

Water Scarcity in Aligambai Village, Alayadivembu Divisional Secretariat, Sri Lanka

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Abstract

The scarcity of drinking water creates major impacts on the rural community, in particular. The people living in Aligambai have been facing numerous problems in getting a safe drinking water supply, even for their daily drinking purpose. This paper sets out to identify the contributing factors toward water scarcity and how to cope with it by increasing water productivity as an integrated approach in the study area. This study is a combination of research methods; quantitative and qualitative data collection techniques. It is built on the premise of the cultural theory, which can be used to study water scarcity issues in rural water points. Mainly, it tries to understand the gap between the performance of the rural water supply sector and the SDG Goal 6: 'water & sanitation for all' through networking with pluralist institutions and mechanisms. Research methods, such as interviews with key informants, direct observations, and Focus Group discussions, have been employed for the study. The secondary data were collected from the Aligambai Resource Profile, records from the GND/DS office, and the statistical records from the National Water Supply & Drainage Board. This study found that water scarcity has affected the community in terms of life and livelihood activities in Aligambai. Therefore, it tries to bring out potential solutions to coping with water scarcity by suggesting measures for water productivity at all levels through an integrated approach in the study area.

Keywords: Water scarcity, Coping strategies, Rural water supply, Tribal, Integrated approach

Introduction

First and foremost, water scarcity is a pressing issue globally, and it is an issue of life and livelihood. The increasing stress on water resources brought about by growing pollution, and the rising demand is of serious concern worldwide. As many countries had been affected by water scarcity in diverse ways, UN-Water declared 'water scarcity' as the theme for World Water Day 2007. Water is essential for all sectors of socio-economic development. It is probably in rural areas that water scarcity affects people most. Added to that, these people are, for the most part, poor and marginalized. When there is not adequate drinking water supply, people have to face many difficulties in getting water from water sources located far away from their places. Much time and energy have to be spent on going to those places for fetching water.

economists complained of poor pricing and tariff design” (Whittington, 2008).

The study is built upon the premise of Mary Douglas’ cultural theory to rural water supply operationalization and management. The theory is applied to Aligambai village, which typifies the water scarcity challenges faced in providing rural communities with safely managed water. It is used to understand the gap between the performance of the rural water supply sector and the SDG Goal 6: ‘water & sanitation for all’ through networking with different institutions, such as the community, NWSDB, and other stakeholders. Interviews with key informants, direct observations, and Focus Group Discussions (FGDs) have been employed for fact-finding at an in-depth level. The necessary secondary data were collected from the Aligambai Resource Profile & records referred to from the Grama Niladhari (GN), DSD office, and the statistical records from the NWSDB.

Water scarcity in Aligambai is a demanding issue. The dug well water has not been used by the community as it is already contaminated. Given the context, getting a safe drinking water supply has become the need of the hour in the study area. Given this, a rural water supply system was established in 2015 by the Japan International Cooperation Agency (JICA) for Aligambai. However, this particular RWS scheme had to be stopped after two years of its function as it failed to provide a feasible solution for limited water availability.

Hence, the research problem is thus formulated for studying the influencing factors toward the water scarcity in Aligambai as the main objective of the study. The specific objective is to address how to cope with it by increasing water productivity of all sectors. A multidisciplinary approach is needed to consider the social, economic, cultural, and institutional constraints relevant to the water scarcity in the study area.

Material & Methods

Two-thirds of the people in the research area belong to a Tribal group, living with different socio, economic, cultural identities and speaking in a language called Thellunku and Tamil. They migrated to this area in 1942 during the implementation of

the Irrigation Project that provided agricultural lands through deforestation in this area. Further, it is believed that the origin of these people is India (Guhaballan, 2000 & Rameez A., et al.,). The total population in Aligambai villages is 1900, residing in 420 households. The main livelihood patterns of this community are agriculture, fishing, and doing labor work. It was found out that 325 water connections had been obtained from the Aligambai rural water supply system, which is in the abandoned stage now. The study was carried out by conducting two Key Informant interviews with the main priest of the church and the Grama Niladhari of Aligambai. Three Focus Group Discussions (FGDs) with the community people through purposive sampling and field observations were done on the community water supply system in Aligambai. Informal discussions were done with the villagers for fact-finding at an informal and in-depth level. The gathered data were analyzed using thematic data analysis for a comprehensive understanding of the factors and coping strategies for the water scarcity problem.

