

## Uzbekistan

Uzbekistan was among the countries characterized in the WHO Monograph on Endemic Goitre of 1960 (1) as “one of the most notorious goiter areas of the world” and most administrative divisions of the Uzbek Soviet Republic were on the “List of endemic goiter regions of the USSR that require iodized salt supplies” of the MOH in Moscow (2). The Fergana Valley and Andizhan Oblast in East Uzbekistan, which border on the Kyrgyz Republic, were reputed for the high prevalence of goiter (3). The Institute of Endocrinology in Tashkent ranked only 2<sup>nd</sup> to Moscow in scientific reputation during the Soviet period.

Prior to the breakdown of the Soviet economy, edible salt in Uzbekistan was supplied mainly from Ukraine, Russia and Kazakhstan, packaged in 1kg paper bags. Additional efforts, arranged through the health care system included KI distribution, or “anti-strumin” tablets, to school children and pregnant women. Upon Independence in 1991, the supplement supplies were discontinued and the hard currency earned from the export of cotton was used by the Uzbek Government for importing food, including salt, from neighboring countries. From 1991 onward, the Government also embarked on stimulating the local manufacture of edible salt and by 1993, about one-third of the salt consumption needs was reported to be produced in Uzbekistan (4). However, while the focus was on the establishment of new salt supplies, the iodization of salt was of secondary policy concern. During the 1990s, salt industries were established in Karakalpakstan, Navoi and Surkhandarya, with part of the production shipped for processing in Tashkent city. Between 1997 and 1999, UNICEF donated 8 spray iodization units and 16,400kg KIO<sub>3</sub> to stimulate the iodization of the local salt supplies. UNICEF also offered support for the development of a national IDD program, but high-level commitment to address the IDD situation was not apparent prior to the turn of the Century. The same UNICEF report (5) mentions that another survey in 13 Oblasts and Tashkent city by the Institute of Endocrinology during 1997-98 showed increases in goiter rates to more than 40%, as compared to 15% in previous studies. The MICS of 2000 was the first nationally-representative assessment: Only 19.2% of the households were using adequately iodized salt.

In 2001, the Government of Uzbekistan accepted the invitation by Asian Development Bank (ADB) to participate in a project, granted by the Japan Fund for Poverty Reduction and aimed to stimulate food fortification, especially USI, as the national strategy to reduce micronutrient malnutrition. A multi-sector delegation led by the Chief Sanitary Physician developed an action plan at the regional joint UNICEF-ADB Almaty Forum in October 2001 (6). The plan was aimed at developing national salt iodization capacity, law enactment and enforcement, monitoring of the salt supplies and population status, and actions to ensure acceptance by the public and improve accountability through periodic public reports. On return to Tashkent, the final agreement with ADB was signed by the Minister of Health in the spring of 2002, including the stipulation that enactment of a law on USI would be among the tasks for the near future.

A salt situation analysis supported by ADB in 2002 identified 10 salt enterprises, altogether supplying an estimated amount of 30,000MT iodized salt and leaving a gap in production compared to the national needs of more than 50,000MT (7). In response, ADB included the needs for 10 Uzbek enterprises in an international tender of spray iodization technology, KIO<sub>3</sub> and packaging equipment and QA needs (WYD checkers, titration equipment), while entering into an agreement that one-third of the costs of the fortificant would be reimbursed by the beneficiaries. Due to a shipping delay caused by the Gulf War,

the delivery in Tashkent took place during the spring of 2003; the investments were operational by October 2003 and the agreed reimbursement was completed by the summer of 2004.

In continued collaboration with UNICEF, the ADB project also stimulated the capacities for design and roll-out of a communications campaign in the participating countries. A joint regional workshop on communications and social marketing designs was conducted in Bishkek, Kyrgyzstan in February 2002 (8), for country delegates to develop generic plans with simultaneous attention to i) Advocacy and resource mobilization; ii) Alliance building and organizational motivation, and iii) information, education and communication in communities. The ADB grant and additional UNICEF support was made accessible for national campaign plans after making local adjustments of the generic plan.

