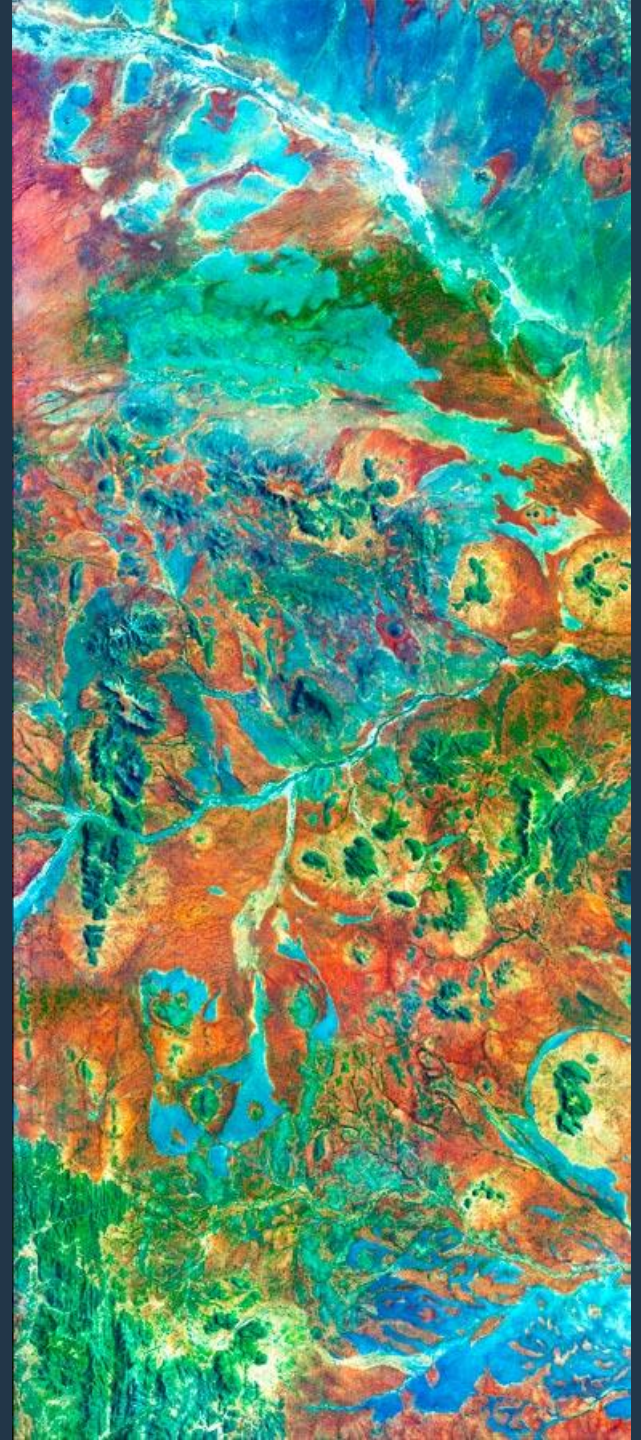

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Tackling Climate Change with the Help of Satellite Imagery: the Case of Azerbaijan Illustrated by the 2022 Climate Change Report

