

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL  
SOUTH ZONE, AT CHENNAI**

O.A No.148 OF 2021

D. CHANDRAMOULESWARA REDDY AND 8 OTHERS ... APPLICANTS

-VERSUS-

UNION OF INDIA AND 5 OTHERS ... RESPONDENTS

**Index**

| <b>Sl.No</b> | <b>Particulars</b>   | <b>Page No.</b> |
|--------------|--|-----------------|
| 1.           | Additional Reply Affidavit on behalf of Respondent No.5  | 1-8             |
| 2.           | Annexure R1 (Article published in Journal of Pharmaceutical Chemical & Biological Sciences , July - August 2016) | 9-16            |
| 3.           | Annexure R2 (Press Report in Deccan Chronicle Dt: 07.08.2015)  | 17-19           |
| 4.           | Annexure R3 (Schematic Diagram of PRLIS)   | 20-20           |

**Through**

PLACE: HYDERABAD,

MR.SANJEEV KUMAR  
MRS.H.YASMEEN ALI

DATE: 08.12.2021

Counsel for the Respondent No.5



- 1 -

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL**

**SOUTH ZONE, AT CHENNAI**

O.A No.148 OF 2021

D. CHANDRAMOULESWARA REDDY

AND 8 OTHERS

...APPLICANTS

-VS-

UNION OF INDIA AND 5 OTHERS

...RESPONDENTS

**ADDITIONAL REPLYAFFIDAVIT FILED BY THE 5<sup>TH</sup>RESPONDENT**

I, Rajat Kumar, IAS, S/o. B.K. Sinha, aged about 58 years, working as Special Chief Secretary, I&CAD Department, Government of Telangana, do hereby solemnly affirm and sincerely state as follows:

1. I am the Special Chief Secretary, I&CAD Department, Government of Telangana herein and I am filing this reply affidavit on behalf of the 5<sup>th</sup> respondent herein and I am well acquainted with the facts of the case.
2. I submit that in the present OA No.148 of 2021 this Hon'ble Tribunal has passed an Interlocutory Order on 29.10.2021 and the operative portion of the said order reads as under;

*"So, under such circumstances, we are satisfied that there is prima facie case and balance of convenience in favour of the applicant and if the relief is not granted, there will be irreparable and irreversible injury will be caused to the environment and as such in order to protect the environment, the 5<sup>th</sup> respondent has to be restrained by an interim order of injunction from proceeding with the project without completing the process of obtaining Environment Clearance as required under EIA Notification, 2006. So, 5<sup>th</sup> respondent is restrained by an interim order of injunction from proceeding with the PalamuruRangareddy Lift Irrigation Scheme (PRLIS) as it stands now pending before the MoEF&CC for Environment Clearance as a combined project without getting Environment Clearance as required under EIA Notification, 2016. The point is answered accordingly.*

*In the result, we hold that the preliminary objection raised by the 5<sup>th</sup> respondent is not sustainable and the same is rejected and hold that the application is maintainable and not barred by*

limitation.

*The 5<sup>th</sup> respondent is restrained by an interim order of injunction from proceeding with the Palamuru Rangareddy Lift Irrigation Scheme (PRLIS) without obtaining Environment Clearance for which they have already applied for and pending consideration by MoEF&CC."*

3. I submit that the erstwhile Mahabubnagar District (now Mahabubnagar, Nagarkurnool, Gadwal, Narayanpet and Wanaparthy Districts) is one of the worst drought prone and distressed areas in our country. There is tremendous shortage of drinking and farm water here as these are fluoride affected areas. A study conducted by researchers in June 2016 concluded that fluoride in water found in the Nalgonda district was more than twice the permissible limit for drinking water. As a result, a large part of the population of these districts is being forced to migrate to other parts of the country. The drought conditions are also causing social problems in the affected districts. In order to redress this situation, the answering Respondents have taken up PRLIS for alleviating the misery of these drought prone areas which will benefit 1226 villages where about 50 lakh people will get drinking water. In addition, 12.30 lakh acres agricultural land will also be supplied water. As such, in addition to PRLIS being extremely important for the concerned districts, it is also a critically important scheme for the State of Telangana. It is submitted that this Application has been filed purely for the purpose of staying such a welfare scheme, which has been initiated for providing basic amenities of water to the people of the State of Telangana. A copy of the research article titled "*Assessment of Fluoride in Ground Water for Drinking and*

*Agricultural Purposes in Ramannapet Mandal of Nalgonda District, Telangana, India*” by the Department of Soil Science & Agricultural Chemistry, College of Agriculture, Hyderabad published in Journal of Pharmaceutical, Chemical & Biological Sciences (July – August 2016) is annexed as **Annexure R-1**. A copy of the press report titled “*Drought causing distress migration from Telangana*” dated 07.08.2015 in the Deccan Chronicle is annexed as **Annexure R-2**.

