

## Turkmenistan

The Guvlyduz Salt Factory, situated near the Caspian Sea in Balkan region, was established in 1976 and continued producing iodized salt until 1992 despite the lack of mandatory legislation at that time (1). A quick overview of the iodine situation in Turkmenistan prepared for the Ashgabat Conference in 1994 (2) reported localized surveys in Ashgabat and Dashoguz citing 20-64% goiter prevalence and 37-72 $\mu\text{g/L}$  median urinary iodine among school-age children. The Guvlyduz Plant reported production of edible salt at 50-60,000MT, more than sufficient to cover the national salt consumption. A Presidential Decree of 1994 stipulated that all Turkmen citizens are entitled to 5kg salt/y, free of charge.

The Ashgabat Conference helped secure a commitment from the President for a program to eliminate IDD, and UNICEF started collaborating in advocacy, capacity development and legislation. In May 1996, the President signed a Decree "On Salt Iodization and Flour Fortification with Iron", stipulating that all locally produced and imported salt for edible purposes must be iodized, setting a level at 23 $\pm$ 11.5mg iodine/kg as potassium iodate. Following the Decree, both UNICEF and the Government made several investments to improve the manufacturing and iodization technology, and the packaging of iodized salt at the Factory. The Guvlyduz Plant accesses potassium iodate from the Khazar Factory in Cheleken also in Balkan region and located  $\pm$ 100 km south of the Salt Plant.



Figure 1: Urinary iodine levels in school-age children by region, 2000

In 2000 with USAID and UNICEF support, a population-representative iodine survey showed that iodine deficiency continued existing in the 3 regions (Lebap, Mary and Dashoguz) that are located at largest distance by railway transport from the national source Guvlyduz (Figure 1) and the Demographic Health Survey in 2000 (3) estimated by RTK that 75% of the households were using adequately iodized salt.

In response to the findings of the iodine survey, the State Standards Consortium raised the required standard to 40±15mg/kg in January 2003, thereby bringing it in line with the level adopted in the CIS countries. The State Customs Authority banned the import of non-iodized edible salt and MOH tightened its oversight by strengthening the monthly salt inspections in institutions and retail outlets, and obliging the regional State Sanitary Epidemiological Centers to report on quantitative salt assays. By a Decree of August 2003, the President exempted the Guvlyduz salt factory from all taxes and duties. Also, the factory tightened its iodized salt processing methods and introduced staff responsibilities for the production and oversight of quality, with quantitative sampling at 2-hourly intervals, thereby ensuring more direct accountability for the continued quality of the iodized salt supplies.

In October 2003, at the International Meeting for the Sustained Elimination of Iodine Deficiency Disorders in Beijing on 15-17 October, the Vice-Minister of Health announced that the official oversight data of the Government of Turkmenistan demonstrated full compliance of the mandatory supply of the population with iodized salt according to the standards (4). During 2004, UNICEF supported a qualitative survey of knowledge about IDD and USI among consumers, school children, health workers and teachers in Ashgabat, Akhal and Balkan, showing high acceptance among the respondents for the exclusive supply and use of iodized salt, and indicating that iodized salt was being routinely used in food preparation and consumption (5). During the same year, in coordination with the IRLI laboratory network and ICCIDD, the laboratory manager of the iodine laboratory of Sofia, Bulgaria, assisted in reviving the iodine laboratory in the Mother and Child Health Research Center, which had fallen into disrepair due to staff turnover and reconstruction of the building.

Table 1: National Survey of Iodine Nutrition, Turkmenistan, 2004

Region	No of children	Median UI (µg/L)	% UI values in range 100-299	% salt samples conforming to national standard
Balkan	91	232	62	100
Ahal (incl. Ashgabat)	208	194	61	100
Mary	206	168	65	100
Lebap	205	160	62	100
Dashoguz	169	157	70	100
Turkmenistan	879	170	64	100

A national iodine survey in mid 2004, led by the Mother and Child Health Research Center of MOH, Ashgabat (6) with assistance of a UNICEF consultant used the standard 30x30 sampling design as recommended by ICCIDD, UNICEF, WHO. The survey results (Table 1) demonstrated optimum iodine nutrition in Turkmenistan. As was apparent also in the 2000 survey, a gradient in UI values occurs along with the distance from the Guvlyduz production location. The survey results show that iodine deficiency had been overcome in Turkmenistan by USI. Upon external independent verification by WHO/ICCIDD experts, including an assessment of the soundness of 10 program functional indicators, the successful achievement in Turkmenistan was recognized by the Network for Sustained Elimination of Iodine Deficiency in November 2004 (7).

In summary, the iodine deficiency situation in Turkmenistan has been tackled by strong central direction and oversight of the mandatory production and supplies of properly iodized salt from the single salt factory Guvlyduz, which sources the  $KIO_3$  requirement from a nearby national source. The State income from national oil reserves permits the Government to subsidize the iodized salt production and supplies, and to extend an entitlement to all citizens to free salt for household consumption. The State-run food control officials report full compliance in the supply channels to the iodized salt standards. All food industries and mass catering institutions use only iodized salt, and the iodine nutrition situation in the population, assessed among school children, has been shown to be optimal.

Participation of national officers in UNICEF-supported regional and international meetings:

- Joint Workshop on the Elimination of Iodine Deficiency Disorders, Ashgabad, Turkmenistan, Economic Cooperation Organization, UNICEF, WHO, 15-16 June 1994
- Eliminating Micronutrient Malnutrition with focus on Universal Salt Iodization – Multi-sector Management Course, 15-22 June 1998, Tbilisi, Georgia
- Regional Salt Producers' Meeting, 29 September – 1 October, 1999 Kiev, Ukraine
- International Meeting for the Sustained Elimination of Iodine Deficiency Disorders, Beijing, 15-17 October 2003. Ottawa, Network for Sustained Elimination of Iodine Deficiency

References/important documents

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7. UNICEF, 2004. Regional Director to meet Turkmen President and present international recognition for Universal Salt Iodization. Media release 1 November 2004