The 5th meeting of the Coordinating Group of the project IIISOS RA II

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National Committee for Hydrometeorology
The Cabinet of Ministers of Turkmenistan

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Introduction

I. The image of the country

1. Geography

Turkmenistan is a state in Central Asia. It borders with Afghanistan and Iran in the south, Kazakhstan and Uzbekistan in the north, it is washed by the inner Caspian Sea in the west, it has no outlet to the world's oceans.

The capital of Turkmenistan is Ashgabat.

The area is 491,210 km ², the length of the border from north to south is 650 km, from west to east is 1110 km.

Velayats of Turkmenistan - The territory of Turkmenistan is divided into 5 velayats: Ahal, Balkan, Dashoguz, Mary, and Lebap.

2. The population

Turkmenistan according to 2016,. was 6 million people. The average population density is 10.5 people per km². The highest density is in the southern, eastern and northeastern oases; one of the lowest - in the west of the republic; in the central desert areas one person - a few square kilometers. The urban population is 50.7% of the population, 49.3% are rural residents.

3. The climate of the country

The climate of the country is sharply continental, very arid, with a large average daily and annual amplitude of temperatures. Humidity is very low, with high volatility and low precipitation. In general, the climate is characterized by: soft, little snow, and sometimes cold winter, wet spring, steadily hot summer and dry autumn. The average temperature in January is 5 C, the absolute minimum is -32 C, only in the Dashoguz region. The average temperature in July is + 32 C, the absolute maximum is +49.9 C. For the flat areas, hot winds and dust storms are typical. The best time to visit the country is spring and summer.

