

# The Impact of Radio Mathematics for Women Empowerment in Periyar Community Radio

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**Abstract:** According to report of Inter Press Service, (IPS) “On a global scale, women often work more than men , women cultivate more than half of all the food that is grown. In India, yet forming women often get little recognition and are paid less for that due to their lack of awareness in mathematical calculation. It is very difficult for these women to get the financial resources to lead their day today life, and often are the ones that suffer the most poverty and that affects the illiterate forming women throughout their lifetime, Media is the lens through which we see the world. Not only does it informs but it also shapes public opinion and mobilizes changes. Today, its ability to reach very large global audiences has turned the medium from a reporter of reality and producer of image to become a part of the reality and producer of self-image. In order to empower and educate the forming women, Department of Science and Technology (DST), Government of India, New Delhi, initiated the new project as Radio Mathematics (RM) through Community Radios on 2013. In this project, around India, 11 Community Radio stations are identified, funded, and impart the mathematical education ( Maths through Air, e-Education ) through their community Radios in their local languages for the benefit of their community people . The prime focus of this paper is , the analysis of Radio Mathematics project in Periyar Community Radio (PCR-one among 11Community Radio stations ) and outlined the ways in which the PCR involved and demonstrated the impact of Radio Mathematics project for Empowerment of their target Women Farmers.

**Keywords:** DST, Radio Mathematics, Community Radio, Women Empowerment, Media.

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## I. INTRODUCTION

The informal slogan of the decade of Women become “Women do two-third of the world ‘s work , receive 10% of world ‘s income and own 1% of means of production [1]. Women cultivate, plough, harvest, more than half of all the food in the world. In Indian villages, women are mainly engaged with forming, around 50 percent of food production, in subsistence farming, horticulture, poultry and raising small livestock, they produce up to 80 percent of basic foodstuffs [2]. Basically, women are increasingly the ones who suffer the most poverty. According to the United Nations, in no country in the world do men come anywhere close to women in the amount of time spent in housework. Poverty, trade and economic issues are very much related to women’s empowerment issues due to the lack of education. Tackling these issues as well also helps to tackle women’s empowerment issues through e-education in their local language .

### 1.1 Radio Mathematic Project:

To impart the mathematics concepts in India, Department of Science and Technology (DST), Government of India, New Delhi, along with the co-operation of National Council for Science and Technology Communication (NCSTC) initiated the new project as Radio Mathematics (RM) through Community Radios on 2013. In this project, around India, 11 Community Radio stations are identified, funded, and impart the mathematical education (Maths through Air-e-Education) through their community Radios in their local languages for the benefit of their community people.

**Problem:** Lack of mathematics concepts, is a main problem, all over the India that women face, from the wealthiest states to the poorest, and it isn’t the scope or ability of this paper to be able to focus them all here, but just provide some examples.

**Solution:** Efficient media for all is Radio. Since Illiterate can also learn Mathematical concepts through air without affecting their work. Community Radio stations especially the Rural villages one spread throughout the India, has to create Mathematic awareness among thousands of rural women hitherto not reachable. This Radio mathematic project , takes its pride from the fact that not only the concept of zero was evolved but also the fact that **world renowned Mathematics wizard Srinivasan Ramanujam was born in India**, lived and postulated his thesis on this soil.

**Case study:** This paper focus the case study of Radio Mathematics project in Periyar Community Radio (Karthodu Kanitham –PCR KK), Vallam , Thanjavur, Tamilnadu, India as shown in Fig 1.

