

*Report on the Proceeding of*  
**INTERNATIONAL WORKSHOP ON**  
**HEALTH ASSESSMENT AND RISK MITIGATION OF ARSENIC**  
**CONTAMINATION IN RURAL AREAS THROUGH COMMUNITY**  
**PARTICIPATION**

Held at

Lahore College for Women University (LCWU), Lahore

5-6 April 2006



Report Prepared by:

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**Day 1: April 05, 2006**

The international workshop on “Health Assessment and Risk Mitigation of Arsenic Contamination in Rural Areas through Community Participation” was held at Lahore College for Women University, Lahore on 5<sup>th</sup> and 6<sup>th</sup> of April, 2006 in IT Seminar Room of Lahore College for Women University, Lahore. The registered participants of the Distant Learning Short course on GIS conducted by PSGIS along with the staff and students from various educational institutions, offices and departments attended the workshop. There were thirty three registered participants for the workshop.

Registration of the participants was carried out at 8:30am on 5<sup>th</sup> April, 06. The inaugural session of the workshop started with the recitation from the Holy Quran by Ms Hafsa Roohi of 2<sup>nd</sup> semester B.Sc (Hons) Environmental Sciences. After the Talawat, Dr Atiq-ur-Rehman, AIST, Japan introduced with the programme and aims of the workshop. He explained that the main purpose of the workshop along with the scientific research is to create awareness among the community about the problem and also to induce the public participation for the solution of the problem. He gave a brief description about his ongoing project related to the Health conditions of the inhabitants of Chahkalalanwala

village due to Arsenic and Fluoride contamination through various sources in collaboration with the Aichi Gakuin University, Japan. He narrated the dilapidated situation of the village. The village is situated almost 50 km away from Lahore. Under the rule of division of districts by Government, the total area of the village had been divided up into two districts, one half was allocated to Lahore district and the other half (located near Mange Mandi, Multan Road) became the part of Kasur District.

Chahkalanwala is a village where few years ago (2000) the cases of bone deformation among children were observed. Some severe cases were brought to hospitals in Lahore city. Some were operated and some treated in the outdoor. He further added that the Japanese had undertaken this project when they heard of this issue in the newspapers to assess the risk and provide remedial measures to improve the deteriorating conditions.



Prof. Dr. Bushra Mateen, Vice Chancellor LCWU; Prof. Dr. K. J. Cheema (LCWU); Dr. Takeshi Komai (AIST)



Dr. M. Atiq ur Rahman; Dr. K. J. Cheema, Dr. Hideharu Morishita (AGU); Ms. Shaheen A. Rehman

Dr. Takeshi Komai, AIST Japan presented his presentation on “Risk Assessment on Arsenic Contamination in Drinking Water”. The assignment included procedures for hazard identification, risk evaluation, risk assessment and related mitigation. He presented his work on the levels of Arsenic in drinking water and there route of entry to water reservoirs using various statistical tools including models and graphical presentations. His showed in his work the areas of high Arsenic contents in various cities of Japan. He stressed on the relevant issues related to Arsenic contamination and its health effects in different regions of the world. He highlighted the use of GIS for the purpose of geographic study and mapping in his work. He said that as this Arsenic is fatally hazardous in their country that is why they started to work on this issue in this village to assess the health status of that population and to suggest the remedial measures.

Next, Prof. Dr. Bushra Mateen, Vice Chancellor, Lahore College for Women University, Lahore, addressed the seminar showing her concern for the issues related to Arsenic contamination in drinking water and the possible health effects. She added that LCWU is very thankful to the Japanese institutions for their heart felt concern about the issue and also for inviting this university for the collaborating work in this regard. She also appreciated the efforts of UDERC, PSGIS and Environmental Science Department in the University for their timely action to resolve the problem.

Vote of Thanks was delivered by Prof. Dr Kausar Jamal Cheema, Dean Faculty of Natural Sciences and Head of Environmental Sciences Department, LCWU. She specifically appreciated the efforts done by the Japanese team for their key role in

resolving the serious issue of Arsenic and Fluoride in the water and soil of Chahkalanwala village thus leading to irreversible health effects.

At 10:45 am, the delegates and participants were escorted to the International Art Exhibition on the themes of Environment, Water Pollution, Gender Equality and Earthquake, in New Examination Hall, LCWU, Lahore. Students from BFA department and Environmental Sciences department presented their work on these themes. Their work was highly valued by the delegates. Refreshments were served along with it.



After this exhibition the delegates and participants joined again in the seminar hall at 11:45 for the Technical session I, chaired by Dr Hideharu Morishita, Aichi Gakuin University (AGU) Japan. He gave a presentation on the application of GIS on various research projects. All registered participants of the PSGIS training course discussed their work individually after the presentation in order to get information about the application of GIS on their specific work. It was suggested by the participants that they should work as a team and should share the resources. It was also recommended that the Technical Session-II was chaired by Dr Takeshi Komai AIST, Japan. In this session Dr. Komai discussed the risk related to various issues like Arsenic and fluoride contamination. He correlated the episode of bone deformities with the tragic case on Minamata in Japan. His

presentation was followed by a documentary on the incident of Minamata, Japan which was due to Mercury contamination. He also showed a documentary on the Fluoride and arsenic contamination at Chahkalalanwala village. The documentary was an eye opener to the abhorrent conditions at Chahkalalanwala village.

