ATLAS
OF SOCIO-ECONOMIC AND ENVIRONMENTAL
INDICATORS IN THE ARAL SEA REGION OF UZBEKISTAN

(DEVELOPED ON THE BASIS COMPREHENSIVE NEEDS ASSESSMENT OF THE POPULATION IN EIGHT DISTRICTS OF THE REPUBLIC OF KARAKALPAKSTAN MOST AFFECTED BY THE ARAL SEA CATASTROPHE)
INTRODUCTION

The Atlas has been developed on the basis of the socio-economic survey conducted in 2017 by the Institute for Social Research in 8 districts of the Republic of Karakalpakstan (Kanlikul, Karauzyak, Kegeyli, Muynak, Nukus, Takhtakupir, Chimbay and Shumanay districts). The study was commissioned by UNDP within the UN Joint Programme “Building the resilience of communities affected by the Aral Sea disaster through the Multi-Partner Human Security Fund for the Aral Sea”.

The socio-economic survey was conducted to identify the needs of the population affected by the Aral Sea disaster through application of human security concept and indicators. The survey covered 116 mahallas and 1,600 households, while eight focus group discussions conducted in each district, covering 1,600 respondents representing local authorities and civil society.

The purpose of this Atlas is to provide graphical information on the status of human security indicators in target areas, based on data collected through the assessment.

The designations employed and the presentation of material on the maps used in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations or UNDP in Uzbekistan concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.
This Atlas provides an overview of socio-economic situation in the 8 (eight) districts of the Republic of Karakalpakstan most affected by the Aral Sea disaster, and reflects various aspects of the population well-being, including access to education, health, and municipal services, employment situation and environmental conditions. The data is structured and linked to conventional cartographic basis. Maps and Atlas have been developed using MapInfoPro software.

The Atlas provides information on the following human security indicators in the surveyed areas:

- Environmental security
- Economic security
- Food security
- Health security
- Social security

Official statistics, results of the sociological survey and of focus group discussions among government and non-government institutions in each target area have been used to develop the maps.
Republic of Karakalpakstan (as of December 31, 2017)

**Population:** 1,817.5 thousand people. (5.7% of the total population of Uzbekistan)

**Density:** 10.9 people / km² (average for Uzbekistan is 71.5)

**Area:** 166,600 km² (37.1% of the territory of Uzbekistan)

**Capital:** Nukus city

**Division:** 1 city and 15 districts

Karakalpakstan is located on the Turan lowland. The Kara-Kum desert adjoins it closely from the south-west, the Ustyurt plateau is located in the north-west and the Kyzyl-Kum desert lies in the north-east. The territory of Karakalpakstan also includes the southern half of the Aral Sea and the lower reaches of the Amudarya River. A new salt marsh desert Aral-Kum is now being formed on the dried bed of which.
BREAKDOWN OF MAHALLAS IN THE SURVEYED AREAS OF THE REPUBLIC OF KARAKALPKISTAN BY THE NUMBER OF POPULATION/INHABITANTS

NOTATIONS KEYS
Number of population
- 0 to 2,310
- 2,310 to 3,290
- 3,290 to 4,340
- 4,340 to 5,590
- 5,590 to 9,180

Source: Research by the Institute for Social Research, August, 2017
BREAKDOWN OF MAHALAS BY THE NUMBER OF HOUSEHOLDS

NOTATIONS KEYS
Distribution of mahallas in breakdown by the number of households:
- 100 to 479
- 480 to 590
- 591 to 690
- 691 to 790
- 791 to 1,740

Source: Research by the Institute for Social Research, August, 2017
NUMBER OF POPULATION IN THE SURVEYED AREAS

NOTATIONS KEYS
Number of population, people
- 29 000 to 38 900
- 38 900 to 46 800
- 46 800 to 85 500
- 85 500 to 111 300

Source: Research by the Institute for Social Research, August, 2017
The level of dissatisfaction with the environmental situation, in %

- 35.7 to 43.5
- 43.5 to 48.1
- 48.1 to 53.2
- 53.2 to 64.3

46.9% of respondents were not satisfied with the environmental situation.