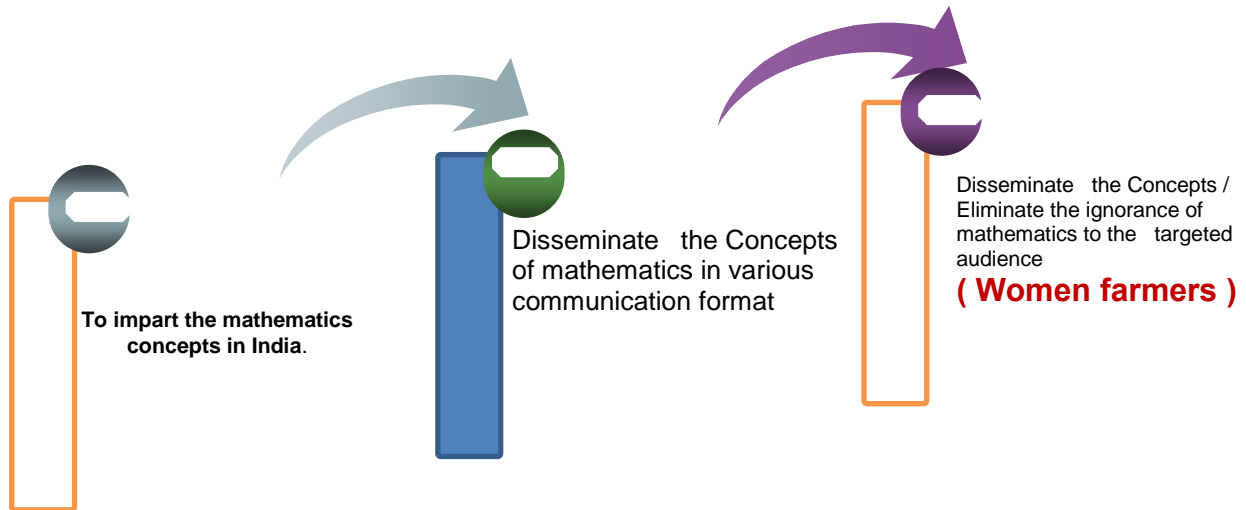


Fig.1 Formation of Radio Mathematics project

**1.2 Periyar PURA:**

For the social development of poor people the government introduced PURA scheme – (Providing Urban Amenities in Rural Areas). One of the practical PURA model is the Periyar PURA. Periyar PURA scheme encompasses 58 villages of Thanjavur district and 8villages of Pudukkottai district. These villages encircle the institution at the radial distance of 22 KM. Periyar Maniammai University (PMU) provides **Physical connectivity** by providing roads, **Electronic connectivity** by providing communication network and **knowledge connectivity** by establishing professional and Technical institutions will have to be done in an integrated way so that **Economic connectivity** will emanate shown in Fig.2 to Fig.3. Periyar FM Community Radio [3] is the communication network between the rural people of the PURA village and PMU.



Fig.2. Periyar PURA

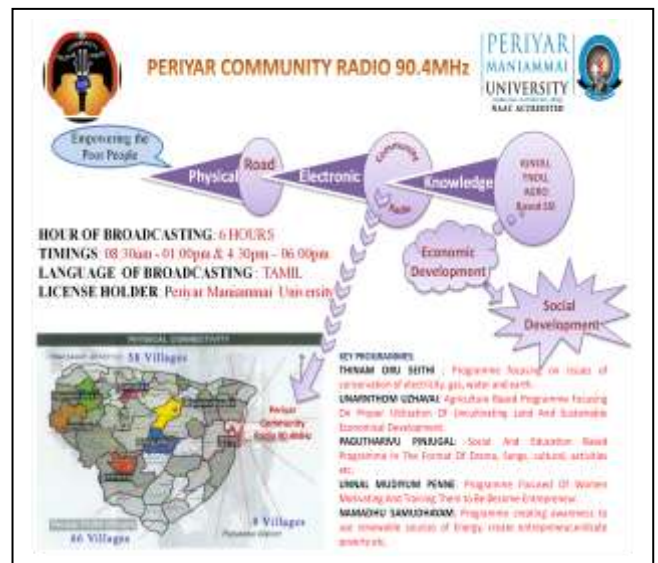


Fig.3. Periyar Community Radio

## II. OBJECTIVES

- To increase the basic Knowledge of the Mathematics for rural Women farmer
- To provide an opportunity to show their Rural Mathematical
- To retrieve from the ignorance of day to day mathematics by providing personal training and e-education.
- To expose mathematics, its applications towards the benefits of farming women

### 2.1 Work Scheme & Methodology:

“Radio Mathematics project” is initiated on March 2013. Project formulation exercise in PCR is from Nov 2014 of Periyar Maniammai University, Thanjavur, Tamilnadu. The aim of PCR (Life Enriching Radio) reaching out to community women, children and small traders, increasing their awareness and knowledge about mathematics and its uses in day to day life. In this paper, PCR, now is projecting the outcome for a six month ( Nov 2014 - April 2015) PCR RM project , support from DST, NSDC, Multi Media & Science club of PMU ( Minimum 90 episodes) .

