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SCIENCE COMMUNICATION TO EXPEDITE RURAL DEVELOPMENT : A CASE STUDY

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Abstract: Technological developments in rural areas can change the mission and motto of livelihood at the grassroot level. Science communication has the capacity to create a space from where a new revolution can take birth. Diffusion of information and education regarding scientific innovations and progress among rural populace generate interest and awareness. Agro-based areas need these enthusiasm and endeavours that may alter the definition of developing nations and move towards the developed concept. Mass media has played an important role in disseminating information among the citizens. But due to lack of education and financial incapacity, the people from remote and rural areas are deprived of accessing the television and newspapers properly. Therefore, deficiency of knowledge remains. This dearth of information becomes a hurdle in the road of creating curiosity and the people are compelled to work as usually. This article tries to explore the role of alternative ways such as documentary films and arranging participatory communication through agricultural fairs so that people are provided the opportunity to exchange ideas of laboratory experiments and scale those into field experiments. Propagation of scientific knowledge among citizens is urgently required today. Betterment of mean level of information may establish our country in a leading position in the near future.

Key words: Participatory communication, empiricisms, farming of knowledge, information congregation

Introduction

Science is the basis of all developments in our society. The world is now at a position where every working field is dominated by scientific inventions. Our everyday lives experience the contributions of science. From birth till death, all the creatures go through different stages of life which are determined by science. Botany, Zoology, Physics, Chemistry are the various disciplines of science that play their respective roles in the lives of these living beings and effect a forward march. India's rich scientific past has created a place from where a new history can be launched. The research efforts and justifiable results have put India in a topmost position. It makes Indians proud. The honours have come after long years of struggle. But within this country how many people are aware about the progress and prospects of scientific developments? It is said that 'Necessity is the mother of invention'. Therefore, to uplift our country it is needed to take a bold step to ensure the improvement of rural India at the very outset.

Need to feel essence of science

Science is for all. The prosperity of a country is standing and depending largely upon scientific innovations and developments. Being a developing country India needs more and more development and this advancement must be happened from the grass root level. Our country primarily depends on agriculture and the overall population shows that most of the people belong to rural areas. According to the Census report 2011, today India is standing with its population of approximatly121 crore. Naturally in future the population will increase. Now, among 121 crore

how many people know about newly invented scientific developments in India? It is not that everybody should know about science. But how many know the minimum areas of it? In fact, there are still so many remote areas where electricity has not yet reached. Therefore, those rural people do not receive the effect of that most epoch-making invention, it will be impossible for them to make out the country's progress and current position in science globally. Another matter is literary. Each citizen in the rural or remote areas has not experienced the essence of literacy. Then, how do they feel the scientific determination of their own country?

The rural people earn their livelihood through agriculture. Therefore technological inventions which can help them in increasing production level as well as income will be more acceptable to them. Newly invented fertilizers, seeds, cultivation procedure and style can change their lives also. Due to these techniques the poor people will experience advancement in life and they can enjoy their as usual cultivation technique in a new direction. If the same investment in the beginning of any production procedure can earn more profit, naturally the people will lean in that system. Then they would alter their motivations. So, awareness is the main thing here. If the rural people become aware about new improvements which can support and secure their livelihood, automatically their interest will be grown up. And to aware them proper communication is necessary. Enriching the rural people through education and information regarding technological up gradation may create remarkable prospect in the near future.

The main drawback of rural areas is reaching of communication channels. Since every single one is not literate, print media does not work properly. Now the arrow will indicates towards the electronic media such as television and radio. But as a very expensive medium the rural people sometimes become unable to purchase a television set per home. Only they can have their first hand access to radio as only an audio medium. Only accessing radio they cannot visualize the actual fact. Therefore it is difficult to make out for them that our country has achieved great success through the collaboration of science and technology in the field of defence. The medical sciences have proved how rare and unprecedented cases can be handled in India and get back life of those who are at the point of death. However, all the time it is not possible for rural populace to realize those innovations only through audio medium. With the invention of technology it is essential also to promote communication and sharing of information within the people with the

help of proper communication channels and networking.

Information about science to rural populace

To develop the frame of minds of the people from rural and remote areas, to expel superstitions, to establish an opinion through proper argument and above all to extend the knowledge of scientific experiments it is necessary to move science from the laboratory to the grass root level. Therefore, a scope should come to the rural populace to grow up knowledge with special consciousness regarding science. Then they will pass their knowledge and share information to others they know as well as to the new generation. In that case, only science books at school level will not help properly to make out what a missile is, what is an automatic robot. In fact some children have interest to create any new scientific model which may turn to a revolutionary innovation in the future. But due to lack of economical support and enthusiasm of the neighbouring people, endeavour and interest take a turn to apathy. Negligence at the very outset of a new creativity thwarts the progress of effort. An individual of urban area gets different types of scopes so that he can create a new thing whereas one from rural area cannot acquire the same feasibility in creating the same thing.

