

PN-ACA-985

# Environmental Policy and Technology Project

Contract No. CCN-0003-Q-00-3165

## **KAZAKHSTAN FIELD REPORT**

*Assessment Report in the Republic of  
Kazakhstan: Water and Sanitation Health  
Education Program in Novokazalinsk and Aralsk  
Trip Conducted November 1994*

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For the New Independent States of the former Soviet Union  
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## EXECUTIVE SUMMARY

This report summarizes the findings of a field visit to Kzyl Orda, Novokazalinsk, and Aralsk in the Kzyl Orda Oblast in western Kazakhstan during November, 1994 by an Environmental Policy and Technology (EPT) Project team. The purpose of the trip was to rapidly assess among people who live in the above areas the health problems, priorities, and needs that are related to water and sanitation, and to recommend health education programs and services relative to these needs, including training to implement this. This project is part of the program as defined in the Memorandum Of Understanding executed on 18 April 1994 between the Governments of the United States and Kazakhstan to "promote improved environmental health" in the Aral Sea disaster zone of Kazakhstan".

Interviews and field visits were made with key persons in government and non-government organizations at the republic, oblast and rayon levels as well as in international organizations. In addition to interviews, information was collected by reviewing records, and documents such as health statistics and demographic data, health education plans and programs, and health education materials such as posters, pamphlets, and lectures given by doctors.

This information was analyzed according to the criteria shown in Appendix 3 and the findings are reported in the body of the report.

The findings indicated that certain actions are needed to strengthen the capacity of the republic and oblast government organizations to plan, develop, implement, and evaluate effective health education programs and services to promote improved water and sanitation conditions and practices.

Four major recommendations are made:

1. Increase the capacity of the Kzyl Orda Health Care House to produce new and improved health education materials related to water, sanitation, and personal hygiene by supplying them with certain basic audio-visual equipment.
2. Increase the ability of key staff members in the oblast and rayon agencies such as health, hospitals, schools, agriculture, and communication media together with community leaders in these areas to do joint assessment of health needs and joint planning and implementation of health education programs through a five day Interagency Planning Seminar.
3. Promote the use of effective health education methods and materials in the target areas by establishing several model centers such as at a school, hospital, collective farm or workplace.
4. Improve collaboration between all organizations and agencies that have responsibility for financing, planning, implementation and evaluation of health education programs for improving environmental health conditions in Kazakhstan.

## Section 1 Introduction

### 1 Background and purpose

This project is part of the program as defined in the Memorandum Of Understanding executed on 18 April 1994 between the Governments of the United States and Kazakhstan to "promote improved environmental health" in the Aral Sea disaster zone of Kazakhstan". The project area is in the Oblast (region) of Kzyl-Orda and specifically in the Rayons (districts) of Novakazalinsk and Aralsk.

The population living in the towns and rural areas northeast and adjacent to the Aral Sea have been living in the disaster zone and have been subjected for many years to unsatisfactory living conditions. These poor living conditions include the lack of safe water, inadequate sanitation, and high rates of waterborne diseases. The majority of the population living in these areas are concentrated in the towns of Kazalinsk, Novokazalinsk, and Aralsk, and in collective farms and other rural settlements that surround them. See Appendix 1 for map showing the location of towns and rural areas visited.

Approximately 150,000 people live in the areas of Aralsk and Kazalinsk. Historically, people drew their drinking water from rivers and canals. This water was of satisfactory quality until the 1960's when the surface water began to deteriorate from upstream agricultural, industrial and community activities. Water became increasingly polluted with mineral, bacterial, and chemical constituents.

The use of this contaminated water had serious health effects as evidenced by the high rates of typhoid, paratyphoid, viral hepatitis and dysentery in the region. Infant mortality, a universally accepted indicator of community health, was considerably higher in the disaster zone than in the nation.

The purpose of the public health component of this project is to better understand how to manage public use of water and human wastes, and to improve public understanding of the relationship between safe water, basic sanitation, and human health.

#### 1.2 Project team

The investigations were conducted by the Environmental Policy and Technology team and included Wilbur Hoff, Dr.PH, Public Health Education Consultant, Donald C. Johnson, Dr.PH, Public Health Education Consultant, and Albert Shafransky, M.D., EPT Public Health Assistant.

#### 1.3 Scope of Work

The scope of work for the assessment report includes the following:

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a) rapidly assess among people who live in the above areas the health problems, priorities, and needs that are related to water and sanitation.

b) recommend health education programs and services relative to these needs, including training to implement this and,

c) plan and conduct training to strengthen the capacity of local persons to implement these health education programs and services.

This assessment and trip report included the assessment and recommendations.

## Section 2 Methodology

The methodology used by the team to collect data for assessing the health problems, priorities, and needs as described in the scope of work, a) above, included the following activities:

1. Interviews and field visits with key persons in government, non-government, and international organizations. These included key persons who work in fields of health and medicine, hygiene and sanitation, agriculture, education, ecology, and communication media, at the republic (national), oblast (region), rayon (district), and local levels. See Appendix 2 for list of persons visited.

2. Field trips were made to visit with persons in the towns and settlements of Kzyl-Orda, Novokazalinsk and Aralsk, and to rural communities in collective farms nearby.

The schedule for these field visits was as follows:

8 to 9 November - Kzyl-Orda  
10 to 11 November - Novokazalinsk  
12 to 13 November - Aralsk  
14 November - Kzyl-Orda

3. During field visits, observations were made to determine unsafe water sources and unsanitary conditions, such as water standpipes, latrines, and surface drainage.

4. A variety of information was collected by reviewing records and documents such as health statistics and demographic data, health education plans and programs, and health education materials such as posters, pamphlets, and lectures given by doctors.

5. The team formulated a criteria for assessing health conditions related to unsafe water and sanitation and used this as a guideline to collect the required information. See Appendix 3 for the development of the criteria used.

## Section 3 Findings

### 3.1 Demographic conditions

#### 3.1.1 Basic health indicators

Data obtained from competent sources reveal situations which have appeared over the last four years. See Appendix 4, Tables 1, 2, and 3.