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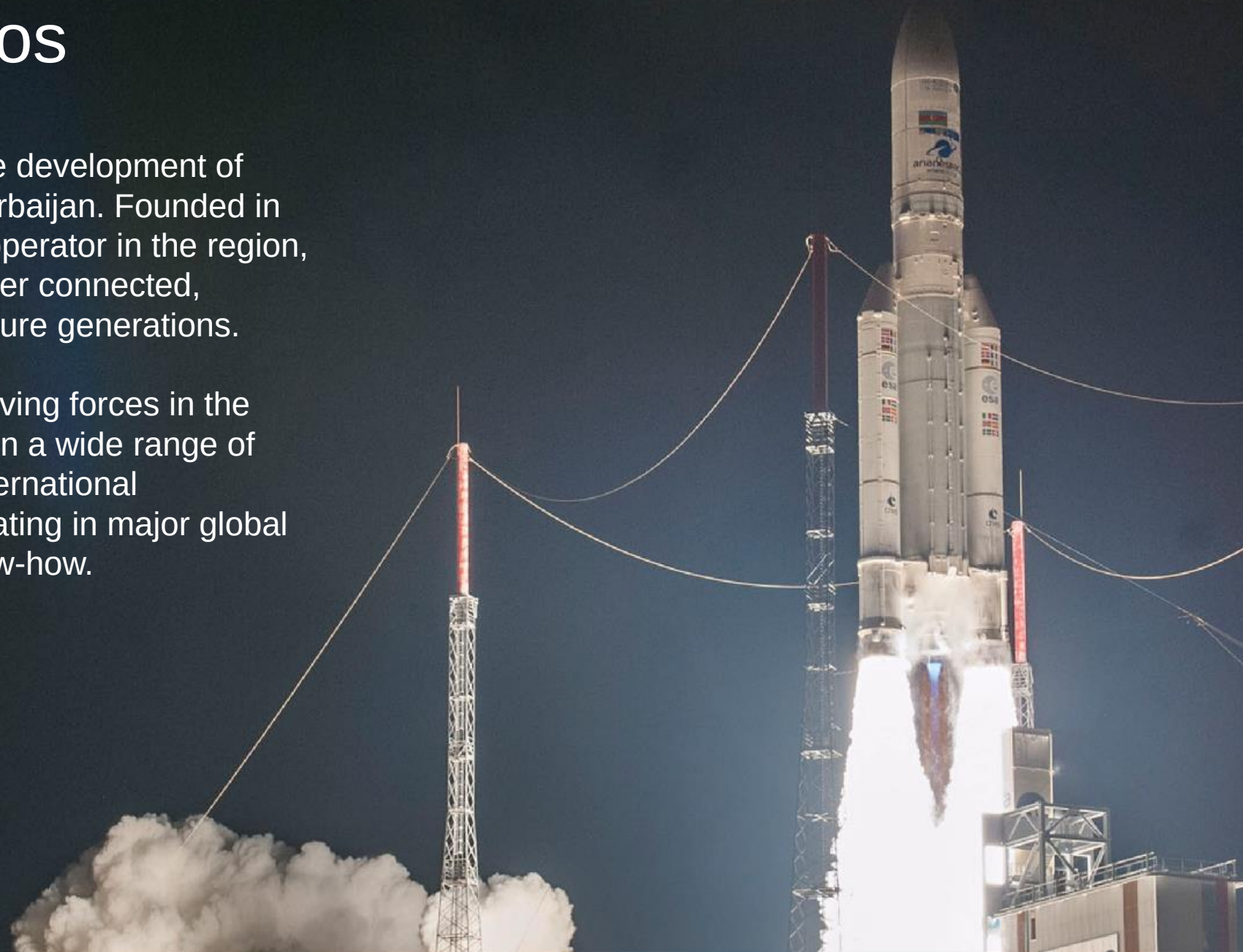
Marketing Communications Manager

About Azercosmos

We are the leading force behind the development of innovative space ecosystem in Azerbaijan. Founded in 2010 as the first and only satellite operator in the region, we are committed to creating a better connected, developed, and secure world for future generations.

We aim to emerge as one of the driving forces in the global space industry by engaging in a wide range of R&D activities, cooperating with international stakeholders and partners, participating in major global projects, and building the local know-how.



Tackling Climate Change Together