Practical experience and watching the usefulness and effectiveness in front of a machine will increase more awareness. Therefore, information about a scientific invention and technological ingredients should have collaboration with communication. If communication happens properly from the experts of laboratory to the populace of rural area means land, then mismatching of opinions will not take place. Because collaboration between practical experience of cultivation of a peasant and research work of an expert in the laboratory can create framing of cultivation strategy. The analysis of conveniences and inconveniences of a particular technology between the inventor and the user will make the matter more effective.

Role of traditional media as a unit of knowledge

Traditional media plays a key role in disseminating information about different types of matters among the rural people through their own form of communication style. As it is very cost-effective media, therefore arranging a campaign and providing information about that through traditional media simultaneously can enhance the propagation of information. With the support of enjoyable rhythms they generate interest of the people. In the remote villages where television or newspaper has not yet reached, only traditional media can avail there. People have a tendency to be acquainted with an unfamiliar thing and to be up to date with an unknown matter with their inherent curiosity. Not only that arranging programmes through traditional media is cost-effective rather than mass medium. People accept entertainment based information a lot.

But sometimes it is not possible to make the rural people realize about any scientific model which is very large and multi action based. For an example a machine that can perform a lot of work at a time, when the same tasks could be done by many people in many days. In this case, the traditional media cannot help so much to show a lot of mechanisms through an entertaining performance. And if they give emphasis on performance such as dances, songs and recite poems, the people will enjoy the entertaining matter but they will not gather information up to the mark to experiment it in the field. Therefore, the results of any invention would not be satisfactory. Here lies the problem of traditional media. But in case of arranging campaigns for any disease such as polio, Aids, cancer etc traditional media will help much because they will perform so lucidly, that people will understand what the symptoms of these diseases are, how they can be cured, what prevention they should take etc. Therefore in case of disseminating information regarding medical science traditional media helps much.

Documentary films to manifest presentation

A pictorial presentation of having little time and little length would help the people of grass root level to make out a model of mechanism of any scientific invention. As a mass medium television is expensive. Therefore the documentary films can fulfil the knowledge gap. Being an audio visual medium it has that capacity to provide information and education simultaneously. The performance of a machine, its dynamism, advantages, and effectiveness can be shown

through a documentary film. It will be acceptable to them also. Even those people from grass root level have already done experiments with their machines can share their experiences. As a result, those people who still do not have any idea about that scientific model or mechanisms can easily comprehend what the efficacy of this invention is. If the people of grass root level agree with the utility of that invention through using it and watching its activity, then the other people from the same level will accept his words immediately.

The people who already experience the aid of new machines are working as opinion leaders. Those who still do not use the technologies, if agreed to experiment the same as opinion followers, then success may come without more ado. Naturally, information will disseminate within little time and the invention from laboratory would take place of land. This step down structure will be more effective and will help the cultivators and peasants. Through visualization process the people can understand a model and through audio, they also gather information at the same time. Therefore this documentation works much more to betterment the dissemination of information procedure. That portion which the traditional media do not execute, documentary films fulfil that vicinity. Documentary films have the power to show the cultivation process of other countries so that people can realize their mistakes and rectify and adopt proper techniques. This effort would help the rural populace to have answers of many unknown sections.

Agriculture fair as a solution

It is necessary to arrange agricultural fair where education and information disseminate embracing entertainment. The people of many villages and remote areas gather in any fair and enjoy very much. In these fairs the scientific invention or models present and through experts, the functions of these inventions are explained. Then it will be easy for the people to apprehend the matter. Because a great difference lies when a person is hearing about a product and is watching it to perform in the field. They will become well informed about the matter. They can exchange, share their ideas with those who have already experienced the inventions. They can ask questions to the experts and instant reply help them to evaluate the theme. Through this process interest will create. They also can see variety of models and their effectiveness. The

agriculture fair also creates the opportunity where mass communication takes place. The people from grass root level also take participation in the conversation process. Therefore participatory communication helps the people to move forward the curiosity among them.

With the help of govt organisations it is possible to organise seminars, fairs for scientific improvements so that the rural people so that can attain and have a discussion regarding new inventions. The different types of models will help them to make out functioning of the machineries.

