

A STUDY OF THE DRINKING WATER PROBLEM AND ITS POSSIBLE SOLUTIONS AT THE THIRAPPANE DIVISIONAL SECRETARIAT AREA IN THE NORTH CENTRAL DRY ZONE OF SRI LANKA

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Introduction

At present, whole world are suffering from various kind of environmental problems such as global warming ,sea level rising, ozone depletion, water pollution, air pollution, land degradation, deforestation, acid rain, biodiversity extinction, climate change...etc due to the manmade and natural phenomena. Lack of adequate quality and quantity of water for drinking is a one of the main problem created by the drought and manmade activities in the North Central Dry Zone of Sri Lanka. According to Keith Smith four types of drought conditions can be identified as meteorological, hydrological, and agricultural and famine droughts (Smith, K. 1996) however, drought is a natural event that cannot be avoided but Various human activities have been massively influenced to reduce amount of drinking water than droughts. Normally , about 1.1billion of people are suffering from without access to safe drinking water and 3.8 million people die each year due to water related diseases (WHO 2006).

Therefore, drinking water problem is a one of the global issue. Water has been become scarce resource due to lacking water for people both quality and quantity due to various reasons such as over population and excessive use of water without good management, water pollution due to the agro chemicals, climate change etc. But when exploring history of the Sri Lanka, it was clear that the ancient people could have been faced to drought conditions and overcome the problems getting adequate water for both agriculture and domestic purposes especially for drinking under the guidance of the King and rules forced by the king. However, at present though there are many institutions and rules and regulations, drinking water problem is increasing day by day. As well as, there are about 15000 both activated and abandoned tank in dry zone of Sri Lanka among them 90% is clustered into the cascades (Madduma Bandara 1985). Therefore, cascade system was a best solution for

supplying drinking water in the ancient times. But at present, though there is such system people have to face inadequate quality and quantity of drinking water ever than before. Therefore, it leads to create many health hazards like renal failure of the people in the area. That is why researcher carried out this research with an eye to identify the problem of drinking water and its consequences in the Thirappane Divisional Secretariat area and find the possible way of mitigating methods and suggest to overcome the problem. So, this research finding will be benefited by the various persons such as planners, other researches...etc.

Methodology

Researcher used both primary and secondary data and Questionnaire, interview, and field observation were used to collect primary data. Books, journals, websites, government institutional data were used as Secondary Data. Thirappane Divisional Secretariat Division was used as the study area where there are 41 Gramaniladari Divisions among them four GN Division were selected to collect sample for the questionnaire which are highly vulnerable to drought and insufficient water for drinking named 541 Manakkulama, 526 Galkulama, 533 Thirappanegama and 544 Paindikulama. 30 households were selected randomly and other relevant data were collected from MOH Office in Thirappane, DS Office in Thirappane, Science and Technology Resources Institution Thirappane and SPSS and MS Excel Software packages were used to data analysis and text, graphs, charts, images, maps, were used to data presentation.

