

# Science Communication and Community Radio: Challenges and Concerns

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## **Abstract**

Rajasthan has a population which is a geographically distributed, culturally varied, economically uneven, and heterogeneous in nature. In such a state where illiteracy is very low, disseminating science education and imparting information regarding threats to health, sanitation, cleanliness and natural and manmade disasters, is a challenge. To serve the edutainment needs of such a population, we require a communication system which can provide a medium of people's own i.e. community medium. This paper seeks to interrogate the role of community radio in making the uneducated or undereducated rural people aware of the issues related to science and daily life. The study has been conducted with special reference to Apno Radio Banasthali @ 90.4MHz which is the first community Radio station operating in rural Rajasthan at village Banasthali, district Tonk.

**Keywords:** Broadcasting, narrowcasting, science and community radio.

Rajasthan is the largest state of India. It exhibits a vast range of socio - cultural diversities corresponding to its geographical variations. South-east part of Rajasthan possesses semi-green forest of Mount Abu, northern and central Rajasthan has grasslands of the desert, the ranges of Aravali have dry deciduous thorn forest and in the eastern part there are waste lands of Bharatpur.

Official language of Rajasthan is Hindi but the primary spoken language is Rajasthani. There are various diversities in languages also for instance, Vagdi and Mevadi in south-east Rajasthan, Mewati in north-east and Dhoondhari in eastern parts of the State to name just a few.

To fulfil the information needs of such a State, the existing communication system which is Doordarshan as the only public broadcaster, is inadequate. Many private satellite channels are present in Rajasthan catering to their entertainment as well as information needs. Programmes broadcast by these stations have not been designed for the audience of Rajasthan alone, but for the national audience. Regional and local requirements remain unfulfilled. The condition is the same for the medium of radio.

All India Radio has 18 regional stations here but their programming has not been designed according to local requirements. Others are private FM stations which broadcast only for the urban audience primarily with a commercial purpose. They are hardly concerned with local problems, achievements and regrets of the people and the opportunity to participate is also very limited for them.

### **Role of Folk Media**

Rajasthan has a rich heritage of folk media like kathputli, bhajan, kirtan, folk lores, folk music etc. Popular forms of folk media like kathputli, folk lores and folk music have been very effective in disseminating information. They were used to spread awareness and force the audience to retain information. Ironically these folk media could not be nurtured and developed as proper public communication system.

### **Alternative Media**

A state like Rajasthan requires multi-media based pragmatic and solution-oriented system of balance and free communication at the village or regional level. The system which would also be participatory and decentralised would promote the tempo of even and equitable revival and developmental process in the future. This will naturally have to be a two way channel of communication, indicating a shift from the concept of linear or downward communication to a system that is multi-level, interactive, horizontal and involving more people. The system can be defined as narrowcasting system of mass communication. (Mahadevan, 2002)

The narrowcasting system of mass communication is a participatory and decentralized system of communication for rural areas. There is a need to investigate about the media and their programmes and demographic profile of the audience to determine which media mix should be used for what purpose and what strategies would be more relevant or appropriate. Community Radio is a medium of narrowcasting which works on the theory of participatory democracy, and committed to enhancing community relations and promoting community harmony. Community Radio represents an important site to illuminate the interpenetrations of local, regional and national cultures within and through communication technologies. Community radio provides a resource for a host of social, political and environment movements to local awareness of these pressing issues and is a vehicle to link local issues with global concerns. (Birowo, 2009)

In Rajasthan, people are generally not aware about science involved in daily life especially in rural areas. The issues like personal hygiene, awareness about nutrition and epidemic diseases like cholera, small pox, and plague etc., are not discussed sufficiently among rural people. Villagers themselves do not feel the need to know about such problems. Unfortunately the so called flood of information cannot provide adequate information to the common people in rural India. The present study aims to identify the role of community radio in addressing these issues.

### **Review of Literature**

Kanchan K. Malik (2012) confirms that as a community driven, volunteer- run, not-for-profit set up, the community radio sector in India must position itself differently in its process, approach, style, and substance in comparison to the state owned and commercial broadcasters. It is possible for community radio stations to challenge the hegemony of the mainstream media and its

programming methods only by developing rigorous and appropriate codes of conduct and practice in the spirit of self-regulation. The codes of practice for community radio in India are open to being adapted by different stations in the form and measure that the stations may deem appropriate. There is no single model that fits all.