Key Challenges

Over the past **100 years**, the average annual temperature in Azerbaijan has increased by **up to 0.4-1.3 ℃.**

Challenge with regard to water resources management – **Azerbaijan placed 18th** among the World Resources Institute list of **most water-stressed countries by 2040**.

Our Response

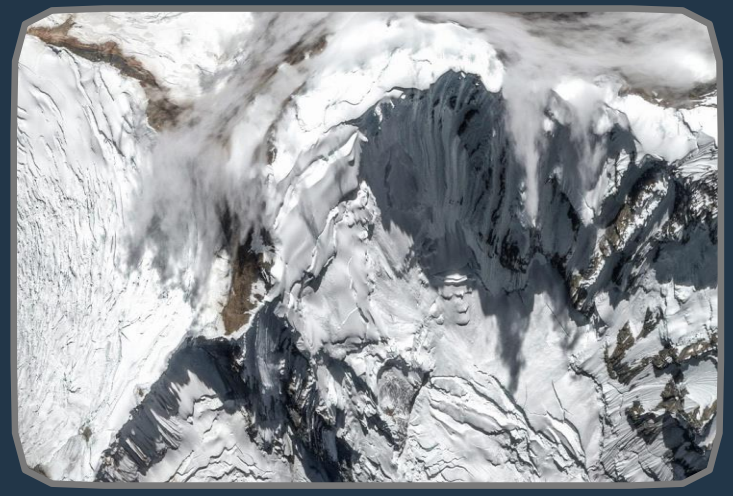
Joined **the UN Framework Convention on Climate Change** in 1995.

Signed **the Paris Agreement** annexed to the UN Framework Convention on Climate Change on April 22, 2016.

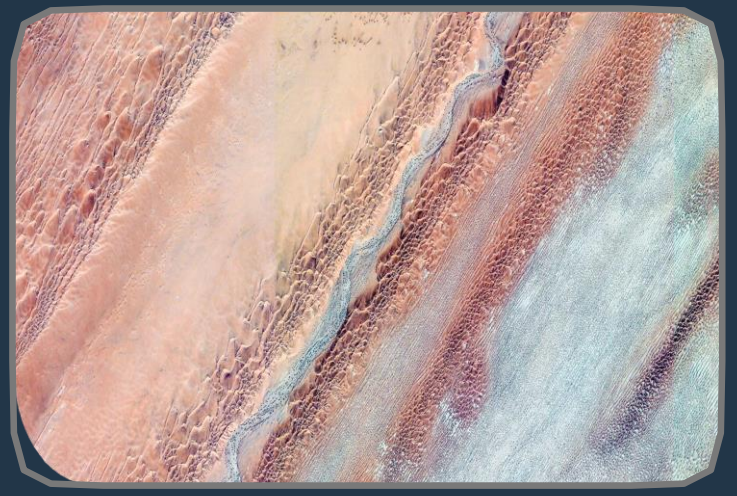
Targeting **a 35% reduction** in the level of greenhouse gas emissions **by 2030** compared to the base year of 1990.