A major purpose of the ADB grant project, and the ongoing collaboration between ADB and UNICEF, was to stimulate political will for a principal USI law that would compel not only the production and import of iodized salt, but also be accompanied by regulations to agree and ascertain the methods, norms and procedures required for quality assurance in the supply channels. To reach the full constituencies for implementing the national laws, ADB organized a regional workshop in Tashkent, Uzbekistan in June 2002 which brought together >60 participants from Government, salt and flour industries, food control agencies, metrology and standardization committees, and ADB and UNICEF expert consultants (9). The meeting's objectives included the range of concerns to ensure and maintain the quality of fortified foods. Industry participants were informed on the preparations needed before the receipt of project-sourced machinery, fortificant, packaging and QA equipment. Two technical groups worked in parallel fashion for two days on model work plans for the acceleration of comprehensive QA systems for iodized salt production, supply and consumption. The recommendations from the groups provide testimony of the raised awareness and understanding that the required enactment in each country of a mandatory law should be accompanied with equally important follow-up action to establish effective QA capacity in the industries as well as functional QC capacity in the food inspections. The model work plans also were an indication of the diverse regulatory standards that needed to be formulated and agreed upon for translating the new legislation into transparent and mutually agreed norms of conduct in input sourcing, fortified food inspections, local trading and export transactions.

To further stimulate the collaboration among the Government and the partners in Uzbekistan, UNICEF worked with ADB to organize a National Salt Producers Workshop in October 2002 to share and expand on the justification and requirements for achieving USI (10). The >50 participants hailed from the salt industry (18 enterprises), complemented by a host of medical specialists and Government officials. The meeting learned of the delays in the progress toward the USI goal in Uzbekistan and agreed to make efforts to take advantage of the new inputs for iodizing salt. The following day was allocated to in-depth deliberations on a draft law proposal for USI and the necessities to assure and enforce the iodized salt standards. The meeting proposed the formation of a Salt Producers Association to stimulate cohesive representation of interests and joint sourcing of future self-procurements. The resolutions from the meeting included an agreement to formally adopt the iodization level of  $40 \pm 15$  mg/kg, agreed in Minsk and co-signed by the PM of Uzbekistan in 2001, and already being practiced in other CIS countries.

The execution and management capacity of the assistance from ADB in Uzbekistan appeared to have limitations. MOH was acting largely in isolation and the Expert Working Group, tasked to guide the USI efforts, tended not to use the full range of national expertise available. In early 2003, the Vice-Premier chaired a special Project Steering Committee meeting that addressed the issues in collaboration. MOH was instructed to assume true leadership, be inclusive of the full range of expertise in the country, and no longer remain in a reactive mode. Specifically, MOH was to initiate a request for elimination of the tax/tariffs on future iodization inputs; start consulting international expertise for the draft USI law that was being reviewed at that time by 21 Ministries and Government agencies; include collaboration with NGOs in the communications; expand the Technical Working Group beyond only the health profession; and strengthen the monitoring of the project's efforts and outcomes.

During 2003, Uzbekistan was among the invited participants in the International High-level Meeting on Accelerating Sustained IDD Elimination, held in Beijing, China, 15-17 October. The Uzbek delegation was led by the Deputy Prime Minister, Mrs. Gulyamova, who in her speech referred to the ongoing efforts to enact USI legislation and mentioned that this effort was being pressed forward by a special Council for Coordination. By the end of 2003, a communications campaign had been launched in pilot regions, but the salt iodization level agreed in Minsk in May 2001 ( $40\pm 15$ mg iodine per kg), although announced at the Beijing Meeting as having been accepted, had yet to be formally adopted.