4. I submit that work in relation to PalamuruRangareddy Lift Irrigation Scheme (PRLIS) commenced in the year 2016; since the project has two Phases i.e., Phase-I Drinking Water Component, Phase-II Irrigation Component; the project proponent has taken up Drinking Water Component works at the first instance, in as much as priority is for supply of drinking water, for which there is no requirement of obtaining Environmental Clearance under the EIA notification dated 14.09.2006; further, Drinking Water Component works have been taken up from 2016 onwards and more than 50% of the works are completed.

5. I submit that since Phase-II of the project i.e., Irrigation component requires Environmental Clearance under the EIA notification dated 14.09.2006, the project proponent has already applied for Environmental Clearance and after conducting public hearing, the application is under submission to the Ministry of Environment, Forest and Climate Change department for grant of Environmental Clearance. At this stage, the present OA has been filed and this Hon'ble Tribunal granted Interlocutory Order on 29.10.2021 staying execution of the project.

6. I submit that by this scheme, much needed water is intended to be supplied to the upland areas of Telangana by utilizing flood water during the 60 day period of the flood season which otherwise would put human life and property to harm. PRLIS therefore envisages lifting of 90TMC of flood water in 60 days during the flood season from the foreshore of the Srisailem Reservoir on Krishna river at Yellur (v), Kollapur (M) in Erstwhile Mahabubnagar District through five separate stages, ending at K.P. Laxmidevipally (v), Kondurg (M), near Shadnagar town at the highest elevation. These five stages each comprise of a reservoir and canals/tunnels between each reservoir for taking the water forward. A copy of the schematic diagram of PRLIS depicting its five stages (or 'lifts') is annexed as **Annexure R-3**.

7. I submit that the immediate purpose of PRLIS is to provide water for drinking and industrial purposes, and later for irrigation as well. For the present, however, the reservoirs and the connecting canals/tunnels are meant for drinking and industrial use of the water and the scheme is being presently implemented accordingly. In relation to the work already awarded, consisting of a total of 18 'Packages' upto Udandapur, the answering Respondents have already committed themselves to substantial expenditure and any stoppages would result in mounting time overruns and cost escalation, besides depriving the people of the State of Telangana, particularly in the dry erstwhile Districts of Mahabubnagar, Rangareddy, Nalagonda and the city of Hyderabad, the benefit of drinking water being provisioned by PRLIS.

8. I submit that it should also be noted that, the ultimate object of PRLIS is to implement an Irrigation infrastructure in phase-II on foundation of the presently envisaged drinking water components under phase-I. PRLIS as presently planned has no provision for Irrigation. Irrigation requires planning and construction of a network of canals originating from each proposed reservoir to take water to the surrounding villages. The schematic diagram of PRLIS clearly establishes that there are no such distributory ayacut branch canals envisaged nor proposed to be constructed. PRLIS therefore doesn't presently and as of now, fall into category of Entry 1(c) of the schedule to the EIA Notification, because the cultural command area which is involved is Nil, rather the immediate and planned aim of PRLIS is provision of drinking water and water for Industrial uses.

9. I submit that water is the basic need for the survival of human beings and is part of Right to life and Right to personal liberty as enshrined in Article 21 of the Constitution of India. The PRLIS has been commenced only to alleviate the misery of drought prone area which will benefit (1226) villages, where about (50) lakh people will get water. This project is extremely required, as there is tremendous shortage of drinking and farm water in Mahabubnagar and Nalgonda districts as these are fluoride affected areas and due to high fluoride content in the drinking water a large part of the population of these districts is being migrated to other parts of the State/Country. The drought conditions are also causing social problems in the affected districts. Therefore to address this particular situation, PRLIS has been taken up and whereas the application has been filed purely

for the purpose of staying for such a welfare scheme with an oblique motive.

10. This Hon'ble Tribunal in certain cases considered granting liberty to the project proponent to continue with the ongoing works subject to obtaining Environmental Clearance within a period of (06) months and directed not to commission the project without obtaining EC. Order in one such case is Appeal No.6 of 2020 dated:23.11.2021.

11. I respectfully submit that since the project work has been commenced in the year 2016 and several contracts have been awarded for executing the works relating to drinking water component in 2016, in the interest of justice this Hon'ble Tribunal may be pleased to permit the project proponent to continue the works relating to drinking water component alone by recording an undertaking that the project proponent shall obtain Environmental Clearance at the earliest for the project and the project shall not be commissioned without Environmental Clearance from the Ministry of Environment, Forest and Climate Change department, Government of India .

This Hon'ble Tribunal may be pleased to permit the project proponent to continue with the works relating to drinking water component of PRLIS with a direction not to commission the project without obtaining Environmental Clearance which is pending for consideration and pass any other order that this Hon'ble Tribunal so deem fit in the present case.



Special Chief Secretary to Govt.  
Irrigation & CAD Department  
Telangana Secretariat,  
Hyderabad - 500 022.

**VERIFICATION**

I, Rajat Kumar, IAS, S/o. B.K. Sinha, aged about 58 years, working as Special Chief Secretary, I&CAD Department, Government of Telangana on behalf of 5th respondent, do hereby verify and declare that the contents stated in the above reply affidavit are true and correct to the best of my knowledge and belief.

Dt :08.12.2021.

PLACE : HYDERABAD.