Case Study

In West Bengal the Burdwan district is well known for cultivation. Here, the fertile lands are popular for various agricultural products like paddy, wheat, potato; various types of edible herbs, besides the crops fisheries, rearing domestic animals and birds, horticulture are very popular. This district consists many blocks under which several villages are producing huge amount of crops. This district is totally agro based. The people from grass root level do not disclose themselves in front of mass media frequently. Thus to show them new scientific innovations for cultivation and other jobs presenting mass media is difficult. Only audio medium such as radio can reach those places. But in remote areas it is very difficult to hear because all the time they cannot access the particular frequencies of the radio channels so that they can hear the agricultural programmes.

An endeavour for "Krishi Mela" (agricultural fair): Each year in the winter season the state government and sometimes NGOs organize these fairs to disseminate information, education among the cultivators, herdsmen, horticulturists and fishmongers. This endeavour has taken place not only for the specialists of particular fields but also for those types of people who want to take initiatives to start new business. These fairs are organised sometimes through joint venture of Panchayet and agricultural departments. At frequent intervals sub divisions of the district and government organizations are arranged to boost the interest of the people from

remote areas. For the economic development of our country it is necessary to develop cultivation. To improve modern techniques of agriculture this Burdwan district has become a role model. Through this fair a communication happens between the agricultural department and peasants. This participatory communication helps them to understand various types of projects which can be performed new technologies. Consequently, information, communication and technology tie up simultaneously.

With the objective of agricultural upliftment many sub divisions and blocks are organised this fair. So many stalls take place to show the rural people about scientific innovations, new models, technologies, mechanisms etc. The experts from laboratory come to deliver speeches regarding horticulture, rearing domestic animals and birds such as cow, goat, lambs, ducks, hens etc. They exchange ideas about different types of diseases and protections of these animals and birds. How the people will realize the diseases through watching the symptoms etc.

Usefulness of a new technology for cultivation of paddy: A newly invented machine to reap paddy crops and to husk the grain simultaneously has been used for three to four years in the blocks of this district. This gigantic machine has been shown in a “krishi mela” or agricultural fair for the first time. The people who are in the profession of cultivation came to this fair to make out the mechanisms and functionaries. The amount of this machine is approximately rupees twenty seven lakh. As it is very difficult for the rural people to purchase the machine individually they can occupy it by paying rent for a particular time. This machine works first and set the crops neat and clean. Taking an hour it can harvest paddy and husk four bighas or eighty kathas (one bigha is equal to twenty kathas). This whole work has been done in the paddy field. The owner of the machine takes rent as rupees two thousand and eight hundred in four bighas per hour. That means the cost of per bigha per day is rupees seven hundred only. This machine can harvest and thrash the paddy simultaneously. But if this same work might have to perform by the human being only, four labours are needed first to reap the paddy in the field. Then four labours are needed by turn to thrash only one bigha in a single old machine or through a plank throughout a day. Moreover three men are required again to make a knot of the straw. Total eleven labours are required to perform the whole work (per bigha) and it costs around rupees one

thousand five hundred per day. Therefore, the cultivator can save approximately rupees eight hundred per day. Naturally this process of using modern technology is accepted more than that of the traditional method. This machine has actually been invented for harvesting and husking wheat. But it is also used in paddy fields. One person sitting inside the machine operates the whole procedure. But the person comes from outside of West Bengal as he is a trained person. Therefore it is necessary to provide training to the persons of local areas so that they know how to operate the technology.

Drawback of the technology: The main shortcoming of this new technology is that, it destroys all straw in the field. But in case of traditional method straws become intact and the persons who have domestic animals can collect as their food. Another major problem is that, the machine both reap and husk the paddy when they are wet. Therefore, after taking the paddy to home, it is needed to dry the crop. Shortage of area to dry the crop creates inconveniences at the time to transfer the crop to granary.

Evaluation: Discussing the usefulness and functions of the technology, it has been revealed that the peasants are very much interested about this new invention. Those who are used this machine are really satisfied with the effectiveness and performance of this machine. Using this machine prove cost effectiveness rather using the traditional procedure. Within a stipulated time it performed very well. Those who are used already, try to disseminate information to others. As a result the opinion followers are getting interest and also want to access to this machine from the next season. Consequently, it has been proved that if the people from grass root level have the minimal benefit of newly invented scientific matters, then it can be spread though out a wide area. As our country is agro based, it is essential to reach proper information in proper time so that the people can enjoy first-hand access with the support of time management.

Conclusion

To develop the science communication it is necessary to throw light upon the remote areas. Only urbanization can never make betterment of our country. It is also necessary to improve the rural areas and especially remote areas where little observation and cordial effort can change the

definition of backwardness and place a smooth track of cultural upliftment. And to develop a place it is essential to disseminate information and education properly to assist the grass root level so that they also can feel themselves as a part of the country's future conductor of science communication.