

## **THE MALADIES OF SCIENCECOMMUNICATION IN RURAL INDIA AND THE CHALLENGES AHEAD...**

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*Abstract: This paper deals with contrasting the multifaceted advancements in the fields of science, technology, medicine, media and communication in urban India against the inability of the overwhelming population struck with poverty and plagued with diseases in the rural parts of the country, who despite presence of such ground-breaking advancements, remain deprived of the very basic resources essential for survival. The existence of these two dichotomized masses almost disconnected from each other reflects two parallel universes coinciding in the same space but reflecting trends of different times. The paper looks into the problems lying ahead and enquires as to what could be the solutions to the same. The experiences and contributions of a Non- governmental organization has been considered here along with a field research in Purulia District in West Bengal.*

*Keywords: digital divide, knowledge gap, rural poverty, inaccessibility to resources, rural health, rural education, rural sanitation, role of media, role of Non-Governmental Organizations, bio-gas.*

Introduction: India is without a doubt the worlds largest Democracy. With the ushering in of major revolutionary science and technological advancements the nation can boast of being at par with the leading nations with respect to these fields. Communication has enabled connecting with not just fellow citizens but the rest of the world at lightning fast speeds. The medical sciences too have made a cosmopolitan impact with its sophisticated innovations and avant-garde technologies to save lives and create medical facilities available in an unperturbed fashion. The advent of ground-breaking advanced technology has been a life altering experience in the country. India has especially made an impact in the information sector and has become a power to reckon with world-over. However, the question here is how far these claims are true in the overall scenario of the country. The question is also whether the impact of these advancements have been felt and spread evenly across India.

Inequalities have been present ubiquitously across ages in several ways. With the intensification of the North-South divide, the urban-rural divide has expanded its extensive wings to further intricately stratify society. Technology has not been successful in bridging the gap in this context.

It has in fact to the contrary, added intensively to the miseries of the millions. Everyday an estimated 2000 children die globally due to diseases related to diarrhoea, some 1800 of which are caused due to lack of access to clean water, sanitation and hygiene. Of the 783 million people world over without access to improved drinking water, 97 million exist in India (1). In a world experiencing globalization 11 per cent of the global population does not have access to improved drinking water and millions die each year due to easily preventable causes.

With the creation of a digital divide the ones with access to technology and its resources are profoundly rewarded while the one's experiencing inaccessibility to the same remain stagnant and witness their life chances dwindle away. Therefore, as common understanding dictates, the advances of science and the fruits it bears are of no efficacy to the millions who remain oblivious to the very presence of these in their lives, especially in a nation such as India where the very access to a prime commodity like electricity is severely restrained for a large majority of her population.

India accounts for a third of the world's population without access to electricity of which 40% have no access to modern energy (2). This poses a larger predicament than is understood. Without access to electricity the levels of poverty elevate further. This affects every possible aspect of their lives, right from access to water and water resources including clean drinking water, to access to modern equipment for agricultural purposes which indisputably involve a massive portion of the population-their lives depending on the same. It also effects education and health and medical facilities along with basic access to information which invariably cuts them off from the largely urban populations further alienating them and elevating their woes. The large sections of Indians engaged in agriculture have little or no access to modern technology even today. The lack of access to electricity creates barriers for the employment of new technological devices and methods for irrigation, in fact water supply itself is affected sans which irrigation efforts remain wanting. The populations here primarily depend on ground water sources as they may have little or no access to pumps for irrigation purposes, this may and as is often seen, does lead to source depletion. The factor raising a concern here is not mere inaccessibility to electricity but the multiple plagues associated with the same and the other issues joining hands with this problem of inaccessibility to multiply the pathos of the millions suffering. This scenario may be caused due to several reasons including major inadequacies at the hands of the government and its ineffective, sometimes life endangering policies. Failure in understanding the needs of the local region or problems in implementation of programmes or utilization of funds allocated in an effective way can be a problem as well along with problems arising due to corruption. Whatever be the reasons in development of such a situation of crisis, the fact remains that lack of electricity and water further shut the doors for other life chances to prevail as well. It presents a vicious circle where one inadequacy leads to inaccessibility to other resources which paralyze the entire structure of rural existence one after the other.