Results and Discussion

The study delivers the following results; an analysis of the factors that have contributed to the water scarcity in the Aligambai area with a special emphasis on the need to have potential solutions to water scarcity by increasing water productivity at all levels through an integrated approach.

The study found out that huge investment was made in implementing this rural water supply scheme in Aligambai. Still, it had been running only for two years with multiple technical and social issues that caused its dysfunction. The water scheme had been abandoned by the village CBO in 2017 as it failed to continue to supply safe drinking water.

The main reason for this failure is the limited water availability for extraction by the source available to distribute water to the total population. The scheme had been running on a groundwater source, that is, a shallow well, and however, its yield was not sufficient at all. Moreover, high electricity costs involved with water extraction from the shallow well and limited water supply of the scheme had led the CBO to consider giving up as the only option.

The president of Aligambai CBO, Father Susai (President of Aligabai, Church), during an in-depth - interview pointed out that,

“It was very difficult to run this scheme due to the scarcity of the water source, and there is a huge and urgent need for drinking water in Aligambai village. The relevant authority needs to take steps to interconnect this CBO pipe network with NWSDB” (2019).

The nature of drinking water sources, knowledge, and reaction of the local community was indicated by the respondents. Table validates the facts of water behavior and knowledge of the tribe in the study area to signify the objective of the study.

Table: Water source, connection, and behavior

Challenges	Respond	%
Have Water well	10	25
Receiving water from bowser supply	40	100
Have water connection (RWS-CBO)	34	85
Lack of knowledge on rain water harvesting	40	100
Bill payment under RWS-CBO supply	40	100

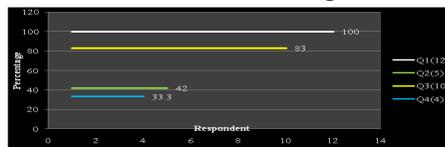
n = 40; Source: Field Survey, 2019

The above responses clearly explain the opinion of tribes regarding the condition of drinking water and its challenges. Around 75% of tribe families do not have water wells in their settlement, and only 25% of households stated that they have a water well. However, those wells are not in a condition to fetch drinkable water, and those have been contaminated, and however, they use water for other domestic chores. Meantime, almost all households 420 are receiving drinking water from bowser supply, which is not enough for their actual requirement. And 85% of households have rural (CBO managed piped) water connection. Yet, the operation or function of the scheme is abundant due to the lack of water source, even though people are interested in operating the RWS system within the village. The local tribes cooperated in the implantation of the above project because all respondents were agreed that they properly settled the monthly water bill during the implementation period.

As an alternative approach, the rain water harvesting system has been identified by the stockholders to implement in Aligambai village with

the participation of local tribes. But, they specified that they do not have any knowledge about the rain water harvesting system, which is required more technical aspects to adopt with the RWS scheme. So, the lack of knowledge has also been found as a huge challenge for initiating any alternative project among Aliambai tribal community. This opinion deliberated by the respondents while conducting FGD, which shows in the following chart 1.

Chart 1: FGD Conducted in Aligambai Village



FGD, Field Visit in Aligambai Village, 2019.

- Q1 - Water scarcity range;
- Q2 - Rehabilitation of CBO Scheme;
- Q3 - Rain Water Harvesting; and
- Q4 - Direct NWSDB Supply.