During the period from 1989 to 1993 the population of Aralsk rayon has increased up to 12.8 per cent, despite the birth rate which has fallen to 31.6 per cent (Figure 1). The death rate has been gradually going down whereas general morbidity has been increasing to 46 per cent above the level existing in 1989 (Figure 2).

The incidence of water-borne diseases, such as viral hepatitis A and acute intestinal infections, has gradually decreased. This may be due to improvement of drinking water quality in the rayons and implementation of anti-epidemic measures.

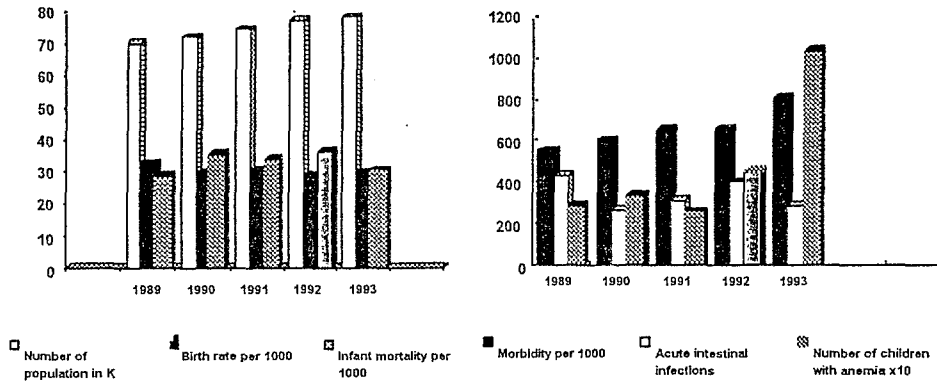


Figure 1.

Figure 2.

During this time, the number of children and women suffering with anaemia increased dramatically. The data from Goskomstat show that the consumption of basic foods (balanced diet) in Aralsk and Kazalinsk regions has decreased very considerably (Table 3). At the same time the intake of sugar and foods containing carbohydrates has almost doubled.

In Kazalinsk rayon the data from 1992 to 1993 (Figure 3) reveals an increase in population of 2.6 per cent, and an increase in the birth rate of 6.6 per cent. Overall morbidity has decreased (Figure 4) for the 2 years by 27 per cent, but infectious morbidity has increased by 52 per cent. This may be caused by an increase of cases of viral hepatitis type A, by the same level of 52 per cent. The incidence of intestinal infections decreased during the last 2 years by 28 per cent.

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five years ago is inoperable because funds for the project ran out and defective connections and materials caused breaks in the pipes, thus making the already installed pipelines inoperable. No new funding has been forthcoming to rehabilitate the inadequate installation or to complete the pipeline for the water distribution system.

In the meantime, householders have constructed concrete reservoirs for each home. Three water trucks are employed continuously to bring water from the reservoir/pump station to the homes. Each water truck has a capacity of 500 liters. Two to three deliveries are made to each home per month at a cost to the homeowner of twenty tenge\* per delivery. As benzene (gasoline) shortages are anticipated this winter due to unavailability of funds and fuel shortages, there is fear the provisional arrangements for use of the trucks will not hold up. Monthly salaries to water system workers and others in the area have not been paid for three months. Funding and technical support are needed to complete the pipeline network before water can be piped to the community. Shallow wells (4 to 6 feet deep) exist for watering animals, for household cleaning, and for other purposes.

The possibility of developing model demonstration water and sanitation projects in schools as well as similar projects for home gardens was also explored in view of the extensive prevalence of anaemia from nutritional deficiencies. These conditions lower resistance of infants, children and mothers to water borne diseases and therefore need to be considered as an important component of community education programs regarding water borne diseases. It appeared that home and school garden programs were an innovation the people in Aralsk Rayon had not known or been aware of.

Agricultural specialists could be called upon to assess what is required in respect to the soil conditions and the water quality in the shallow wells for irrigation of school and home vegetable gardens in the collective farm settlements. Consideration could also be given to developing and demonstrating the value of composting animal, human and other organic wastes for fertilizer so that readily available and sustainable sources of fertilizer could be used for vegetable gardens which, in turn, could contribute to improved nutrition in the community.

According to the Head of the Aralsk Collective Farm, all people boil their drinking water. The samovar (tea maker) in each home seemed to be the main source of boiled water consumed by the families.

A bathing house structure with a water tank reservoir on its roof was observed near the water reservoir of a family compound. These "shower houses" are used mainly in summer.

Puddles of water were observed in various parts of the rural community, but were not as extensive or obviously polluted as those observed in Aralsk town.

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\*The exchange rate in November 1994 was approximately 1US\$ = 55.00 tenge

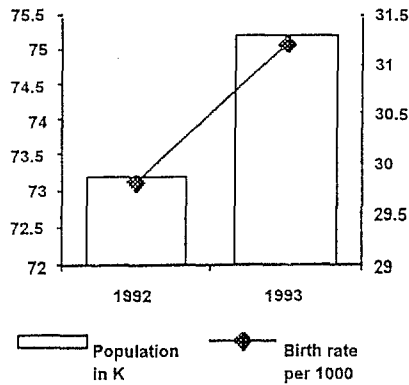


Figure 3.

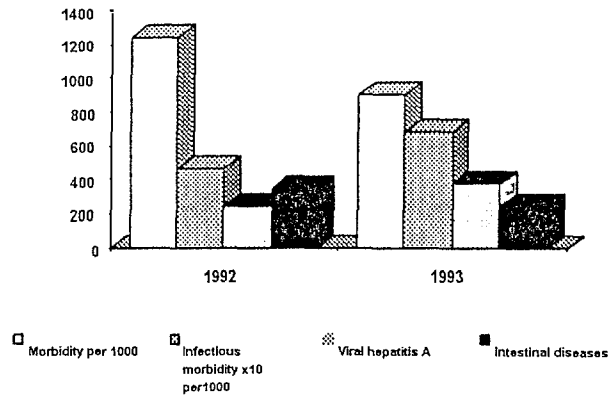


Figure 4.

### 3.2 Environmental conditions

#### 3.2.1 Water sources

According to the October 1994 report of the EPT field investigations which were carried out during June and July in the Kzyl Orda Region, the cities of Aralsk and Novokazlinsk obtain their drinking water from two different sources.