### 2.2 Methodology:

- To identify the needs of Women in Periyar PURA villages
- Formulation of action plan to achieve their needs
- To analysis of implementation of action plan in Periyar PURA villages

Many methods and techniques are available for data collection. The methods were used to collect the data for the investigation. (a) Taking survey (b) Live interaction with the listeners, (c) Semi structured interviews with the Periyar PURA villages community people, (d) Observational visit to the Periyar PURA villages for their sustainability on PCR-RM . The collected data were classified and tabulated according to the objectives, and analyzed by using statistical tools, such as percentage analysis and ranking analysis.

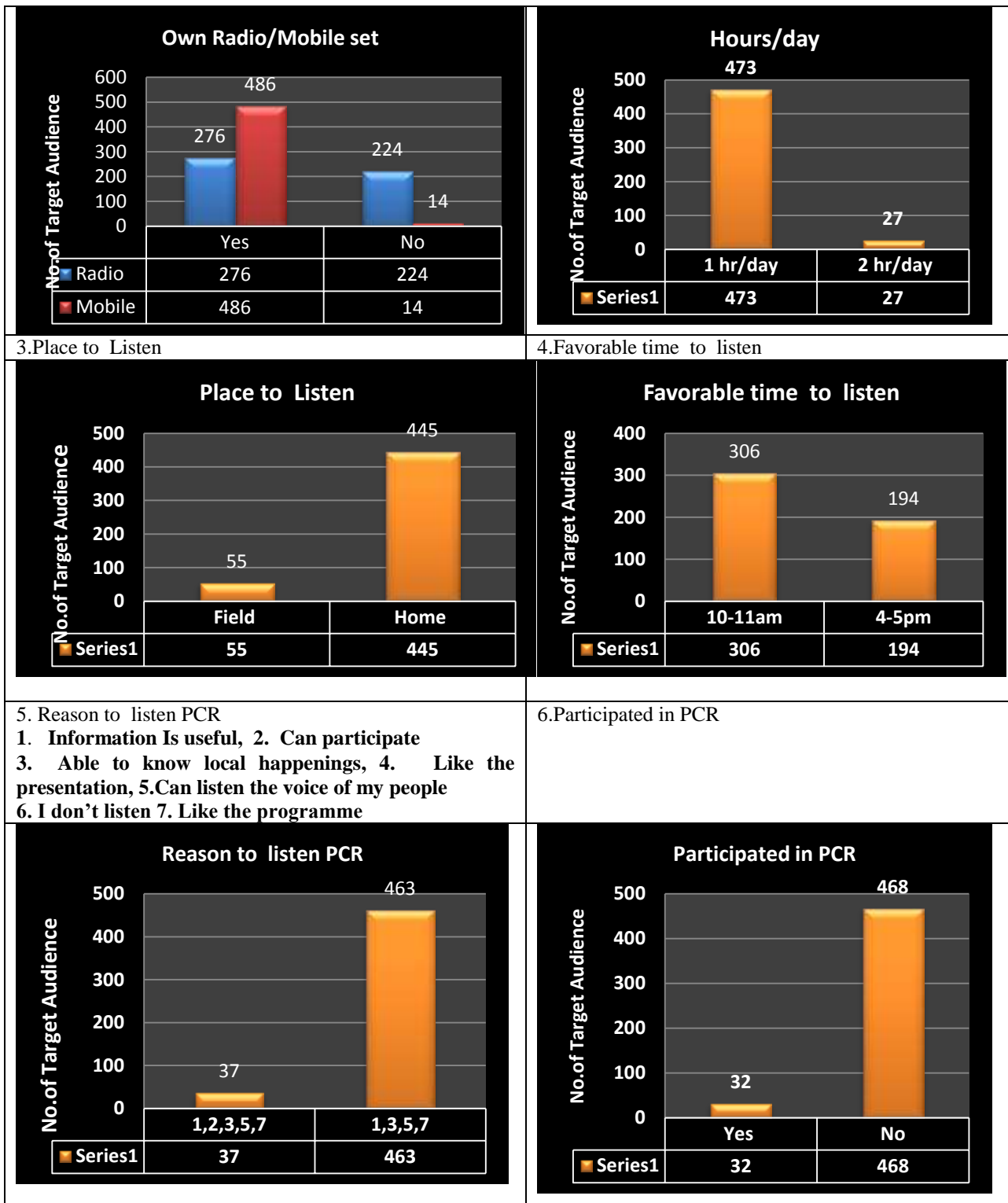
## III. DATA ANALYSIS

### 3.1 To identify the needs of Women in Periyar PURA villages:

Based on a report of true sample survey shown in Table 1, among 500 women farmers (Target people) in 10 Periyar PURA villages (Usilampatti, Vallam, Pillaiyarpatti, Vendaiyampatti, Chinna kangeyampatti, Sengipatti, Thurusupatti, Rayamundanpatti, Manaiyeripatti, Sanoorapatti) conducted on 25<sup>th</sup> Aug to 28<sup>th</sup> Aug 2014, formulated the objectives. Nearly 35 NSS Students volunteers and 7 Community people are participated to collect the data.