Here one feels compelled to highlight the maladies of Science communication in relation to the social context since life as we know it, can not remain divorced from the larger realities of its social circumstances. To understand the problematic of science communication one has to analyze the intricately woven social fabric of the structure we call society and the evidently visible inequalities prevalent in it. The World Development Report 2008: Agriculture for Development explains how agriculture related problems may increase cases of malaria linked with irrigation, pesticide poisoning and transmission of diseases from livestock and animals to human beings (3). India faces a serious challenge as most of these issues are prominently posing a threat to lives galore. Distinguished journalist P. Sainath –a Rural Messiah, in his revealing works

has brought to light the several problems plaguing society, severe drought being one of them. Drought in most parts of India occurs not because of shortage of adequate rainfall but as a result of acquisition of water resources by the influential handful and the exclusion of the masses in policy formulation and absence of consideration of their opinions while planning the programmes brought about by anti-drought funds(4). Several people lose their lives due to the poverty and scarcity of food resources droughts bring about. Severe famines have been another major reason for situations of crisis in the country. Dr. Amartya Sen speaks of how famines may cause mayhem where man may be forced into starvation even when there are plenty of resources available at hand in the advent of a situation where he loses his ability to access them due to loss of income (5). Though famines do really take place in India at times, situations arise where people die not due to the lack of food available but due to lack of access to the same. Farmers' suicides due to pesticide poisoning too are posing a major issue here. For a society where the allocation of basic food resources is grossly ineffective and inappropriately positioned the need for effective government intervention is called for, but who is to be considered answerable when Government policies themselves are impotent or are infected with corruption? Here the question of pertinence is what good are the advances of science and technology to those who are committing suicide due to lack of access to basics commodities such as food and water?

With the above scenario in the background an analysis of the maladies of Science Communication in India becomes more pragmatic. The grave problems of the system of education can be seen as a major reason for the creation of a Knowledge gap between the urban and the rural parts of India. The President of India Sri Pranab Mukherjee in the Central Hall of Parliament in New Delhi said, on the 25<sup>th</sup> of July 2012 that "Education is the true alchemy that can bring India its next golden age. Our motto is unambiguous: All for knowledge, and knowledge for all. " Unfortunately knowledge has not been accessible to all. According to the Opportunity for Action report by the International Youth Foundation, 270 million Indians of 15 years of age or more are illiterate(6). Interestingly, the picture is always worse than the figures suggest due to several reasons. The people enlisted as literates do not necessarily have formal education. The number of people with basic formal education in India is limited. Illiteracy and poor formal education are hurdles not just in the way of employment or attainment of a dignified lifestyle to live without poverty and disease, but also create a divide in society where communication with this section of society becomes very difficult. Without having formal education it becomes very difficult for this section of society to keep pace with the advances of urban India and the rest of the world. Even of the people who have attained basic formal education most remain inept in utilizing any of it in their lives as it barely creates chances of employment. The expenses of education and the long years that the process requires often prevent the poor rural masses from allowing their children to attain such formal education, despite attainment of which, cent per cent employment is not a guarantee. They like to engage their children in a trade of some form instead where certain skills can be attained which can therefore be converted into income. There have been efforts by the Government in introducing mid-day meals and introduction of free education which were initiated to lure the people into educating their children but most efforts have remained unsuccessful. As a result of people largely remaining uneducated and remaining divorced from the realities of the advancing world on the one hand and simultaneous advances in the other sections the knowledge gap deepens and the possibility of bridging the gap becomes a distant dream. Education is the single factor that can change the picture radically, but with the system and the institutions of education remaining wanting a large challenge is posed. Even when educational institutions are present in any of these regions, the standard of education imparted remains below acceptable standards, especially in the case of higher education and modern science education. The need for a radical transformation in the education system is called for in this context.

The question of access to health and medical facilities is also of pertinence here as these are in no better condition. The troubled state of health care facilities is evident from the percentage of the Gross Domestic Product (GDP) allocated on health. In a nation where the masses remain in urgent social need of basic health care facilities only a meagre amount is set aside for the same compelling the poverty ridden masses to bear the burden of health care on their frail selves. 80 per cent of India's masses live in her rural areas and ironically only 20 per cent hospital beds are present here(7). Most hospitals and health care facilities ensure services to the affluent urban masses leaving the lives of the rural masses in jeopardy. Of course, the nation is producing some of the finest doctors even in reference to global standards, but they remain confined to either serving the urban privileged masses or render their services abroad for substantively handsome rewards. With the state of the art laser technology to ensure pain free-tension free surgeries available just a few miles away in the 'advanced' urban towns and cities the rural masses die not merely of their ailment but the unbearable pain that it brings along.