As part of the communications plans, a large-scale salt testing campaign was conducted in Uzbekistan by Grade 5-11 pupils during IDD Day in the fall of 2003. The rapid tests of household salt in 10,000 schools, coordinated between ADB, UNICEF and the Ministries of Health and Education, was accompanied by lessons about the dangers of IDD and the benefits of using iodized salt. A UNICEF report of the campaign mentioned that of the almost 6 million samples tested, 56% were positive for the presence of iodate. The salt testing campaign illustrated that a sizable increase had taken place in the iodized salt supplies in Uzbekistan. A Producers Association had also emerged, mainly due to the Government-led attempt to strengthen the sector and stimulate the quality and amount of national iodized salt supplies. The logical next step would be to augment on the salt companies' political will by stimulating information access for the promotion of self-sustained iodized salt production and supply. To this end, ADB organized jointly with UNICEF a 1<sup>st</sup> Regional Workshop for Salt Producers in Bishkek, Kyrgyz Republic, on 12-13 July 2004 (11). The workshop included a promotional "Expo" part that afforded external companies of iodization and packaging equipment, fortificant and other input materials to showcase their products. Speakers of the European Salt Producers Association (Eu Salt) and the Russian Salt Producers Association presented the mandate, structure and activities of the organized salt industry in Europe. Also the staff of the China Salt Company and the Lonestar Corporation, who had been selected in the competitive bid of ADB, participated actively in the exposition and the proceedings of the workshop. The recommendations adopted by the salt producers' workshop give testimony of the acceptance by the major salt industry leaders in the region of the joint collaborative national approach in addressing the shortfalls of dietary iodine in the population, and their political will to continue collaborating with like-minded organizations through improvement of information exchanges and national USI legislation.

At the time that the first period of the ADB project came near its end, self-reporting by salt producers in Central Asia and Mongolia indicated that >80% of the project goal to realize 66% iodization of the

national salt requirements was being achieved. For all the Central Asian Republics, the increases in iodized salt supplies by 2004 were in theory sufficient to reach 33.5million people or 35% of the collective population with additional dietary iodine, thus helping to protect the brains of an additional 500,000 newborns in the region against brain damage that might have occurred otherwise. Using UNICEF data, the user shares of iodized household salt had risen in the participant countries by a quantum leap from 26% in 2001 to 63% in 2004 (12).

While the 1<sup>st</sup> project period had served to convince participating countries of the feasibility of the USI strategy and the key importance of managing USI by multi-sector collaboration at the highest political level, the follow-up period of the ADB-managed project was aimed at achieving the 90% consumption target based on in-country actions in quality iodized salt production, strengthened incentives and regulations for production and trade, and continued building of awareness and acceptance among the partners and in society. As was the case in 2001, the ADB follow-up project was initiated at an Almaty Forum, held in October 2004. Despite the continued postponement in Uzbekistan in enacting the draft USI law, Uzbekistan was also invited in the follow-up project although the disbursement of funding for the next planned period was made contingent on the actual enactment of a USI law.



Figure 1: Salt supplies in Uzbekistan from the major deposits to different regions

An in-depth salt situation analysis (SSA), conducted by the Center for Social and Marketing Research with support of UNICEF in 2005 (13) located the four major salt deposits for the national supply of salt in Uzbekistan as follows (Figure 1): Karambet and Barsa-Kelmes in Karakalpakstan (West Uzbekistan), Lavlakan in Navoi Oblast (South) and Khujaiikon in Surkhandarya Oblast (Center). The study identified 65 salt enterprises, among which 9 were classified as major (reporting >2,000MT in 2004). The aggregate volume of the salt supplies by the local enterprises was estimated at 90-100,000MT (half of which was iodized) while the total national demand estimate was 245,000MT. The report suggested that >50% of

the salt purchases took place in “shadow” markets. Analyses by the Institute of Endocrinology of the iodine content of salt samples collected in 800 randomly selected households indicated that about one-third each was non-iodized, lowly iodized and adequately iodized at that time. The SSA report finally commented on the ongoing discussions on the merits of a draft USI law. The major technical objections included the absence of USI legislation in some European countries, the US and Canada, the opinion of unnamed Russian experts that it is not necessary to pass mandatory salt iodization laws since iodine can be added to animal fodder and a local expert opinion of a contraindication among people with certain thyroid disorders. The report introduced the argument that IDD elimination should be approached from a consumer rights perspective, a notion that had not been included in the draft law circulated at that time (13).