II. Main historical hydrometeorological catastrophes

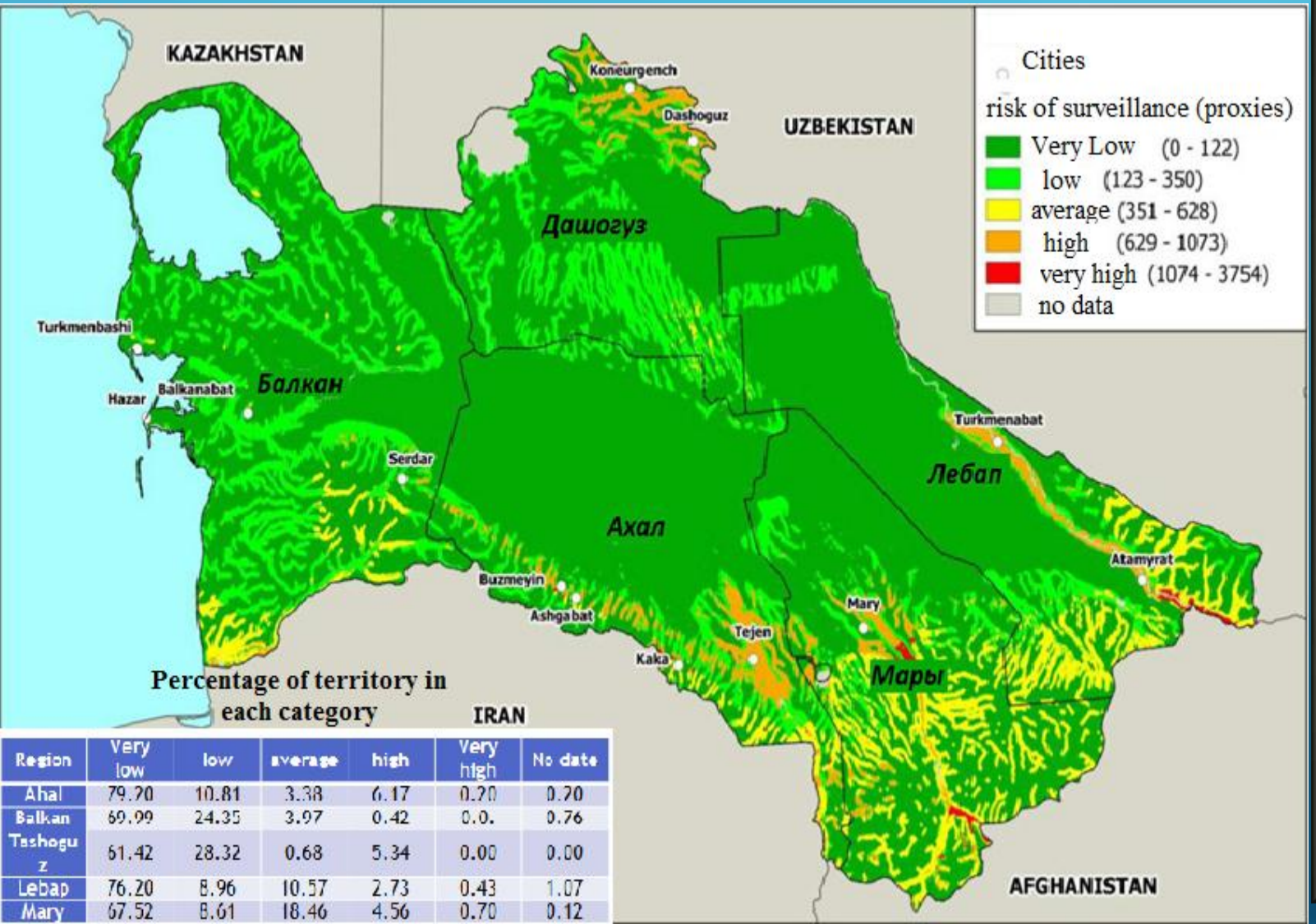
1. Type and distribution of disasters

The main climatic risks in Turkmenistan include drought, storms and strong winds, dry winds (dry winds), severe cold and frost, rapid melting of snow, severe hail, catastrophic dusty cyclones, floods and mudflows, sandstorms, heavy showers and extreme heat . The main sectors at risk from climate change are water resources, agriculture, health.

2. Life and economic losses

In Turkmenistan, due to temperature variability, the magnitude of climate risks can increase and cause significant economic damage for the country. For example, it is expected that some of the climatic risks may intensify: rainfall and mudflows (annually by 10%), heavy rains (annually by 5%), periods of intense heat (1.6% annually). However, despite the improvement in the health system and the improvement in living standards, it is obvious that due to the expected increase in temperature and the decrease in precipitation, some climate-related hazards may have an adverse effect on health.