The FGD was conducted with 12 members, including CBO representatives (04) and eight (08) people from different categories, who are experienced with the issues of the present study carried out in Aligambai village. Mainly the above-mentioned questions were raised in connection with minimizing the water scarcity through coping strategy in the study area. The Q1, 100% of (12) respondents highlighted that the water scarcity issue is serious public anxiety in the study area. Meanwhile, 83% (10) of respondents agreed that they wanted to rehabilitate the abandoned CBO schemes to medicate this water scarcity issues while 42% (5) of participants responded to receive the pipe-born water supply facilities through NWSDB, and only 33.3% of the respondents pointed out that Rain Water Harvesting (RWH) would be useful to minimize the water scarcity. However, the rain water harvesting system is not familiar with the local community. Thus respondents marked a little attention on rain water harvesting while conducting FGD. Perhaps this RWH technology would be a sustainable solution for decreasing the water scarcity issue in many rural segments in the future.

Apart from that, it was learned that there had not been any proper coordination between the Japanese International Cooperation Agency (JICA)

and the National Water Supply & Drainage Board (NWSDB) as to how to take on the responsibility for sustainable maintenance of the scheme by adopting context-specific mechanisms mainly because of the water scarcity issue prevailing in this area.

Moreover, groundwater levels are falling further each year, and the dug well water in this area has been contaminated from expanding agricultural uses and climate changes, droughts, in particular. It has posed a major threat to the groundwater sources, and water quality degradation is also a major cause of water scarcity.

As per the interview with the Senior Mechanical Engineer, NWSDB, Akkaraipattu, Eng. T. Vinahamoorthi;

“The yielding rate of this Aligambai water source (Shallow Well) is not sufficient compared to the pump’s capacity. Depending on ground row water is not advisable to minimize this water scarcity prevailing in Aligambe village. An alternative water source needs to be identified to supply water in this area” (2019).

Further, the people fulfill their drinking water needs through bowser supply that comes to the village Church through Alayadivembu Preshiya Shaba (PS). Given the context, people’s time, money, and energy have been spent on collecting water, which in turn will deprive of their labor productivity and economic productivity since they have to travel about 2km away from their homes in collecting water supplied by the PS to the Church. Simultaneously, since the quantity of water supplied to the community through Alayadivembu is not sufficient even for their basic daily needs, people have been compelled to consume unsafe water from the existing water canal or river in this area. This study also found out that several CKDu cases have been reported from the area, and the respondents of the study have expressed that it may be due to poor quality water consumption from the wells.

The mothers and children of the households have had to take it on their shoulders in getting a daily domestic supply of water into their houses. The children would travel with elders in the family to fetch water from the river before school. At times, some children get late to school, and these children find no time for personal cleanliness or being able to

use time productively for doing their studies. Hence, this has created a major impact on their education as well. The women in the village are suffering a great deal due to an inadequate supply of safe water for daily needs, and it has created tension and imbalance in their household chores. The following snaps clearly show the situation of fetching water in the Aligambai village.

Picture 1: School Children & Women Fetching Water from Bowers



The school children are at the top of the water tank, and both women and children are actively involved in fetching water for their basic requirements. It is a pathetic condition observed by the researcher during the field visit. The solution mechanism has to be undertaken by the responsible stakeholders to tackle this problem among tribal in the study area.

Given all of the above, the integrated approach should look into water use and demand, regional aspects, rainfall patterns, and the ecosystems that sustain them. Furthermore, it has been suggested enhancing water productivity by implementing a properly functioning rural water supply system based on a participatory development approach as the existing one has been abandoned and awareness creation on protecting and restoring the ecosystems that are crucial to increasing the availability of good quality water in the study area.

As the villagers in Aligambai had been formerly deviated from the mainstream of the community and have been trying to incorporate as common civilized people in the society, it is paramount to mobilize them, empower them, and provide them with a safe drinking water supply by extension of pipe-line systems through the NWSDB. This study outlines that interconnecting the Aligambai RWS scheme tower network with the Irakkamam WSS end point (Barakath Nagar Junction) is about 4km away from the Aligambai scheme tower, focusing on

the necessary technical feasibility would bring out a sustainable solution to the water scarcity issues in this area.