#### Aralsk Rayon

Aralsk and most of the rural settlements north of Novokazalinsk obtain their water from the Federal Water Resources Commission's transmission pipeline and booster pump stations from artesian groundwater wellfields about 110 km northwest of Aralsk. The well fields at Kosaman and Berdykol are operated by staff who live in small settlements near each well field and pump station. They had not been paid salaries for six months. Major equipment is antiquated and in need of spare parts or replacement. In June, Kosaman had 30 wells of which 16 were operational. Twenty of these had been constructed in 1991-1992. Only eight of the twenty new wells were operational. When problems occurred with the wells, they were taken out of operation and parts salvaged for use in other wells. This was the only source of spare parts. With this modus operendi, the functioning of these wells will likely continue to decrease.

In Aralsk Town, piped water comes mainly from the Kosaman and Berdykol well fields. Most homes and buildings appeared to have piped water. No stand-pipes were observed in Aralsk. Pools of stagnant water were noted particularly near the industrial sites.

#### Aralsk Collective Farm at Shizhaga

The water source of the Aralsk Collective Farm is a well field about five km from the collective farm. There is a large reservoir and pump station at the edge of the settlement. The pump station is clean. It appears to be in good condition and well managed. The pipeline network which local technicians from Aralsk started installing

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People exploit all possible water resources throughout the year as dictated by climatic and seasonal conditions including collection of rain water when it rains, use of melted snow in the winter and surface and river water when other sources are not available.

### **Novokazalinsk Rayon**

Novokazalinsk gets its water through it's own water treatment plant supplied from the seriously polluted Syrdarya River. The previous EPT field investigation team noted that "some of the health statistics are horrendously bad and the water supply improvements clearly warrant immediate attention." The questionable operation of the water treatment facility, and the erosion and breakage of both sewer and water pipe lines throughout the system, contribute to a highly contaminated drinking water system. Contaminates include bacteria, salts, phenols, cadmium, and other chemicals from fertilizers and insecticides. A shortage of chlorine prevents adequate treatment of the water system.

Although Novokazalinsk is not yet served by the transmission main from the wellfields, it is anticipated that some operational improvements could provide water of better quality, in the short-term, until a new pump station near Pump Station 7 can be completed.

In Novokazalinsk, the health authority said that piped water reaches 80 per cent of the houses. The rest depend on public stand pipes which were found to be running into open drains and not in good condition. Piped water was obviously not reliable as reservoirs for hand washing were found both in hotels and homes. The piped water supply was turned off more than once during the duration of our two day visit.

Stagnant water was observed in drainage ditches lining the roads throughout the town and large, obviously very polluted water ponds were very prevalent in the industrial areas.

The Deputy Chief of the hospital reported that the Baikonur disposal of sewage into the river had been stopped and the water in the town plant was chlorinated. They found that untreated water contained two million E. coli per litre, but that up to 70 per cent of the water was now treated. He said the existing network of pipes is 30 years old and is in very bad condition.

He also reported that in 1994 they recorded 450 cases of diarrhoea but only 87 were admitted to the hospital. The remainder were treated at home with Regidron packets manufactured in Finland and imported by the Government. This is similar to ORS and widely used in Kazakhstan. He believed that because of their intensive health education campaign, hepatitis cases had been reduced from approximately 3,000 to very few per year and the number of typhoid cases from 500 five years ago to only 4 or 5 cases this year.

He stated that although they had significantly reduced the levels of bacteria in the water they had not been able to remove chemicals from pesticides and fertilizers. He thought these chemicals were related to increased cases of anaemia, liver, lung, and

allergic illnesses such as bronchial asthma and allergic rhinitis. In the three collective farms visited near Novokazalinsk, water came from wells and was not chlorinated.

### 3.3. Methods of waste disposal

In all rural areas visited, human waste disposal appeared to be entirely through use of pit latrines constructed of wood. No concrete latrine slabs or fly proof latrine structures were observed either in homes, hospitals, schools or other places.

In the towns of Novokazalinsk and Aralsk there were water flush facilities in some of the homes, business establishments and industrial buildings that reportedly connect to a sewer system, but pit latrines were observed to be present in most areas visited. None of these were fly proof. Some industrial establishments have latrines some distance from the buildings. The surroundings of those observed appeared well kept.

Streets seemed to be routinely swept of refuse, which was collected by trucks and taken outside the city to refuse disposal sites.

In Novokazalinsk the medical doctor said the sewage system did not work. We observed pit latrines behind most houses and public buildings.

Most of the streets in the town were unpaved with open drainage ditches along the sides. We observed along one street an open manhole to the main water line. At the bottom of the manhole the valve of the lateral water pipe was so corroded that the home owner who was working there said he could not shut it off to replace the broken pipe to his house.

## Section 4 Socio-economic and behavioral conditions

### 4.1 Organization of communities

In the rural areas, communities are organized in the collective farms which are headed by the Head of Collective Farm (Akim). Each collective farm consists of families who live in the farm center and work on the cattle ranches which are in outlying areas, sometimes ranging from 50 to 200 km from the main settlement. Most adults living here, as well as their older children, work collectively to raise cattle and farm the land. Besides farm workers, there are some persons involved in administration and in operating facilities such as schools, stores, cultural affairs, and medical services. The collective farm is the governmental structure and people working here are paid monthly salaries which range from 1,000 to 2,000 tenge. During the last few years, workers have been allowed to lease their land and this has enabled some people to receive additional income. Common crops grown include melons, water melons, rice and wheat.

### 4.2 Cultural background

Among people living in the rural areas the education program is designed to enable them to read and write. Secondary education is provided and compulsory for all. The schools are Kazakh with education in Kazakh language. Some Russian language courses are offered. Most Kazakh people speak some Russian, or they can understand it.

The Kazakh people are very rich in family traditions that emphasize the preservation of family and nation. Originally, Kazakh people were nomads and shepherds and were moving from one pasture to another to find new grassy areas. The typical Kazakh family living in rural areas has from 5 to 15 children. Usually women are not employed outside the home but focus on caring for the children and family, and the management of household activities.