RESPONDENTS NO.5

Special Chief Secretary to Govt.  
Irrigation & CAD Department  
Telangana Secretariat,  
Hyderabad - 500 001

- 8 -

**BEFORE THE HON'BLE NATIONAL  
GREEN TRIBUNAL( SZ), AT CHENNAI**

O.A No.148 OF 2021

D.CHANDRAMOULESWARA REDDY  
AND 8 OTHERS

...APPLICANTS

-VS-

UNION OF INDIA  
AND 5 OTHERS

...RESPONDENTS

**ADDITIONAL REPLYAFFIDAVIT**  
**FILED BY THE 5<sup>TH</sup> RESPONDENT**

**MR.SANJEEV KUMAR**  
**MRS.H.YASMEEN ALI**  
**Counsel for the 5<sup>th</sup> Respondent**

- 9 -

Annexure R-1

ResearchGate

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/326413895>

## Assessment of Fluoride in Ground Water for Drinking and Agricultural Purposes in Ramannapet Mandal of Nalgonda District, Telangana, India

Article · July 2018

CITATIONS  
2

READS  
159

1 author:



K. Jeevanrao

Professor Jayashankar Telangana State Agricultural University

22 PUBLICATIONS 5 CITATIONS

[SEE PROFILE](#)



Original Research Article

## Assessment of Fluoride in Ground Water for Drinking and Agricultural Purposes in Ramannapet Mandal of Nalgonda District, Telangana, India

D. Vijaya Lakshmi\*, K. Jeevan Rao, T. Ramprakash and A. Pratap Kumar Reddy

Dept. of Soil Science & Agricultural Chemistry, College of Agriculture, Rajendranagar, PJTSAU, Hyderabad, Telangana, India

\*Corresponding Author: D. Vijaya Lakshmi, Research Associate (Soil Science), Dept. of Soil Science & Agricultural Chemistry, College of Agriculture, Rajendranagar, PJTSAU, Hyderabad, Telangana, India

Received: 19 January 2016

Revised: 01 February 2016

Accepted: 18 February 2016

### ABSTRACT

The fluoride concentration in ground water was analyzed during *kharif* and *rabi* (2012-13) seasons to identify the suitability of water for drinking and irrigation purposes in all the villages of Ramannapet Mandal of Nalgonda District, Telangana. Fluoride present in the ground water samples collected during *kharif* and *rabi* varied from 0.53 to 3.86 and 0.99 to 3.94, with an average of 1.71 and 2.08 ppm, respectively. As per drinking water standards, 53 % (16 samples) of the ground water samples in *kharif* and 67% (20 samples) of the ground water samples in *rabi* have fluoride content greater than that of maximum permissible limit of 1.50 ppm fluoride. On an average, maximum concentration of fluoride was noticed in 16 and 20 villages during *kharif* and *rabi*, respectively. Therefore drinking water is sufficient to produce severe form of dental fluorosis and mild form of skeletal fluorosis consumed for a long period. As far as irrigation is concerned, data show that none of the bore well and open well water samples have fluoride content above 10 mg L<sup>-1</sup>, which is the safe limit for all type of crop plants. Thus, all water samples tested in this investigation can safely be used for agricultural purpose.

**Keyword:** Fluoride; Ground Water; Drinking; Irrigation; Nalgonda

### INTRODUCTION

The occurrence of the high fluoride concentrations in ground water is a problem faced by many countries; India is one among

the 23 nations in the world. Over all 200 million people in worldwide and 65 million people among 29 states of India are facing the problem

with fluorosis as groundwater of Indian aquifers varies from < 1.0 to 25.0 ppm. The probability of occurrence of high fluoride concentration in ground and surface water was detected in various states in India. Telangana state is facing major problem with fluoride pollution because ground water is used as drinking and an irrigation source, a natural occurrence of excessive amounts of fluoride levels in ground water. Nalgonda district is one of the poorest and most drought-prone districts of Telangana in southern India. The area has long been associated with high groundwater fluoride concentrations which have been reported to reach up to 20 ppm [1]. In spite of continuous efforts by the government, external support agencies, NGOs and private enterprises the problem still remains unsolved.

The main natural sources of fluoride in the ground water of Nalgonda district are weathering and dissolution of rocks and minerals, emissions from volcanoes and marine aerosols [2]. This high concentration of fluoride in drinking water causes dental and skeletal fluorosis in human beings and also has negative effect on crop production. So periodical measurement and control of the concentration of fluoride is very important to avoid both biological and environmental damage. Hence, keeping in view the above facts a survey was conducted to identify the suitability of ground water for drinking and irrigation purposes.

#### MATERIALS AND METHODS

The study area forms a part of Nalgonda district, Telangana, which is located at a distance of 90 km away from Hyderabad (Fig. 1). This area experiences arid to semiarid

climate. The study area goes through hot climate during the summer (March–May) with a temperature range from 30°C to 46.5°C, and in winter (November–January), it varies between 14°C and 29°C. The average annual rainfall in this area is about 1000 mm, occurring mostly during south-west monsoon (June–September). Groundwater samples were collected during the *khariif* (September) and *rabi* (March) seasons of 2012-13 from existing water sources (open wells and bore wells) with the help of a handheld Global Positioning System (GPS). Geographical information *viz.*, latitude and longitude of the benchmark sites were recorded, so that the delineation of the areas having fluoride pollution can be done and ground water fluoride status maps can be prepared by depicting the element in water at village level. Totally 30 benchmark sites were fixed depending on the number of villages of study area for collection of water samples. The depth of the wells varied from 16 to about 30 m below ground level.