TABLE: 1 BASE LINE SURVEY

PART A - Audience Profile					
1.Target Audience	2.Age limit		3.Educational qualifications	4.Family income	
Women farmers (500)	25-50		Illiterate / No Schooling	2500-5000	
PART B – Mathematics					
1. Think about Maths	2.Heard (learn) Maths programme on other Media	3.Apply mathematics / day	4.Maths can be understood better on radio	5.Like to Listen RM	6.Like to Participate in RM
Tough	No	More than 5 times	Yes / illiterate	Yes	Yes
7. Interest to listen in PCR					
1.To learn basic Maths , Addition , Subtraction, Multiplication, division etc					
2. To Calculate interest , percentage , Area , Dimension, etc					
3.To learn day to day Application Maths					
4.To learn financial aspects in banks , investments , business, etc					
PART C – Media Habits					
1.Own Radio /Mobile set			2.Listen to Radio / Hour/Day		



**Outcome of BLS:**

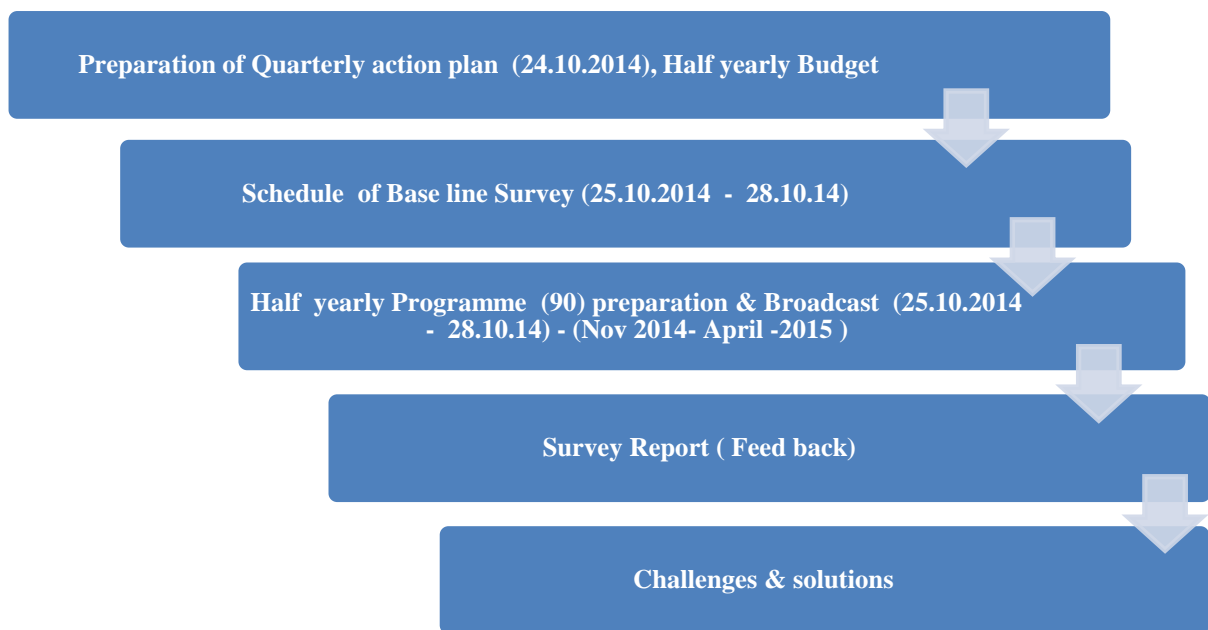
- They are eagerly to listen/learn simple day to day Mathematics through “Karthodu kanitham” in PCR preferably in-between 10-11am
- Ready to participate in all aspects depends upon their talents in “Karthodu kanitham” programs