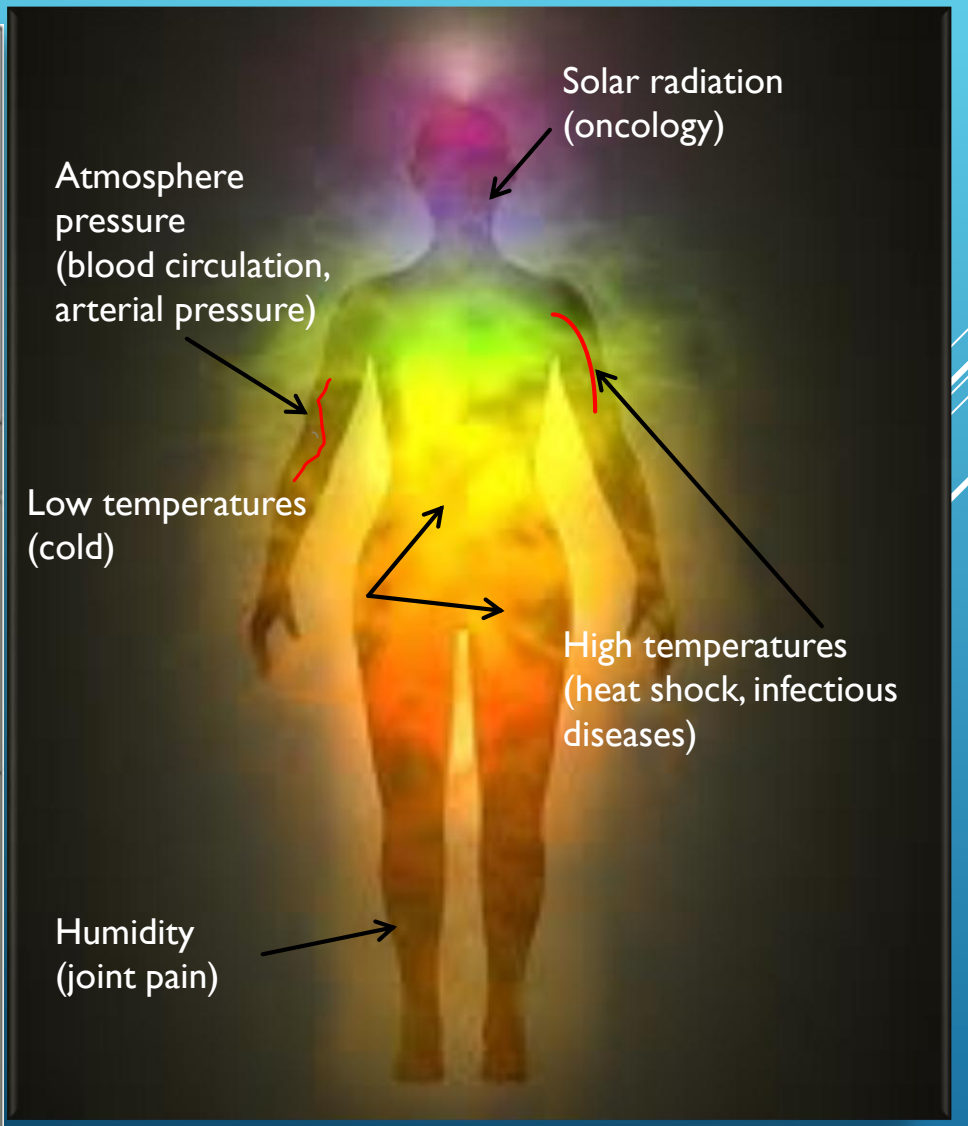
FLOOD RISK DISTRIBUTION MAP IN TURKMENISTAN



Percentage of territory in each category

Region	Very low	low	average	high	Very high	No data
Ahal	79.70	10.81	3.38	6.17	0.70	0.70
Balkan	69.99	24.35	3.97	0.42	0.0.	0.76
Dashoguz	61.42	28.32	0.68	5.34	0.00	0.00
Lebap	76.20	8.96	10.57	2.73	0.43	1.07
Mary	67.52	8.61	18.46	4.56	0.70	0.12

THE IMPACT OF CLIMATE ON HUMAN HEALTH



III.The main national economic sectors relying on NMHS

1. Agriculture

Impact of climate change on agriculture - Current climatic conditions of Turkmenistan are suitable for growing cotton, grain, vegetables, fruits, grapes and fodder crops almost throughout Turkmenistan; In the south-west, such subtropical crops as olives, pomegranates and persimmons are grown. With climate change, such as a rise in temperature and a decrease in precipitation, it will directly affect the demand for irrigation water, mainly due to the intensity of evaporation, return to irrigated land, crop yields and the growing season in plants.

Agrometeorological observations on agriculture - Agrometeorological observations are conducted to study the influence o meteorological conditions on the development of crops and pasture vegetation. Agrometeorological observations, processe agrometeorological information about crop damage by adverse weather phenomena, agricultural pests and diseases. Genera assessment of the state of agricultural crops and inspection of wintering crops.

Hydrological Observations - There are more than 32 hydrological posts on the territory of Turkmenistan, data that are received by the Hydrology Department. These data are used by various organizations and ministries TurkmenHydromet receives inquiries for which we respond in the form of background information (water level, water flow, wate turbidity, evaporation from the water surface, salinity, long-term data, information on mudflows).

Brief description of NMHS activities

The National Committee for Hydrometeorology under the Cabinet of Ministers of Turkmenistan is the body of state administration carrying out the state policy in the field of hydrometeorology and ensuring the satisfaction of the needs of the national economy branches, the defense complex and the population of Turkmenistan in the information on actual and expected changes in hydrometeorological conditions and their negative consequences.