Water samples were collected in clean polyethylene bottles of 600 ml capacity. The sampling bottles were soaked in 1:1 diluted HCl solution for 24 h and washed with distilled water. In the case of bore wells, water samples were collected after pumping the water for 10 min. In the case of open wells, water samples were collected 30 cm below the water level using a depth sampler. Samples collected were transported to the laboratory and filtered using 0.45 µm Millipore filter paper fortified with 1 ml toluene to arrest any biological activity. The samples were stored at 4°C until used for fluoride analysis. Fluoride was analyzed by using Specific Ion Electrode method [3].

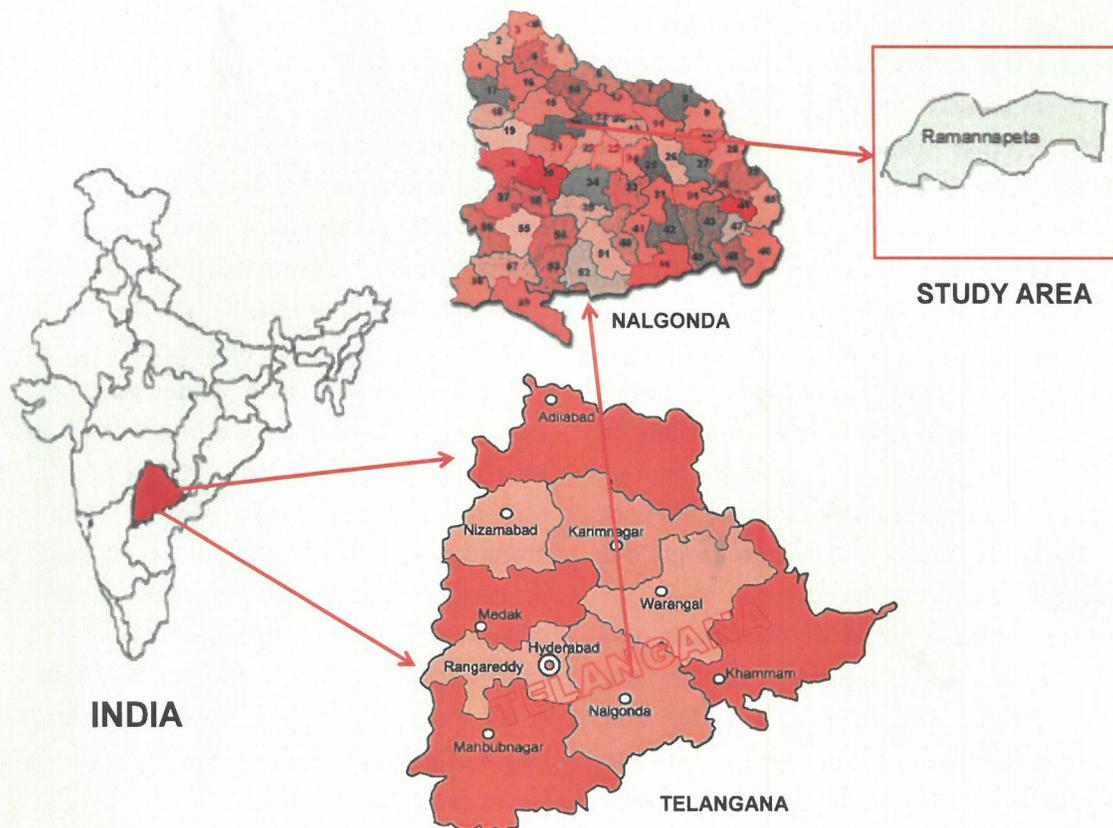


Fig. 1: Location map of the study area

## RESULTS AND DISCUSSION

Fluoride content of ground water collected from open and bore wells in the villages of Ramannapet mandals of Nalgonda district during *kharif* and *rabi* are presented in Table 1. Fluoride present in the ground water samples collected during *kharif* and *rabi* varied from 0.53 to 3.86 and 0.99 to 3.94, with an average

of 1.71 and 2.08ppm F, respectively. Lowest content of fluoride was recorded in Venkatapuram village (0.53 and 0.99 ppm during *kharif* and *rabi*, respectively) while the highest was recorded in Rontakolla village (3.86 and 3.94 ppm during *kharif* and *rabi*, respectively). Groundwater F status map during *kharif* and *rabi* are shown in figures 2 and 3.