Malik explains that the role of community radio leads to social change, enhanced community participation and nurtures cultural diversity. She also emphasises on the requirement to evolve the ways to make CRS self-sustainable.

Sekhar (2012) gives an account of the role played by community radio station at Anna University, Chennai during tsunami in the year 1994. In the emergency condition, student volunteers went to the affected area and provided minute by minute information about the relief operation, medical and other aid available. Later on, CRS educated people about tsunami and noticing these services, Ministry of Information and Broadcasting requested Anna University to set up similar kind of CRS at Nicobar Islands and to train local people there to run the radio.

Dr. K. John Babu (2010) opines that the radio lessons enhance the knowledge of the students and are also useful to the teachers. He suggests that the use of radio programmes in classrooms may not only help the teachers in multi-grade teaching to use supplementary devices for their better professional growth but also enrich students in respect of cognitive growth and provide an adequate inspiration.

Dr. Babu recommends that issues other than primary education may be taken up for further research, hence the proposed research aims to evaluate other developmental issues like health, agricultural practices and sanitation and proposed study is confined to the area covered by one community radio station.

The above study is an experimental study whereas the proposed study aims to evaluate a community radio working for more than five years for the target community.

According to Gopal Krishan Rao (2010), community radio is expected to focus on issues related to education, health, environment, agriculture, rural and community development. Cable community radio station as Namma Dhwani or our voices was set up earlier in Boodikote, Karnataka. The villagers believe that this radio station is ours because it speaks about us-in our language and in our accent. G.K. Rao opines that community radio is a new source of strength for poor people. It addresses their most basic development needs.

The study is not supported by collected data. It is based on personal observations of the author whereas the proposed study is trying to establish the role of community radio with sufficient data and data analysis.

Bazlur Rahman (2010) gives an account of status of community radio in Bangladesh as it has made its beginning in December 2010. He opines that the broadcasting of CR is going to bring about a qualitative change in the broadcast policies of the country. Introducing community broadcasting will be a significant step towards decentralizing the media system in Bangladesh. CR will not be able to get into the competitions of media market immediately, but it will not

doubt, add value to the plurality and diversity in a democratic media environment.

Birowo (2009) opines that in chaotic and uncertain situations related to natural disaster, information is important for people to understand their recent situation. This paper describes the role of community radio in its community, especially before, during, and after natural disaster in Indonesia. He observes one advantage of community radios after tsunami in 2004, that it could voice the interests of affected people. The radios were staffed by volunteer locals so it could interact directly with community members. According to Birowo, community radio can function as media for people's awareness about disaster risk management. With continuation of exposure, people will be aware about their situation, including the potential hazards from their environment. In this context, the greater the exposure to disasters, the greater is the interest in disaster management.

Birowo finds community radio very useful in Indonesia; it would be interesting to know whether community radio is equally useful in India especially at Rajasthan where diversities are prominent.

Kiran Prasad (2009) analyses the development models adopted in Kerala, Karnakata, Tamil Nadu and Andhra Pradesh. The author says that the key word for development is 'participation'. Most people in Kerala read the newspapers and discuss them. They also write letters to complain about problems and demand solutions.

The Karnataka model of development revolves around the concept of participatory governance with more power to the local bodies to resolve local development issues.

Prasad opines that the community radio is spurred on by new social movements and grass root organizations articulating alternative thinking and development and aims to be the voice of the voiceless, a mouthpiece of oppressed people, especially for those marginalized within a community on grounds of gender, caste, or class. He defines community radio as having three aspects: non-profit making, community ownership and control, and community participation. He gives an account of currently operative community radio stations but she lacks in her effort when she does not give any note on the development taking place due to these CRS. The study supports the participatory approach of development which is undertaken by the proposed study but it does not see any link between participatory approach and community radio. The proposed study aims to find whether community radio can be used as a means of participatory approach of development or not.

#### Area, Universe and Sample

The universe includes the whole population of the villages - Banasthali, Palai and Sunara.

Since the study area is vast, sampling method has been adopted for making estimates about the characteristics of the universe. In the proposed study, random sampling method has been used. Approximately, 250 respondents have been taken for the study.

