

Minutes of the meeting on the formulation of a multi-sectoral project on Arsenic and Fluoride removal and its impact on health and environment- A case study for Assam.



Date and Venue- 20-07-2015 time 2.30 pm MS Iyengar Hall-CSIR-NEIST

The meeting was started with the welcome remark given by Dr. R.L. Goswami. Dr. Goswami informed at the outset that due to Assam Bandh several participants from AAU, Golaghat and Tezpur could not come to the meeting. The meeting was presided over by Dr. D. Ramaiah, Director CSIR-NEIST Jorhat.

Director gave speech-

This is second meeting related to water issue of Assam in NEIST after 28th November 2014. The issues related are water pollution, distribution, contamination etc. There are two things having utmost importance of future- Energy & Water. The demand of energy is growing day by day. In case of water a few years back there was no problem but at present it is a huge problem. As we are meeting to discuss issues related to water the most important thing is to implement the actions. Only meetings without any implementations will not be helpful. At the end society need to be changed.

As we are meeting second time what have been done after first meeting and the problems faced need to be discussed. Also some conclusion needs to be found out after the discussion. a) He emphasised on the need to draw a road map to go forward.

Introduction of everyone-

Four Presentations-

First by Dr. R.L. Goswami.-

Title- Formulation of multi sectoral research & technology demonstration

Technologies those are available in the CSIR Network on F and A, mainly in different CSIR institutions. Development methodology by deeper penetration. Mail from Dr. S. Sridhar.

Question-Answer Session

Q: NP Das- Are the technologies invented accessible to common people? How much are those user friendly and environmental friendly?

A: Director replied when J&K was affected by flood NEERI-ZAR was installed for water filtration all over Srinagar and succeeded to provide pure drinking water to flood affected people. He also informed that many of these technologies are proven and cost effective.

R.L. Goswami said about his work on waste to convert those to safer solid for disposal. Director intervened him by saying that that kind of solid may again contaminate water source and become unsafe.

NP Das asked to give director about earlier meeting on sludge management.

Director answered putting sludge underground was practiced but individual level practice of that is not possible. That must be state level.

NP Das shared one experience about a dog got addicted to discharged RO water and death of that dog within 6 months after developing that habit.

RL Goswami said that constant surveillance is required how RO discharged water is affecting ecology and environment.

Dr. Nabajyoti Saikia asked about sludge management by making cement. RL Goswami replied that research using calcium oxide is going on.

Second by Dr. Nabajyoti Saikia (Expert in cement & concrete sciences)

Title- Environmental behavior of wastes generated from arsenic contaminated drinking water purification units.

Proper waste management technologies are required. Two methods-

- Using Fe salt & KMnO₄
- Limestone siderite

Cement based technique is the most effective. The waste generated can be used in cement production in case of NE.1) He commented that recycling would be better than stabilization.

Question-Answer Session

Director commented about acceptance of people using arsenic in cement. Whether they will like to live in a house full of arsenic?

In earlier days arsenic was used to many medicines.

Third by Dr. Pranjal Tamuli (Doing 1 year research as a part of his MD course)

Title: Prevalence of Chronic Arsenic Toxicity (arsenicosis) and its relation to drinking water.

Earlier, arsenic was used as medicine. During WR-II, after discovery of penicillin use of arsenic was reduced. Now bad aspects of arsenic has come to picture- skin, lung, liver, liver cirrohotic.

Around the world 30 countries are arsenic contaminated. In India- WB, Assam(Ganga, Brahmaputra, Meghna basin contains arsenic)

In Assam 20 districts and among those Titabar block of Jorhat is worst affected.

On earth 245 minerals contains arsenic. Two forms- arsenite is toxic.

DN GuhaMazumdar from Kolkata Medical College is the top doctor of Arsenic. Nutritional status is very significant.

Arsenic enters in human body through drinking water & food. There is no lab in Assam to test sample of hair, nail of affected people to be confirmed.

According to WHO, 10 micro g/l is acceptable limit of presence of arsenic.

Ground water contamination-

Chronic arsenic toxicity=Arsenicosis= slow poisoning.

This leads to pigmentation and keratosis.

Leucomelanosic.

Skin manifestation= Thicker skin

Other problems=

Respiratory system= chronic cough.

Gastro intestinal system= nausea, diarrhea, abdominal pain

Liver damage=fowler's solution.

Cardio vascular system=black foot disease (Antafagesta district of Chille=Worst affected)

Nervous system= Stroke

Blood problem- anemia

Pregnancy outcome- dead baby

Weakness, fatigue, long term memory.

Arsenic accumulates in nails and hair because of its affinity towards keratin.

Solution may be- alternative water source Oxidation Coagulation

Dr. Tamuly emphasized on the urgency of such a study as there is yet no report on effect of Arsenic in human health in the Titabor area although the Arsenic content in Titabor area is reported as 60 times higher than WHO limit.

He also emphasized the requirement of highly trained dermatologist to study the case in detail.

