

# **Environmental Health Risk Communication in Karakalpakstan**

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## **INTRODUCTION AND OBJECTIVES**

The Autonomous Republic of Karakalpakstan in Uzbekistan has borne the brunt of one of the largest human-induced environmental disasters the world has ever seen – the near total destruction of the Aral Sea. In what The United Nations Environment Program (UNEP) has termed “*One of the most staggering disasters of the Twentieth Century*”, the near disappearance of the Aral Sea has had far reaching social, economic, and health consequences for the people of Karakalpakstan. The health care-system has been particularly affected and many health indicators, including infant mortality, are worse in Karakalpakstan than the rest of the country. The difficult and changing climatic conditions and the effects of massive pollution and environmental degradation add to the health burden. Children in this region, in particular, are more likely to die before they are five because they live with more poverty, contaminated water, soil and air. In response to this situation, Medecins sans Frontieres (MSF) began an operational research program in 1998 to study the impact of the ecological disaster on health of the population. Since 1998, three studies have been completed including the following: 1) Contamination of food with persistent organic pollutants (POPs); 2) Dust storm exposure and the impact on child respiratory health; and 3) Salt exposure via drinking water and the impact on hypertension and renal disease. In addition to sharing research results with the local and international scientific community, MSF in collaboration with the Health and Environment Consortium in Canada and Counterpart International’s Child Survival Program in Karakalpakstan, has begun a Risk Communication Project program to communicate the implications of research findings to the local population. Initial efforts are focusing on results of the food contamination study. The Project Partners are pursuing a two-pronged strategy of: 1) Building support for risk communication related to POPs contamination among local NGOs, government and academics; and 2) Establishing a foundation for future activities by educating the public on basic chemical contamination principles.

Noting the consistent call by local experts for focusing such educational efforts on children, the Project targeted school children as the initial audience for this educational activity. Specifically, given the recent MSF experience in training 9<sup>th</sup> grade science teachers on use of a tuberculosis education modules, the Project developed and provided similar module on chemical environmental contamination for these same teachers. The overall goal of this activity is to educate students on the sources, fate, and health and environmental impacts of environmental chemical contaminations so they understand the risks posed by this contamination. The content of the science teacher module focuses on basic concepts of human generated chemical contamination in the environment (sources, fate, etc.), routes of exposure, health impacts, and general protection/safety measures. While the focus of the Project is not on behavior change communication, the lessons educate students on the scientific basis for how people in the region can limit their exposure to chemical pollutants in the environment. Through its collaboration with Counterpart’s Child Survival Program, the Project has used a consultative approach in its implementation. In project preparation and implementation, project staff members have consulted with government institutions and non-government organizations to ensure that activities are culturally sensitive and locally appropriate.

## **METHOD**

To achieve these objectives, an advisory panel of environmental health educators and specialists, including officials from the Ministry of Education and Ministry of Health, were invited to support

development of the teacher module. The Project identified key references on curriculum development in environmental health for this age group as well as specific articles on the environmental health conditions in Karakalpakstan. This information was used to develop content on basic principles in toxicology such as dose-response, bioaccumulation, and routes of exposure. The movement of contaminants through environmental media - water, soil, air and food was also highlighted and a series of posters were developed to illustrate these concepts in a culturally sensitive and acceptable manner and sensitive to conditions in Karakalpakstan. Workshops and seminars including Training of Trainers (TOT) for teachers ensure that teachers receive adequate training and are capable of teaching key environmental health principles to their students.

## **RESULTS**

In May 2004 the project staff conducted seminars for 100 secondary school biology teachers from Nukus city and five districts of Karakalpakstan (Takhtakupir, Karauziak, Chimbay, Kegeily, and Nukus district). In September – October 2004 the project conducted similar seminars for additional 190 teachers from other districts of Karakalpakstan. As the concept of Risk Communication is relatively new in this region, there is great interest in this activity. The Project's special focus on children's environmental health has drawn attention and interest from community leaders, local NGOs, and most notably government ministries who understand the special vulnerability of children to environmental pollutants and are very keen in lending their support to the Project. The Ministry of Education, in particular, was very supportive of disseminating research findings in children's environmental health and organizing environmental health education activities not just for teachers but for the broader public as well. The Project partners hope that this activity will be the first of many to come in the ecologically devastated region of Karakalpakstan.

### **Project Implementors and Partners:**

**Medecins Sans Frontieres (MSF)** is an independent organization which aims to provide medical and humanitarian aid for people in crisis situations. MSF's relief programs are intended to help victims of conflicts, disasters, epidemics and refugees. This is done through the provision of direct, basic medical care. In addition, MSF endeavors to bring the victims' humanitarian situation to the attention of the world community.

**The Health and Environment Consortium (HEC)** is based in Canada and includes the Centre for International Health, University of Toronto; McMaster Institute for Environment and Health, McMaster University; Primary Care Research Unit, Sunnybrook / Women's College Health Sciences Centre; and Engineers Without Borders-Canada.

**Counterpart's Umir Nuri (Rainbow of Life) Child Survival Program** aims to sustainably reduce mortality among children under 5 years of age in target regions, and to build the capacity of its local partners in the area of child survival through regular training on interventions that address the major causes of child mortality and morbidity in the region. To achieve program goals, *Umir Nuri* works in close partnership with the MoH, Center Perzent, and various community-based organizations.