The long duration of the deliberations on the draft law was mainly due to the complicated process for review, approval and concurrence that included 21 different Government ministries and expert entities, some of which had veto power. The Ministry of Justice was long opposed, citing concern about the “right of consumer choice”, while expert advice changed several times in attempting to strike a balance between USI as the single “mass” strategy and proposals for clinical treatment and “group” prevention by using iodine supplements for especially vulnerable groups. The Ministries of Economy and Trade also took long to overcome their veto against the proposal, which kept changing during the successive consultations. The course of events illustrated that MOH, the focal ministry for driving the consultative process, was just too weak among the Cabinet of Ministers to manage it expeditiously.

ADB and UNICEF collaborated in November 2005 in a 2<sup>nd</sup> Regional Conference for Salt Producers, which was held in Tashkent again and aimed at consolidating the mechanisms of commercial procurement for self-sustained salt iodization among the salt enterprises in Central Asia. The meeting further addressed the promotion of trade among the participant countries and with the outside world. Sessions stressed the issue of quality assurance of the salt supplies as a joint task for producers and officials, emphasizing the roles and responsibilities of the partners while starting out at production. The meeting provided the salt, fortificant, and equipment firms an opportunity to showcase their products and services; establish and strengthen the interactions of the salt producers with reputed international suppliers of fortificant and equipment; and consider the routine enforcement needs in international trade. Several speakers stressed the significance of the principle national laws that had already been enacted for reaching mandatory USI – a detail that was not lost on the hosting government of Uzbekistan. International suppliers of salt iodization equipment (SERRA, Spain), test kits (MBI, India), and potassium iodate (Ajay-SQM, Chile; L-Pharma, Kazakhstan and Iodobrom, Ukraine) offered consultations and presented an interactive exhibition to the attending country groups and associations.

The MICSIII in Uzbekistan, conducted in early 2006, reported that 53% of the households were found with adequately iodized salt, highest in Tashkent city (73%) and lowest in the far-away western and Eastern parts of the vast country (43-44%).

During July 2006, the World Bank office in Tashkent circulated an economic analysis of malnutrition and nutrition interventions in Uzbekistan (14) that illustrated the high costs due to the prevalent rates of stunting, underweight, iron deficiency anemia, and vitamin A and iodine deficiencies. Iodine deficiency

was estimated as the greatest contributor to national economic loss among the nutrition indicators examined: 2.9% of GDP. On the other hand, the potential economic gain of reaching USI was projected at US\$ 83million, while USI was one of the most cost-effective strategies of the nutrition interventions considered. Although the estimates in this study for the economic losses ascribed to each nutrition issue were several-fold higher compared to similar estimates that had just been published in the global VMD campaign (15), the analysis succeeded in stimulating a productive high-level dialogue with Government, and UNICEF started supporting a working group, across the Government and the private sector and under the Cabinet of Ministers to develop a national plan for nutrition investments, which included USI.

Although the State Epidemiological Service of MOH had been offering guidance and standards for proper iodization, the inspection in the markets was constrained by the requirement of permission for enforcement in each case from the local administrations. Recognizing the limitations in the official food control system, in combination with the continued shadow market for non-iodized salt (although this salt was being sold, labeled as iodized), UNICEF initiated a collaboration among the Associations of Consumer Rights Protection (ARCP) with the Institute of Endocrinology and the National Sanitary Epidemiological Inspection (NSEI) of MOH (16). During 2004-2005, experts of the Federation of ARCPs conducted 5-day seminars in all the 14 Provinces of Uzbekistan and trained >3,000 ACRP staff members, chairmen of local communities, Women Council activists, employees of salt enterprises, salt traders and NSEI staff members in a comprehensive curriculum of USI and iodized salt supply issues. The curriculum had didactic, mobilization and normative elements that were used during 5,503 monitoring raids in the shops, mass catering, bakeries and other consumer outlets of the Provinces (Table 1).