Ironically most of the diseases and health issues are caused by easily preventable causes. A glass of clean drinking water and basic sanitation facilities can also make a difference here. But such is the poverty that 69 per cent of the population lives on less than \$2 per day! (8) To add to the woe, there are diseases that are tightening their grasp on the poor masses steadily. Over one million people die each year due to malaria across the globe (9). Many of them die in India due to the disease. With lack of access to medical facilities in local areas due to absence of well functioning hospitals with a functioning staff or any hospital at all, the rural masses find themselves in a severe bind. Most hospitals are either ill staffed or have few or no doctors in many remote villages across the country. Most people can not for various reasons access medicines due to the medical stores being situated in more 'convenient' locations, usually closer to the urban towns. Of the handful few that may have access to these medicines may not be able to afford them. In case of an emergency access to the medicine may be delayed often leading to tragic consequences. The answer to the problem therefore does not lie in seeking medical assistance in urban areas because though there are adequate facilities in these areas including Doctors, hospitals and medicines, they are unarguably beyond the reach of the poor rural populations.

Although the entire urban population can not be said to be free from the problems being discussed here, one has to agree that despite the fact that the urban poor suffer from a major issue of inequality as well, the problems of the rural masses are intensely connected to one another pulling them down in a metaphorical quicksand where no opportunity to rise beyond a certain class stratification toward a better life and lifestyle is visible! The most essential commodity here is 'information' which can not reach the rural masses. Basic information and awareness among these masses can help them in prevention of diseases and to make use of the Sarkari yojnas, if available. Therefore though the distance from availability of resources such as medicines; and institutions that are educational, medical and employment related create a larger problem for the rural masses than the urban poor, the question of alienation from 'information' becomes an even bigger curse to the rural people. This may be clearly evident if the health scenario in India is analyzed. About 500,000 women die annually due to pregnancy related causes across the globe, 99 per cent of these in 'developing' countries. According to the Sample Registration System Report (2004-2006), the Maternal Mortality Ratio (MMR) in India is 254 per 100,000 live births as opposed to 45 in China and 58 in Sri Lanka (in 2006)! There exist wide disparities in India with the MMR ranging from 95 in Kerala to 480 In Assam. More than half of the married women in India are anaemic and one-third of them malnourished and have a body index below the

normal. Only 47 per cent of Indian women have an institutional delivery and only 53 per cent have the privilege of assistance by a skilled birth attendant. Around half of the maternal deaths are caused largely due to haemorrhage and sepsis. A large number of deaths can easily be preventable through proper medical and maternal care and through safe deliveries (10). The lack of knowledge related to pregnancy and child care especially considering the scenario of child marriages and pregnancy cause major complications here. Unfortunately the picture does not seem to change significantly despite several claims of the government of providing 'Yojnas' to the people.

Most children in these rural areas are extremely malnourished and have an immensely weak immune system. Measles being one of the most contagious diseases is one of the leading causes for child deaths in such areas. Globally an estimated 450 people, mostly children, die everyday because of the disease, ironically it costs less than a dollar to vaccinate a child against measles (11). The Government of India estimates that 2.40 million Indians are living with HIV! According to a World Bank report some of the chief causes for the spread of HIV are unsafe sex and low condom use, Injecting Drug Use (IDU) and widespread stigma, among others (12). These can easily be prevented through proper communication to educate the people about HIV prevention as usually people are not well aware of the preventive measures to be adopted. Here the role of media and communication becomes very significant. Media here has the twin responsibilities of educating the masses through various means of communication about diseases and methods of prevention on the one hand and of highlighting their maladies and plight across the nation to provide a voice to them, on the other.

The role of Telemedicine as far as improving the health scenario is concerned can be an interesting way out. Telemedicine is the use of information and telecommunication to provide medical care at a distance. This can provide help at hand to the doctors in remote areas who either lack the expertise or need more specialized opinion in a given case. Most of the prominent doctors do not prefer to work in rural areas as they remain confined to the hospitals in the cities. Medication and diagnosis in urban areas is largely unaffordable for rural patients but this is a fairly low cost solution as the Doctors shall communicate without having the patient to travel large distances and bear the cost of extremely unaffordable hospital accommodation in the city. Also, it may save lives in cases of an emergency. One has to remember though that telemedicine of course has its own limitations and can not be depended upon beyond a certain extent.

