Considered sacred, it finds mention in Tamil literature. Sadly it has been reduced as a sewage carrier.

People conducting cleaning of Nilayur channel as part of cleaning of Kiruthamal river

During this campaign, the science behind the death of a river was explained to the community and the press. Liquor bottles, plastic, and polythene were removed along with the shrubs from the river bed in the Erkudi-Achampathu village. Then in the campaign activity three newspapers were encouraged to write about the present condition of the river (*Times of India*, 2016).

கருவேல மரங்களை அகற்றி திருமங்கலம் குண்டாற்றில்
பராமரிப்பு பணிகள் மேற்கொண்ட சமூக ஆர்வலர்களுக்கு பொதுமக்கள் பாராட்டு

Prosopis juliflora trees grown near the Aarukan Bridge in Thirumangalam were removed during the in-campaign activity. This initiative increased the media sensitivity about the river. '15 years ago, Gundaru river was the main source for drinking water for Thirumangalam city. Now, the river carries water during rainy days only.' (*Dinabhoomi*, 2016)

After the campaign with the public and showcasing them the pollution on the catchment beds, the newspaper reported that 'The Catchment area of Vaigai river in Varushanadu becomes an open defecating area, where large quantity of sewage also flows in. If this catchment area is polluted, the pollution will be carried into six districts, that will cause health risks.' (*Dinamalar*, 2016)

S CITY

THE TIMES OF INDIA, MADURAI
WEDNESDAY, OCTOBER 26, 2016 3

Mariamman tank cries for attention as people make it a place to poop

Open Defecation, Urination Threatens Temple Tank

TIMES NEWS NETWORK

Madurai: Mariamman Teppakulam is one of the important landmarks in the city and a popular hangout spot among residents. Despite this, the area around the temple tank – one of the biggest such tanks in the state – stinks due to open urination and defecation. The tank has also turned into a dumping ground for liquor bottles and plastic waste.

According to a legend, the soil excavated from this place was used in the construction of the Meenakshi temple during the Nayak rule in Madurai. With a dimension of 305 metres in length and 290 metres in width, the Mariamman Teppakulam is only next to the Tiruvarur temple tank in size. It is in this tank where the annual float festival is held in the Tamil month of 'Thai'. Besides, the tank is also a favourite place among morning and evening walkers.

In spite of all these significances, the tank is in a bad shape. "There is very little maintenance or security arrangement during night. We have been working on a proposal for setting up high mast lights on all four corner. However, it is yet to materialize," said former Madurai South MLA, R Annadurai. The demand to store water in this temple is yet to come to fruition.

Though there are two pay & use toilets at the remote corners of the tank, not many prefer to use them for relieving themselves. "Open urination has become a menace. Further the vendors are dumping all 'use&throw' cups and plates inside. The worst part is that they burn these items made of Styrofoam which is carcinogenic," said S Nagarathinam, head of department of Communication, Madurai Kamaraj University.

Residents said that establishing basic amenities, especially adequate toilet facilities, near the tank is important to maintain hygiene in the area. "Till the city corporation establishes permanent toilet facilities, at least mobile toilet facilities could be placed to eliminate open urination inside the tank," said Selvam Ramasamy, a social activist in the city.

A number of other temple tanks in Madurai, like Naina Teppakulam, Elukadal Teppakulam and Valaiveesi Teppam have all disappeared in the urbanization spree, according to the booklet, Neerindri (Without Water) by Dhan Foundation.

STATE OF NEGLECT

- With a dimension of nearly 350 metres in length and 290 metres in width, the Mariamman Teppakulam is estimated to have been constructed by the Madurai Nayak king, Thirumalai Nayak in 1645 AD
- Next to the Tiruvarur temple tank in size, it has a spread area of 22.97 hectares with a storage capacity of 0.24 mcft water
- The float festival in the teppakulam during the Tamil month of 'Thai' attracts thousands of people across the region
- The tank was beautified with lights and meadows a few years back, but it all disappeared in no time

Volunteers take out 30 bags of trash from Teppakulam

TIMES NEWS NETWORK

Madurai: About 100 volunteers consisting of students and public took out a cleaning drive in Mariamman Teppakulam on Tuesday with the intention of sensitising public about keeping the water body clean. Students from Thiagarajar College, Fatima College and department of communication, Madurai Kamaraj University (MKU) and volunteers from various forums participated in the cleaning drive.