Conclusion

The people living in Aligambai have been faced with many difficulties due to water scarcity. It has affected their socio-economic, cultural, health, and hygienic aspects. It is against this backdrop that the potential for access to improved water supply and better maintenance and integrating the community to coping strategies, such as rain water harvesting, educating on water conservation, and best water use practices, should be developed to the full. It can be argued that the Aligambai water scarcity issue takes a multidimensional form, and it requires an integrated approach by all the parties related to it. Having a strong rural water supply scheme established and following effective and equitable management practices requires knowledge of the institutional and managerial aspects. This integration needs to be carried out people-centered by considering people's socio-economic status, lifestyles, etc.

Suggestions & Recommendations

The study recommends that this community facing water scarcity mainly has two ways to address the issue. First, it can be stated that people need to integrate rainwater collection to cope with water scarcity. Secondly, water scarcity can be taken as an issue of poverty. According to the cultural theory, this community is a rural set up having less socially mobilized and less economically resilient to obtain their daily requirement of water. It has an impact on how successfully people can cope with the water scarcity issue. They are a special group of people slowly adjusting to the mainstream culture from how and what they had been before and mixing with other people in society.

This challenging issue calls for a coordinated effort from major stakeholders to concern public awareness creation and community mobilization. The community people can be mobilized to learn about drinking-water contamination risks in their homes by enhancing the knowledge, skills, and attitudes. Since this community is relied upon farming as one main livelihood, establishing a stable, safe drinking

water supply is deemed necessary to continue their agricultural activities.

This paper makes a case for implementing solutions through the integration of coping strategies and joint action by all parties for achieving water productivity. Promoting rainwater collection and measures to improve the efficiency of water use at a household level, awareness & mobilization at the public level, and institutional arrangements that enable an effective community-based scheme supported by the NWSDB through establishing a water supply system from the regional end point of distribution have been identified as ways to creating value for rural water users in Aligambai.

Note: The key findings of the paper were presented in the International Conference on 'Contemporary Global Challenges and Trends: Human Dignity at Crossroads,' at Department of Sociology, Manonmaniam Sundaranar University (MSU), Tirunelveli, Tamil Nadu, India, held on 27th January 2020.

References

- Briceno-Garmenedia, Cecilia, et al. "Infrastructure Services in Developing Countries: Access, Quality, Costs and Policy Reform." *World Bank Policy Research Working Paper 3468*, 2004.
- Chambers, Robert. *Rural Development: Putting the Last First*, Longman Scientific and Technical, 1983.
- http://ncst.nic.in/sites/default/files/documents/central_government/File415.pdf
- Hutton, Guy, and Jamie Batram. *Regional and Global Costs of Attaining the Water Supply and Sanitation Target (Target 10) of the Millennium Development Goals*, World Health Organization, 2008.
- National Family Health Survey (NFHS-2) 1998-1999*. International Institute for Population Sciences, Mumbai, India, 2000.
- Reddy, B Venkateshiva, et al. "Water and Sanitation Hygiene Practices for Under-Five Children among Households of Sugali Tribe of Chittoor District, Andhra Pradesh, India." *Journal of Environmental and Public Health*, vol. 2017.

- Riswan, M., et al. "Social, Economic and Cultural Challenges Confronting Gypsies in Aligambai Village, Sri Lanka." *South Eastern University Arts Research Session*, 2017, pp. 170-179.
- Somaratne, P.G. "Water Scarcity - The Big Picture." *Water Matters: News of IWMI Research in Sri Lanka*, International Water Management Institute, 2007.
- Statistical Report*, Community Based Organizations (CBOs). Aligambai, 2018.
- Statistical Report*, Divisional Secretariat Division, Alayadivembu, 2018.
- Statistical Report*, Regional Office, National Water Supply and Drainages Board (NWSDB). Akkaraipattu, 2018.
- Whittington, Dale. "How Well is the Demand-Driven Community Management Model for Rural Water Supply Systems Doing? Evidence from Bolivia, Peru, and Ghana." *BWPI Working Paper 22*, 2008.
- Zubair, Lareef. "Modernisation of Sri Lanka's Traditional Irrigation Systems and Sustainability." *Science, Technology and Society*, vol. 10, no. 2, 2005, pp. 161-195.

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