In the cities, the level of literacy is much higher due to more developed schools, industry and social life. Families usually have 2 to 3 children. The basic source of incomes in the city are salaries, whereas people at the collective farm have their own animals and gardens.

Most of people living in rural areas in Kazakhstan are muslims and they keep their religious traditions, with the help of mullas. During the reading of Koran they obtain basic knowledge of hygiene, such as washing hands and other rules of personal hygiene.

### 4.3 Health problems and priorities

Economic deprivation is of highest concern to people living in Novokazalinsk and Aralsk. This has been brought on and exacerbated by the Aral Sea ecological catastrophe which has seen previously rich agricultural lands decimated and an overall depletion of the productivity and environmental conditions in the area. Infectious intestinal diseases,

respiratory ailments, tuberculosis, and extensive anaemia among infants, children and mothers exist as well as a relatively high incidence of carcinogenic diseases. More people are moving out of the area than are coming in because of the deteriorating economic situation.

The highest priority voiced by medical and other health staff was to provide safe drinking water to the communities as soon as possible. Many staff members remarked that many consultants have come and made promises that are not carried out. They want to see actions made towards helping the people who live in their oblast and rayons. Water that is safe and adequate in quantity as well as a sanitary environment that promotes a higher health status and level of wellness are top priority health needs of the people.

#### 4.4 People's beliefs and attitudes about health

The EPT team's contacts were mainly with senior governmental authorities, medical and health personnel, school officials and administrators of collective farms. Due to the brevity of time, the intensity of the visits with health and other officials, and the multi-language barriers that required translation from Kazakh to Russian to English and visa versa there was very limited opportunity to meet and talk with farmers, industrial workers, shop keepers, school teachers, child care workers or community members about their beliefs and attitudes about water and sanitation. Nevertheless, some general impressions from these interviews were gained from these interviews.

The overall impressions are that both medical professionals and lay persons link the accentuated disease patterns found in the Aral Sea area with contact from polluted run-off water contaminated by sewage and chemicals deposited in rivers and irrigation waters from rice and cotton fields, and waste chemicals discharged from factories.

Discharges of sewage and other wastes from places like the Baikonur space complex are highly suspect by the general population. This includes beliefs that a variety of environmental contaminants, including airborne pollutants, play a major role in health problems faced by mothers, children and others.

Of interest was the apparent absence of peoples' knowledge or concern about the role of insect vectors such as flies and mosquitoes as carriers of disease. Fly screens are used in some homes to protect food in summer time, but it seemed there was little awareness of the sources of fly breeding such as from open latrines and other refuse, and their role in transmitting intestinal infections as well as what can be done to control them.

The importance of nutrition in overcoming anaemia seems to be present mostly among medical and health professionals, and is not operational among the population as a whole. People living in rural areas do not consume many vegetables and fruits due to the lack of money to buy them, and poor soil and lack of water to grow them.

The practice of growing and eating vegetables and fruits was reportedly not common among Kazakhs, as originally they were herders of sheep and cattle and their

staple food was meat and bread. As this is a traditional cultural characteristic, more analysis will be required to develop a constructive and meaningful educational program to overcome this cultural barrier to enhanced nutrition.

#### 4.5 Health practices of people

For conditions that do not require medical interventions people usually use their knowledge that they have been taught by doctors, relatives and friends. In Kazakh tradition there are many non-traditional methods of treatment by the use of herbs, fat of animals, prayers and blessings. Also in rural areas people rely upon traditional healers. For instance, if someone gets a cold they use boiled fat of the goat and rub it into the skin of the chest. One of the traditional liquids used for treatment is horse milk, which is very rich with vitamins, proteins and high in calories. It is said that it can be used for prevention and treatment of tuberculosis. In cases of diarrhoea, people generally use sour milk. In families with small children, mothers are trained to use packets of ORS in cases of dehydration. If the packets are not available, some of the mothers know how to make ORS with water, sugar and salt.

#### 4.6 Barriers and difficulties

A severe problem is the lack of adequate medical supplies, material and equipment for doctors and other health personnel working in rural areas. This situation, compounded with low salaries for rural medical and health workers, are constraints that impede the effectiveness of the services.

Another major difficulty that prevents effective health education programs from being implemented is the almost total lack of equipment and other facilities for developing visual materials that are appropriate for use with Kazakh people. This includes both the lack of printing and audio visual equipment such as computers, copy machines, and video and 35mm cameras, as well as finances to use graphic artists, obtain supplies, and print visual materials at existing printing facilities.

## Section 5 Organizational capacity

### 5.1 Structure of Health Organizations

The system of health care services in Kazakhstan functions at three main levels with designated responsibilities for each level. These include the Republic (central), Oblast (region) and Rayon (district) levels. There are units responsible for health education of the public at each of these levels.

#### Republic level

The Ministry of Health of Kazakhstan has a Department of Sanitation and Epidemiology headed by the Deputy Minister of Sanitation and Epidemiology. He is the senior authority responsible for water and sanitation education programs for the population as well as for other activities. The Republic Sanitation and Epidemiology Station (SES), which is under the Sanitation and Hygiene Department, has a Methodology office which is responsible for development of the national program on sanitation and hygiene. The Department of Educational Methodology and Training is responsible for the overall health education program of Kazakhstan and oversees the Republic Health House which plans and implements the national health education program and develops most of the health education materials. It collaborates with the SES on its program of sanitary hygiene.

Structure of the SES branches out to the most remote parts of the health service system and designates responsibilities to the most peripheral levels, e.g. from the Republic, through the Oblast, to the Rayon SESs. The Republic Health House functions through the Oblast Health Houses. These support the work of education methodology specialists in the Rayon Hospitals and SES offices.

The Ministry of Education has a school health education program developed in cooperation with the Ministry of Health by education methodology specialists on hygiene of children and youth. School teachers, through the school curriculum teach basic health knowledge including personal hygiene. There is a school health medical worker on the staff of each school who also participates in the school health education programs.