Six villages under Radio Banasthali study area are nucleated villages around Apno Radio Banasthali. Banasthali, Palai and Sunara are within 2-3 km range whereas the area which is not covered by Apno radio Banasthali i.e. village Sindara, Khidgi and Jamdoli are 6-7 km away from it. The Radio-Banasthali study area located in Niwai Tehsil of Tonk District in Rajasthan State, 22 km. north-east of Tonk town. Banasthali and other villages are not connected by railway however a railway line is passing nearby but there is no railway station at any of the villages. One has to travel by road to reach to all of these villages from Niwai. Tonk is situated on N.H. 12. The Radio-Banasthali study area is surrounded by a series of villages within two to three kilometres. The nearest town, Niwai has the facilities of a post office, a hospital, a maternity home, a high school, and a college. It also serves as a marketing centre for Banasthali and other nearby villages.

The study area of Radio Banasthali is well connected through buses, vans and tempos. Private jeeps are available to travel. They are often overloaded and tend to get imbalanced. The State Transport buses plying between Niwai, Tonk and Jaipur touch Radio Banasthali's study area. The popular private transports in the area are motorcycle and jeep. The age old bullock-cart is almost obsolete for the purpose of transport. During the grain collection season, the bullock-cart cannot meet the requirements of moving heavy loads in a fast and cheap manner. This is done by trucks.

Apno Radio Banasthali@90.4 MHz is the first community Radio Station in Rajasthan. Radio Banasthali was launched in the year 2005. It reaches 50 villages around Banasthali.

#### Radio Workshops for Community Members

To make people aware about the CRS and its activities Radio Banasthali has organised many workshops for the community members. More than 200 community members residing in the villages around the campus of Banasthali Vidyapeeth have been trained in radio programme production and presentation techniques in the last seven years. These members are working as community volunteers in Radio Banasthali.

#### Creating Awareness in the Community

People residing in nearby villages are more active, attentive and ready to work towards health, nutrition, personal hygiene and environment. A change in the mind set of the people has been observed.

#### Radio Listener Clubs

Radio Listener Clubs have been created in villages by the village Youth Volunteers with the help from the supervisors and coordinators. These clubs meet at the time when the programmes are being broadcast. There are 10 Radio Listener Clubs in village Palai, Aliabad, Bidoli, Khandewat, Sonara, Sonari, Karanpura, Trilokpura, Banasthali and Haripura.

#### Participation

Approximately 3000 villagers from the community have been participating in programmes during the last seven years and around 5000 people of the community have taken part in live phone-in programmes through phone.

### Listenership

Around 15000 people of 50 villages are regular listeners of Radio Banasthali.

### Discussions

This CRS narrowcasts for 12 hours daily between 7.00 am – 11.00 am, 12.00-4.00 pm and 5.00-9.00 p.m. Radio Banasthali narrowcasts a programme ‘Vigyan aur Insaan’ and the programme is in the live phone-in format. The programme is designed in a way that an expert delivers a talk on any relevant science subject and the talk is followed by a question- answer round which is conducted as live-phone-in. Villagers associated with Radio Listener Clubs and the people who have done workshops with the CRS motivate other people to listen to the programme and ask as many questions as they can. Given below are some of those questions asked to the listeners:

#### Q.1-Do you listen to Apno Radio Banasthali?

Title	Sample	%
1. Yes	197	78.80
2. No	53	21.20
Total	250	100%

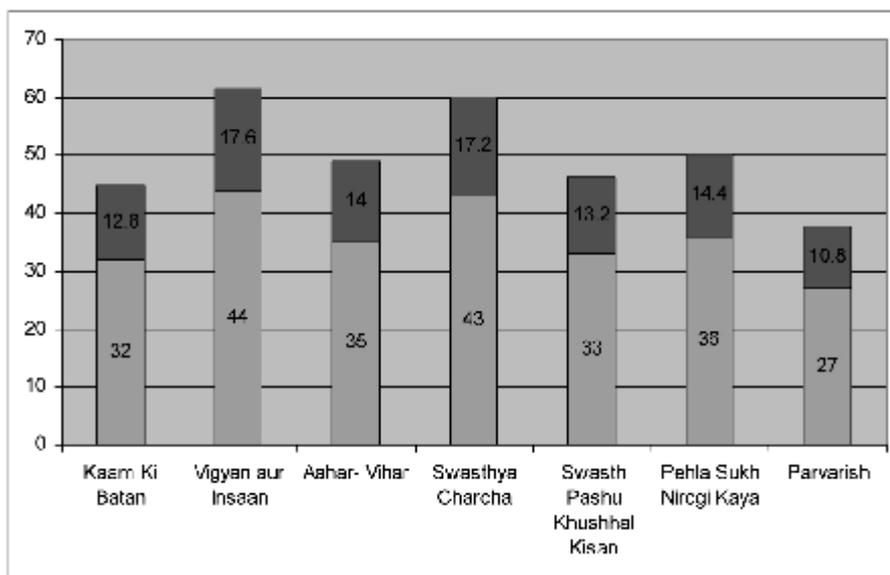
**Table no. 1: Distribution of population according to listenership**

#### Q.2-Which programmes do you like in Radio Banasthali?

Programme Name	Type	Sample	%
1. Kaam Ki Batein	Discussion	32	12.8
2. Vigyan aur Insaan	Live Phone-in	44	17.6
3. Aahar- Vihar	Talk	35	14
4. Swasthya Charcha	Discussion	43	17.2
5. Swasth Pashu Khushhal Kisan	Live Phone In	33	13.2
6. Pehla Sukh Nirogi Kaya	Live Phone In	36	14.4
7. Parvarish	Interview	27	10.8
<b>Total</b>		<b>250</b>	<b>100</b>

**Table no. 2: Distribution of population according to listenership of various programmes**

**Graph no. 1: Distribution of population according to listenership of various programmes**



(% may be >100% due to multiple responses)

Approximately 50-60% villagers could answer the questions which were asked to test their basic awareness about science related issues like mosquito control, vaccination of children and the importance of oxygen in our life etc.

Another programme 'Pahala Sukh Nirogi Kaya', which is also an interactive live- phone-in programme, highlights the excellence of radio as a mass medium being an interactive medium.

The programme provides a brilliant platform to the villagers to ask about any health related problem. Questions range from ailments like cough and cold to dangerous diseases like cancer and AIDS.

Sometimes people want to know about the right expert to see for consultation for specific diseases. They are informed adequately about the same.

'Aahar-Vihar' is a programme in which two anchors talk about health and nutrition.

'Swasthya Charcha' is a programme where an expert and an anchor discuss personal hygiene issues. Villagers were found to be aware of sanitation issues like the use of soaps, washing hands before and after eating, importance of toilets in the house and use of hygienic sanitary napkins.

'Parvarish' is an interactive line-phone-in programme where a platform has been provided to the village women to ask about caring and bringing up of children and their own personal health and maternity related issues.

'Kaam Ki Batein' is a programme where two anchors discuss about daily routine tips like how to repair electric torch, how to save LPG and how to use refrigerator.

**Q. 3- What are the Sources of drinking water in your area?**

Drinking Water	Sample	%
1. Scarcity	6	2.4
2. Unclean	60	24
3. Have to go far to fetch	31	12.4
4. Tankers	5	2
5. No Problem	90	36
6. Any other (Specify)	58	23.2
<b>Total</b>	<b>250</b>	<b>100</b>

**Table No. 3 : Distribution of population according to availability of drinking water source**

**Q.4-Do you know that unclean water can cause many diseases? Name a few.**

Title	Sample	%	Name of the diseases
1. Yes	186	74.4	Diarrhoea, Gastroenteritis, Hepatitis A, Typhoid, Malaria, Dengue etc.
2. No	64	25.6	
<b>Total</b>	<b>250</b>	<b>100%</b>	

**Table no. 4 : Distribution of population according to awareness regarding diseases due to unclean water**

**Q.5- What are the drainage/sewage facilities in your area?**

Title	Sample	%
1. Open drains	101	40.4
2. Clogging	64	25.6
3. No Municipal drainage system	44	17.6
4. No Problem	33	13.2
5. Others	8	3.2
<b>Total</b>	<b>250</b>	<b>100</b>