**Table 1: Fluoride content in ground water samples collected in different villages of Ramannapet mandal during *kharif* (September) and *rabi* (March) seasons of 2012-13.**

| S.No. | Village          | Fluoride Content (ppm) |                  |
|-------|------------------|------------------------|------------------|
|       |                  | <i>kharif</i>          | <i>rabi</i>      |
| 1     | Ramannapet       | 1.46                   | 1.51             |
| 2     | Neernemula       | 0.78                   | 1.17             |
| 3     | Shobanadripuram  | 0.95                   | 1.05             |
| 4     | Laxmapuram       | 1.72                   | 2.25             |
| 5     | Nidhanpalle      | 0.98                   | 1.21             |
| 6     | Bogaram          | 1.03                   | 1.27             |
| 7     | Thummalagudem    | 1.15                   | 2.53             |
| 8     | Yellanki         | 2.28                   | 2.75             |
| 9     | Siripuram        | 2.07                   | 2.12             |
| 10    | Dubbaka          | 2.52                   | 2.56             |
| 11    | Rontakolla       | 3.86                   | 3.94             |
| 12    | Munipampula      | 2.35                   | 2.33             |
| 13    | Palliwada        | 0.92                   | 2.58             |
| 14    | Nagulanchagudem  | 1.29                   | 3.12             |
| 15    | Bachuppala       | 1.37                   | 1.43             |
| 16    | Suraram          | 2.43                   | 2.48             |
| 17    | Thurkapalle      | 2.76                   | 2.73             |
| 18    | Venkatapuram     | 0.53                   | 0.99             |
| 19    | Kunkudupamula    | 1.27                   | 1.36             |
| 20    | Peddabavigudem   | 2.09                   | 2.52             |
| 21    | Yennaram         | 1.98                   | 1.99             |
| 22    | Kallonikunta     | 2.04                   | 2.15             |
| 23    | Kakkireni        | 0.94                   | 1.29             |
| 24    | Pilligudem       | 2.82                   | 2.84             |
| 25    | Uttatoor         | 1.54                   | 1.67             |
| 26    | Iskilla          | 0.97                   | 1.23             |
| 27    | Lacchigudem      | 2.08                   | 2.58             |
| 28    | Janampalle       | 2.04                   | 3.12             |
| 29    | Sanjeevaiahnagar | 0.85                   | 1.39             |
| 30    | Kommaigudem      | 2.23                   | 2.36             |
|       | <b>Range</b>     | <b>0.53-3.86</b>       | <b>0.99-3.94</b> |
|       | <b>Mean</b>      | <b>1.71</b>            | <b>2.08</b>      |

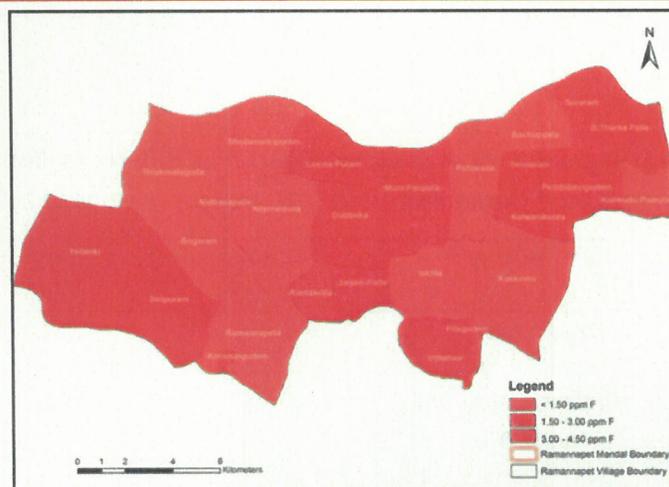


Fig.2: Ground water fluoride status map of Ramannapet mandal (Kharif, 2012)

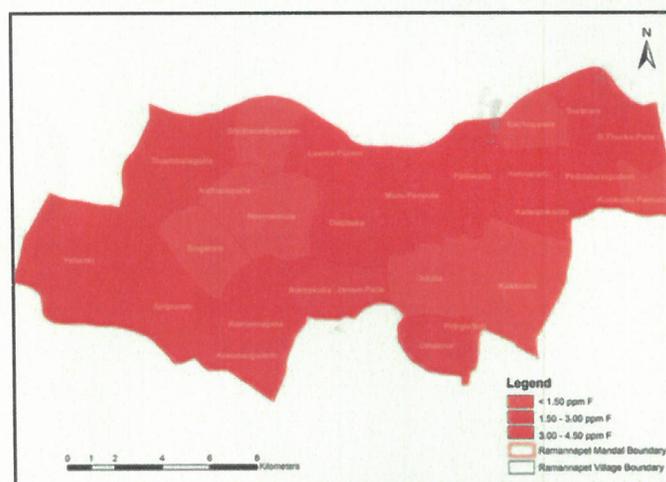


Fig.3: Ground water fluoride status map of Ramannapet mandal (Rabi, 2012-13)

