## **Oasis of Otrar**

The Otrar oasis is located on the middle Syr Darya river near the confluence with the Arys river, modern Otrar area, South Kazakhstan region, Republic of Kazakhstan. This rich complex of channels, oxbow lakes and shifting floodplains formed the site of the Oasis of Otrar, a key settlement in Central Asia on one of the routes of the Silk Road.

The modern climate of the Otrar oasis is classified as dry semiarid continental. Average summer temperatures rise to 35 degrees C and winter minima of -10 degrees C. Usually the Syr Darya river freeze in the beginning of December and the ice remains till March. Annual flood waters would cover large areas of the Otrar Oasis and provided a useful natural irrigation that was exploited by constructing water storages in former oxbow lakes.

Geographer Al-Masudi, who lived in the 10<sup>th</sup> century, described one of such floods. He reported that "the river flooded territory of more than 30 parasangs and then people travelled from one place to another by boats. At the Modern Times the region experienced the same floods. In 1944 the Arys river bursted its banks and inundated several auls (villages). In 1947 the whole oasis and old streams of the Syr Darya river were under the water. In 1969 severe winter with strong snowfalls and sudden warming resulted in strong spring floods and the water flooded parts of the vilages of Shaulder and Chilik.

In the northern part of the Otrar oasis a 20km long relic secondary course is preserved 5 km north the main river bed. This course is hydraulically connected to the Syr Darya via the underlying gravel aquifer and is often filled by out of bank flood waters. Summer discharges have progressively decreased due to the retreat of the ice deposits on the Tien Shan mountains with a more significant decrease during the last 1500 years.

The Arys and Syr Darya rivers are the main water sources. Water channels, which were built in this territory, supplied water to cities and settlements and brought irrigation. Abundance of water contributed to development of agricultural civilization there.

The oasis of Otrar has a convenient geographical location. It is surrounded by vast steppes which were inhabited by breeders in ancient times. The steppe is adjoining to the Karatau Mountains. Valleys of the rivers are rich in meadow grasses and rosehip; poplars and elms can be found there. Foothills of Karatau are convenient places for breeding livestock while valleys of the rivers are the best places for agriculture. Present day irrigation consists of a mixture of crops - cotton, maize, sunflowers and vegetables; and is grown on the site of former irrigation works, leaving a complex series of modern and ancient channels crossing the area.

Remnants of the former Otrar covers an area of 200 km<sup>2</sup> with evidence of 10 large walled towns and 50 small villages. The main town of Otrar was one of the most powerful urban centres of the Silk Road, and formed a bridge between trading, farming and pastoralist cultures. In the Middle Ages the town of Otrar (other sources name it Farab) was the capital of Otrar-Farab district. Scientists suppose that the name "Otrar" meant "camp-site", and "Farab" was interpreted as "place of the crossing".

The majority of buildings there consist of earthen architecture, with only some prominent buildings, such as the mosques in Otrar, built of brick.

Otrar City remains as a 170-ha platform of earth, 20-m high that provided protection against floods and attacks. Other smaller satellite settlements were spaced at approximately 5-km intervals and each were supplied by earth canals fed from the Arys or Syr Darya rivers. The

modern irrigation system commenced in the period of 1920-1936. A cross weir was constructed 25 km upstream of the town of Shaulder supplying concrete lined canals.

Nowadays the oasis of Otrar is one of the most famous places of attraction in Kazakhstan. It is well known thanks to its numerous medieval towns, settlements and burial places. Its cultural landscape is unique.