MOTHER AND CHILDREN'S HEALTH IN THE ARAL SEA REGION

O. A. Ataniyazova,
PERZENT, Nukus, Karakalpakstan, Uzbekistan

The Aral Sea crisis is a good example on how missmanagement of transboundary water resources has severely affecting about 3,5 million people at the delta of the rivers in Central Asia. The progressive deterioration of the environment has created an arid climate, intensified salinization processes, and increased salt/dust exposure. When combined with contamination of drinking water and other natural resources containing excessive salts, heavy metals and pesticides, these factors all affect public health and well-being.
The Republic of Karakalpakstan (an autonomous republic within Uzbekistan), whose 1.5 million people live around the delta of the Amu-Darya, is believed to be the most polluted area in the country. The population of this region is thought to have been exposed to chemicals for a long time, posing a serious risk to their and their future generations' health. The large mono-culture of cotton in the region is probably the main reason for toxic pollution. For more than 30 years heavy application of insecticides, pesticides such as dichlorodiphe-nyltrichloroethane (DDT), aldrin, dieldrin and lindane, herbicides and defoliants, used in the cotton industry and for the irrigation of crops, has led to chronic environmental degradation and health problems.
One of major problem is the water. Water deficiency at the delta affecting to social-economical condition of people and creates high risk for future of people in Karakalpakstan. There is increase in unemployment, powerty, morbidity, about 20% of people migrated. Unsafe drinking water is one of main problem. The ground water table in Karakalpakstan is contaminated with high levels of salts and other minerals (measured as Total Desolved Salts - TDS). The ground water quality ranges from 0.4g/l TDS to 6 -8 g/l. Situation is much worse in north part of Karakalpakstan. The World Health Organization (WHO) set an international standard for water mineralization for human consumption of 1.5 g/l TDS as related to palatability. The situation is much the same on the other side of the Aral Sea in Kazakhstan.

The population around the Aral Sea suffers from generally poor health. Part of the problem is due to a breakdown of the health care infrastructure since the collapse of the Soviet Union. The deteriorating health situation in Karakalpakstan parallels the worsening ecological situation and social-economical condition. Rates of diseases among the population seem to increase, particularly rates of anemia, kidney and liver diseases, respiratory infections, allergies, endocrine pathology, cancer, and tuberculosis. Women and children are the most vulnerable. Maternal and infant morbidity and mortality is significantly higher in Karakalpakstan and Kzyl-Orda than in other parts of Uzbekistan and Kazakhstan. High levels of reproductive pathologies (infertility, miscarriages, complications during pregnancy and in birth) have been observed in this region. A high rate of anemia is found in almost all groups of women in Karakalpakstan– in 87% of teenagers, 91% of non-pregnant women, and in 99% of pregnant women. Most of these women have complications during pregnancy and delivery, including hemorrhages. Some 87% of newborn babies are also anemic. Untreated anemia in pregnancy and young children poses a high risk for weak immune systems and a risk for brain damage.
The pathology among children involve birth abnormalities, pathologies in respiratory, endocrine and immune systems.

The investigation of Center Perzent has shown significantly high levels of organochlorine pesticides (HCB, -HCH, pp-DDE and pp-DDT) in the plasma of pregnant women, again far higher than in European countries. The high levels of organochlorine pesticides pose severe risks for both mothers and their babies. The effects include changes in reproduction and fetal development, disturbance of endocrine function, neurobehavioral changes, soft tissue cancers, dermatological damage, immunosuppression, and changes in liver function.

Our findings led to the conclusion that, the negative environmental factors (pesticides, high mineralization of water, iodine deficiency) could be one of the main factors in the formation of negative health consequences for women and children in the Aral Sea region and, in combination with medical and social factors, result in the high level of reproductive pathology, including maternal and infant morbidity and mortality

Center Perzent

Center PERZENT - The Karakalpak Center for Reproductive Health and Environment - is a national NGO which has worked to improve the health of mothers and children in the region since 1992. It activities include: a scientific research program on linkage between environmental factors and health: developed a community based clinic for women on reproductive health, organic farming and a healthy nutrition program; providing educational activities on health and environment; and supporting women's and children's initiatives. The activities cover more than 200.000 people in 7 districts.