In September, the department of communication, MKU had organized a training programme for their students through National Council for Science and Technology Communication under department of science and technology, government of India about cleaning of water bodies.

With a core team of students from the university and accompanied by students of other colleges and public, the cleaning drive has been going on for the last few days. They had already cleaned the

LIQUOR BOTTLES, PLASTIC

Pulloothu stream, Nilayur channel, Kiruthamal river bed. As a next step, they began cleaning work in the Mariamman Teppakulam.

"We cleaned one part of Teppakulam and collected nearly 30 bags full of trash from the water body containing liquor bottles and plastic waste. During our cleaning drive in Moolavaigai – the originating point of Vaigai river – we found numerous liquor bottles, drug syringes and plastic wastes. Our water bodies are littered indiscriminately which is the reason we are carrying out these awareness drives," said S Nagarathinam from the department.

Along with cleaning drive, students also distributed pamphlets on sensitising public to keep water bodies clean from garbage. The department will take out cleaning drive in another five water bodies in the coming days.

K Antony Xavier

Students from Thiagarajar College, Fatima College and department of communication, Madurai Kamaraj University (MKU) and volunteers from various forums clean the tank on Tuesday

On 25 October 2016, during the cleaning drive, garbage was removed, and the activities were documented in Teppakulam Tank. 'Open urination has become a menace. Furthermore, the vendors are dumping 'use and throw' cups and plates inside the tank. The worst part is that they burn these items made of styrofoam, which is carcinogenic.' (*Times of India,* 2016) This S&T information is crucial for stakeholders who maintain the Tank.

Small stretch in Vaigai cleared of plastic waste

TIMES NEWS NETWORK

K Antony Xavier

Madurai: Students, social activists and public came together on Thursday under a common banner 'Save Vaigai' to clear a stretch of the river of its plastic waste.

The initiative was jointly undertaken by the Madurai Kamaraj University, American College, organisations such as Ilaya Thalaimurai, wishtohelp from Thirunagar, among others where about 200 people including students entered the river bed and cleaned a portion of the stretch between Kalpalam to AV bridge till afternoon.

The Madurai Corporation rendered the services of 10 of its conservancy workers as its contribution to the cleaning programme. Armed with brooms and rakes, they removed the plastics and at the end of the cleaning session they had collected two tractor loads of plastics from the riverbed.

The volunteers said they have not even cleared one-fourth of what is there in this short stretch and much more needs to be done. They had decided to clear the plastics in a particular stretch so that at least one particular place was cleaned.

Vaigai is the main source of water recharge for the city and as the flow of water has become scarce on the riverbed, the removal of the plastics was crucial to ensure that the ground water was recharged with whatever water was available, they added.

The students of American College, Madurai Kamaraj University and members of voluntary organisations cleaned a portion of the Vaigai River and removed plastic waste from the river bed on Thursday

The volunteers said they have not even cleared one-fourth of what is there in this short stretch and much more needs to be done. They had decided to clear the plastics in a particular stretch so that at least one particular place was cleaned

On 15 December 2016, as a part of the project #SaveVaigai Campaign, the plastic and polythene wastes were removed from a stretch in the riverbed near a bridge. A lot of young people participated in the campaign to protect the Vaigai River for the first time. 'The removal of plastics was crucial to ensure that the groundwater was recharged with whatever water was available.' (*Times of India*, 2016)

During the in-campaign activity, plastic, polythene and the garbage thrown by tourists that were hiding in the plants were removed. Along with that, shrubs were also removed. Plants with long thorns, buried plastics and wastes have also been removed. 'Buffaloes eat polythene and die of further complications.' (*The Hindu* — Tamil, 2016). The man-animal conflict was also explained to young participants and media.

Conclusion

Science Communication is a combination of several components, including dissemination of S&T information, activities, community engagement, etc. These components act as an influence in Gatekeeping for communicating science to the common people. The International Conference on Science Communication for Scientific Temper (2012) recommended that there is an urgent need to establish synergy between research and actual communication of science. For most people, the reality of science is what they read in the press (Nelkin 2001).

Without the understanding of science by journalists, creating public understanding will be an even tougher task for science communication in the society, which aspires for development.

An individual or public's interest, knowledge, activities, opinions, and attitude towards science are related to the public understanding of science. Whether Science Literacy, Scientific Temper or Public Understanding of Science, any or all of these necessitate our prior engagement with science as a behavioral process (Hak-Soo, 2012). The Science in Action events have opened the news gates successfully.

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