As per drinking water standards of ICMR [4], the highest desirable concentration of F is 1.0 ppm in tropical countries and that of maximum permissible level is 1.50 ppm. Out of 30 samples, 53% of the ground water samples in kharif and 67% of the ground water samples in rabi have F content greater than that of maximum permissible limit of 1.50 ppm fluoride. On an average, maximum concentration of fluoride was noticed in 16 and 20 villages during *kharif* and *rabi*, respectively. Therefore drinking water is sufficient to produce severe form of dental fluorosis and mild form of skeletal fluorosis consumed for a long period. The rocks of this area possess

fluoride content higher than the world average. Weathering of rocks and leaching of fluoride bearing minerals from the basement granitic rocks are the major reasons which contribute to elevated concentration of fluoride in ground water. The other important natural phenomenon that contributes to high fluoride is evaporation [5]. Similar results reported by Reddy *et al.* [6] and Kishore and Hanumantharao [7] in Nalgonda district. According to FAO [8], the normal and moderately suitable range of fluorides concentration in irrigation water is from < 19 ppm ( $1.0 \text{ me L}^{-1}$ ) and 19 to 171 ppm ( $1.0\text{-}15 \text{ me L}^{-1}$ ), respectively. Safe limit of  $10 \text{ mg F L}^{-1}$  of

irrigation water has been proposed for all type of crop plants by Leone *et al.* [9]. The present investigation showed that none of the water samples were found to cross this limits and hence suitable for irrigation purpose. However continuous application of irrigation waters having toxic concentration of fluoride is likely to affect adversely the crop growth.

Especially higher F concentrations were observed in bore well water samples (>1.5ppm) and the F concentration in dug well water samples found to be within permissible limit of 1.5 ppm. The concentration in general, increases with the depth of bore wells and this indicates the possible geogenic nature of fluoride.

#### SEASONAL VARIATIONS OF FLUORIDE

When compared to two seasons, the concentration of fluoride in groundwater during *kharif* was lower than the *rabi*. Seasonal distribution is found significantly and the variation of fluoride is dependent on many factors. Generally, a high rate of evapotranspiration and over-exploitation of groundwater resources for agricultural and drinking water purposes during *rabi* season causes a low freshwater exchange and results in precipitation of salts, including F rich salts, temporarily in the top layers of the soil. During *kharif* season, the infiltrating waters leach these soils and replenishment of the groundwater by rainfall indicated a clean recharge from external sources. Hence, the concentration of fluoride is observed to be greater in the *rabi* season groundwater than in *kharif* season. As a result, 67% (20 samples) of the total groundwater samples from the *rabi* season are above the permissible limit of fluoride (1.50 ppm), compared to 53% (16 samples) of those from the *kharif* season.

Seasonal distribution of fluoride is also dependent on amount of soluble and insoluble fluoride in source rocks, the duration of contact

of water with rocks and soil temperature, rainfall and oxidation- reduction process [10 & 11].

#### CONCLUSION

High concentration of fluoride in groundwater of up to 3.94 ppm was measured. About 60% of wells had fluoride concentration above the permissible limit of 1.5 ppm set by Indian drinking water standard. The use of groundwater for drinking purpose from these wells has to be restricted. Suitable measures such as defluorinating the ground water before use and recharging the ground water by rainwater harvesting for irrigation purpose need to be practiced to improve the groundwater quality in this area.

#### ACKNOWLEDGEMENT

The authors are grateful to Professor Jayashankar Telangana State Agricultural University for providing financial assistance during my post-graduation under Dept. of Soil Science & Agricultural Chemistry, College of Agriculture, Rajendranagar, Hyderabad during the study.

#### CONFLICT OF INTEREST STATEMENT

The authors declare that they have no competing interests.

#### REFERENCES

1. Rao NS. Groundwater quality: Focus on fluoride concentration in rural parts of Guntur district, Andhra Pradesh, India. *Hydrol Sci J* 2003; 8(5): 835-847.
2. Rao MS, Mamatha P. Water quality in sustainable water management. *Curr Sci* 2004; 87(7): 942-947.
3. Wedepohl KH. Handbook of geochemistry (Vol. II-I) (Ed.). Berlin: Springer; 1969.
4. ICMR (Indian Council of Medical research). New Delhi manual of standards of

- quality of drinking water supplies special report series 1975; p 44.
5. Brindha K, Rajesh P, Murugan P, Elango L. Natural and anthropogenic influence on the fluoride and nitrate concentration of ground water in parts of Nalgonda district, Andhra Pradesh. *J Appl Geochem* 2010; 42(2): 231-241.
  6. Reddy DV, Nagabhushanam P, Sukhija BS, Reddy AGS, Smedley PL. Fluoride dynamics in the granitic aquifer of the Wailapally watershed, Nalgonda district, India. *J Hydrol* 2009; 592: 72-36.
  7. Kishore M, Hanumantharao Y. A survey on fluoride concentration in drinking water of Tipparthy revenue sub-division, Nalgonda district, Andhra Pradesh, India and batch mode defluoridation with renewable resources. *Rasayan J Chem* 2010; 3(2): 341-346.
  8. FAO. Water Quality for Agriculture. FAO Irrigation and Drainage Paper. Rome: FAO; 1994, p 29.
  9. Leone JA, Brennan EG, Danies RH, Robbins WR. Some effects of fluorine on peach, tomato and wheat when absorbed through the roots. *J Soil Sci* 1948; 66: 259-266.
  10. Mahapatra MK, Mishra A, Das BP. Fluorosis first reported in Naupada district of Orissa India. *Ecology, Environ Conserv* 2005; 11(2): 277-280.
  11. Paya P, Bhatt SA. Fluoride contamination in groundwater of Patan district, Gujarat, India. *Int J of Eng Stud* 2010; 2(2): 171-177.

