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2019

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**Prathimana : Journal of The Department of Sociology
Twelfth Volume**



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ISSN 1391-2445

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**CBO managed water supply projects in mitigating rural
water deficiency in the selected coastal villages of
Akkaraipattu region, Sri Lanka**

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ABSTRACT

The inadequacy of safe drinking water is a serious problem and it has major impacts on rural communities. Thus, this study has been done based on the data collection through surveys, interview, focus group discussion, and consultation of CBO managed water supply report at National Water Supply and Drainages Board, Akkaraipattu region. Using the secondary information, this paper demonstrates the implementation and progress of community water supply scheme in the rural segments of study area with the support of Community-Based Organizations, and it explores community water projects or Rural Water Supply – RWS, which was implemented by the NWSDB in the selected villages in the study community. This study found that the CBO managed water facilities in terms of community water supply scheme was feasible system for reducing water poverty from village segments. Further, it reveals that the participation of local people was very poor in the CBO managed water projects due to the lack of technical knowledge and co-ordination as well as other social, economic, psychological and cultural factors

that have contributed on their lower participation in this effort. However, the CBOs need to be motivated and empowered to amalgamate rural people to ensure the sustainability of the community water project in order to eradicate water crisis from rural communities especially from study villages in Akkaraipattu region. Hence, this study is a crucial attempt to find a communal calamity which is nationally and globally challengeable threat for human security. So, this study needs to be extended in a wider academic platform in the future field research.

Keywords: CBOs, Community Water Project, Public Participation, Water Deficiency

1. INTRODUCTION

Water is a fundamental human need and it is basic requirement of human life. Water deficiency has been defined as “state of insufficient water to satisfy normal requirements” (Fenwick, 2010). Safe drinking water is essential to health, survival and development. The Sri Lankan government has set ambitious targets to provide access to safe drinking water and basic sanitation facilities to 85% of the population by 2015 and 100% by 2025 in line with Millennium Development Goals (Ediriweera, 2005). One of the major challenge posed in achieving this target is the huge backlog of rural people who are still unserved with safe drinking water and basic sanitation due to the existing water poverty in rural areas of Sri Lanka.

However, by the year 2009, 84.8% of the population of the country had facility to safe drinking water and 35% had the access to pipe borne water (Central Bank Report, 2009). Even though water supply and sanitation coverage had increased in many developing countries including Sri Lanka, there is an uneven progress between rural and urban areas (Hutton and Bartram, 2008 &

World Bank, 1998). In the Sri Lankan context, most of the population is largely rural segments with about 81.52% percent living in rural areas in 2018, according to the report of the World Bank collection of development indicators (World Bank, 2018).

Many rural people suffer without safe water and proper sanitation in most of the villages in Sri Lanka, especially in the selected coastal villages in the Akkaraipattu region, Ampara district of Sri Lanka. The selected villages namely; Pottuvil, Lahugala, Alayadivembu and Navithanveli, where community-based water supply projects have been implemented by the National Water Supply and Drainage Board (NWSDB) with the participation of CBOs in order to reduce water crisis.

The Government of Sri Lanka is very keen on implementing many programs and policies to control water crisis in rural segments. Some remarkable achievements have been made in the water supply and sanitation sector in Sri Lanka over the last decade. The government's continued efforts to improve national social development indicators have placed the country ahead of most other South Asian countries. Provision of drinking water supply and sanitation is a government priority and periodic targets have been set for the proportion of the population that should have access to safe drinking water and improved sanitation services (Fan, M, 2015). Thus, the community participation is one of the key measures which is keenly followed by the government in successful water deficiency reduction programs. Many activities have been implemented in eradicating water dearth with the participation of local communities, especially CBOs. And these activities have been planned to implement in-collaboration with the Ministry of Water Supply and Drainage, National Water Supply and Drainage Board (NWSDB) and the Department of Community Water in the island-wide.