| Location       | Salt samples obtained | Samples without certificate | Tested by the NSEI |              | Test-results sent to take measures | Samples addressed | Recall of defective product |
|----------------|-----------------------|-----------------------------|--------------------|--------------|------------------------------------|-------------------|-----------------------------|
|                |                       |                             | Iodized            | Not iodized  |                                    |                   |                             |
| Tashkent-city  | 418                   | 287                         | -                  | -            | -                                  | -                 | -                           |
| Tashkent       | 428                   | 223                         | 145                | 158          | 102                                | 95                | 85,000                      |
| Andizhan       | 106                   | 43                          | 72                 | 34           | 3                                  | 3                 | 8,500                       |
| Bukhara        | 99                    | 29                          | 58                 | 28           | 28                                 | 23                | 1,019                       |
| Dzhizzak       | 189                   | 150                         | 39                 | 150          | -                                  | -                 | -                           |
| Navoi          | 66                    | -                           | 56                 | 10           | -                                  | -                 | -                           |
| Namangan       | 1,201                 | 827                         | 265                | 300          | -                                  | -                 | -                           |
| Samarkand      | 409                   | -                           | -                  | -            | -                                  | -                 | -                           |
| Syrdarya       | 56                    | 1                           | 16                 | 40           | 40                                 | -                 | -                           |
| Surkhandarya   | 516                   | 233                         | 408                | 108          | 63                                 | 63                | 485                         |
| Fergana        | 500                   | 251                         | 65                 | 133          | -                                  | -                 | 5,000                       |
| Khorezm        | 189                   | 118                         | 114                | 75           | 5                                  | 2                 | 468                         |
| Kashkadarya    | 1,442                 | 1,292                       | 305                | 425          | 5                                  | 5                 | 60,000                      |
| Karakalpakstan | 150                   | 124                         | 19                 | 131          | 131                                | 91                | 6,200                       |
| <b>TOTAL</b>   | <b>5,769</b>          | <b>3,578</b>                | <b>1,562</b>       | <b>1,592</b> | <b>377</b>                         | <b>282</b>        | <b>166,672</b>              |

Table 1: Results of joint monitoring raids in salt sales outlets of Uzbekistan, September 2006

The raids showed that the majority of salt was being provided by suppliers without an accompanying certificate of conformity (62%). Half of the samples tested with a rapid test kit were not iodized. Of the 377 salt samples sent for further investigation to the local SES, the tax agency or an anti-monopoly committee, 282 (75%) led to enforcement actions. In total, the raids resulted in 167MT salt being removed for re-iodization or destruction, and 10 fines were imposed for violation of the regulations. To re-enforce the momentum generated by the joint action in grassroots enforcement, UNICEF helped producing posters that are used in point-of-sales outlets of Uzbekistan to remind the consumers of the characteristics on packages when they purchase salt (Figure 2).

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**СТАТЬЯ 15**  
«Пищевая и кормовая соль, производимая на территории Республики Узбекистан, подлежит **ОБЯЗАТЕЛЬНОМУ** йодированию»

**СТАТЬЯ 17**  
«Производство йодированной соли и йодированных пищевых продуктов осуществляется юридическими лицами в соответствии с требованиями государственных стандартов, правил и норм.

Йодированная соль и йодированные пищевые продукты по истечении установленного срока годности подлежат утилизации, промышленной переработке, либо повторному йодированию»

**СТАТЬЯ 23**  
«Лица, виновные в нарушении законодательства о профилактике йоддефицитных заболеваний, несут ответственность в установленном порядке.»