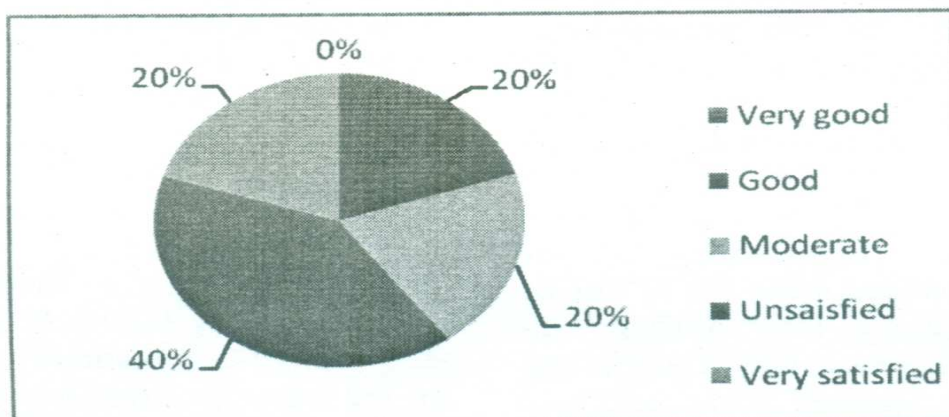
Results and Discussion

According to the result, drinking water problem of the Thirappane area is very high because people in the area are suffering from both quality and quantity of drinking water. When considering of the source of the drinking water, many families use protected or unprotected wells to get underground water as their source of drinking water 63 %of the families in the area used protected or unprotected wells to get their drinking water 56% equals to protected wells and 7% equals to unprotected wells. Community based tap water supply are used 23.28% families to get their drinking water. 12% of families use tube wells as their drinking water source of the area approximately. About 1.02% of families of the area used tanks, streams as the source of drinking water. Rain water harvesting as the source of drinking water use about 0.5% of families in the area. Most of the people in the area are suffering from poverty because most of the families' income source is the agriculture which is always damaged by the droughts. Hence, most of the families receive low income. However, drinking water problem has been imaged due to both lack of quality and quantity of water because seasonal drought leads to increase scarcity of water and different types of pollution due to natural and manmade causes direct to the reduce quality of the water and it may leads to health problems such as kidney failure because already 134 kidney patients have been reported in the area. According to Government Medical Office's Association they have point out the there are about 15000 kidney patients in the North Central Province and 20000 people die

annually due to kidney failure and about 100000 rupees is spent on one kidney patient per month by the government. Though this disease remains unknown etiology there is vast doubt regarding drinking water as the causative factor because many scientists have proved that high fluoride contain of the ground water and other substances such as cadmium, arsenic,..Etc in the NCP.(Illeperuma, et al 2009) .Researcher checked 30 sample of water collected from the study area where could be seen 8 samples out of 30 were very bad of electrical conductivity and high fluoride contain that exceeds the level of suitable for drinking according to World Health Organizations 'parameters. According to people perception on drinking water quality of the area 20% is good quality 20% is moderate quality 40% is unsatisfied 20%is very unsatisfied. Though there are about 52% of people whose income level is less than 6000 rupees per month, they like to pay about 40% of people in the area within the range of

450to 550 rupees per month and 60% of people like to from 500 to 1200 rupees for safe pipe born drinking water of National Water Supply and Drainage Board of Sri Lanka. As well as about 40% of people use water for drinking after boiling and 20% of people use water after filtering and about 40% of people use water for drinking without any treatment to the water it means they direct consume getting water from the well. Another observed factor is that though about 63% of people use water from protected of unprotected wells for drinking about 80% of wells have not been checked never to check weather its water suitable for dinking or not. Therefore, it is obvious that there is no proper mechanism to check water and provide suitable drinking water for people in the area. Therefore, the health hazards such as kidney failure and other water born diseases will increase exponentially if it is not given suitable solution for the mass in Thirappane area of the North Central Province as soon as possible.

Figure: 1 Public perception on drinking water quality in the area.



Source: Field survey data 2014.

Conclusions

According to facts, it is time to take possible mitigation measures to overcome the problem. Rain water harvesting may be the one of best way of supplying drinking water source, in addition, introducing safe water wells by checking regularly, introducing traditional methods of purifying water, suppling water board approved tap water, Using cascade system and village tanks, giving suitable water purification filters..Etc. At the same time, launching awareness programmes to increase positive attitudes on protecting environment, relevant institutional coordination, reducing water pollution through laws and policies...Etc are needed to overcome the problem. Specially, government must involve for overcoming this problem because various types of human activities massively influenced to pollute water in the environment such as misuse of agrochemicals, poor management of wastes, illegally discharge waste water from industries into streams and tanks, etc. So, these activities must be controlled through laws and policies.

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