At the same time, the government and non-governmental organizations have implemented various rural water supply projects during the last two decades in order to control water crisis. In this effort, they have tried to use participatory approaches and utilize community-based organizations to provide them better services to the rural communities in providing safe drinkable water. Access to safe and clean drinkable water is an indicator of development sort in terms of health, nutrition and societal upgrades. However, many rural areas in developing countries have lack of access to good, quality, and affordable water due to various factors. In this backdrop, this study paved its attention to understand the role of CBOs and institutional motivation for mitigating rural water crisis in the coastal areas of the study community. Therefore, this study significantly explores why community participation in relation to CBOs could not be effective in the water poverty reduction programs in the coastal areas of Akkaraipattu region, even though the government and non-governmental organizations were empowered with technical and human resource.

2. LITERATURE REVIEW

Mimrose et al. (2011) carried out a study on *Assessment of Sustainability of Community Water Supply Project in Kandy District*, which highlighted community water supply project implemented and managed by the government has been considered a useful strategy to provide access to safe drinking water to rural communities. This study was carried out in 20 community managed water schemes in eight Divisional Secretariat divisions in Kandy district to assess the sustainability of community based rural water supply projects using the methodology adopted by the UNDP and World Bank in six other countries. Participatory research methodology tools were used for

the assessment based on 5 sub-indicators, such as physical condition, operation and maintenance, consumer satisfaction, financial management and willingness to sustain the system. This study adopted assessment tools to ensure the sustainability of community water supply project, especially in Kandy district. This research was linked with the concept of community water supply project on the basis of its sustainability, but did not deal with CBO managed water supply facilities in the south-eastern part of Sri Lanka.

A study by Glietsmann et al. (2007) in Mali, a country in the Sahel observed that source of water in the village of Yadianga during the dry season, the shallow aquifer begins to dry up and water availability can become a critical issue. In the village of Ogodouroukoro has an acute shortage of water at the end of the dry season. At the same time water shortage is not a critical issue in the village of Bénébourou. 45% of the total households no longer considered the pump fitted boreholes to be a worthwhile investment in Yadianga. They found that bathing was the activity that consumed most water. Drinking represented approximately 11% of the total water use and ranked as the fourth activity with respect to the quantity of water used. The former is attributable to water scarcity during the driest months of the year. World Vision's WAWI water project in the Koro district was implemented based on some criteria. Only India Mali Mark II hand pumps were offered to the concerned communities and no alternative water supply options were offered. Consultative participation in this context suggests that people have participated only by being consulted or asked to answer questions on decisions that have already been taken by a minority of stakeholders who have decision making power (in this case world Vision). The majority of the surveyed women from this village were primarily interested in investing in additional large-diameter wells which could increase the village's access to the groundwater during the dry season, or in more advanced pumping systems

(wind / solar). In their study, overall, women based their decisions mainly upon ease of access to water rather than on technological design considerations related to water quality. They also noticed that NGO's working on water in the region-World Vision included-is the provision of portable water through boreholes fitted with manual pumps. The residents complained that they did not have enough water to satisfy their primary needs and hygienic was a distant secondary concern.

Waithaka, A. et.al. (2016) in 'The Impact of Community Participation in Rural Water Management in Ndarugu-Thiririka Sub-Catchment, Athi Basin, Kenya', assessed the effects of community participation in the rural water supply operation in the catchment areas, which focused on four community-based rural water supply regions; namely, Kinyathena, Juja Farm, Munyu and Kamunyaka. The study explored that the embracing of community participation required due to the incapability of government to provide water supply service to the necessities. Thus, participatory approach (from top-bottom approach to bottom-top approach) has been extended as significant support for allowing local people to participate in decision making in the water supply project.