**Cite this article as:**

D. Vijaya Lakshmi, K. Jeevan Rao, T. Ramprakash and A. Pratap Kumar Reddy. Assessment of Fluoride in Ground Water for Drinking and Agricultural Purposes in Ramannapet Mandal of Nalgonda District, Telangana, India. *J Pharm Chem Biol Sci* 2015; 3(4):169-175

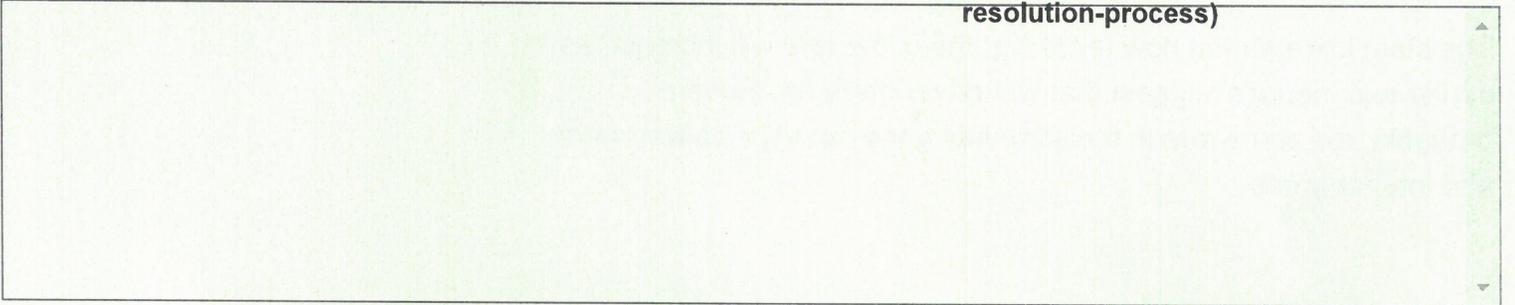


Sunday, Aug 22, 2021 | Last Update :  
06:50 PM IST

Auto Refresh

| Corporate Insolvency Resolution

Process (/corporate-insolvency-  
resolution-process)



NATION (/NATION), CURRENT AFFAIRS (/NATION/CURRENT-AFFAIRS)

# Drought causing distress migration from Telangana

DECCAN CHRONICLE

Published Aug 7, 2015, 6:51 am IST  
Updated Mar 28, 2019, 7:08 am IST



*Mahabubnagar is followed by Medak at eight lakh, Nizamabad at seven lakh and Adilabad at five lakh*



Picture for representational purpose



**Hyderabad:** The ongoing drought is fuelling distress migration from districts in Telangana, a trend that was witnessed in the early 2000s.

The severe drought conditions for the year have led to crop failure, mounting debts, chronic unemployment and failure of the NREGA scheme, especially in the districts of Mahabubnagar, Medak, Nalgonda and Adilabad, forcing large-scale exodus of farmers and others.

The state government now fears that the crime rate will increase as earlier experiences suggest that whenever there have been droughts, the crime rate in the state has gone up, especially in rural and interior areas.



Auto Refresh

| Corporate Insolvency Resolution Process (/corporate-insolvency-resolution-process)



As per official estimates, Mahabubnagar tops the list with over 10 lakh rural population migrating to Hyderabad and Ranga Reddy districts in search of livelihood, mostly as daily-wage labourers, watchmen in colonies, apartments, shops etc. besides engaging in granite and construction industry on the city's outskirts.

Mahabubnagar is followed by Medak at eight lakh, Nizamabad at seven lakh and Adilabad at five lakh. "The severe drought conditions will hit not only the agriculture sector but would also lead to several social problems. There will be large-scale migration of people from rural areas to urban areas. There were instances earlier of increased crime rates where drought migrants had settled because of poverty and unemployment. The roads and highways surrounding villages and interior areas witness a high number of theft cases with travellers on roads being attacked for money and other valuable items," said an official of the Agriculture department, which prepared a report on adverse impacts of drought.



**e-Paper (<http://epaper.deccanchronicle.com/states.aspx>) | Sunday Chronicle (</sunday-chronicle>)**

Citing instances, he said that the districts of Adilabad, Nizamabad, Medak and Warangal had recorded 60% increase in theft rates

between 2000 and 2004 due to consecutive droughts, with most being road-side thefts near Khanapur, Basar, Ramayampet, Dichpally etc.

The other social problem being witnessed on account of drought is increasing school dropouts in government schools in rural areas due to the families migrating to urban areas.

"It's difficult to earn even `100 per day in villages in drought conditions. But in Hyderabad, we can earn up to Rs 500 per day as daily-wage labourers easily and working as watchmen, security guards etc.," said Shivanna, a small farmer from Mahabubnagar district.