Priority is given to the introduction of **low-carbon, efficient renewable energy and waste management technologies**, as well as **expansion and protection of forest areas.**

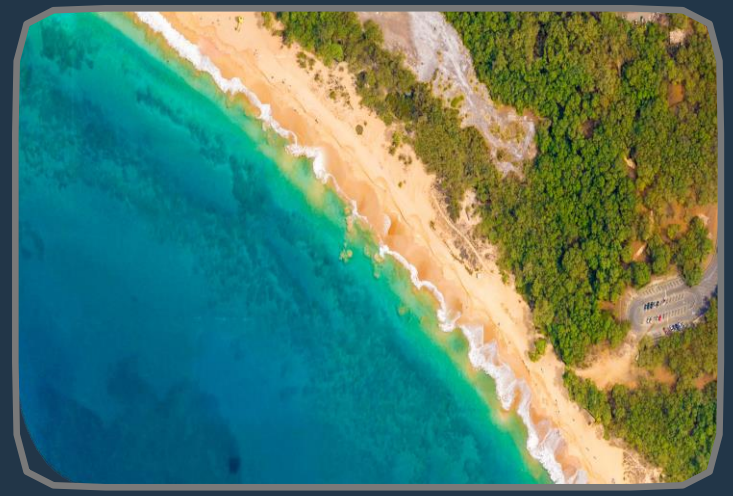
Azercosmos Climate Change Report 2022



Cryosphere



Lithosphere



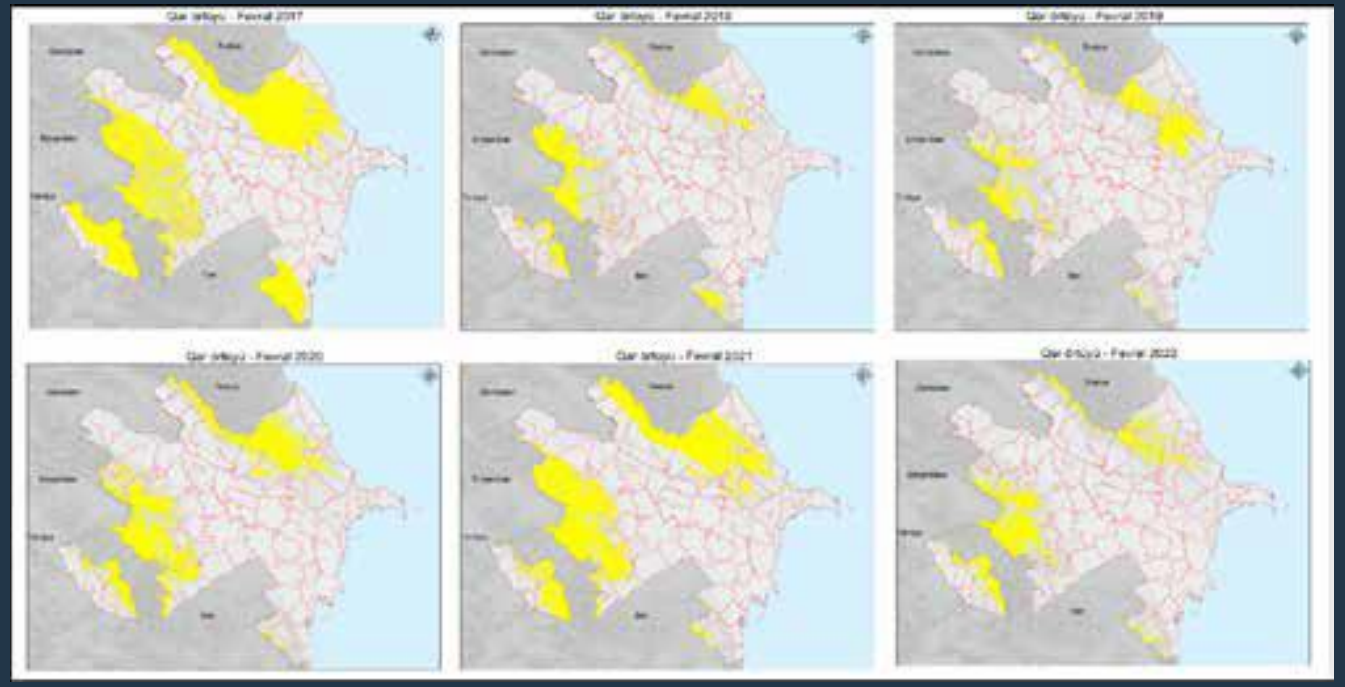
Biosphere

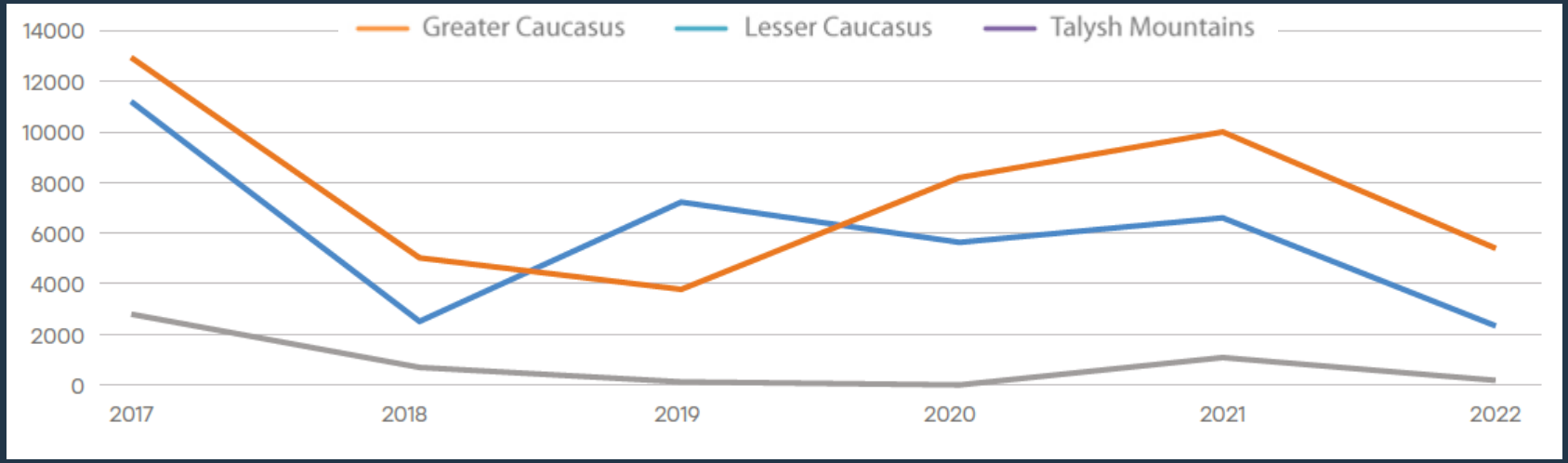
Hydrosphere

Cryosphere – Snow Cover Monitoring in Mountain Areas

The areas of snow cover in the **Greater Caucasus, Lesser Caucasus and Talysh mountains** were calculated in January, February, March and April of each year **from 2017 to 2022**.

In comparison with the average indicator for 2017-2021 period, the snow cover reduction **in 2022 is about 10%.**

