

The « Golden age lake » of Turkmenistan

On October 20, 2000, the President of Turkmenistan inaugurated the works for building a new sewage system in order to drain most of the drainage waters of Turkmenistan.

It is well known that uncontrolled sewage of drainage waters salinize areas where they are spread. Up to now the big irrigated areas of the country, from Mary-Bayram Ali, Tedjen, Khalkar, Achkabad and Kazandjik, were rejected to the north, in corridors located between sand dunes ranges, and ancient deltaic deposits of past rivers coming from the south border of Turkmenistan, and forming solonchaks along the Unguz depression (fig 1).



The localisation of future “Lake of the golden age”(foreground); behind: Sary Kamysh lake, and the Aral Sea; Nasa 1990. In front, the Kaplankir hills and Karashor basin (white)

Ninety five percent of the 1 million ha cultivated areas are irrigated. A small part of water comes from the southern Murgab and Tejen rivers, and brooks from the Khopet Dag range for about 1 km³ per year, and the remaining source for 14-16km³ is the Great Turkmen canal – ex –Lenin Canal, built since 1960 Amu Darya river at Kerki, near the afghan frontier; a second tapping is near the town of Lebap, and a third one at the Takiatash dam at the apex of Amu Darya delta. Water is shared between Turkmenistan and Uzbekistan, as long as Afghanistan does not claim its part of the international river water, as it is empowered by a 1920 treaty.

Table 1. Water resources of Turkmenistan

Sources of water	Water resources, million m³
A. Permanent water resources	
1. Surface water (Amudarya, Murgab, Tedjen, Atrek and small rivers)	27,100
2. Water wells with salinity less 3 g/l	3,300
Total for 1 and 2	30,400
B. Temporary and alternative water resources	
3. Runoff from indigenous water harvesting systems (takyr and takyr-like soils)	332
4. Sub-sand fresh water lenses	99,680
5. Fresh water of underground lenses near the rivers and canals	307
Total for 3-5	100,319
Total for A and B	130,719

(from Orlovsky N. and V., 2005)

Survival of Turkmenistan is linked to this resource, as 87% of its water is used for agriculture, developed essentially by the turkmen government for cotton production, a small part being used for cereals and hay. One may wonder why the country, at the difference with its neighbours, Turkmenistan go on promoting an industrial culture of low added-value.

The idea behind the project of the “Golden Age Lake” is to collect most of sewage waters to irrigate some new 400 000 ha for pasture and orchards, and to create with the residual waters a new lake, located in a salt depression North of Turkmenistan, the Karashor (shor = salt lake). The project is to fill the depression with waters conveyed by past rivers, such as the Uzboy, a past bed of Amu Darya, running from Dashowuz in its present delta to the Caspian Sea, for waters coming from the turkmen cultivated part of the Amu Darya delta, down from Lebap, and through a new canal starting from the region of Chardzu (today Turkmenabashi), crossing the Karakum sands, and finally using a small part of the Unguz depression, presently the place of numerous solochaks (dried salt lakes). Presently a part of drainage waters from the Chardzu region is sent west through eastern Karakum through a low pass, with small lakes; this canal is extended west, collecting on its way present sewage canals going north from the big oases located on the Great Turkmen canal to the Unguz depression (fig.1)..

The terminal Karashor depression is located higher than the Uzboy bed (fig.3), and therefore a dam of about 30m height and two km long will have to be built to across this bed to feed the Karashor with the collected water.

The project is foreseen to form a lake, the “Golden lake” of journalists, 130m deep, 4060 km² wide, with a capacity of 123 km³. The foreseen water input would be 14 km³ per year (455 m³/sec.), of which 125m³/sec would come from the Dashowuz district, to which the Lebap district would be connected. This water would follow the dry bed of Uzboy down to Karashor.

The turkmen government estimated the total investment at first to be 4-5 billions dollars, and now 20 billions, on 15 to 25 years. An armada of scrapers and bulldozers have begun the

earthwork in 2002. The turkmen press, tightly controlled by the State, is dithyrambic about this project, speaking of the creation of green pastures and orchards etc.. and evocating the role of the new lake as a holiday resort.... Apparently, since the first enthusiast reviews, nothing new has been published. Recently, Turkmenistan bought 200 new heavy-duty trucks to reinforce the working task-force, and said work should be finished in 2010

Most foreign specialists criticized the project: first, unprotected banks in permeable soils will salinize big areas, to which it was answered that these are desertic, and new halophile vegetation may be used for cattle food.; second: the project to fill the Karashor depression is irrealist, as evaporation in the area is about 1.2 to 1.5m as a minimum, as was established years ago by N. Orlovsky . It would ask at last 200 years to fill Karashor, with a constant augmentation of salinity, and precipitation of salts. Karashor would become a new Dead Sea.



A landscape near the projected canal



fig.2: Map of the Turkmenistan canal system.



Karashor panorama from the east.

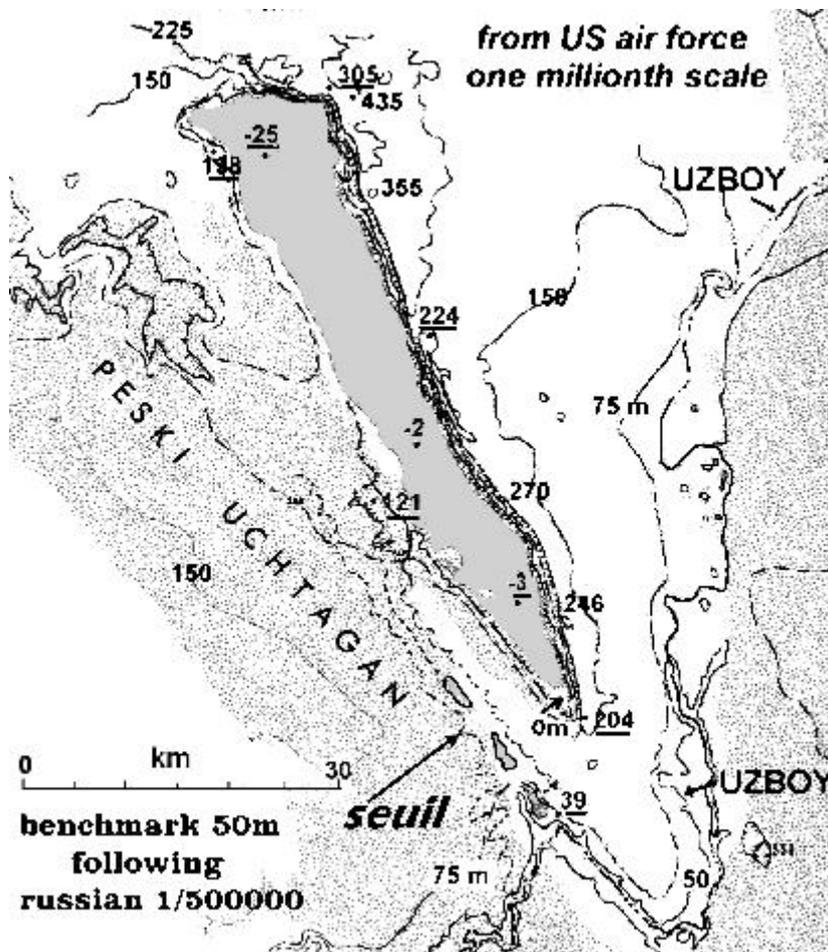


fig.2: Map of the Karashor depression.

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