For the prevention of HIV AIDS proper channels to communicate with the masses are to be established. The lack of education creates a barrier in the way of prevention of the disease. Some basic guidelines if followed can prevent the spread of the disease in its present form. Simple acts like use of a condom or cautiousness regarding use of injected drugs can immensely control the spread of the disease. Here, being aware of such facts is important, but absence of channels of communication and lack of education with regards to the subject may be viewed as a major challenge. The subject of sex being treated as a taboo is a crucial problem as people refrain from any public discussions regarding the subject which disables the efforts of creating awareness amongst the people. Many Non Governmental Organizations often arrange platforms for such discussions but people largely refrain from participation. Here the role of Radio as a medium of communication becomes important. Most people even in the remotest villages of India have access to radio, they may therefore, listen to the radio in private and may educate themselves with respect to the disease and other related issues. Even among the rural populations who may be aware of use of protection for 'safe' sex may have limited knowledge with regards to the subject as a result of which they may consider contraceptives as an easy alternative to the use of

condoms. We may as a result witness women using contraceptives on a regular basis without any knowledge about the potential damage these may cause as they are to be used only as an emergency measure, besides these may not help in prevention of any disease that can be communicable via sex. Therefore we see that lack of information puts their lives at risk while they remain oblivious to the same. We have to remember that the reception of information is of immense significance to each individual in society. Just the knowledge of the fact that if coughing continues for three weeks or more possibly accompanied by pain in chest or coughing up of blood, one could possibly be suffering from Tuberculosis and should immediately get oneself tested for it could save one's life. Yet India accounts for one-fifth of the world's population suffering from the disease. About 2 million people in India develop TB annually, around 0.87 million are infectious cases. About an estimated 330,000 people die annually due to the disease (13). Just the knowledge about the disease and its timely detection and treatment can bring down the numbers drastically however the awareness in the absence of proper communication channels is difficult to create. The reliance on fake Hakims and Tantriks and belief in superstition and taboo prevents timely detection of diseases and its proper cure as people may waste precious time and monetary resources on fraud treatments and endanger their own lives in the process. The vulnerable situation of the rural masses also creates a chance for fraud claims of being professional doctors by some opportunists, putting the lives of the rural patients in danger. The role of communication channels in educating people about refraining from such practices and advising them about proper treatment especially under prevailing schemes of the government at affordable prices if available can help change the scenario.

A general approach toward resolving any prevailing issue in a given society is usually sought by creation of a National plan or strategy. However in a society that is as diverse as ours creation of a single plan that can be implemented across the nation and prove to be of significant efficiency is quite a mammoth task. A view of society from the top shall prove to be inept as far as provision of actual gains to the beneficiaries is concerned. Each district in each state of India has a unique pattern of living and unique set of problems that need to be analyzed and understood individually to meet the demands of these teeming populations. The task sounds rather thorny but is a much more pragmatic and target oriented approach that shall deliver more effectively in a society such as ours. The people living in the remotest corners of the country have concerns that create everyday life into a battle of some form. The smallest of things like fetching water for daily use can become a goliath task that may involve miles of travelling on an everyday basis. The general approach of belittling the everyday shall have to be eschewed. An approach to fix the macro picture via transformation from the 'top' has to be abandoned. Once each individual micro scenario is taken care of, the macro shall by itself be triumphed. The model of democratic decentralization has provided just the same. The Panchayati Raj Institutions (PRIs) in several states across the country have been set up to provide the same. However the results have varied from state to state depending on various regional factors for their success or failure. A major reason for the failure of the set up can be corruption at different levels of the set up. In such a case a complete sense of apathy is displayed by the authorities in the causes and concerns of the local inhabitants where their needs and aspirations are systematically ignored. The major cause of success of the PRIs in other states could be a 'one to one' connection of the authorities concerned with each individual family as a unit and each individual member as a citizen. The role of Non-Governmental Organizations (NGOs) in the process can be of major significance. NGOs usually help build a nexus between the individuals and the authorities and make the process of understanding the problems of the teeming populations an easier task for the authorities to tackle. On several occasions the NGOs themselves take an initiative in providing necessities that the state has failed to provide by pursuing a piloting role in remedy procurement to the grave grievances of the people. NGOs have proven to be major 'game changers' in society over the decades. They have led from the front and have proven their credibility by the quality of work