Sanitation and Water for All (SWA) report released by Tanzania in 2012, highlights that the Government of Tanzania commits to provide an additional 27 million people with access to sanitation. This will bring the proportion of people with access to improved sanitation to 53%. While this commitment is commendable, more efforts are needed considering the fact that the current coverage is at 12%. The current investment in Tanzania is less than 0.1% of the GDP, therefore reaching these commitments will require analysis of current financing for sanitation. The commitment of the Government to provide an additional 4.2 million people with access to water in Tanzania is

also commendable and will bring the proportion of people with access to improved water supply to 65%. However, issues around equity should be considered to increase services to the most marginalized groups and to make sure more resources are targeted to them. The Government's commitment to pursue good governance of budget allocation should go together with capacity building interventions to the Local Government Authorities (LGAs), especially on the use of findings from the water point mapping data for planning and equitable distribution of resources. Finally, commitment of the Government to attend future SWA meetings and officially join [Tanzania Demographic and Health Survey (2010) Water and Sanitation Program (2011)] the SWA partnership is a commendable decision and the Government is encouraged to honor these international commitments. Although not all announcements tabled by the Government of Tanzania at the HLM were new, a number of significant commitments were discussed. Thus, this report basically considers the SWA program which carried out in Tanzania, but it did not consider the existing research area of this study.

The Water and Sanitation Program (WSP) is a multi-donor partnership administered by the World Bank to support poor people in obtaining affordable, safe and sustainable access to water and sanitation services in the rural areas in many underdeveloped and developing countries including Africa and Asia. This report emphasized that about 2.5 billion people live without access to improved sanitation around the world today, with a majority of them in rural areas. This underscores the continuing need to scale up and sustain efforts to increase access to rural sanitation. To address this challenge, WSP is working with governments and local private sectors to build all the components needed to develop and institutionalize large scale, sustainable rural sanitation programs. WSP helped 37 million people gain sanitation services in 2014. WSP works with client governments to achieve access to

sanitation at scale. Since the baseline was established, focus countries have helped more than 107 million individuals achieve access to sanitation. Based on the methods for contribution defined in the results framework, about one-third is due to WSP's work, although the amount varied across countries in Africa and Asia, but, did not pay attention to the south-east part or coastal areas of Ampara district on the basis of the contribution of CBOs in reducing water crisis.

Recently conducted surveys are also taken into the account of literature review. Recent surveys in the Menaca region of Mali found that 80% of wells were dysfunctional. In surveys in Northern Ghana, 58% of water points were shown as needing repair. The water and sanitation foundation fairwater estimates that there are 50,000 dysfunctional water supply infrastructures across Africa. Local people are being required to pay into a community fund for every 20 liters of water they use. In some countries, public provision of water supply is seen as the role of government and local people remain passive actors, expecting external agents to fund and maintain the system. Such lack of community mobilization and commitment is a fundamental hurdle impeding sustainability. In response, government, donors and NGOs have stepped into compensate for lack of capacity. But these top-down interventions may also backfire, distorting markets and attitudes in ways that contribute to an overall systemic weakness, as pointed out in recent publications by Water Aid. Government policy in most West African countries is to decentralize and delegate the provision of drinking water supply. Finally this study recommended that, Donors and NGOs should focus on these actors in all water supply projects on the continent, and ensure that progress to full delegation of responsibility and fund is rapid. This research linked with the concept of community water supply project on the basis of its sustainability, but did not deal with CBO managed water supply facilities.

Silva De P.K.W. (2018) in his work ‘Alternative Management Models in Small Town Water Supply Schemes in Sri Lanka’, described the alternative management models for water supply system which has been adopted in Sri Lanka. W&S development programs for small towns has introduced three alternative management models by ensuring the beneficiary participation for the management of water supply systems. This study reveals that CBOs are the core of this implementation process and the distribution of responsibility was assured through the establishment of tripartite operational and maintenance agreement. However, the nature of community engagement in the study region need to be addressed and further studies need to be done in the existing field in order to fill the research gap.

3. OBJECTIVES

The objective of this study is to examine the role of CBOs in water poverty mitigation programs in the selected coastal villages in Akkaraipattu region, and it places specific emphasis on the association between water poverty and the community water supply scheme implemented amongst study villages. Further, this study tries to highlight the mitigation interventions of state and non-state actors and the impact such interventions have had on rural water poverty reduction in line with community participation in the study community.