#### Oblast level

A similar system exists at the oblast level in the structure of Oblast Health Care Department with its Education, Methodology and Training Unit which is connected with the Ministry of Health and is under its responsibility. The oblast SES carries out activities on development of programs of sanitation and hygiene education as well as activities for control of sanitation and epidemics in the Oblast. The organisation which is responsible only for health education at the oblast level is an Oblast Health House. When epidemiological problems caused by communicable diseases break out the Health Houses distribute health information to improve knowledge among the population in a variety of forms to help the people know what they can do to control and prevent these diseases.

### **Rayon level**

At the level of rayons there is an assigned Deputy Head of Doctors on Methodology and Training in each rayon hospital who is responsible for improving health care conditions in the rayon, including water and sanitation education. In each of these rayon hospitals there is a sanitation and hygiene education methodology specialist. The duties of this person are to educate the population on how to handle their health care needs and on how to promote their own health. The Rayon SES carries out activities to control epidemic situations and prevent the spreading of infections at the source, especially those associated with water.

### **Rural level**

At the most peripheral rural level, the primary health care service includes the system of Feldcheur-Accoucheur Posts, Rural Sectoral Hospitals and Rural Doctor's outpatient clinics (ambulatorias). These are situated in the collective farms. Medical workers in these institutions carry out programs on health education using a variety of methods according to plans that are approved from above.

Most of the programs on sanitation and hygiene education have been developed at the Republic Health House in the Ministry of Health. Once the materials and plans have been developed, they are sent to the Oblast Health House for comments and implementation in accordance with local conditions. The Oblast Health Care House works closely with the Department of Health Care and all interested health institutions such as Oblast SES and Heads of Rayon hospitals for implementation through existing resources and opportunities. After reviewing and using the materials, comments and suggestions are returned to the Republic Health House through written reports or in seminars and conferences set up to evaluate and improve them.

## **5.2 International and nongovernmental organizations**

USAID, UNDP, WHO, UNICEF, World Bank, European Union, Japan, U.S. Peace Corps and other multi-lateral and bi-lateral agencies are collaborating with the Kazakhstan Government in the Aral Sea area. The Environmental Policy and Technology Project (USAID) is closely associated with these agencies in support of the Central Asian Republics Heads of State Program to provide safe water and sanitation facilities.

These organizations are supporting a variety of activities to accomplish these objectives. For example, the UNDP programme for Aral Shore Rehabilitation and Capacity-Building will provide assistance to local communities for solving environmental problems and for resolving the most immediate drinking water and sanitation problems.

Several nongovernmental organizations were found to be providing assistance in community health development. These included:

Mercy Corps International - grants monies to community groups to improve health care.

Children of the Aral Sea - provides rehabilitation and health care to children afflicted by biological and chemical contaminants in the Aral Sea areas.

### 5.3 Health education policies, goals and objectives

There is a national policy for providing health information on important topics to all oblasts and rayons. Campaigns are carried out according to a prescribed program throughout the year where doctors are directed to give health lectures on the average of one hour per week to groups of students in schools (at all levels), parent groups, clubs, shops, collective farms, and workplaces. Sanitation bulletins are also posted in these places.

The health staff at Novokazalinsk hospital gave us the following schedule for these lectures:

20 Nov. to 1 Dec.	Anti-AIDS and family health
December-February	Anti-flu campaign
March-April	Anti-TB campaign
May-September	Cancer prevention
June-August	Anti-diarrheal campaign
October-November	Anti-hepatitis, typhoid, or other prevalent diseases

The timing of these campaigns is related to the seasonal frequency of cases that occur.

### 5.4 Health education programs & services

Doctor's lectures are primarily didactic. When questioned whether they try to obtain any involvement from participants, such as through group discussion or problem solving sessions, it was noted that sometimes doctors organise meetings with workers to discuss health topics requested by the workers through the use of a question and answer box installed at the factories.

Doctors also give lectures on radio, TV programs and submit articles to the newspapers. And rural doctors, nurses and Feldsheurs distribute health information in their hospitals, clinics and health posts.

The best example of a display of health education materials that were observed was in the rural hospital in a collective farm outside of Novokazalinsk. Here the dedicated staff of doctors and nurses had made very good colored graphic materials with their own hands and local materials. This was an exception to what was found elsewhere.

### 5.5 Health education facilities for AV materials and communication media

Visual aids and other health education materials such as posters, brochures, graphic materials, and videos are very limited or not available in most places.



Equipment for the production and use of health education materials, such as copy machines, video cameras, recorders, and viewers, cameras and slide projectors is almost non-existent. This was the case at the Oblast Health House (health education center) in Kzyl-Orda, as well as in the Novokazalinsk and Aralsk rayons. For example, at the Kzyl-Orda Health House the staff has only a typewriter which they use with carbons to type health lectures, and an outdated 16mm projector.

#### **5.6 Quality of human resources**

The medical and other health staff that were interviewed seemed highly dedicated and educated in the medical and clinical tasks for which they are responsible. The provision of visual and audio aids, use of demonstrations and models, and introduction of participatory educational methodology would strengthen the effectiveness of educational work. Some doctors noted that they were tired of words - they want to see action. They are weary of giving of just health lectures and would like to see some other methods of health instruction through demonstrations, such as demonstrations and the use of visual aids.

#### **5.7 Financial resources**

Finances are extremely limited. There have not been sufficient monies to even pay the salaries of many workers for the past three months.

#### **5.8 Collaboration between agencies**

Mercy Corps has effectively worked in these areas near Aral Ses and has expressed intent in collaboration.

USAID, UNDP, WHO, UNICEF, World Bank, European Union, Japan, U.S. Peace Corps, and other multi-lateral and bi-lateral agencies have begun to collaborate with the Kazakhstan Government in the Aral Sea area. The EPT Project (USAID) is closely associated with these agencies in support of the Central Asian Republics Heads of State Program to provide safe water, sanitation and public awareness to improve health.

## Sector 6 Recommendations

In view of the findings in this report the team recommends several actions to strengthen the capacity of government organizations to plan, develop, implement, and evaluate health education programs and services, particularly related to the improvement of water and sanitation practices and conditions.

The following recommendations have been discussed with SES and Health Center authorities in Almaty at the Republic level, and with authorities at the Kzyl Orda Oblast and the Kazalinsk and Aralsk Rayons and they are in general agreement with them.