pursued by them that have potentially provided a new perspective toward welfare and community building tasks in society. They provide an apt answer to the problems of corruption and red-tapism that the bureaucracy adheres to. NGOs are funded heavily from various national and international sources and many of the NGOs are funded by the Government as well to pursue their welfare goals more effectively. These organizations are funded so generously by different sources because of the faith in them due to their ability to successfully allocate funds to the target beneficiaries without any scope for corruption or mismanagement of funds. The donations India received by several International funding resources in her Post-Independence years for welfare and developmental causes were handed over to NGOs to ensure appropriate placement of these funds as only a part of the funds allocated via the government percolates down to the target masses and most is acquired illicitly by the middlemen in the process.

The experiences of an NGO have been analyzed here accompanied by a field visit to understand the challenges they face and the limitations that they have. The Ramkrishna Mission Loksiksha Parishad (RKMLSP) is an organization based in Narendrapur, Kolkata. The organization has been working toward attainment of rural development through education with initiatives in formal and non-formal education, through child education, education in agriculture, vocational education and education of women in rural areas. Here, we look at the initiatives taken by the organization in the field of water and sanitation programme in Santuri in the rural district of Purulia, comprehensive tribal development programme and Non conventional energy programme in the same district. To understand the existing difficulties in the region and the role of the Organization in attempting to combat the same the geographical location of the place has to be taken into account. Purulia is a district in West Bengal plagued with acute poverty. The communication channels to access the region are few and mode of conveyance is limited. The journey toward the district from the nearest railway station involves travel through dry terrains for hours amidst uneven roads. The picture of villages usually remind us of green terrains of endless cultivated land but this journey has only vast patches of dry arid lands to offer with the occasional tree in the middle of nothingness. On arrival one may see tiny thatched roofed kachcha huts or semi-pucca homes situated in the dry lanes of the district. In some of the interior regions people and cattle share the same roof. Even the elaborately dressed Goddess Durga is austere here almost unrecognizable in the tiny temple on the pathway. Even of the areas that are considered relatively urban have no remote resemblance to anything the term 'urban' may define. People have almost no access to television sets or even radio! Electricity is available in many households but used sparingly. Newspaper access is limited and readership is close to absent. In the inner fringes of the area one may witness a polash tree at regular intervals. The shocking presence of a widespread illiteracy under the 'Polash gaach' can stun one to silence (14).

The RKMLSP works in the rural areas by associating with the local clubs in the areas concerned. The very purpose of working in close linkage with the local clubs is to reach as close to the grass root level as possible as these clubs are familiar with the local residents and their problems and provide a comprehensive understanding of the needs in the concerned village. All club representatives from each village further form a 'cluster' which is directly headed by the Organization itself. This three tier system is sought to simplify work by creation of a close nexus between each tier. Work in the field of early childcare education is provided by the various crèches called 'Shishu Lalan Kendra'. Children in these crèches remain secured even in the absence of their mothers who may have to leave for work to earn a living. The Vivekananda Child Development Project is another initiative toward providing pre school education to underprivileged children. What these institutions do is to educate the children about hygiene and the importance of education which they are encouraged to teach their parents as a result of which,