4. METHODOLOGY

Ampara district comprises of two regional offices namely; Regional Office Ampara and Regional Office Akkaraipattu which are functioning with 10 and 11 water supply schemes respectively. In the Akkaraipattu region there are 4 schemes that have been identified as water deficiency areas, particularly, in the eastern costal belt of the district, where arrangement made for drinking water supply facilities by using bowsers for the purpose of drinking and cooking. The



following map clearly displays the study community. The secondary data have been collected from officials such as the Divisional Secretariats, National Water Supply and Drainage Board of Akkaraipattu region, books, publications, journal articles, e-sources, previously conducted research, and other reports. Relevant data for this research have been gathered and analyzed using qualitative and quantitative tools through interviews, frequencies, percentages and cross tabulation. Out of 10 water supply schemes which operated by the CBOs, only 04 villages have been undertaken for this study. The study locations are; Navithanveli, Lahugala, Pottuvil and Alayadivembu. Altogether, 2279 families live in these 4 areas, out of that 1,039 families do not have water supply connections. These household were also considered for gathering information related to this study. Further, the Regional Sociologist and Regional Chemistry also were interviewed as key informants. And, the data have also been analyzed manually with the descriptive way.

5. RESULTS AND ANALYSIS

The water crisis has been identified as a challengeable issue for ensuring sustainable development at present. It is focusing that the ‘water war’ will be taken place in many countries in 2025, particularly these issues will escalate as a result of population growth, environmental pollution, usage of chemicals and polluted underground water sources. As a developing nation, in Sri Lanka, the water crisis, especially the rural water poverty occurred in 14 districts. Thus, the government of Sri Lanka has been implementing two different water supply systems under national water supply scheme. First system is ‘urban water supply’ (surface water) and the second system is ‘rural water supply’ (underground water source). The surface water sucked from dam and lake and purified or chlorinated, and then supplied to urban, suburban and the semi-urban areas island-wide including this study community. This urban water supply system is directly implemented by the National Water Supply and Drainages Board (NWSDB). At the same time, rural water supply is handled by Community-Based Organizations (CBOs) with the consultation or direction of NWSDB. But the CBOs are responsible and local people are key stakeholders in these water supply projects. The rural water supply system occupies underground water rather than the surface water. In this background, approximately 4000 rural-village water supply projects have been implemented by the government to eradicate water poverty. All these systems are managed by the CBOs in many villages in Sri Lanka (Report on Existing Water Supply Schemes, 2014).

This study tries to understand how rural water poverty has been reduced with the participation of CBOs. The water supply in the south-eastern coastal part of Ampara district is managed by the Akkaraipattu NWSDB regional administration. Thus, there are four Divisional Secretariats namely;

Navithanveli, Lahugala, Pottuvil and Alayadivembu taken into account of this study. The following table shows the CBO managed water supply scheme in many villages (rural segments) of aforesaid areas.

Table 7.1: CBO Managed Water Supply Scheme in Akkaraipattu Region

No	D.S. Division	G.N. Division	CBOs Name	Household	Number of house connections	Water Source
01	Navithanveli	Chawalakkada i Kampikkala	Social Economic Development Society	10	7	Dug well
		Sorikkalmunai 02	Sorikkalmunai Area Development Society	152	113	Dug well
02	Lahugala	Lahugala	Yalipubudu CBO	200	64	Dug well
		Panama South	Kantha Grama Sangwardana Samithiya	400	280	Bore Hole
		Lahuagala 02	Hulannuge CBO	350	260	Bore Hole
03	Pottuvil	Komari	Komari CBO	250	237	Bore Hole
		Kanahakirar	SECDA – Urani	239	16	Shallow well
		Hijra Nagar	Hijra Nagar CBO	258	240	Bore Hole
04	Alayadivembu	Hillru Nagar	Sanasamooha Nilayam	350	145	Shallow well
		Kannahipuram	Vipulanantha Community Cantor	520	328	Bore Hole

Source: Report on CBO Managed Water Supply Scheme, NWSDB, Akkaraipattu, 2016

According to the above table, it can be understood that the CBO managed water supply schemes are functioning in 10 villages in the study communities. Altogether 2,279 families live in these villages and out of that only 1,690 families have received rural water supply connections. Pathetically, 1,039 families do not have such connections or facilities and face problems related to safe drinking water. Among these villages, water supply facilities are consumed by ‘Kannahipuram’ (328) in Alayadivembu, ‘Panama South’ (260) in Lahugala, and ‘Hijra Nagar’ (240) and ‘Komari’ (237) in Pottuvil division respectively.