He also emphasised a field level study of trained doctors involving a sample size of 10,000-20,000 people.

He emphasised establishment of specialized infrastructure to study the problem of Arsenicosis in detail.



Question-Answer Session

Why it shows in palm?

Laboratory confirmed study is needed. Elaborate study required. Doctors need to be trained.

DilipKakoti (PHED) said water has been getting wasted. People don't understand the value of arsenic free water. 11 lacs litre /day water is been supplied to only 9000 connections. There are many loop holes in PHED also but doctors should also try to make people aware (as people deny

listening to engineers about health). The research works done by various groups should reach PHED for implementation. He have emphasized on the need of an intensive IEC campaign for mass literacy on the As problem. He requested all the parties to work in convergent on the problem.

Tafijjul Ali member of Gaon Panchayat, MelamatiTitabor representing the affected community regretted that his area has left out by PHED. So people are forced to drink contaminated water. 8 people died in 2008. Villagers don't understand the problems from water. Village level awareness is very much required.

Third by NP Das

Mr. Nilotpal Das gave a multimedia presentation on the problem of Fluorosis about TapatjuriNagaon Assam.

Question-Answer Session

Whether water been supplied regularly at present?

Yes, but some people refuse to use water citing some religious issue. Hindu-Muslim community-water from same tank.

Ananta Khanikar

In first meeting someone said that Basmati rice of Titabor is not edible but no scientific reason had been proved.

Awareness is very much needed and the awareness message should be acute, simple, correct and only one. People get confused of multiple messages.

Many misuse of water is done because of installation of water taps in religious places and those places demand free water supply and those taps can't be closed.

He greatly emphasized on single message and need of mass campaign to community. Seminars help least if those messages don't reach the community. People continue using ground water despite of lots of schemes and some places are yet to get any scheme. In most of the cases government departments have employed wrong people.

Example- Rain water harvesting system was installed in school. Initially students denied to use that water, later looking at their teachers students started to drink now even carry that water to their homes for drinking. Some days back during summer vacation teacher called PHED to clean the tanks seeing fungus growing in those tanks. Some workers from PHED went to school and at the end just opened the water outlets and said that rain will clean those tanks.

Here in this meeting many pictures of affected people have been shown. But if those pictures go directly to common people they will panic. People use groundwater by seeing the clear water, so they need to make aware about using pond water and wastage of water need to be stopped. New

STOs suggested about connecting water meter. RWH can be done in villages also like schools for immediate effect.

R.L Goswami commented that in the areas of Kachari Gaon, Melamati where Arsenic free water from PHED has not reached so far there CSIR could explore the implementation of some of their own technology as demonstration plants.

R.L Goswami also commented that apart from CSIR in these places SaCI waters and Eco-concept could intervene to popularize rainwater harvesting.

Director Dr Ramaiah commented on this that the efficacy of the existing national technologies could be thoroughly studied in such a case.

- Ground reality & community feedback is important.

Two things- Drawbacks of water supply need to be addressed & technology may be able to do something.

Putting up demonstration plants can be tried from laboratory.

Rain water harvesting for community and educate people.

Regarding rain water preservation Mr Nilotpal Das cited the example of Apna Talab Abhijan of Madhya Pradesh and said about the good results obtained there from rejuvenation of old ponds.

Anant Khanikar talked about making people aware from small small real life examples like using solar energy, apnatalav etc.

NP Das- Let us decide what can we do in next three months?

Till now no collective awareness camp has been conducted in Titabor- camp through students will help- local NGO workers can be brought in.

Dr. Tamuly denied of anything coz his research will be completed only after 1 year.

AGENDA-

Finally the participants have identified for next three months the following possible activities –

1. Developing community material- Enhanced IEC activity involving school students.
2. Areas other than under scheme need to be surveyed for surface water resources and RWH. Unused RWH tanks (of schools) can be used for community purpose.
3. Collection of different background information for field testing of efficacy of national technologies for F and As removal.- Find out adv. & disadv. Of various technologies available at family and village level.

4. Dr. Tamuli will get in touch with Bio Tech dept of NEIST.
5. Awareness meeting at user level-village community.
6. Sharing works over mail. Email group will be activated
7. Network gap between clinical and lab confirmed data.
8. Sani water will provide infrastructure.
9. Doctor's training- Planning of a study of Arsenic affected areas around Titabor involving medical practitioners.
10. Planning for a bigger proposal on the F and As issue and related resource mobilisation.
11. Finally, a consensus has been reached on formation of a network around Jorhat involving
(1) NEIST(2) AAU (3) JMCH (4) Kaziranga (5) NGO and affected community (6) PHED (7) AAU

The participants asked CSIR-NEIST to act as a nodal institution in this regard.

NPDAs asked RLG to take responsibility for making the draft proposal.

Director said all related departments, work components need to be studied and identified. Different groups need to be convergent.

RLG will take initiative to collaborate different institutions for their proposal. Dr. Tamuli said well-defined goal is required. RLG said job responsibility for all will be identified.