### Recommendation 1.

Increase the capacity of the Kzyl Orda Health Care House (the unit primarily responsible for health education in the Oblast) to produce new and improved health education materials for water, sanitation, and personal hygiene.

This could be done by supplying them with some basic equipment such as the following and including necessary supplies:

- 1 - desk computer and printer
- 1 - copy machine to enlarge/reduce images
- 1 - video camcorder
- 1 - 35 mm camera
- 3 - slide projectors (one each for Kzyl Orda, Novokazalinsk and Aralsk)
- 3 - portable video players with monitor & VCR (one each for the above three centers)

This equipment would enable key staff at Kzyl Orda to produce effective visual aids and distribute them to outlying staff in areas at Kazalinsk and Aralsk. This would improve the talks and lectures now given by doctors and provide more health education materials and methods to hospitals, schools, and community centers.

### Recommendation 2

Increase the ability of key staff members in agencies such as health, hospitals, schools, agriculture, and the communication media to do joint assessment of health needs and joint planning and implementation of health education and action programs for hospitals, schools, rural clinics and health posts (FAPs), sports organizations, industries and other working groups.

This would be implemented by a 5 day Interagency Planning Seminar which would include representatives of administration, health, education, agriculture, parent groups, and workers in collectives, factories and other work places. Approximately 25 participants would be selected to represent the Oblast, the two Rayons, and local areas, and they would

include administrators, medical and sanitary doctors, methodologists, FAPs, parents, teachers, farmers, factory workers, and communication media persons.

The seminar would be under the authority of the Kazakhstan Ministry of Health Sanitation Epidemiology Service and the Republic Health House and would be jointly planned and conducted by Dr. Salmanov Daulet, Head Doctor of the Kzyl Orda Health Center and members of the EPT team. The seminar would be conducted sometime in the spring of 1995.

It is recommended that the five day meeting be convened at Aralsk to enable the Novokazalinsk and Aralsk project staff and representatives from local community groups to attend. Aralsk has adequate facilities to accomodate seminar participants and the surrounding area also provides opportunities to select a variety of sites for possible demonstration centers.

It is also recommended that a two or three day follow up meeting be convened at Kzyl Orda the following week to review results of the seminar and plan for replication in other regions of the Oblast.

### **Recommendation 3**

Promote the use of effective health information and education activities in the target areas by establishing several model centers, such as at a school, hospital, collective farm or workplace where staff could try out new or improved health education approaches such as involving parents, teachers, and workers in assessing health needs and planning solutions. These centers could also experiment with using demonstrations, visual aids, and discussion groups to motivate children, students, parents, and workers to develop needed facilities and carry out proper health behaviors regarding water, sanitation and other health areas.

The Interagency Planning Seminar would be used to plan the development of these model centers. For example, the Shizhaga Collective Farm near Aralsk and its scattered cattle raising villages would be an ideal demonstration model of a rural community to develop a water and sanitation education program involving the schools (including the kindergarten and parents of young children), and the entire collective through the adjacent Community Cultural Center. Inter-agency collaboration and involvement of the community people in developing the program seems very feasible because of the interest and support of the collective farm manager, the school people, the rayon health authorities, and others including the local agricultural authorities and journalists from the local press, radio and TV.

These model centers could be used to test methods and materials developed by the Health Care House in Almaty and Kzyl Orda and they could be used to demonstrate to other doctors, primary health workers, teachers, parent groups, and community leaders how health information and education services can be strengthened and integrated into the health care system, school curriculums, community centers, and workplaces.

#### **Recommendation 4.**

Improve collaboration between all organizations and agencies that have responsibility for financing, planning, implementation and evaluation of health education programs aimed at improving environmental health conditions of people in Kazakhstan.

The Interagency Planning Seminar as proposed in Recommendation 2 would be a model on the oblast level of how to involve multiple organizations and agencies in planning and implementing health education programs for various population groups. Members of this Seminar will be selected to represent Ministries such as Health, Education, Agriculture; industry; collective farms; parent and other community groups; and the mass media. One objective of the Seminar would be to involve all relevant agencies and groups in identifying needs, priorities and resources, and planning together to evolve practical and sustainable programs to improve health conditions related to water and sanitation.

## APPENDICES

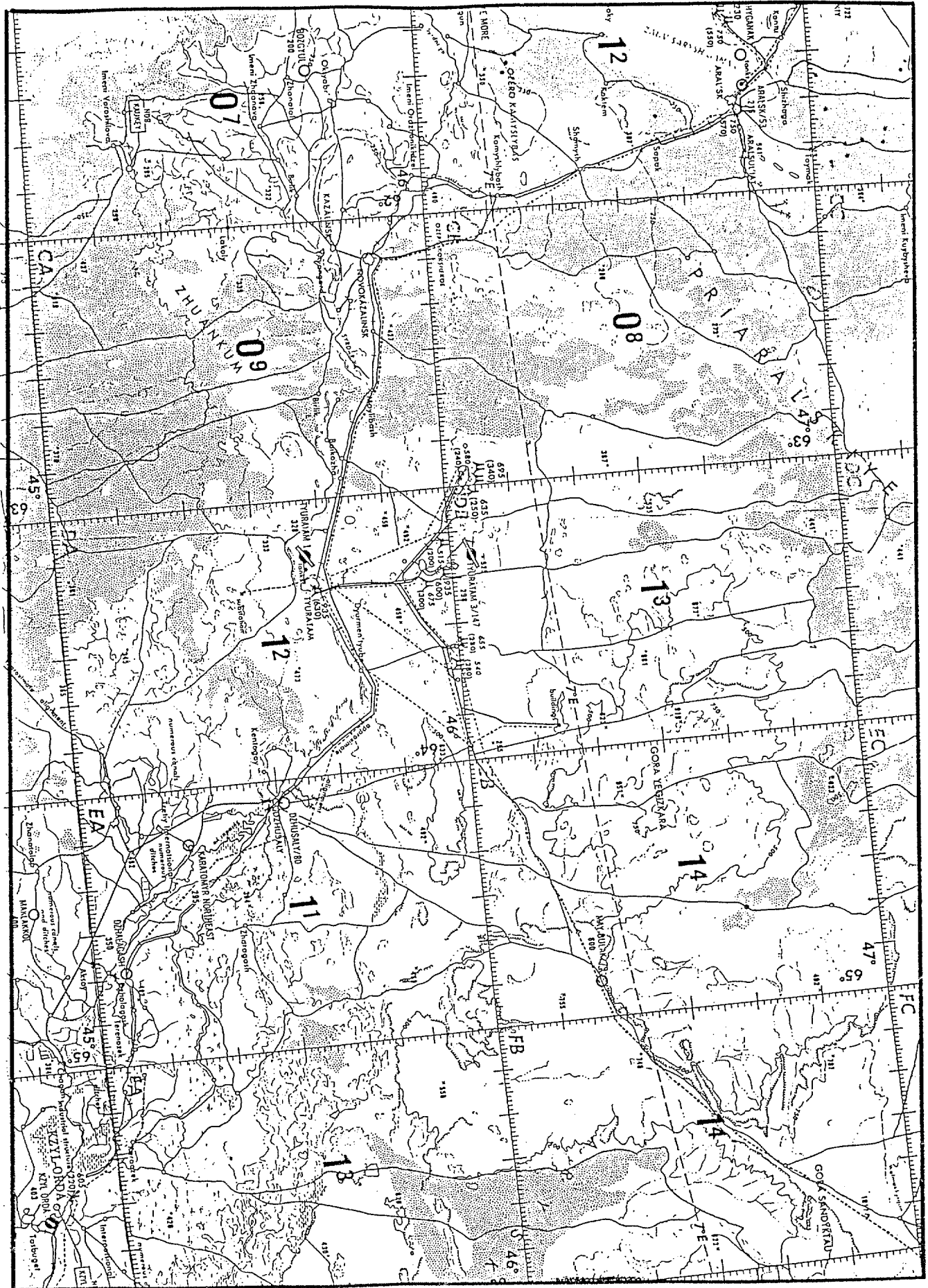
Appendix 1. Map showing towns and rural areas visited.