Even though, there are 239 families in Kanahakirar (Urani) of Pottuvil division, only 16 families consume the rural community water facility. Further, only 64 out of the 200 families in Lahugala, and 145 out of the 350 families in Hiru Nagar consume the rural community water facility. But Navithanveli, which is one of the research areas, where Savalakadai village has a very low amount of population. Altogether, there are 10 families, but 7 of them are utilizing the water supply under CBO managed facilities or scheme.

Furthermore, there are several families which needed water supply facilities. In order to this need, 223 families in Kanahakirar village, 205 families in Hiru Nagar and 192 families in Kannahipuram are essentially needed toward water supply. Under CBO managed water facilities in Akkaraipattu region drinking water has been distributed by using underground water supply system. Under this system, 5 villages use ‘Bore Holl’, 3 villages use ‘Dug Well’ and 2 villages use ‘Shallow Well’ and utilizing the rural water supply source, which is managed by the CBOs.

Although they have given drinking water supply in these villages, *has the drinking water supply accomplished their need?* this is the argumentative and questionable matter in this research. But, two major factors have to be discussed. The first one is “the level of public participation in rural community water supply facilities”, and the other considerable matter is “the challenges confronting the NWSDB when implementing rural water schemes”. Rural water supply and its sustainability depend on the greater involvement of local community. Therefore, top-to-bottom approach has been shifted to bottom-to-top approach in order to enhance the community participation in the RWS system across-countries including Sri Lanka. But, the success of this system is in the hands of public participation or the strength of CBOs. Despite this research, in all study villages, whether CBOs are actively functions or not with their main tasks. So that, in this connection, the information is gathered from two key-informants. Typically, Regional Sociologist and Regional Chemist are the most experienced persons usually visit rural areas and discuss the problems or obstacles of local people.

As a result of this, in ‘Navithanweli’ of Akkarapattu region, CBOs are abounded. Thus, this particular area is facing huge problems towards pure water. At the same time, Yalipupudu and Hulannuge CBOs (in Lahugala division) are motivated by the Civil Security Force (CSF). Public are involved in a systematic way, maintaining the water supply project, administrating the water bills monthly and some other works are maintained by them and their contributions were identified very obligatory. But on the other hand, the defeat of this project is that misunderstanding of those people who are working along with CBOs. The researcher noticed these problems normally amongst CBOs namely; Komari, Hijra Nagar and Sanasamooha Nilaya CBO.

While talking with regional Chemists, he said that;

“Community water supply system is the best way to reduce the water poverty. But to enforce the resolution in Akkaraipattu region has several obstacles. Specifically, it is very difficult to handle or administrate or maintain these CBOs in this area. And lack of solidarity among local people is one of the challengeable issues among them. Typically, while forming the CBOs the competition for leadership, misunderstanding who is going to handle the authority, to whom control there are continuous chain problems of them... (Interviewed with Regional Chemist, NWSDB).

Therefore, according these above opinions, this situation was found among CBOs in Alayadivembu and Pottuvil divisions. Moreover, the local people are feeling several technical problems while providing/supplying water systems (Handling *Bore Hole, Dug Well and Shallow Well*) among their selves.

The regional Chemist said that, they are struggling to handle the technical tools for their water supplying system and the *chloride* and *phosphate* which are used to mix with water, which is an unknown chemical to them and non-vigilantes about it. Furthermore, lack of co-activities of CBOs and other institutions regarding this concept, the weakness of interaction among the fund donating institutions are the challengeable one.

It is found that the aforesaid service provider’s (NWSDB) assistance and actions were highly effective for reducing water crisis in the study community especially in the urban settings. On this basis, the Pottuvil, Lahugala and Alayadivembu Divisions have been identified as highly rampant areas of drinking water scarcity. For this serious problem of water, it has been identified that lack of public awareness is the main cause so that it should be promoted by the organizations with the help of local community.