the entire community may learn the importance of hygiene via the children themselves. This of course sounds like a trivial task but the changes such small initiatives can make is massive. This also creates a higher chance of enrolment in schools of the children who are prepared for formal education. Provision of meals and refreshment for children is also made. The area of Sartori, Purulia is located in a remote pocket of rural West Bengal disconnected from most modes of communication with little or no sanitation facility. It is an initiative by the Government of West Bengal in collaboration with the organization that spear headed a Demand Driven Sanitation Strategy, the first of its kind in the nation. The program attained technical guidance and financial support from UNICEF. In case of Purulia the program has created significant benefits for the people so far, though the task is far from completion and work is still in progress with regards to each household in the district. The facility of toilets was nearly absent before the initiative was taken. In fact even the awareness with regards to sanitation was not present. Water and Sanitation can be viewed as a major factor toward reduction of water borne, water washed, water based and water related diseases. The organization created awareness through interaction with the families in the villages and urged them to take initiative and build toilets in each household. The area of mondol para in sartori, Purulia has attained cent per cent toilets in each household. A small initiative like creation of toilets can bring about major change in the health scenario and in the lifestyle of people as can be witnessed in this case. The toilets were built at subsidized rates where only a part of the payment had to be paid by the residents. Based on interviews with the local residents, it can be affirmed that their life has been altered in the process as they do not have to suffer the embarrassment of using public places and fields as toilets. This can especially be witnessed among the youth especially young school going girls and boys. Unlike mondol para, the nearby villages have not yet been able to attain total sanitation facilities. In fact even in case of mondol para, a major problem of creation of small bathrooms for the purpose of bathing is yet to be resolved. The overwhelming poverty constrains people to be able to take such initiatives. As a result the young girls prefer to use the toilets as a bathroom for bathing which is quite a problem for them. The procurement of water for the purpose of bathing is also a problem as water from the nearby ponds and wells has to be filled in buckets and carried all the way to their kachcha houses and the newly built pucca toilets. Despite the intense labour involved they prefer this method as opposed to bathing by the ponds. It is interesting to see how a group of the population that had no awareness about sanitation facilities is now looking toward creation of further facilities like bathrooms which they had not considered essential before as bathing by the nearby ponds was a regular practice. The practice continues but is lamented by the education attaining youth. One of the young residents of the village, a girl studying in Sartori High School in the 9<sup>th</sup> standard explained how she could go without food without regrets but could not stand the embarrassment of bathing in public ponds like her mother and grandmother did. The problem is yet to be successfully addressed in the village and the district at large.

The problem of lack of access to clean drinking water has been taken care of by the Government and the organization to a great extent. Considering the fact that the people have to travel great distances to fetch water and stand in quo to obtain it displays a dismal picture but considering that most of the water the residents had access to, just a few years ago was chlorine contaminated the scenario seems better now. The quality of water has been tested and water has been treated which can be obtained during specific hours of the day via sources locally known as 'time kals'. It is difficult to decide whether the situation of water can be said to be a satisfactory one here or not. Considering the larger picture of prosperity and development it is heart wrenching to observe poor frail women walking distances to fetch water which is the most essential commodity for survival. In context of the urban societies it is unthinkable to imagine going through such gruelling hardships to obtain a glass of clean drinking water, the larger goals of life like attainment of laurels or creating a mark for oneself in society are beyond the scope of discussion or even imagination to someone who spends a substantial part of their day to access water! If the



scenario is judged in the local context the situation can be called a rather successful one because the dependence on wells containing highly contaminated water has ceased completely as admitted by the residents. Visible change in the health scenario has been experienced by the villagers. Viewed in the backdrop of the advancements of the world these changes look insignificant, however these are immensely significant to the residents concerned.

The most impressive observation with regards to this specific area of Mondol para was the number of children obtaining education. A majority of children were enrolled in a certain educational institution or another. The number of children obtaining secondary education was overwhelming as well, especially the fact that the female children were as educated as the male ones. The significance given to education by the poor, mostly unemployed parents was interesting to note. It was evident that this had more to do than just free mid-day meals, people are actually aware of the virtues of attaining education. However, just awareness and vigour does not guarantee education for all as the people have multiple handicaps at the root of which is poverty. Poor Lokkhi Mondol has spent the last year in tears rebelling to attain admission in a nearby college after the completion of her Higher Secondary education last year. Her mother broke into tears when enquired about the same and explained how higher education can be unaffordable especially the travelling expenses which can cost up to Rs. 20 per day. The Sartori College is about 12 kilometres away from her residence while the Raghunathpur College is at a massive distance of 45 kilometres. The communication facilities are a major challenge as just one bus travels in the routes, connecting the sartori residents with the outer world, which too remains subjected to a break down on most days. This poses a major hurdle for children like Lokkhi to overcome. With an unemployed father and a poverty ridden family higher education for little Lokkhi seems like a distant dream though she is determined not to give up. Most men in this village are unemployed and make a living as 'din mazdoors', working on a day to day basis in random venues such as construction sites or tiny stone chip manufacturing units nearby. Income is based on day to day basis and each day of failure to grab a day's employment means a day without a meal for the family. Surprisingly of the few men that are employed, most are involved in toddy making and work in alcohol shops. Alcohol consumption is a major deterrent to progress in this area as each evening, of whatever money is left in the hands after a days labour is wasted on alcohol by the men in the village. Most people abstain from attending gram panchayat meetings as they feel the meetings are not a platform for addressing their grievances but for party politics. They are therefore not even aware of the schemes for employment and health care facilities if and when present.