Appendix 2. List of persons visited

Appendix 3. Criteria for assessing water and sanitation conditions in periurban and rural areas of the Aral Sea, Kazakhstan.

Appendix 4. Tables 1, 2, & 3, showing public health conditions and food provision in Aralsk and Kazalinsk rayons.

Map showing towns and rural areas visited.



**APPENDIX 2**  
**LIST OF PERSONS VISITED IN KAZAKHSTAN**

Persons visited in Almaty

- |                                     |   |
|-------------------------------------|---|
| 1. Ms. Yspaeva Janat Bahitovna-     | Head of the Centre of Children of Aral                              |
| 2. Dr. Murat Kuzhukeev-             | Project Assistant/ Health USAID/A                                   |
| 3. Ms. Nina Kavetskaya-             | Project Assistant/<br>Environment USAID/A                           |
| 4. Dr. Barry Primm-                 | Project Officer USAID/A   |
| 5. Dr. Richard Shortlidge, Jr       | Director for Central Asia<br>Academy for Educational<br>Development |
| 6. Ms. Anna Spielbaur-              | Participant Training<br>Manager                                     |
| 7. Mr. Myron Jespersen              | Mercy Corp.   |
| 8. Ms. Ann Richards                 | Peace Corp  |
| 9. Mr. Kulzhanov Maksut Karimovich- | Deputy Minister of Health   |
| 10 Mr. Vladimir Baluk-              | Specialist on Water<br>Supply of the Ministry of Health             |
| 11. Ms. Ivanova Rufina              | Specialist of the Republican Sanitary and<br>Emidemiology Station.  |
| 12. Dr. Kenesariiev Usen            | Deputy Director of the Institute of Hygiene                         |
| 13. Dr. Zhakashev Niazaly           | Institute of Hygiene.   |
| 14. Dr. Snitin Vladimir-            | Institute of Hygiene.   |
| 15. Ms. Molly Mort-                 | USAID/W   |
| 16. Ms. Marilyn Schmidt-            | General Development Officer USAID/A                                 |
| 17. Mr. Gordon W. Weynand           | USAID/A   |
| 18. Dr. Almuhamed Adilchanov        | Head Doctor of The Republic Health House                            |
| 19. Mr. Jaras Takenov               | Sustainable Development Adviser in UNDP                             |

Persons visited in Kzyl-Orda

- |                            |  |
|----------------------------|--|
| 1. Ms. Jilkibaeva          | First Deputy Head of Oblast<br>Administration in Kzyl-Orda   |
| 2. Mr. Baialimov Daulet    | Director of Kzyl-Orda<br>branch of the Fund for the Aral Sea |
| 3. Mr. Muslimov            | Head of Educational Department                               |
| 4. Mr. Makhanov            | Head of Oblast Health Care Department                        |
| 5. Mr. Saduakasov Amankhan | Deputy Head of Oblast Health Care Department                 |
| 6. Mr. Nurgazarinov        | Assistant Professor of Chemical Ecology Laboratory           |
| 7. Mr. Shimbaev            | Rector of Agro-Industrial Institute                          |

- |                             |   |
|-----------------------------|---|
| 8. Ms. Samenova             | Doctor of Infectious Hospital, Head of<br>tatistical Department               |
| 9. Ms. Anosbaeva            | Deputy Head Doctor of the City Polyclinic.                                    |
| 10. Mr. Makhtybaev          | Inspector on Water Supply and Ecology in the Oblast<br>Health Care Department |
| 11. Mr. Salmanov Daulet     | Head Doctor of Oblast Health Care House                                       |
| 12. Mr. Tulepov Ascar       | Deputy Head of Educational Department   |
| 13. Ms. Omiralieva Jumiscul | Deputy Head of Sanitary Epidemiological Station                               |
| 14. Mr. Tagysbaev Asylbek   | Head Doctor of Diagnostical Centre  |

Persons visited in Novokazalinsk

(peri urban area)