The main tasks of Turkmenhydromet are:

- providing ministries, departments, public organizations and the population with hydrometeorological information, as well as information on solar activity;
- making forecasts of hydrometeorological phenomena, water content, favorable periods of sowing from agricultural crops, taking into account the state of the environment, yield and gross harvest of the main types of crops, providing these data to state and public organizations;
- carrying out applied research in the field of natural and technical sciences, introduction of advanced science-intensive technologies;
- provision of cooperation in the field of hydrometeorology concluded in interstate agreements and implementation of scientific and technical cooperation: regular exchange of hydrometeorological information, including in case of natural disasters, a unified methodology for hydrometeorological observations, harmonized with the technology for the collection and dissemination of hydrometeorological information;
- maintenance of the co-ordinated work in a network; fulfillment of international obligations and interactions with the World Meteorological Organization;
- fully ensures the implementation of the relevant work for the
- implementation of government plans and projects;

- provides on the basis of the latest achievements of science and technology the further development and reliable functioning of the state system of hydrometeorological observations;
- conducts systematic observations of the state of the atmosphere, ionosphere, surface water (water bodies), agricultural crops and pastures;
- carries out hydrometeorological support and bringing necessary information to ministries, departments, public organizations and the population;
- develops in coordination with the interested ministries and departments;
- a) bringing to them operational information, including information on natural and dangerous hydrometeorological phenomena; b) issues, on contractual terms, information prepared on the basis of hydrometeorological observations conducted at stations located near the planned agricultural and industrial construction sites;
- ensures the maintenance of the state hydrometeorological fund;
- Carries out preparation and preparation for printing of scientific - applied, agroclimatic reference books and yearbooks;
- performs work to ensure the modern technical level, the unity and comparability of measurement results, for standardization, the implementation of rules and standards of metrological support, performs metrological control over measuring instruments;
- develops and concludes bilateral agreements with ministries and departments providing for the order of interaction on issues of hydrometeorological observation;

Overview of the current observational system

I. Turkmenistan has more than 100 meteorological stations observing the surface of the earth;

II. Observations in the air - Turkmenbashy 1 aerological station;

III. We check the sea observation - the temperature of air and water, the direction, speed and gust of wind, the direction and height of the wave, the direction of the swell, the average period of waves of the prevailing type (wind or swell) rounded up to whole seconds., Visibility, weather phenomena, sea level on time observations, minimum and maximum sea level for the past day, fast ice (number and width), fast ice (thickness and snow), air and water temperature average for the past day;

IV. Observations on airplanes - we do not observe;

V. Satellite observations - cloud analysis, snow curtain, rapid cyclone movement, hot and cold atmospheric layer;

VI. There are 2 radars in Turkmenistan. These radars are now being improved;

Collection, processing and use of satellite data and products

I. List of satellites / instruments that are currently used online for NWP, today's weather forecasting and other applications

We do not have a satellite product at this time. We get via the Internet from EUMETSAT.

We are provided with information from meteorological satellites:

Meteosat-8 41,5E
Meteosat-9 9,5E
Meteosat-10 0 E

II. Current capabilities for the collection, processing and archiving of satellite data and products

We do not have satellite data and products archived. From the Turkish Hydrometeorological Organization for the product SADCA we receive the meteorological programs TMETVis and TMETPro.

III. Current satellite data applications

1. Satellites through the online displays cloudiness, precipitation, long-term and short-term forecast of the pagoda and other atmospheric phenomena.

2. Satellite product

Meteosat Services

0 ° Service we get the data each:

1/4-hour data transfer **

1/2-hour data transfer **

1 hour data transfer **

3 hour data transfer

Satellite data for solving regional problems

Turkmenhydromet recently began using the already-available products of meteorological satellites via the Internet. Currently, NMHS staff are gaining experience in compiling weather forecasts and dangerous hydrometeorological phenomena using the products of meteorological satellites. In the future, they will identify gaps and work on its elimination.

THANK YOU FOR ATTENTION !