**Table no. 5: Distribution of population according to availability of sewage/ drainage facility**

**Q.6-Do you know about the diseases/ harm caused due to open sewage/drainage system? Name a few.**

Title	Sample	%	Name of the Disease
1. Yes	195	78	Malaria, Dengue, Brain Fever, Eye Discharge, Nasal Discharge, Cancer, AIDS etc.
2. No	55	22	
<b>Total</b>	<b>250</b>	<b>100%</b>	

**Table no. 6: Distribution of population according to awareness regarding diseases due to sewage/drainage problems**

With regard to drinking water, maximum respondents mentioned 'unclean water' (24%) as the main problem faced in terms of drinking water, followed by 'have to go far to fetch' (12.4%). A large share of population is unaware about the uncleanliness of drinking water condition and the people who are aware of the fact received information from Apno Radio Banasthali. Open drains and clogged drains were problems mentioned by 40.4% and 25.6% respondents respectively. The lack of a proper municipal drainage system was also mentioned by 17.6% respondents. Largely people are aware that they should get a clean and hygienic system of sewage and drainage. Role of the Community Radio and some non-government organizations is significant in disseminating this information among villagers. People who are aware about the diseases know about their names largely. Most of them were correct but some of them gave incorrect answers like they said that malaria is caused by unclean water or said that cancer and AIDS are the result of open drainage /sewage system.

**Q.7- What are the natural disasters that affect your area?**

<b>a) Natural Disasters</b>	<b>Sample</b>	<b>%</b>
1. Floods due to rain	6	2.4
2. Drought	158	63.2
3. Earthquakes	5	2
4. No Problems	61	24.4
5. Others (Specify)	20	8
<b>b) Man made Disasters</b>	<b>Sample</b>	<b>%</b>
1. Fire	5	2
2. Short-circuit	6	2.4
3. Riots	42	16.8
4. Damage by bad construction	34	13.6
5. Hooch - Illicit liquor	11	4.4
6. Accidents	45	0.18
7. No Problems	103	41.2
8. Other (Specify)	44	17.6

**Table no. 7: Distribution of population according to disasters faced in the area Q.8- Do you know how to handle these disasters? Name a few.**

<b>Title</b>	<b>Sample</b>	<b>%</b>
1. Yes	185	74
2. No	65	26
<b>Total</b>	<b>250</b>	<b>100%</b>

**Table no. 8 - Distribution of population according to awareness regarding measures to handle the disasters**

Droughts were mentioned by more than half of the respondents (63.2%) as the most problematic natural disaster, whereas riots and accidents were the most mentioned man-made disaster (16.8% and 17.18%). Other man-made disasters mentioned were 'damage by bad construction' and 'hooch-illicit liquor'. Most of the villagers who know about disasters are alert regarding their measures also. Apno Radio Banasthali has a significant role in making people conscious in this regard.

Environment/Animals/Health/Others: Among the environment-related issues, soil pollution, air pollution and water pollution were the most prominent (mentioned by 37.2%, 32.2% and 15% respectively). Traffic congestion and industrial pollution were other problems mentioned. In terms of animal-related problems, insects created the maximum problem (mentioned by 33.6% respondents), followed by rodents, lack of veterinary services and stray dog menace. Answers given by the villagers clearly indicate that their awareness about the problems but the unawareness about the solutions.

It was found that the mothers in villages get information from their school going children and rely on them the most.

In health-related issues, seasonal diseases were mentioned by about half the respondents (50.4%). Allergies, Malaria and Diabetes were also mentioned. It should be noted that 'poisonous insect' was mentioned by most respondents (95.7%).

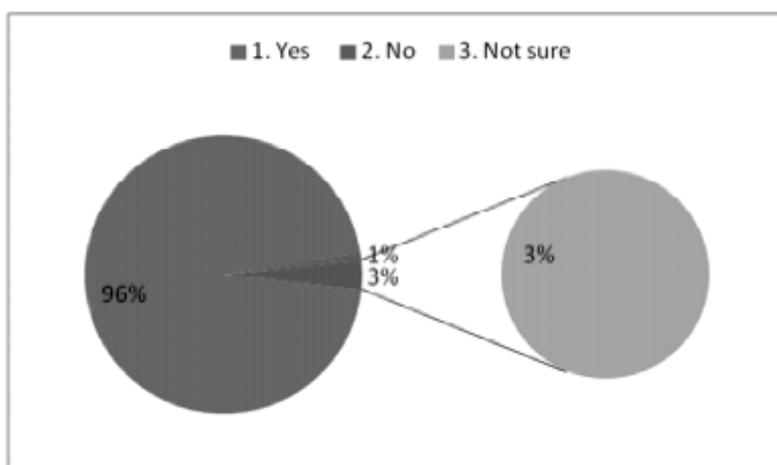
There are many other programmes being narrowcasted from Radio Banasthali which are dealing with folk music film music, career counselling and talking about the developmental activities taking place in the area. In this format interview of Sarpanch, Government officials and field visits are very popular.