**3.2 Formulation of action plan to achieve their needs:**

The half yearly Action Plan is shown in Fig 4.

**3.3 To analysis of implementation of PCR- Radio mathematics project in Periyar PURA villages:**

PCR coordinated with other organizations of PMU, organized “Karthodu kanitham” (Mathematics through Air - 30 min/ Programme / Every alternate day/ 12 months ). Various radio formats like Vanika Kanitham , Nadaga Kanitham (Applied business mathematics ), Alavodu Kanitham (Metrics , Analytic geometry), Nadaimurai Kanitham,(Quantitative aptitude ), Puthir padalgal ( Pure Mathematics –measurements) as well as convergent methods are attempted. 90 programmes in various thrust areas have been produced and captive audience identified. The programmes have been designed to suit the community around the PCR station and we ensured that the programmes reach them and easily understood by them. Events and competitions were also be organized, recorded, edited and presented in a way that is attractive and effective. The Periyar PURA village communities have also been involved in developing and consolidating the programmes. They were be the participants in the outreach programmes.

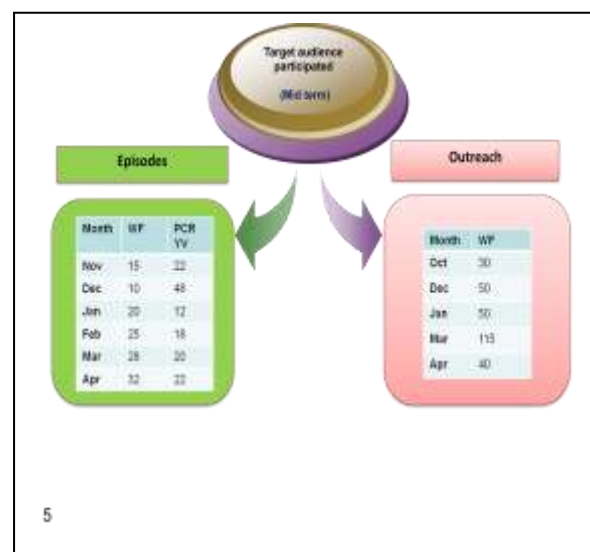


**Fig 4: Action Plan**

The Fig.5 and 6 shows and Table 2 illustrated the schedule of action plan and the rate of beneficiaries. From the graphical representation in Fig7, the author showed the impact of Women empowerment through PCR-RM in Periyar PURA villages.



**Fig.5 Program Organization**



**Fig.6 Program Schedule**

Table: 2 Action plan and rate of beneficiaries

Programme	Target	Village covered	Date	Schedule/ outcome
PCR STTP_1	30	Avaranpatti	26.10.14	Script writing & Artist Training
		Buthalur	27.10.14	Radio Jacky , & Recording
		Kurumpoondi	28.10.14	Editing, & Visit to Ramanujam Musium
PCR STTP_2	50	Pillaiyarpatti Vallam , Thanjavur, Sengipatti	23.12.14	Script writing &
			24.12.14	Drama Artist Training
			25.12.14	Radio Jacky , & Recording
			26.12.14	
		27.12.14	Editing, Documentation	
Women Maths Pongal Thiruvizhla	50	15 PURA villages	13.1.15	Competitions like Debate, Quiz , etc related to basic Mathematics concepts Feedbacks
Women Maths Carnival	75	6 PURA villages	6.03.15	
Community Meeting 1	40	Puthukudi Valambakudi	27.03.15	
Women Maths workshop/ CM 2	40	Achampatti, Nanjikottai	25.04.15 26.04.15	

Through Training programme 08 PURA community people got Employment opportunity (Part Time) in PCR-RM (Karthodu Kanitham - KK ) programme. Through PCR KK Short Term Training Programme 130 women farmers are motivated to exhibit their Talents in Episodes and 285 women farmers are participated in Out Reach programmes

#### IV. OBSERVATIONS

- Well organized Team oriented Group.
- Self Motivated to work towards social & life enrichment of the women farmers.