When the condition of the nearby villages is considered the problem seems worse. In Gaursita, an area mostly comprised of a Schedule Tribe population, education is yet to be considered of significance by the residents. The organization has initiated works to create awareness regarding sanitation. Work is at its initial stage and a gigantic task of creating awareness regarding education, sanitation and creation of access to clean drinking water is at hand. The pattern of society is surprising here as most women are bread winners in this community. The women do not bring along with them the traditional dowry which women of other communities of surrounding areas do. This creates a situation where they may be threatened by their husbands who may claim to abandon them at any point of time. This is a problem that has emerged from amalgamation of factors such as lack of education and societal narrow-mindedness. The task of the Government and the organization should be to eradicate these maladies on a priority basis if other works of progress are to be pursued here.

The development efforts in the areas of forest fringe dwelling populations are a major challenge for the organization and the government to overcome. The forest fringe dwellers usually do not let outsiders enter the territory occupied by them and reject offers of communication of any form.

The most significant achievement of the organization in this region is the fact that they have been able to create a bond with this population and have been able to gradually convince them into adopting means for a better living. The problem that the given population creates is the destruction of forests by felling trees as these provide the only major resource for their sustenance. Providing income alternatives to these forest fringe dwellers has been of immense significance in both betterment of the lives of this population and in environmental conservation. The institutionalization of Lac culture based economy at Ajodhya Hill and the institutionalization of Agro-Horticulture based economy along with provision of certain health care facilities at Santuri have been achievements. The forest fringe dwellers have been so secluded in the past that they have resorted to chopping down rare and expensive wood and used it for cooking and bartered it for even something as trivial as a bag of salt being oblivious of its worth. In the process of felling trees major damage to the forests has been witnessed, this has fortunately been checked in the recent years. The tribal populations have also benefited through initiatives of the organization in promotion of sustainable livelihood programmes focusing on orchard development locally known as 'Amader Falbagan' (which literally means, our orchard). The most prominent work by the organization has to be, the development of a sustainable and liquid waste management (SLWM) model. The use of vermin-composting/composting with solid, animal and agricultural wastes and generation of bio-gas through waste products have been key achievements. Though the work is still at operational stages it stands to be of major potential in attaining many developmental goals in the villages like promotion of sanitation facilities, better waste management and procurement of alternate energy access through generation of bio-gas.

Tiny steps at the grass root level can make a huge difference to the people concerned in the areas. The Organization has been striving to achieve success here but an NGO can only supplement the role of the state in welfare and developmental activities, not substitute for it. Each organization has its own limitations and the crux of the matter is that a nation can not run on charity, it can only run on efficient governmental policies. The assistance of an NGO can of course be taken into consideration but the task of development has to be pursued by the government itself. Government institutions at the grass root levels have to be checked, not just strengthened. The job does not end by creation of grass root level decentralized democracy but begins there. The corruption at this level is to be monitored and combated. Provision of grievance cells is to be ensured where rural populations can register their complaints at all times. Abstaining from partisan agenda discussion in gram panchayat meetings is to be ensured which will enable mass participation by the people and prevent loss of faith of the people in the institution. Small teams to provide health related education to the people are to be organized from time to time even in the remotest of fringes of the country. Subsidiary on medicines and medical expenses is to be made available. The total spending on health benefits in rural areas is to be increased in the GDP. Electricity and energy access especially through alternate resources like bio-gas are to be encouraged and made available. Dam construction creating displacement of the masses is to be abstained from as far as possible. However considering the fact that most displacements take place out of forced movements to urban slums due to the conditions of poverty and unemployment in rural areas and not due to the much cursed dam constructions, these are to be undertaken only when alternate options have been explored, on failure of which these are resorted to and 'fair' compensations, rehabilitation and employment is guaranteed to the populations affected. It is only when the government takes a stern approach toward resolving rural problems and removes the hurdles that are disabling the access of science communication in these areas and create situations conducive to the access of the same that the remotest of areas shall reap the benefits of science and progress.

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The 'polash gaach' is a local name for the *butea monosperma* tree, the flower of which is dear to the Goddess of literacy and wisdom, devi Saraswati. Ironically illiteracy is a prominent problem in this polash growing area.