The main reasons: soil salinity (70.6%), air pollution (12.7%), water pollution (9.5%), and drought (6.7%).
Public dissatisfaction with access to drinking water averages 33.9%. The main reasons: poor-quality water (37.8%), irregular water supply (26.9%) and long distance to water source (19.0%).
THE MAIN SOURCES OF DRINKING WATER AND THE LEVEL OF DISSATISFACTION OF THE POPULATION WITH WATER SUPPLY, IN %

NOTATIONS KEYS
- The level of dissatisfaction with water supply, in %
  - 25.6 to 28.6
  - 28.6 to 31
  - 31 to 42.9
  - 42.9 to 43.7

- The sources of drinking water
  - from domestic running water
  - from domestic wells, boreholes
  - transported water
  - from open reservoirs
  - wells, boreholes on the street or of neighbors

Source: Research by the Institute for Social Research, August, 2017
BREAKDOWN OF BY AGGREGATE INCOME AND EMPLOYMENT

NOTATIONS KEYS
Employment in the formal sector, %
- 36.1 to 41.5
- 41.5 to 44.3
- 44.3 to 46.3
- 46.3 to 50.5

Aggregate household income in UZS
- Less than 700,000
- 701,000 – 1,400,000
- 1,401,000 – 2,100,000
- 2,101,000 – 3,000,000
- More than 3,000,000

Source: Research by the Institute for Social Research, August, 2017
Source: Research by the Institute for Social Research, August, 2017

### Households producing agricultural products, %

- **66.9 to 82.1**
- **82.1 to 84.1**
- **84.1 to 85.1**
- **85.1 to 89.1**

### Share of income from entrepreneurship

- Including from farming on household plot

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**NOTATIONS KEYS**

- 67

**Share of income from entrepreneurship**

- **Blue**

**Including from farming on household plot**

- **Green**

Source: Research by the Institute for Social Research, August, 2017
The share of middle-income population, according to surveys of the mahalla leaders, in %

- 63.5 to 67.1
- 67.1 to 68.3
- 68.3 to 71.4
- 71.4 to 74.3

The structure of household expenditures

- Food
- Non food products
- Services
- Obligatory payments
- Savings

Source: Research by the Institute for Social Research, August, 2017
### Employment in the Informal Sector and Labor Migration

#### Employment in the Informal Sector, %

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Color</th>
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<tbody>
<tr>
<td>43.5 to 48</td>
<td>Light Yellow</td>
</tr>
<tr>
<td>48 to 52.6</td>
<td>Yellow</td>
</tr>
<tr>
<td>52.6 to 54.3</td>
<td>Orange</td>
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<tr>
<td>54.3 to 55.8</td>
<td>Red</td>
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</tbody>
</table>

#### Household Members in Labor Migration, %

<table>
<thead>
<tr>
<th>Category</th>
<th>Color</th>
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<tbody>
<tr>
<td>Male</td>
<td>Blue</td>
</tr>
<tr>
<td>Female</td>
<td>Red</td>
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</table>

#### Source
Research by the Institute for Social Research, August, 2017
According to the survey results, 49.8% of respondents are not satisfied with the employment situation due to the lack of permanent jobs (76.2%) and low wages (21.6%).
According to the survey results on average 25.9% of the population prefers to do business.
MAIN REASONS FOR UNWILLINGNESS TO DO BUSINESS

Unwillingness to do business, in %

- 68.6 to 69.5
- 69.5 to 72.1
- 72.1 to 79.5
- 79.5 to 88.2

Main reasons:
- Lack of willingness, no inclination
- Lack of professional education
- Non-profitable
- Absence of start-up capital
- Poor quality of land
- Busy with the family

Source: Research by the Institute for Social Research, August, 2017
The level of dissatisfaction with transport infrastructure, in %

On average, 43.2% of the population is not satisfied and 24.3% is partially satisfied with the operation of transport infrastructure facilities.

The main reasons: low quality of local roads which require repair and reconstruction (79.4%), as well as the lack of transport routes (16.3%).
On average, 16.3% of respondents expressed dissatisfaction with trade services. The main reasons: remoteness of trade objects (31%), high prices (22.7%), limited range of products (8.1%).
The level of dissatisfaction with the quality of banking and financial services, in %

- 8.7 to 12.4
- 12.4 to 16.1
- 16.1 to 19.8
- 19.8 to 23.6

On average, 14.8% of respondents noted dissatisfaction with the quality of financial services.

The main reasons: high interest rate on loans, problems with cash, bureaucratic barriers, excessive claims on collateral for a loan.
The level of dissatisfaction with the secondary specialized and vocational education averaged 12.7%.
On average, 9.9% of households were engaged in the production of food and non-food items over the last 12 months. Of the total amount of goods produced by the households surveyed, 88% are food products.
The survey revealed that the production of rice and beans per household for the last 12 months was on average 10 kgs.

Production of beans and rice per 1 household/kg/for last 12 months

Source: Research by the Institute for Social Research, August, 2017
According to the survey, the production of fruits and grapes per 1 household for last 12 months averaged 67 and 26 kg, respectively.

Production of fruits and grapes per 1 household/kg/for last 12 months

NOTATIONS KEYS
Sown area of agricultural crops, thousand hectares

- 15,4 to 18,8
- 11,8 to 15,4
- 1 to 4,6

Source: Research by the Institute for Social Research, August, 2017
According to the survey, the production of potatoes, vegetables, and melons for the last 12 months per 1 household averaged 44,410 and 139 kg, respectively.