Auto Refresh

| Corporate Insolvency Resolution Process (</corporate-insolvency-resolution-process>)

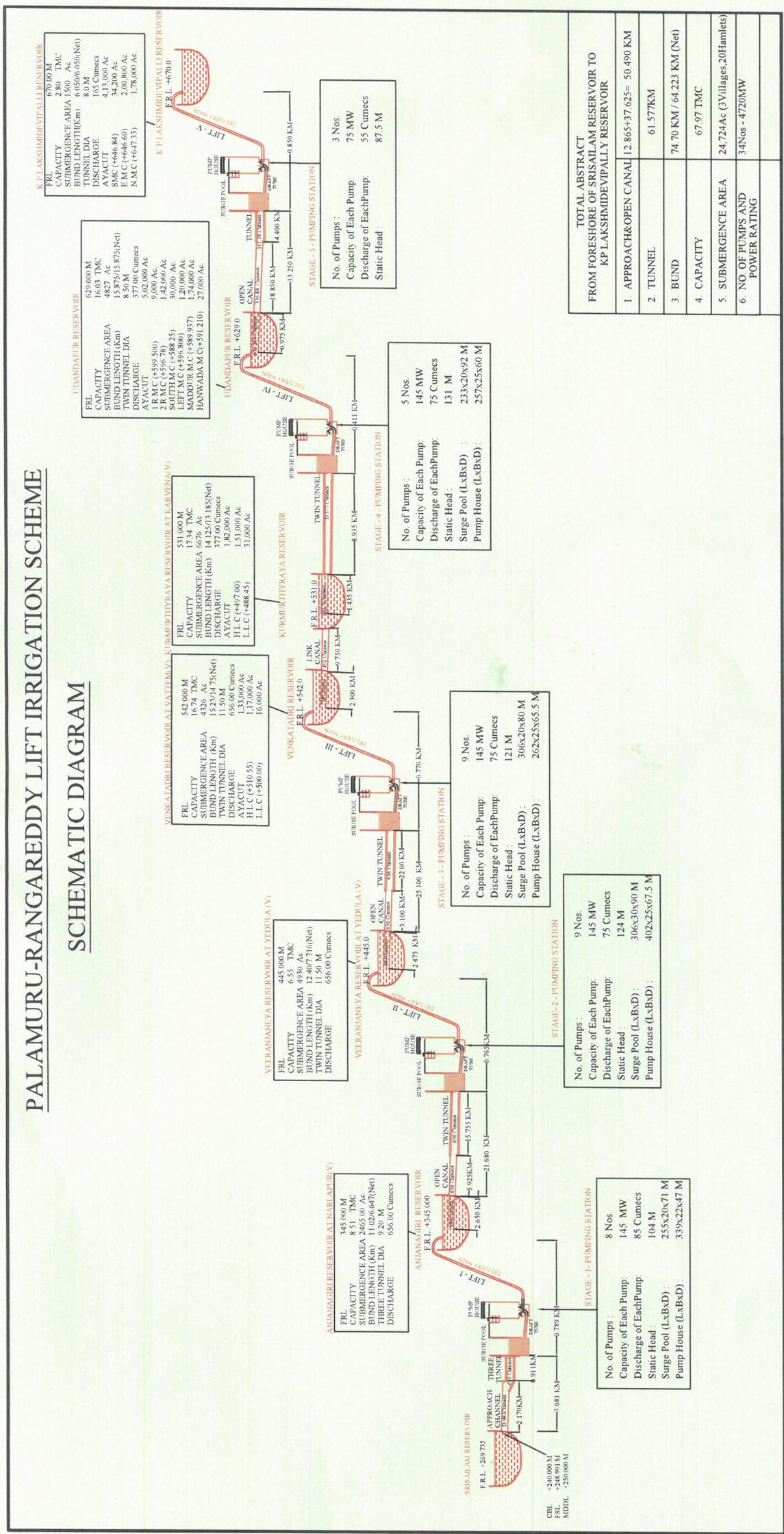


...  
**Tags:** [telangana \(/content/tags/telangana\)](/content/tags/telangana), [nrega \(/content/tags/nrega\)](/content/tags/nrega), [drought \(/content/tags/drought\)](/content/tags/drought)

**Location:** [Telangana \(/location/india/telangana\)](/location/india/telangana)



# PALAMURU-RANGAREDDY LIFT IRRIGATION SCHEME SCHEMATIC DIAGRAM



| TOTAL ABSTRACT<br>FROM FORESHORE OF SRISAICALAM RESERVOIR TO<br>KP LAKSHMIDHEVIPALLY RESERVOIR |                                    |
|--|------------------------------------|
| 1. APPROACH & OPEN CANAL   | 12,865+37,625 = 50,490 KM          |
| 2. TUNNEL  | 61.577 KM                          |
| 3. BUND  | 74.70 KM / 64,223 KM (Net)         |
| 4. CAPACITY  | 67,97 TMC                          |
| 5. SUBMERGENCE AREA  | 24,724 Ac (3 Villages, 20 Hamlets) |
| 6. NO. OF PUMPS AND POWER RATING   | 34 Nos - 47,20 MW                  |