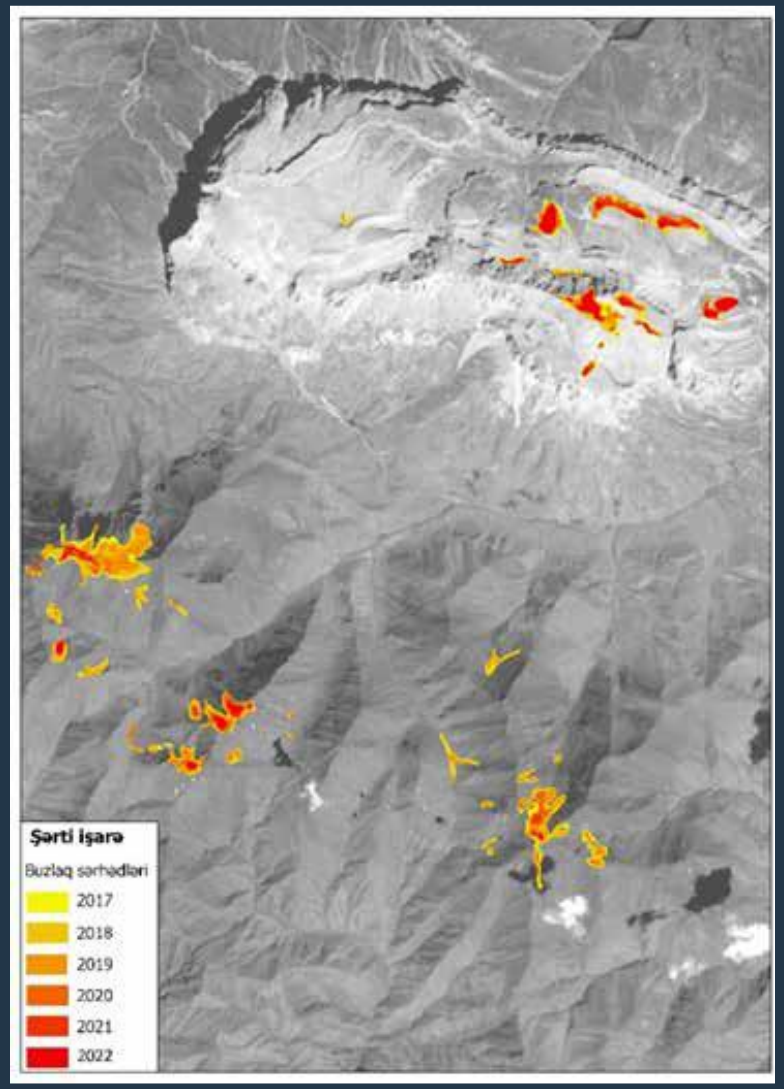




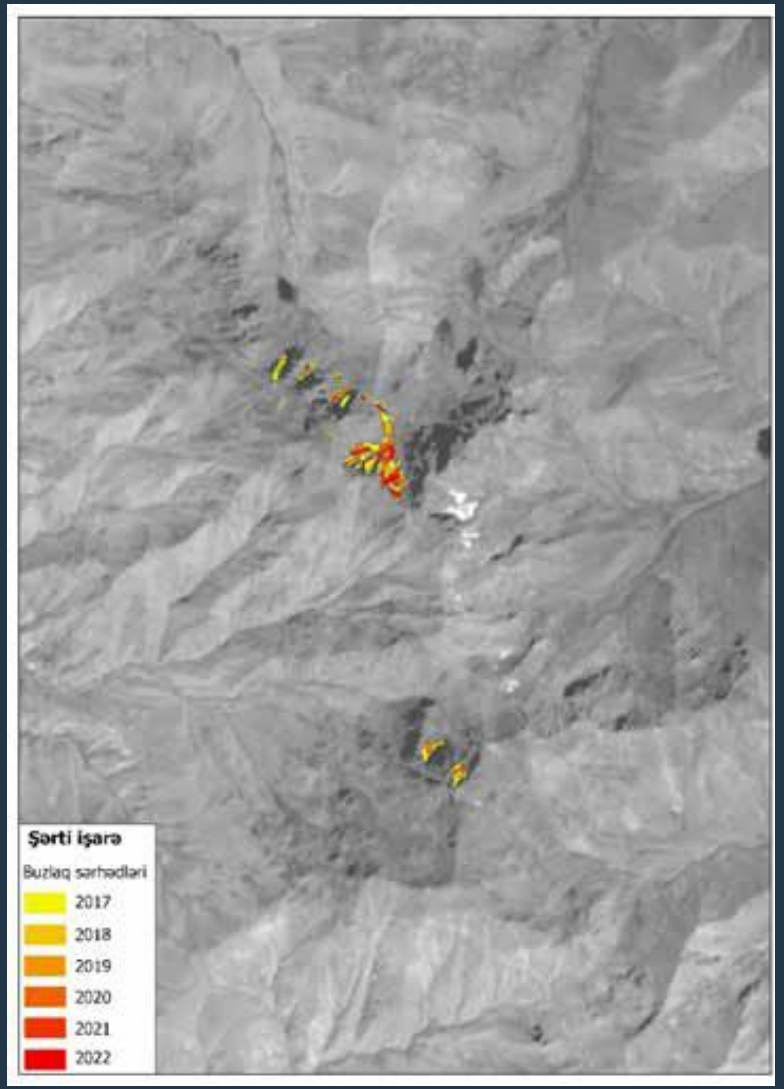
Cryosphere – Glacier Monitoring

For the monitoring of mountain glaciers in the Greater and Lesser Caucasus, imagery pertaining to August of each year was utilized due to the melting of snow cover in summer.

Average decrease of **17%** in glacier areas was observed in the last **6 years.** The average annual reduction is **10 hectares.**