**Production of potatoes, vegetables, and melons per 1 household/kg/ for last 12 months**

- **Potatoes**: 830 kg
- **Vegetables**: 44 kg
- **Melons**: 14 kg

**NOTATIONS KEYS**

Sown area of agricultural crops, thousand hectares:

- **Yellow**: 15.4 to 18.8
- **Orange**: 11.8 to 15.4
- **Red**: 1 to 4.6

Source: Research by the Institute for Social Research, August, 2017
According to the survey, 100 households have on average: cattle – 185 heads, sheep and goats – 292 heads, poultry – 848 heads.

Livestock and poultry per 100 households

<table>
<thead>
<tr>
<th></th>
<th>Cattle</th>
<th>Sheep and Goats</th>
<th>Poultry</th>
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<tbody>
<tr>
<td></td>
<td>1500</td>
<td>1500</td>
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Source: Research by the Institute for Social Research, August, 2017
In average 1 household produced 193 kg of meat (for last 12 months), 614 litre of milk (for last month), 694 eggs (for last month).

Livestock production per 1 household:

- Meat, kg: 980
- Milk, litre: 614
- Eggs: 694
In general, for 60% of the households, the affordability of food products is low, i.e., the aggregate income of families do not cover the cost of consumer basket.
The availability of medical staff across the RK is 21 doctors and 92.1 nurses per 10 thousand people including health workers at republican medical institutions. The proportion of doctors with qualification categories is 50.6% and nurses – 36.2%.
HEALTHCARE INSTITUTION ATTENDANCE OF POPULATION, IN %

Source: Ministry of Health of the Republic of Karakalpakstan, 2016
On average, 18% of respondents are not satisfied with the quality of medical services provided. The main reasons: inexperience of doctors (31.9%), remoteness of medical institutions (22.5%), poor quality of emergency medical care (14.0%), insufficient provision of medical equipment (13.0%), lack of specialized specialists (10.9%).
An incidence rate of Viral hepatitis A in the Republic of Karakalpakstan in 2016 was 92.7 per 100 thousand population.
An incidence rate of Tuberculosis in the Republic of Karakalpakstan in 2016 was 84.1 per 100 thousand population.
The level of dissatisfaction with the provision of medications, in %

27.4 to 37
37 to 45.2
45.2 to 50.6
50.6 to 54.2

On average, 41.3% of respondents are not satisfied with the provision of medications. The main reasons: the remoteness of pharmacies (57.3%), high prices for the medicines (37.5%).
According to the survey of community leaders, the level of poverty in the surveyed areas averaged 20.3%.
On average, preschool attendance was 32.7%. The main reasons for low attendance: the absence of pre-schools, the remoteness from settlements, the lack of appropriate conditions (physical infrastructure, etc.), high tariffs.
The level of dissatisfaction with the services of preschool institutions, in %

- 23.6 to 34
- 34 to 40.6
- 40.6 to 55.7
- 55.7 to 61.6

On average 40.3% of respondents are not satisfied with the services of pre-school institutions. The main reasons: the absence of preschools (53.3%), the remoteness from the settlements (16.5%), lack of appropriate conditions (physical infrastructure, etc.), high tariffs (6.7%).
The level of dissatisfaction with school education was 13.1%. The main reasons: poor quality of education (41.5%), insufficient provision of teaching materials (13.8%), remoteness (8.1%), lack of personnel (4.1%).
On average, 34.8% of surveyed households are not satisfied (including partial dissatisfaction) with the provision of land and housing. The main reasons: lack of land for housing (46.7%), high cost of building materials (60%), associated with additional transportation costs due to the remoteness of rural settlements.
THE LEVEL OF DISSATISFACTION OF THE POPULATION WITH NATURAL AND LIQUEFIED GAS SUPPLY, IN %

The level of dissatisfaction of the population with natural and liquefied gas supply, in %

- On average, 21.1% of respondents are not satisfied with access to natural gas supply. The main reasons: irregular supply of natural gas (20.5%) and late delivery of liquefied gas cylinders (41.2%).

NOTATIONS KEYS

14.7 to 15.7
15.7 to 16.7
16.7 to 27.4
27.4 to 32.8

Source: Research by the Institute for Social Research, August, 2017
On average, 25.6% of respondents are not satisfied with the state of access to fuel (coal). The main reasons: high cost (56.3%) and irregular supply (23.4%).
On average, 30.9% of respondents are not satisfied with consumer services. The main reason is a long distance to the object.
UN JOINT PROGRAMME

“BUILDING THE RESILIENCE OF COMMUNITIES AFFECTED
BY THE ARAL SEA DISASTER THROUGH THE MULTI-PARTNER
HUMAN SECURITY FUND FOR THE ARAL SEA”

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