S.No.	Disaster	Measure to prevent or handling Technique
1.	Draught	Water harvesting at fields and Homes, Check Dams, Anicut building.
2.	Riots	Maintaining Communal Peace, Informing Police and Administration etc.
3.	Accidents	First aid, Informing police, taking to the hospital etc.
4.	Fire	Arranging for water, Blanket, Soil etc.

**Table no. 9: Distribution of population according to awareness regarding measures to handle the disasters**

#### **Q.9-Can Radio Help in Finding Solutions?**

"It is good to see that most of the respondents (85.7%) believe that radio had the potential to find solutions to problems.

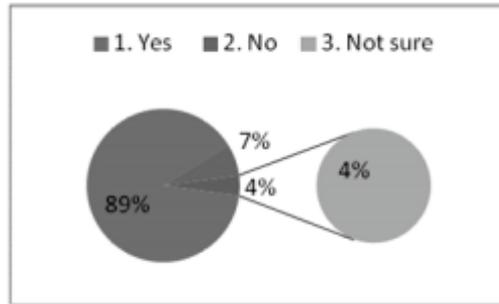


Graph no. 2

Q.10- Would you like to participate in Radio Programmes? Name the types of the programmes.

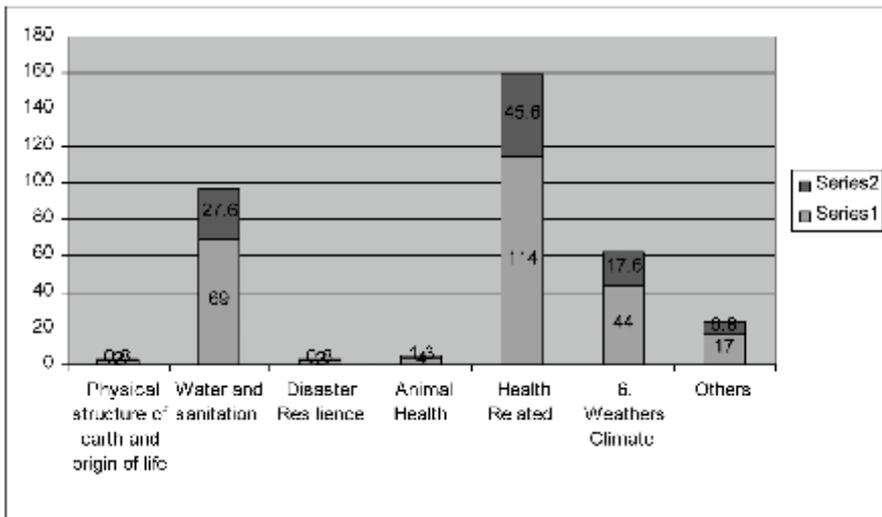
Title	Sample	%
a) 1. Yes	223	89.2
2. No	16	6.4
3. Not sure	11	4.4
<b>Total</b>	<b>250</b>	<b>100%</b>
<b>b) Type of the Programme</b>		
1. Physical structure of earth and origin of life	2	0.8
2. Water and sanitation	69	27.6
3. Disaster Resilience	2	0.8
4. Animal Health	4	1.3
5. Health Related	114	45.6
6. Weathers Climate	44	17.6
7. Others	17	6.8

Table no. 10 : Distribution of population according to choice of the programme to participate



Graph no. 3

Maximum number of respondents would like to participate in 'health-related' programmes, followed by 'water and sanitation', 'weather and climate' and 'soil health'. This phenomenon shows their awareness about the issues and their aspirations to solve the such issues and make quality of life better.