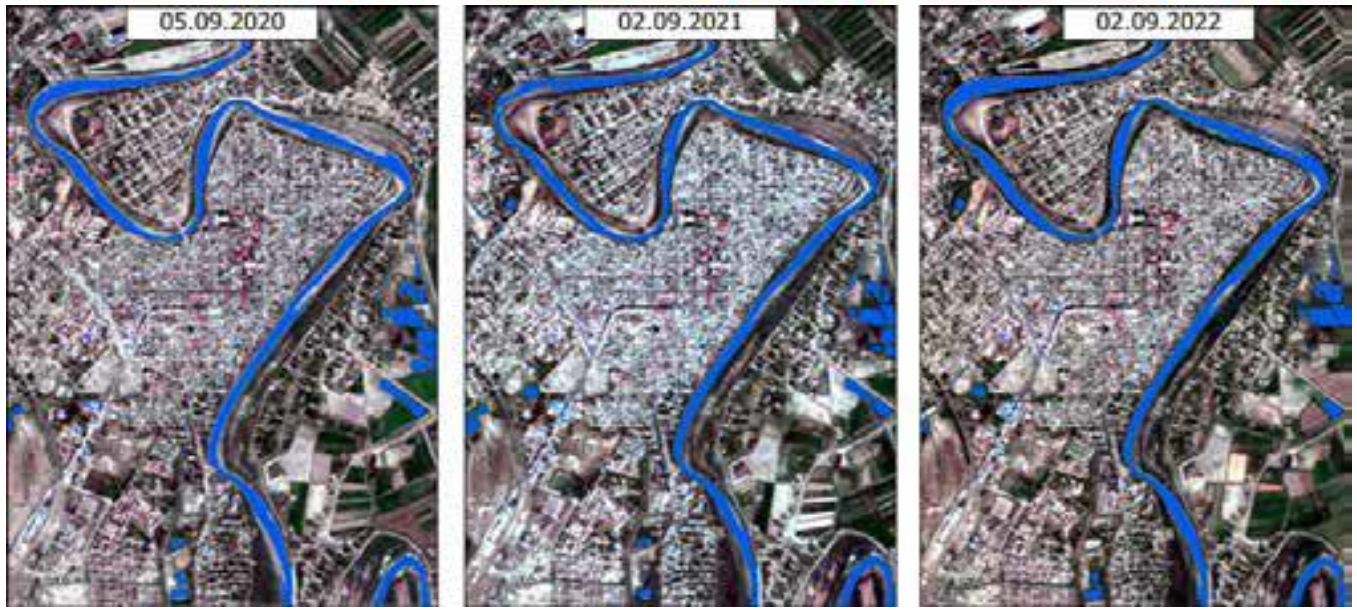


Greater Caucasus



Lesser Caucasus

Hydrosphere - Water Level Changes of the Kura River



The parts of the Kura river passing **near the city of Salyan** were selected as the key research area for 2020-2022 period.

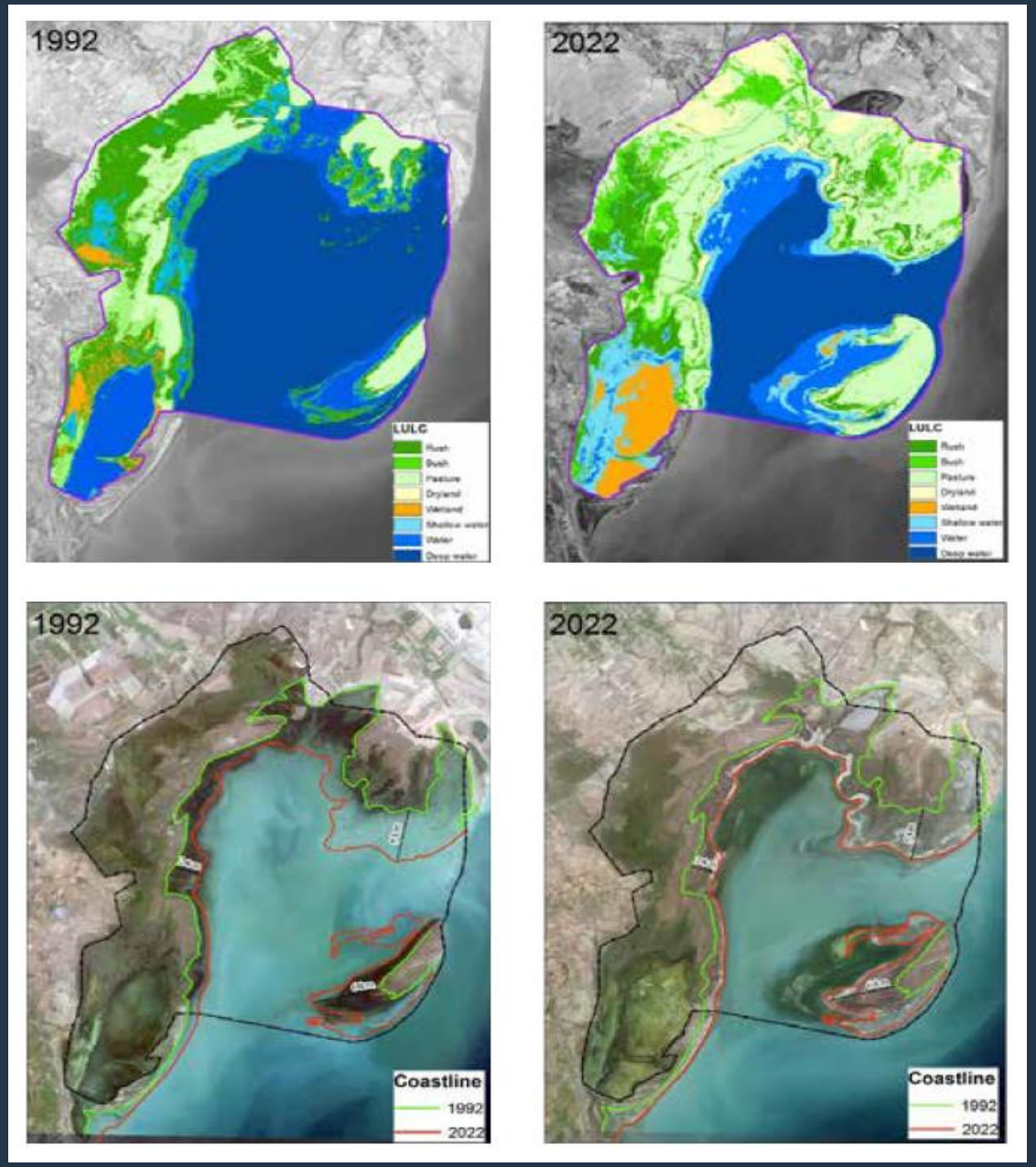
Significant changes in the water level were observed. While in February 2020 the width of the river was **60-120 m**, in 2022 it varied between **20-50 m**.