- |                                |  |
|--------------------------------|--|
| 1. Mr. Kadyrbaev Amangeldy     | Head Doctor of Rayon Hospital                          |
| 2. Mr. Myrzaliev Zharylkojan   | Deputy Head Doctor on treatment work                   |
| 3. Ms. Dosmailova Sophia       | Deputy Head Doctor on Methodology                      |
| 4. Mr. Zhancuzhaev Umurzak     | Deputy Head Doctor on MCH                              |
| 5. Mr. Akpaev Shaki            | Head of Rayon Ecology Committee                        |
| 6. Ms. Tosmagambetova Kamazhai | Instructor on Public Health                            |
| 7. Mr. Amirashev Deminbai      | Deputy Head of Educational Department                  |
| 8. Mr. Akbergenov Adilkhan     | Head Agronomist of Rayon Agricultural Department       |
| 9. Mr. Kaparov Sackhy          | Head of News Paper Department on Claims and<br>Letters |

Persons visited in Aralsk

- |                             |   |
|-----------------------------|---|
| 1. Mr. Zhapbarov Tynyshtyk  | Head Doctor of Central Hospital                                       |
| 2. Mr. Zhusupov Amirkhan    | Deputy Head Doctor on treatment work                                  |
| 3. Ms. Knyzbaeva            | Doctor on Sanitation Education  |
| 4. Ms. Dashniyazova Gulzhan | Head Doctor of SES  |
| 5. Mr. Buirdev Mamay        | Deputy Head Doctor on Methodology                                     |
| 6. Mr. Maidanov             | Head of Urological Department   |
| 7. Mr. Sergaziev            | Head of Therapeutical Department                                      |
| 8. Mr. Almakhanov           | Head of Neurological Department                                       |
| 9. Mr. Kerimov              | Head of Collective Farm<br>"Aralsk" in Shizhaga settlement            |
| 10. Mr. Zhusupov Sabit      | Head Doctor of Rural Sectoral<br>Hospital at Collective Farm "Aralsk" |



## APPENDIX 3

### CRITERIA FOR ASSESSING WATER & SANITATION CONDITIONS IN PERIURBAN AND RURAL AREAS OF THE ARAL SEA, KAZAKHSTAN & UZBEKISTAN

November, 1994

#### A. Demographic and environmental conditions

1. general health statistics of populations in the areas, ie population, birth rates, family size, morbidity and mortality of diseases related to unsafe water and sanitation; age and sex distribution.
2. information related to water - sources, quantity and quality, delivery, storage, consumption, & drainage
3. information on methods of human waste disposal

#### B. Socio-economic and behavioral conditions

1. organization of communities, ie., where located, size, income
2. literacy level, language, religion, cultural background
3. health problems and priorities of people
4. beliefs and attitudes regarding health
5. practices of people regarding health, ie. drinking water, food preparation, human waste disposal, etc.
6. human or other barriers and difficulties that exist, ie, previous negative experiences between communities and agencies

#### C. Organizational capacity

1. Structure of health organizations at different levels that have responsibility for improving water and sanitation conditions in communities:

##### a) Republic (national) level, i.e.:

Ministries of Health, Education, Social Services  
International orgs, ie WHO, UNICEF, UNDP  
NGOs

##### b) Oblast (regional) level, i.e.:

District hospitals  
NGOs

c) **Rayon (local) level, i.e.:**  
local rayon government  
FAPs and rural clinics  
indigenous sources of health practitioners  
collective farms  
religious groups

d) **Private Sector, i.e.:**  
small businesses  
industries

2. **Organization policies, goals and objectives** that relate to improving water and sanitation, health education and training services.
3. **Health education programs and services** provided by the above organizations.
4. **Facilities for developing and utilizing health education methods and materials.**

5. **Quality of human resources**

The **capability** of community leaders, health educators, trainers, and others to promote/provide community involvement and organization, health education and training in water and sanitation, such as skills in:

- a) leadership
- b) organization and management
- c) health education
- d) training
- e) promoting community participation

6. **Financial resources**

The availability of funding for health education and training services in water supply and sanitation programs such as:

- a) budgets within existing programs
- b) outside funding sources
- c) different sources of budgeting, ie, collective farms

7. **Extent of collaboration between organizations** on health education and training services and programs.

#### APPENDIX 4

Tables showing public health conditions and food provision in Aralsk and Kazalinsk rayons  
Table 1.

Data showing the status of Public Health in the Aralsk rayon

N	Item	1989	1990	1991	1992	1993
1	Number of population	70.1K	72.1K	74.2K	77.1K	77.9K
2	Birth Rate per 1000	32.8	29.7	30.0	29.0	29.7
3	Death rate per 1000	7.9	5.2	5.5	5.8	5.4
4	Infant mortality per 1000	28.6	35.4	34.1	36.3	30.6
5	Morbidity per 1000	553.0	603.7	652.1	660.1	808.5
6	Viral hepatitis per K	247.5	347.2	181.8	246.4	200.2
7	Acute Intestinal Infections	430.8	263.8	311.1	400.7	291.3
8	Number of children with anemia	2902	3379	2583	4521	10311
9	Prevalence of anemia among women of reproductive age in per cent	79.2	74.5	74.8	86.8	98.5

Table 2.

Data showing the status of public health in the Kazalinsk rayon.

ITEM	1992		1993	
	N	per 1000	N	per 1000
Population	73293		75210	
Birth Rate	2191	29.8	2340	31.2
Death Rate	627	8.5	417	5.5
Infant mortality	75	31		29.9
Morbidity	91569	1249.3	68474	910.5
Infectious morbidity	3400	4638.9	5191	6902
typhoid	5	6.7	4	5.3
disentery	542	739.4	23	30.5
intest. inf.	251	342.4	179	238.0
viral hepatitis	182	248.3	278	369.6
serum hepatitis	8	10.9	2	2.6

Table 3.

Data showing an actual provision of population with the main products of nutrition  
( per cent to oblast norms) per capita.

Description	Meat and meat products	Fish and fish products	Milk and milk products	Bread and bread products	Potatoes	Vegetables	Fruits and berries	Vegetable oil	Sugar and grocery	Eggs No's
Norm per year	65-73	8-12	344-370	126-130	60-90	120-150	50-69	102,1	31-33	200-250
Kazalinsk	38,8	60,0	101,2	104,5	24,2	68,5	8,4	102,1	57,9	1,8
Aralsk	38,8	3,8	81,1	107,6	20,0	30,0	2,5	26,3	56,4	18,2