The session followed an extensive question-answer session. In this session, participants showed their deep concern over the issue and proposed many recommendations for the relief of the affected community. They suggested that the efforts must be to protect the human population from the drastic effects of the contamination but other components like dairy, poultry and most of all agricultural resources must also be considered in this case.

**Day 2: April 06, 2006**

The Day 2 proceedings started with Talawat at 9:00am. The Chief Guest of the seminar was Ms. Shaheen Atiq-ur-Rehman, Executive Director BUNYAD Literacy and Community Council and Former Minister for Social Welfare, Govt. of the Punjab. Team of LCWU students from Environmental Science and Zoology Department, who had been working on the project of Chahkalalanwala village, presented their work.



Seven assignments on different parameters affecting the health conditions of the people and environment of the village were presented by these students. In these presentations, Ms. Numrah Nisar presented the role of media in highlighting the issue of Fluoride and Arsenic contamination in that area. She presented the graphic comparisons of the various local and National newspapers in relation to their news coverage in this regard. She gave date-wise analysis of various sources in this case. She told that after the flaring of the issue in the newspapers in July 2000, lot of criticism was made on the Govt. and public departments for their negligence about the issue. After a temporary ban on few nearby industrial setups, the situation became silent for a short time and not much news appeared in the papers. Afterwards, the issue was taken up by various organizations and institutions for research purpose including LCWU, Lahore. The succeeding presentations were on the research based studies carried out for the purpose of analysis of Fluoride and arsenic levels in soil, drinking water and in hair samples of the children from the study site. All the sample results were compared with the control samples from non-contaminated areas. The names of the participants who presented their research work are:

- 1- Role of media in highlighting the issue related to Arsenic and Fluoride contamination at Chahkalalanwala Village, by Miss Numrah Nisar (Environmental Science department).
- 2- Level of Arsenic in the drinking water and soil samples from Chahkalalanwala Village, by Miss Huma Asif (Environmental Science department).
- 3- Level of Fluoride in the soil samples from Chahkalalanwala Village, by Miss Saima Hussain (Environmental Science department).

- 4- Level of Arsenic in the hair samples of children at Chahkalalanwala Village, by Miss Ayesha Butt (Zoology Department).
- 5- Level of Fluoride in the hair samples of children at Chahkalalanwala Village, by Miss Faiza Butt (Zoology Department).
- 6- Level of Fluoride in the drinking water samples from Chahkalalanwala Village, by Miss Zunaira Masood (Environmental Science department).
- 7- Assessment of health status of people at Chahkalalanwala Village, by Miss Hina Chaudhry (Environmental Science department).

All of these studies showed very high levels of Arsenic as well as Fluoride in all test materials as compared to the permissible WHO limits. At the end of each presentation, recommendations were given to decrease the risk and to improve the quality of life in those areas. An open discussion was carried out after these presentations. The work of the students was highly appreciated by the audience. The documentary on Minamata and Chahkalalanwala was again shown. In this session, representatives from Chahkalalanwala village were also present. They included the volunteers, school teachers, Imam Masjid (head of the mosque) who are working in that village in relation with this issue. They explained the critical health and environmental conditions of their village and appealed for an early and efficient remedy. They appreciated the role of the UDERC for their keen interest and cooperation in solving the problem. As it was unanimously decided that drinking water is now the main source of contamination, so UDERC was providing the villagers' with the water filters at their door steps. The also told that government is providing them with the facility of clean water but it is not sufficient for that locality.

The next session was allocated for the workshop certificates, Art exhibition certificates and *Meraj Khalid Awards for the Promotion of Science and Technology in Pakistan* (2005-2006). Certificates to the workshop participants were given by Ms. Shaheen Atiq-ur-Rehman. Meraj Khalid Award for the promotion of Science and Technology in Pakistan (2005-2006) were also awarded by Ms. Shaheen Attique -ur- Rehman. This international award is on the basis of the services for the promotion of science and technology in various fields. Candidates from all over the world get themselves registered and then the selected candidates are announced. For the year 2005-2006, one ceremony was held on the occasion of this workshop while another will be held at Tokyo, Japan for the awardees from other countries of the world. Another award ceremony will be held in Pakistan to deliver awards to researchers and scientists selected for this award.



In this session of award distribution, awards were given to the selected candidates from the LCWU, Lahore. Prof. Dr. Bushra Mateen, Vice Chancellor, LCWU, Prof. Dr. Kausar J. Cheema, Dean Faculty of Natural Sciences and Head of the Environmental Science Department, LCWU, Mrs. Sabiha Fazal, Associate Professor, Department of Environmental Science, LCWU, Mrs. Husna Malik, Assistant Professor, Department of Environmental Science, LCWU, Mrs. Arifa Tahir, Assistant Professor, Department of Environmental Science, LCWU and Miss Sadia Khurshid Qureshi, Lecturer, Department of Environmental Science, LCWU. Four outstanding students from the pioneer batch of B. Sc. (Honours) Environmental Science Department, LCWU were also awarded with the awards. These were Miss Hina Chaudhry, Miss Amina Zafar, Miss Zahra Asghar and Miss Numrah Nisar. The participants and winners of the Art exhibition were also awarded with certificates by Prof. Dr. Bushra Mateen, Vice Chancellor, LCWU.

The workshop ended with concluding remarks by the chief guest and the worthy vice chancellor of LCWU.



Appreciation awards to volunteers from Chahklalanwala Village, District Kasur.