Measures were taken by the state authorities and the water level was normalized by September 2022.

Hydrosphere – Monitoring of the Caspian Sea Levels

The main purpose of the monitoring was the assessment of the level change in the Caspian Sea along the coast of the Gizilaghaj National Park in the last 30 years.

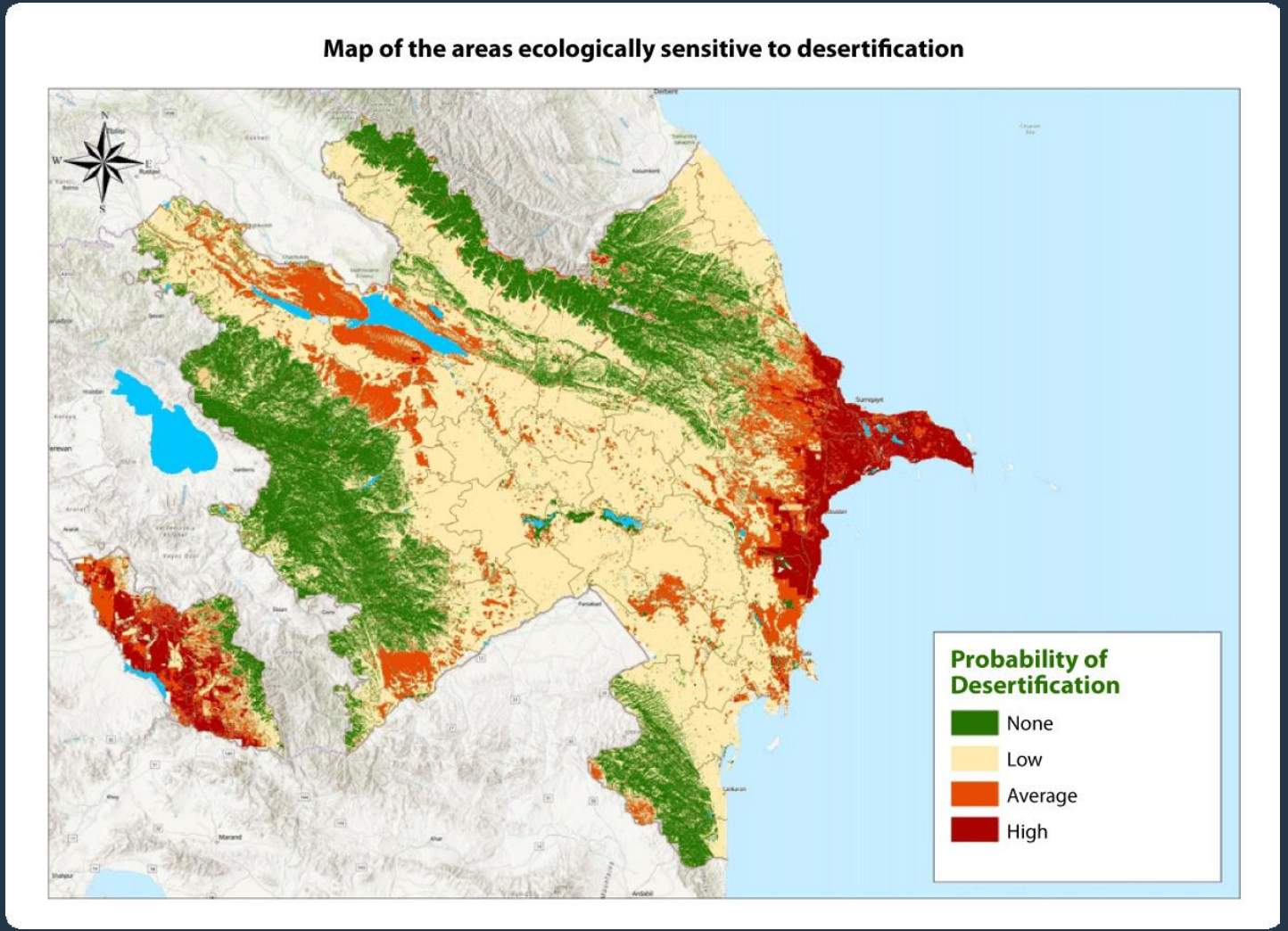
Based on the comparison of 30-year optical satellite images, a 2-5 km seaward shift of the coastline was observed.



Lithosphere - Desertification

Identification of desertification-sensitive areas across the country **over the last 20 years**.