According to the interview had with Sociologist, NWSDB has said that;

“People are facing several problems to get pure drinking water around 14 districts in Sri Lanka. Thus, to reduce this crisis, in Akkaraipattu NWSDB region, the public participation in the CBO managed water poverty eradication projects (rural water supply) was low in earlier and now the people’s participation is a bit increased compared to the earliest situation. In fact we cannot say that the public participation had led to reduce water crisis in the country as well as in the region. But, the people who somewhat involved in the water poverty reduction activities in the study region, But, the involvement of youth was inadequate; meantime the people normally can support us when we go for a field visit or observation. The public participation is normally happening as temporary or situational effort but it should be promoted as a continuous and effective process among all villages in the study region respectively” (Interviewed with Sociologist, NWSDB).

Two focus group discussions were also carried out for gathering primary information from the local people relevant to the CBO managed water facilities, in order to analyze the level of the local people’s participation in Akkaraipattu region. The members from CBOs, representatives from NGOs, local people who have experience and knowledge about CBO managed RWS system, and others participated in the discussions. Based on two focus group discussions, it can be figured out that even though 92% of people in the research area have realized and understood the importance of public participation in water poverty reduction programs, only 15% of people are involved in the CBO managed community water projects. To ensure the public participation in the CBO managed water projects, some mechanisms have to be formulated or implemented, such as, every citizen of the country or every

member of the society should have the responsibility or the social obligation to participate voluntarily in all kinds of communal works like disease prevention, development, environmental protection, community water project and disaster management etc. The problems of water is a serious public concern, since it is a social phenomenon which is brought to the community as a result of the behavior of every individual in the family, group and society. In the meantime, the social problem should be handled by the community, therefore, people need an attitude change to understand this aspect and to make behavioral changes in order to involve voluntarily in any kind of public related actions, especially community water projects in the study villages.

According to the findings derived from primary and secondary data analysis, it can be determined that the public participation in the CBO managed water supply projects was very poor in the selected villages in Akkaraipattu region due to the social, economic, cultural, psychological aspects and the institutional setup currently prevailing in the research area. Further, the following factors also have been identified as the key issues in the study area, such as, the idea of community water scheme did not reach the grass-root level at all times, lack of social network or ownership among village people in the area of research, individualism and the feeling of exclusion from the main stream social events and in the communal duties, the local people are expecting money for their societal attachment, challenges for keeping the gender equity in any kind of social work due to the cultural barriers and religious restriction they follow, and awareness programs and other community water projects were implemented mainly by the NWSDB with the support of CBOs, not by other institutions as whole. In general, the research areas like Navithenveli, Lahugala, Pothuvil and Alayadivembu are also facing problems in obtaining safe drinking water. It makes several inconveniences to

reduce water poverty in these particular areas. But, the selected regions which are utilized for research is re-organizing these activities. Then only it can be reducing the problems of water poverty to the poor in the region can be reduced.

CONCLUSION

Many techniques have been implemented by the NWSDB in Akkaripattu region to eliminate drinking water problems. The local people in the study community are also motivated to take part in the rural community water supply facilities. But, the findings of this study revealed that local community themselves elude to actively take part actively in the CBO managed water supply scheme. They do not want to be involved in this mechanism to ensure public participation in their own villages where drinking water crisis is still obvious. The CBOs need a greater participation of rural people in this RWS system implemented in the respective study villages. It shows that rural people have poor interest in this manner due to cultural and psychological concern. The carelessness of safe water, lack of communal coordination or network, lack of technical (usage of chemicals) knowledge, challenges for community leader and gender equity in term of cultural barriers, and expecting money for all social responsibilities were also identified as main reasons for poor contribution of local people through CBO managed water facilities in preventing water crisis in the selected villages in Akkaraipattu region. So, there is a need for conducting similar researches in various parts of the island in order to find further facts and give appropriate solutions to the water deficiency in all needy villages in Sri Lanka, including study communities in the region.

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