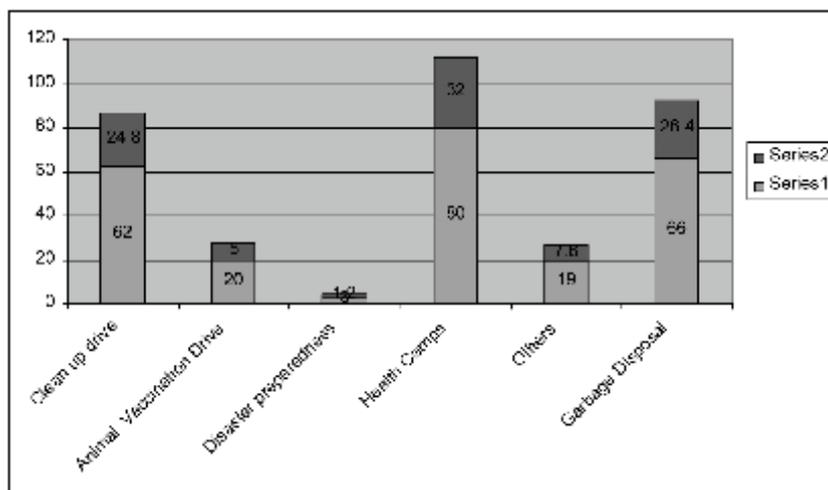
Graph no. 4

Q.11- In what type of outreach activity would you like to be involved?

Issue	Sample	%
1. Clean up drive	62	24.8
2. Animal Vaccination Drive	20	8
3. Disaster preparedness	3	1.2
4. Health Camps	80	32
5. Others	19	7.6
7. Garbage Disposal	66	26.4

**Table no. 11: Distribution of population according to choice of the outreach programme to participate**

As regards interest in outreach activities, respondents said they would be interested in garbage disposal, health camps and clean-up drives. The pattern shows that people actually want to eradicate problems related to health and want to get rid of garbage. For the purpose they are ready to contribute to the best of their effort.



**Graph no. 5**

Figure shown above are evident that community radio station has a significant role in making people aware of some issues related to science involved in daily life. People are not only getting aware but also awoken enough to take part in some action.

## Conclusion

The aim of the Government to give licences to Community Radio Stations is to raise the level of awareness among the rural as well as urban people of India and to involve them in the process of development of the country. Participation of the people was the primary objective for which the conventional means of communication were felt to be inadequate. Mass media had failed to fulfil the information need of the people at the grass root level. As an alternative, community media offered the greatest possibilities for effective action.

Among various media, radio was the most potent by virtue of its unique features. It has great potential to capture and attract the attention of many. Through its features of being multiuser, multitasking, cheaper and approachable, radio brings depth and dimension to life and intimacy to most events. It can disseminate rich experience of specialists and experts to a large number of people simultaneously.

### Science Communication through Community Radio

Science communication is one area which is more difficult to work with. Science is involved in our day to day life but illiterate people especially in rural areas do not want to talk about it. If the information is being delivered to them directly they will never be ready to receive it. In such a situation, community radio demonstrates that illiteracy is no barrier in the communication process if properly designed programmes are cast. This is an important consideration for a country like India and especially in Rajasthan where literacy is still low and radio appears to act as an important medium of information.

The role of Community Radio in disseminating the knowledge and expanding the horizons of the rural listeners needs a specific consideration. By imparting relevant facts, it has not only made the rural people more aware of the world around them but has also made them prone to discussions on the matters of their interest. It has demonstrated to them the ways and life style of distant and different people as also the tools and equipments hitherto unknown to them. Community Radio thus, acts as an important means of enhancing the general knowledge of the people, so also of creating awareness among them.

The basic object of community Radio narrowcasting is to serve the cause of the community in the service area of the radio station by involving member of the community in the narrowcast of their program. The community means people living in coverage zone of the broadcasting service of the radio station.

This paper sought to analyse the work of Community Radio which is working for providing ground level information to the people and subletting a platform for expression to the target community. The study gives sufficient reasons to believe that Community Radio is an appropriate instrument to provide information about natural and human risk to people who face the threat in their daily life. The results of the study may be equally implementable to other geographical areas like costal region of extreme climatic conditions where it is very important to get information about the risk due to natural conditions. Community Radio is a medium which serves people at grass root level at the same time it faces the challenge to survive in an era of commerce.

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