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Figure 2: Point-of-sale poster to remind consumers in Uzbekistan of their right to proper salt

The mid-term review of the ADB project 2<sup>nd</sup> phase took place during October 2006 in Cholpon-Ata, Kyrgyzstan. The purpose was to jointly examine the progress and analyze the obstacles, with a view to identify and discuss key strategic actions for each country for the remaining 1.5y project period. In preparation of the Workshop, MOH of each country prepared a summary of lessons learned during the previous period and proposed actions and their expected outcomes for the upcoming months. Uzbekistan reported that the draft law had passed a review in Parliament and, anticipating on enactment, the plan was to follow through by support to the National Salt Manufacturers Association (NSMA) to build its membership and strengthen the capacity in assisting its members by training technicians in practical methods for quality assurance of iodized salt during production. The plan also included a temporary national salt industry expert to strengthen the focus of NSMA's agenda and actions. In view of price fluctuations in the world market, MOH would set out to collaborate with NSMA in KIO<sub>3</sub> procurement with the aim to devise a sustainable arrangement of fortificant access by the salt producers. The work plan also included advocacy for subsidiary decrees or acts to reduce government taxes on KIO<sub>3</sub> and/or salt iodization input procurements. To increase awareness and consumption, actions with Customs would be promoted on quality control of imported salt and with NGOs on rapid testing of salt brands offered for sale in poor communities, followed by exposure and publicity of non-compliant salt. To further promote and sustain public awareness, the project planned an extension of the previous work with the Ministry of Education to insert the essential knowledge of IDD and the mandate for USI in colleges, high schools and other relevant educational curriculums, including for health care professionals.

The final version of the law "On preventing iodine deficiency diseases" was adopted by the Legislative Chamber on 27 December 2006, approved by the Senate on 29 March 2007 and signed by the President in May 2007. The articles in the law defined a combination of approaches, including "saturation of the consumer market with iodized salt and iodized foodstuffs", "preventive supply with iodine-containing medications", state control on quality and safety of iodized salt, awareness building and maintenance, various training needs, and monitoring, method development and international collaboration. The Cabinet of Ministers, Ministry of Health, State Agency of Standardization, Metrology and Certification, and local state authorities were made responsible for managing the approach. Mass prevention was stipulated to be carried out through the use of iodized salt and iodized foodstuffs, while individual prevention should consist of MOH arrangements for diagnosis and treatment of iodine deficiency diseases. On budget, the law stipulates that funding shall be carried out by means that were not forbidden by the law. Persons with medical or other contraindications against the use of iodized salt should be provided with access to non-iodized salt. Thus, in contrast to the principle laws enacted several years earlier in Turkmenistan, Kazakhstan, Kyrgyz Republic and Tajikistan, the Government of Uzbekistan elected not to ban the import and sale of non-iodized salt while leaving the door open for the supply and promotion of alternative commercial food products and iodine supplements.

A Presidential Decree of early 2007 waived the import tax on salt iodization equipment. In the spring of 2007, MOH released information that in Uzbekistan, 19 industries were producing salt and another 28 firms were engaged in packaging, labeling and sales of salt purchased from primary producers. The 13 salt industries, selected in succession for ADB support since 2002, constituted about 2/3<sup>rd</sup> of the



national salt supplies. The Salt Producers Association, promoted by Government, was not afforded an import license for  $KIO_3$  and it ceased playing a further role. The decision was that centralized purchases were to be arranged under Uzmedimport, the official MOH agency for drug supply management.

Working with the GAIN-sponsored wheat flour fortification project, the ADB project in May-June 2007 was involved in youth festivals in five Oblasts to promote fortified foods. The local organization involved Kamalot NGO and the festivals were covered in national TV and local newspapers. Also during 2007, UNICEF organized a massive awareness campaign in schools along the lines as the previous campaign in 2003, but without salt tests. The campaign distributed 3.2million leaflets with consumer information about fortified flour on one side and iodized salt on the other. The leaflets had a tear-off section that the parents could use for reporting their observations of fortified products back to the teachers. Teachers of 5-11 grade students were stimulated to give lessons on fortified foods as part of "Health Week".