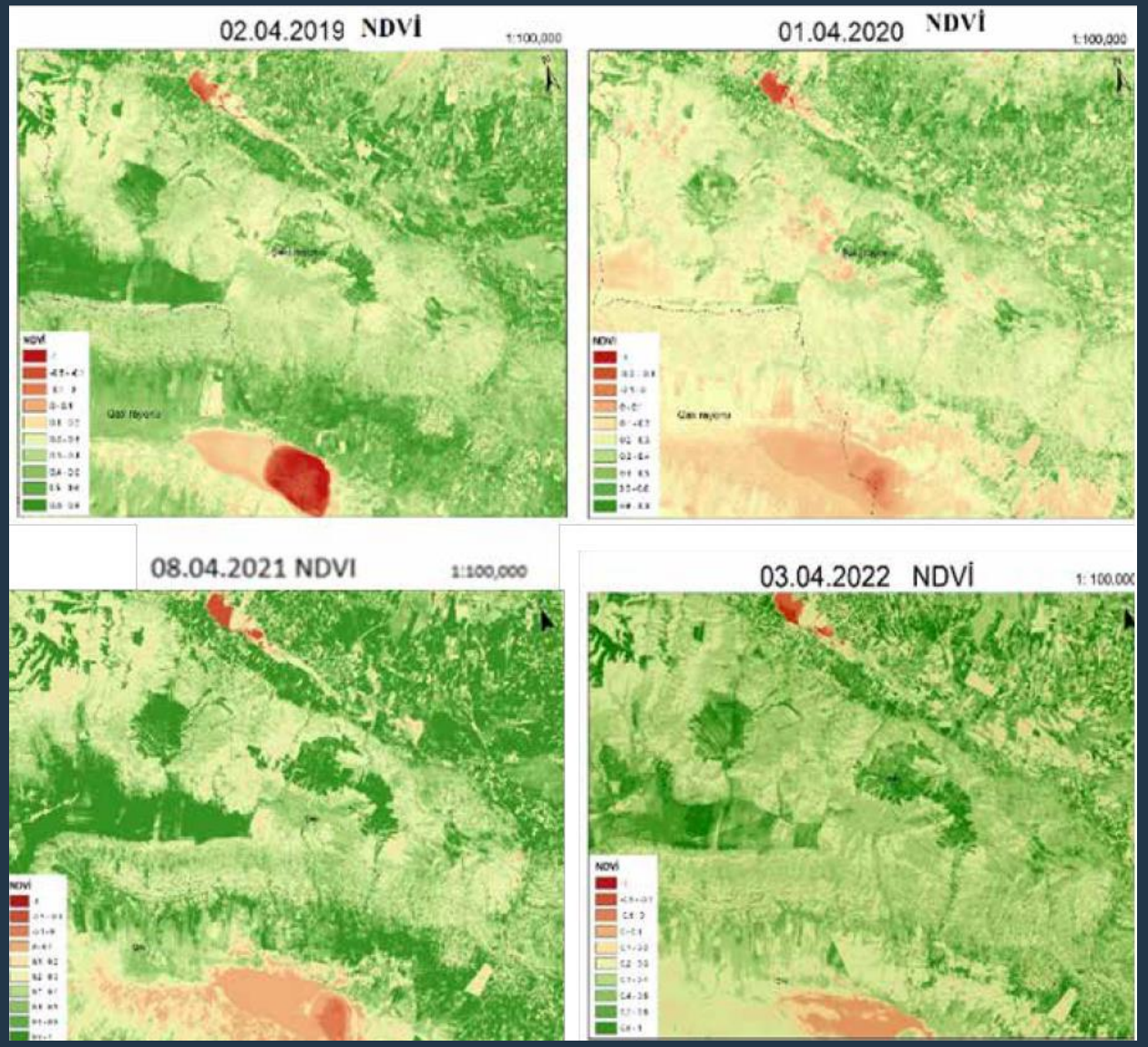
According to data spanning 22 years (2000-2022), **5,000 km2 or 6% of the total area** have been identified as having high risk of desertification.



Biosphere – Vegetation Monitoring

In 2022, **33% decrease** in area with higher vegetation index is observed compared to previous year.

In cultivated areas, zones with low values of NDVI index were **45% in 2022**, while areas with high values cover **55%** of the country's territory.



Earth Observation Competition

The competition aims to accelerate the development of projects carried out with the help of satellite images and promote Earth observation services and solutions and their application.

In 2022-2023 edition, 593 applications were received and 27 final projects were selected for the final evaluation by the jury.

Held annually, the competition will be launched by the end of 2023 and will cover a greater array of topics, targeting both local and international audience.

International Astronautical Congress 2023

The most prominent event of the global space industry, the IAC will be held in Baku, Azerbaijan on 2-6 October, 2023.

Azercosmos was selected as the host of the IAC 2023 in Washington, D.C., at the General Assembly of the International Astronautical Congress.

The IAC is back to Baku exactly 50 years after the capital of Azerbaijan hosted the event for the first time.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Thank You!