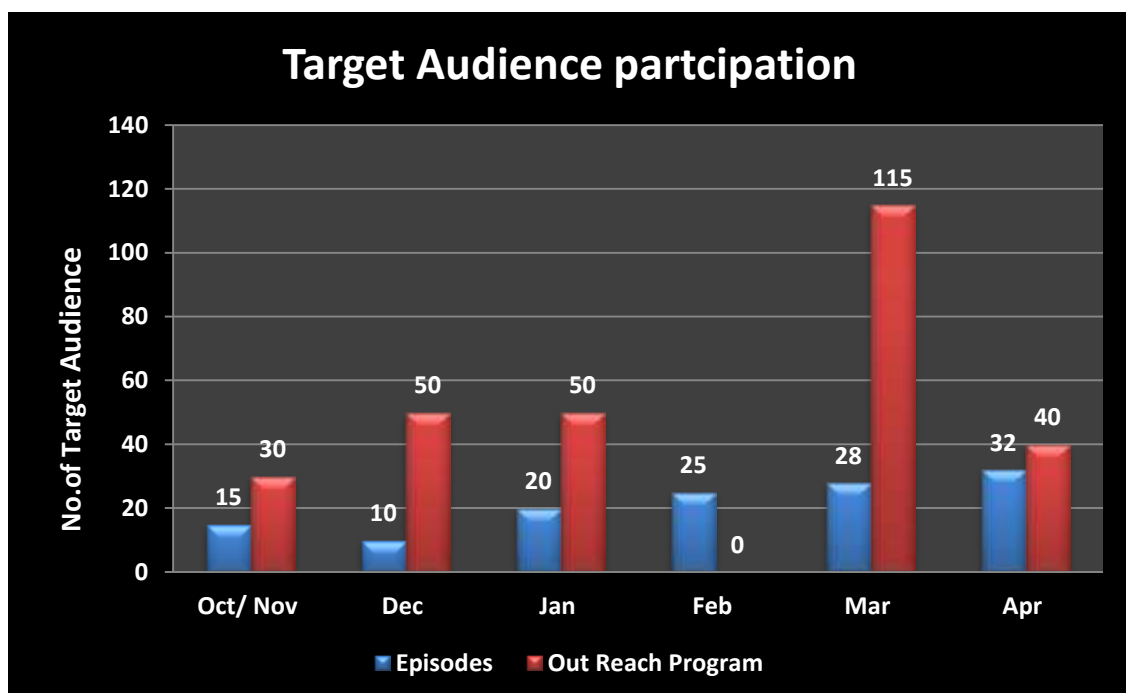


Fig : 7 Impact analysis on Women empowerment

**Challenges:** Bringing our Women formers from their forming work to Studio to participate in preparing episodes.

**Bottle neck:** Women formers are interested to learn basic concepts of Mathematics but little bit of hesitation to participate in Radio programmes.

**Solutions:** Broadcast only the application oriented Day today Mathematics concepts by live phone in through field programmes.

## V. CONCLUSION

In order to empower and educate the forming women, Community Radios plays a vital role to support the Radio Mathematics project throughout India funded by DST and associated with NCSTC. Women committed to a common vision of their rights, but diverse in terms of race, ethnicity, class, religion, culture, and geography. While the links have not always reached out as widely as hoped (especially along class lines), the movement has succeeded in creating strong and enduring bonds among diverse groups of women. Networking has also been fostered across professional divisions such as grassroots organizing, service provision, academia, the medical and legal professions, lobbyists and governmental policy makers. This has been an effective way to learn from diversity in the process of planning actions that incorporate a broad spectrum of strategies. This paper has focused the way , the PCR impart the mathematical education ( Maths through Air, e-Education) in their local languages for the benefit of their target group audience and analyzed the ways in which the farming women have been Empowered and succeeded in their life.

## ACKNOWLEDGEMENT

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