As reported at the final Almaty Forum that concluded the ADB project (17), the salt quality inspections by SES in the markets and shops of Uzbekistan numbered largest among the countries involved in the ADB project. More than 51,000 titration and 4,200 WYD tests indicated that nearly 90% of the salt for sale to consumers was iodized according to the GOST standard by the end of the project. Producer reports, on the other hand, showed that the amount of iodized salt supply attained 60-65% of the national consumption need (17).

The Nutrition Investment Strategy Plan, Uzbekistan, was completed in 2008 and encompassed a set of programmatic activities to support fortification primarily through private enterprises, complemented by targeted public health services to be delivered by MOH (18). Among the objectives, the plan states "expand salt iodization levels to sustainably reach 85% of the population and virtually eliminate iodine deficiency disorders" and the plan is budgeted to last 6 years. A UNICEF review in July 2009 notes that the percent of households using iodized salt did not change from its 2006 level (19). The underlying reasons given for the continued status quo are that the law did not explicitly state USI achievement and that the roles of MOH and SES had not been clearly defined yet due to lack of by-laws, and subsidiary acts and decrees. The Uzbek Government adopted the Nutrition Improvement Strategy in 2009, which re-positions the IDD virtual elimination goal for 2015 when the progress to achieve the MDGs will be assessed.

In conclusion, after Independence in 1991 Uzbekistan had to develop its own salt production and supply systems, which made iodization of secondary importance for some time. After 2000, many events and efforts have led to a principle Law on IDD Elimination that gives priority to developing an approach that would flood the markets with properly iodized salt. The USI goal in Uzbekistan has been moved to 85% of the households by 2015, i.e. the MDG deadline. National action toward this goal under Government responsibility has been inserted in the nutrition improvement strategy, which is principally driven by economic considerations. The numerous, mainly small salt enterprises in Uzbekistan are not united and they depend for their  $KIO_3$  access on the Ministry of Health, which has limited authority for control and enforcement in consumer outlets. Although public awareness is high, this has not yet been translated into an effective insistence on being supplied with the proper product. The Institute of Endocrinology has a high reputation, but a national, population-representative iodine survey has not been conducted.

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

- Joint Workshop on the Elimination of Iodine Deficiency Disorders, Ashgabat, Turkmenistan, Economic Cooperation Organization, UNICEF, WHO, June 1994
- Eliminating Micronutrient Malnutrition with focus on Universal Salt Iodization – Multi-sector Management Course, 15-22 June 1998, Tblisi, Georgia
- Regional Salt Producers’ Meeting, 29 September – 1 October, 1999 Kiev, Ukraine
- Almaty Forum, 2001: Launch of the JFPR project “Improving nutrition of poor mothers and children in Asian countries in transition”. Almaty, Kazakhstan, October 2001 (Asian Development Bank and UNICEF)
- Mini-Round Table on fortification standards, regulation, quality assurance and control. Tashkent, Uzbekistan, June 2002 (Asian Development Bank and UNICEF)
- Workshop on Strengthening Strategies for the Elimination of Micronutrient Malnutrition in CARK. Almaty, March 2003 (UNICEF, CDC and Asian Development Bank)
- Regional Workshop for Salt Producers of Central Asia and Mongolia. Bishkek, Kyrgyzstan, July 2004 (Asian Development Bank and UNICEF)
- Almaty Forum, 2004: Sustainable Food Fortification in Central Asia and Mongolia. Almaty, Kazakhstan, September 2004 (Asian Development Bank and UNICEF)
- Training workshop to improve the monitoring and evaluation of micronutrient fortification of salt and flour in Central Asia Republics and Kazakhstan (CARK). Almaty, Kazakhstan, October 2004 (UNICEF, Asian Development Bank, CDC and MOST)
- Second Regional Conference of Salt Producers of Central Asia and Mongolia. Tashkent, Uzbekistan, November 2005 (Asian Development Bank and UNICEF)
- Almaty Forum, 2007: Towards Sustainable Food Fortification in Central Asia and Mongolia. Almaty, Kazakhstan, October 2007 (Asian Development Bank and UNICEF)

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